

National Commission on Forensic Science

Meeting #8

December 7–8, 2015

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Washington, DC**



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

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December 7, 2015

Call to Order/Opening Remarks

Andrew Bruck opened the meeting at 12:08 p.m.

Sally Q. Yates, Deputy Attorney General, U.S. Department of Justice

Ms. Yates reviewed the purpose of the National Commission on Forensic Science (NCFS) and presented the Attorney General's response to recommendations submitted, namely promoting universal accreditation and finding ways to improve upon medicolegal investigative practices. In the future, the Department of Justice (DOJ) will make every effort to respond to recommendations within two NCFS meetings.

Recommendations

Universal accreditation

1. By December 2020, all Department entities that provide forensic science services, except those conducting digital analysis, must obtain or maintain accreditation.
2. By 2020 (i.e., within 5 years), all DOJ attorneys must use, whenever practicable, accredited forensic testing entities when they request testing of evidence, except for evidence involving digital analysis. The Executive Office of U.S. Attorneys, in conjunction with other Department litigating components, shall work to create implementation guidance to put this into effect.
3. Where relevant, the Department should redraft its grant solicitations to provide incentives for state, local, and tribal forensic testing entities to apply for and use discretionary funding to seek and maintain accreditation.
4. The Department should work with Congress and with federal, state, local, and tribal law enforcement agencies to support accreditation. The Department is somewhat limited in its ability to award formula grant money to go only to accredited entities. Formula grants require that bodies meet statutory requirements, but the Department can redraft solicitations to clarify that some funds can be used to seek accreditation. Similarly, the grants supporting forensic labs from Office of Justice Program (OJP) discretionary funds could be modified to give preference to labs that seek accreditation. This would relate to forensic labs and other entities that perform forensic testing. Ms. Yates asked NCFS members to think of other ways to promote accreditation.

Digital evidence

DOJ temporarily defers a decision on this recommendation. Given the recent revision to the NCFS charter, the DOJ thinks it is important as a procedural matter that the Commission allow additional debate and public comment on the question of digital evidence. Ms. Yates asks the Accreditation and Proficiency Testing subcommittee to develop additional recommendations on this topic noting that to the extent that the subcommittee develops a new work product that recommends universal accreditation of digital labs, that they address community concerns about the difference in the practices of forensic analysis of digital evidence.

Medicolegal death investigation

DOJ is committed to strengthening the field of medicolegal death investigation (MDI). It is absolutely vital that the field enjoy the same level of scientific rigor and reliability as all other forensic science

disciplines; however, DOJ has limited direct involvement as it does not handle its own MDI. DOJ is looking to the Office of Science and Technology Policy (OSTP) to help convene an interagency working group (IWG) on a broad range of issues related to MDI. DOJ is concerned that its impact will be limited unless the federal government addresses MDI issues in a more comprehensive way. Ms. Yates refers the MDI accreditation and certification recommendations to this interagency working group, and explains that future MDI recommendations approved by NCFCS will be referred to the working group to maximize impact.

Views Documents

Scientific literature, inconsistent terminology, and forensic science

The views documents on scientific literature, inconsistent terminology, and forensic science terminology do not make specific requests for action. The Attorney General agrees that rigorous research, review, and testing processes are essential elements to strong forensic science, and further that it is important to have clear and consistent terminology, and she looks forward to working with NCFCS to further these goals. Views documents are useful to build consensus statements, but broad principles are not linked to policy actions.

Discussion

- Use of accredited labs should be required except in the rare circumstance when it is not possible (e.g., food safety labs or environmental cases for pollution-related crimes, or when it would cause a lengthy delay).
- If accreditation is not a priority, it will always happen last; we are asking lab personnel to rethink priorities for scarce resources. Accreditation can be encouraged by giving priority to accredited labs when awarding discretionary grants and allowing them to use the funds for accreditation. Accreditation has to be built into the budget.
- At the same time, states where labs are already accredited will not take a back seat; they will apply for different types of grants.
- As for non-DOJ labs, DOJ has no control over state and local labs, but it does have ways to encourage their conduct to meet the standards and get accredited. Previous Interagency Working Groups of the White House Subcommittee on Forensic Science (IWGs) have stated that enforcement was the problem.
- Uniform high-level performance is the ideal. NCFCS should think about uniform guidelines for accrediting authorities, and DOJ will talk through how it can help the subcommittees.

Willie E. May, Ph.D., Director, National Institute of Standards and Technology

Several people have spoken to Dr. May about increasing the scientific presence on the Commission. However, the National Institute of Standards and Technology (NIST) has non-regulatory status and chooses not to delve into that space, thereby maintaining its unbiased neutral stance. NIST develops currently relevant measurement and standards issues. Forensics is one of several areas NIST is fully committed to. In its work with DOJ, NIST has assumed leadership of the Organization of Scientific Area Committees for Forensic Science (OSAC) and agreed to expand its internal science research program. NIST convened a successful First International Symposium on Forensic Science Error Management and is working to complete the conference proceedings.

Forensics is not totally a science, but a practice. NIST has no experience in the practice side but would like to decrease the number of errors. NIST conducts research in a number of forensic areas on topics including DNA, digital evidence, and toxins. NIST can address the quality standards these areas are expected to reach but not the context in which they are used.

In May 2015, NIST's funding of \$20 million over 5 years was awarded to a consortium led by Iowa State University to establish NIST's center of excellence (COE) in forensic science, the Center for Statistics and Applications in Forensic Evidence (CSAFE). This will support NIST's efforts to advance the utility of probabilistic methods to enhance forensic analysis.

Upcoming events include the American Academy of Forensic Sciences (AAFS) meeting with a theme of Transformation: Embracing Change.

Discussion

- There is a distinction between NIST's capability in measurement and in interpretation (admissibility). Regarding trace evidence: NIST can determine whether there is a valid method for determining whether it is similar to a reference sample and how rare or common that match is. Throughout, NIST needs to understand exactly what DOJ is asking of NIST and where its resources can provide the best value.
- However, accurate measurement is of little value without context (e.g., bite marks): Analysis can determine whether two are the same, but not how the matrix of bite marks or age of the imprint is related—much metadata has to be brought into play. One of the ways NIST can help different parts of the Executive Branch is by bringing up sources of uncertainty, which differs from admissibility.

Attorney General's Role

Alex Krulic, Office of Legal Policy, Department of Justice

The Office of Legal Policy has helped coordinate review of the Commission's work products. The Department is committed to processing anything that the NCFS submits to the Attorney General. As you know, DOJ interacts with forensic science in a variety of ways - as lab manager, customer, and grant-funder. Overall, DOJ, which includes the National Institute of Justice (NIJ) and the Bureau of Justice Assistance (BJA), has more than 100,000 employees. It does not oversee other federal agencies or state and local entities, but it interacts with them on these issues in a variety of ways. Specifically, it interacts with state and local law enforcement personnel through its prosecutors and its grant funding authorities. DOJ has 93 U.S. Attorneys offices nationwide. It receives its grant-making authority through a variety of funding mechanisms.

Responding to NCFS work products is easier when there is a clear and concise recommendation that makes explicit what the Commission is asking (i.e., a concrete recommendation that speaks to a particular action). If the Commission wants the Attorney General to implement a recommendation, it must be within the Department's direct authorities. The Attorney General cannot require other federal agencies to comply with particular DOJ policies. She can, however, make the Department's policies an example. There are also limits to how DOJ grant funds can be used (e.g., formula grant programs are noncompetitive, and discretionary funds are bound by requirements and stipulations set by Congress).

Discussion

- The Commission can be most helpful to the DOJ by crafting clear and specific work products. For example, by creating a work product that states each recommendation separately. Making smaller but more specific recommendations will help ensure the Commission's goals are clear.
- The Views documents represent the views of the Commission but do not include a specific request or recommendation for consideration by the Attorney General.
- The Attorney General only has the ability to directly impact policy for DOJ, but the issues NCFS considers may be broader. The Attorney General can use Views documents as a guide

for proposed reforms that the Commission recommends. This process needs to be a partnership.

- New work product templates (distributed to Commissioners) indicate how best to craft Recommendations, Views, and how to use supporting documentation.

Commission Accomplishments and Upcoming Priorities

John Butler, Ph.D., Vice-Chair, National Institute of Standards and Technology

Dr. Butler congratulated Pam King on becoming a judge.

He noted that the subcommittees have presented three work products to be voted on, and that seven are out for public comment until December 22. The Commission will vote on those at the March meeting.

The current charter for the NCFS will expire in 16 months (i.e., five more meetings) on April 23, 2017. With a new Administration taking office on January 20, 2017, there may be different priorities. Although the Commission may continue past that time, we are certain only of five more meetings and will plan accordingly.

Nelson Santos, Vice-Chair, Department of Justice

Mr. Santos proposed a framework to better organize NCFS's work products and to advance discussion about the path forward, namely, what we want and how we plan to get there. In a reverse strategic planning exercise, what has already been done will be used to build a roadmap for the future.

A total of 42 documents have been produced, of which NCFS has adopted 12, and 3 will be voted on during this NCFS meeting. Three are foundational (i.e., deal with underlying science, validation, or research); seven are operational and deal with systems; four are application(al) and deal with reporting, testimony, transparency, clarity, and understanding; and one is unassigned. The overall vision is that all forensic evidence will support the equal and impartial application of justice. If the charter expires in 16 months (5 meetings), what do we want to have accomplished? What are the most important goals, and what are the objectives within those goals? All 42 documents can be categorized as follows:

1. Improve underlying science and validity of forensic evidence and methods (8 documents).
2. Improve operational and management systems of forensic science service providers (FSSPs) (16 documents).
3. Improve clarity and understanding of forensic evidence (17 documents).

Mr. Santos asked commissioners to think about the path forward when producing work products and to consider how each feeds onto the next.

Discussion

- In the history of the DOJ, they have never said anything about accreditation. The Attorney General's decision is a huge win for NCFS. It will put something into effect in the DOJ labs, and it will affect more than 18,000 law enforcement agencies.
- Today was the first feedback NCFS has had from this Attorney General, and we have not gone through any iterative process. There are gaps that are not filled yet. Another dilemma is that a lot of good work is ongoing in the faith that someone will take it and do something with it, but who? The area that becomes critical is funding. Can the Attorney General provide guidance on funding priorities? Consider role of NCFS/DOJ to create movement on the work products. Work with external groups: OSTP, OSAC, professional organizations. Analogous to

the National Transportation Safety Board: they conduct investigations and create recommendations but are responsible for nothing, and they delegate their work.

- It would be helpful to find out how the Deputy Attorney General thinks Views documents should be used. The federal government can be useful in endorsing statements, so we should have more dialogue about what role NCFS is to play. Other people are listening, so it would not take much effort to support views and principles. You cannot say X in a courtroom without evidence to support it, so there's more synergy among our documents than one might think.
- The Attorney General can use Views documents to speak to the community. Views documents can be seen as white papers for background, whereas recommendations are things the Attorney General can use to make policy, and they need to be more finely tuned to whatever is required.
- Recommendations should be stated in one or two sentences with an explanation of why expressed in several bullet points. Although the Attorney General may not have jurisdiction and may have limited ability to act on recommendations, her opinions matter, and she does have a bully pulpit and friends. It is a question of how to have influence without power.
- Principles to be endorsed can be listed as specific actions in recommendations documents.
- The medicolegal subcommittee's issues are the same as those discussed in the framework, but they are about MDI topics. OSTP is the right place in the Federal government to think about these issues going forward to be the most productive.
- It would be useful to ask each subcommittee what it can get out in the next two meetings.
- Abstracts can be introduced using this framework as a guide.

Organization of Scientific Area Committees for Forensic Science, Update

Jeremy Triplett, Chair, Forensic Science Standards Board

OSAC promotes and develops technically and scientifically sound forensic consensus documents. It publishes the *Registry of Approved Standards* (i.e., requirements) and the *Registry of Approved Guidelines*. Its enforcement mechanism is engaging accrediting bodies, which is largely self-enforcement—labs can choose to adopt what they want. To be published in the registries, a standard or guideline must have technical merit (including detailed scope and validation) that has been assessed as valid by those in the forensic, scientific, statistical, research, and academic communities and follow a reasonable development process (i.e., transparency, balance of interest, due process, and consensus).

The process for developing a new standard, changing an existing standard, or developing a guideline that is not formally adopted moves from prioritization to approval (the most labor-intensive phase). Then they list the standard or guideline on the registry. Each has a 30-day mandatory public comment period. NCFS members can take part by commenting to the standards-developing organizations or during the 30-day comment period. There is also an appeal process.

The Forensic Science Standards Board (FSSB) oversees five scientific area committees with three resource committees to provide input and feedback during the process. FSSB has received more than 1,900 applications from people who want to participate, and has more than 150 affiliates, each of which has a particular expertise. It is considering 364 active projects (standards, guidelines, research, and guidance documents).

Five standards have been put out for public comment so far, all from chemistry. Each was evaluated for technical merit via a worksheet of bibliographic references, guidance for estimating uncertainty, validation studies, and generally accepted practice in the forensic or general science community. The

registry request form would benefit from subcommittees, resource committees, and OSAC statisticians exchanging views as the standard or guidance is formed.

The new disciplines process for inclusion in OSAC includes these questions: What is the impact of the discipline? Does it render conclusions in a legal context or process forensic evidence? What is the frequency of use? Does published research define the scientific basis? How is the discipline related to or different from existing OSAC subcommittees? Could a task group be added, or could we add to the scope of an existing subcommittee? If not, we can create a new subcommittee. Crime Scene is the 25th subcommittee; more than 150 people said they would be interested in joining. Other future subcommittees or task groups might be forensic art, polygraphs, or forensic psychiatry.

OSAC gives feedback on basic and applied research needs: 57% of its members are forensic science practitioners, and 28% are researchers or academics. OSAC divides the mechanism by which subcommittees identify needs and gaps. Research needs will be published on the OSAC Web site. Researchers can use this as a resource for grant applications and solicitations. The OSAC newsletter posts vacancies, meetings, accomplishments, and public comment periods.

OSAC convened several collaborative meetings this year. Upcoming meetings are: the full OSAC meeting, January 25–29, 2016, Leesburg, Virginia; and the AAFS Public Reporting at the annual meeting, February 22–23, 2016, Las Vegas, Nevada.

The international community—European Network of Forensic Science Institutes (ENFSI), and the Australian National Institute of Forensic Sciences (NIFS)—is also interested in working with OSAC. OSAC will continue to reach out to possible constituents at meetings such as this and other OSAC forums. A functional shift has been the transition from infrastructure building to the operative phase. Stay informed by going to NIST.gov/forensics/osac.

Discussion

- OSAC would be supportive in taking recommendations from the Commission to follow up on, although the mechanism does not yet exist. OSAC is developing research needs assessments, which flows out of the NCFS discussions.
- Inquiry on OSAC consideration on authority and obligation for duty to correct (e.g., understanding that the American Board of Forensic Odontology Academy of Odontology changed their standards and no longer makes positive identifications). However, this has not been discussed within scope. They have focused on developing standards and are now looking at research guidelines.
- Question 6 on the OSAC Technical Merit sheet will be broken in two and will specify whether the discussion refers to measurement uncertainty or a conclusion uncertainty. OSAC has statistician task group, embedded in the subcommittees.
- #11b on the OSAC Technical Merit sheet refers to the general scientific community. Each would have a statistician to help with the measure of uncertainty. The technical merit worksheets follow the standard or guideline through the process. Dissenting opinions are captured on the worksheet. Public comment is another place it could be captured. The subcommittee would vote; then the Scientific Area Committee (SAC) and all comments follow throughout.
- “N/A” means the worksheet is owned by whoever has it at the time. SAC chairs should expect to see all this when they see the document, and they should also see up-front collaboration.
- People are asked to become affiliates because of their expertise.
- There is heavy focus on practice and practitioners, but how are the SACs attempting to examine, evaluate, and report on the science that undergirds the standards they are proposing? It is all about using the science appropriately. This community would like to see

the science that undergirds the standards—reliability of measurements; in forensics, there is reliability and accuracy for a purpose. The technical merit evaluation part is the root of how OSAC is approaching the standards’ use in a legal context. Only the five mentioned standards have been subjected to this process, and public comments are still being evaluated. For all five, the references that give the technical merit are online and publicly available. Anyone who has a concern about the references can comment during the 30-day period.

- E-mail further questions to Mr. Triplett.

Reporting and Testimony Subcommittee Report

Judge Jed Rakoff & Matt Redle, Co-Chairs

Documentation and Case Record and Report Contents

Since the last meeting, this subcommittee has had conference calls and e-mail exchanges, and they have one work product to be voted on today. It has received eight comments: three anonymous, two institutions, and three identified individuals. On August 10, they began discussing public comments and revising accordingly. This document fits under Mr. Santos’ goal #2 (Improve operational and management systems of FSSP).

Discussion

- The document references a group of people that two other documents also reference. This can be reconciled at the end with all the documents rather than done piecemeal. The Subcommittee on Procedures and Operations may take care of this.
- On page 2, “As noted above...” Used “report throughout.” It is common for labs to produce an analytical report for everything scientific, but not for photographic and other evidence.
- In the title, replace the first “and” with a comma.
- #4 is essentially a glossary.
- It would be preferable to receive documents using the track changes feature, so changes would be highlighted as they come and go (e.g., the last sentence of #4 is new, as is the paragraph on the second page beginning with “as noted....”).

**VOTE TO ADOPT VIEWS WORK PRODUCT ON
DOCUMENTATION,
CASE RECORD AND REPORT CONTENTS**

- Of the 32 members voting, 22 votes are needed for a 2/3 majority.
- 87% yes, 10% no, 3% abstain.

Testimony Using the Term “Reasonable Scientific Certainty”

Changes will be made in accordance with today’s discussion.

Discussion

- The document actually has three views in the introduction; these could be made bullet points. The rest of the document is supplemental and not additive. Sentence 1 would be bullet 1; sentence 2, bullet 2; and sentence 3, bullet 3. Delete the next sentence and put the rest elsewhere.
- Condense sections III and IV. In IV, second paragraph, bullet 2: “use of the term ‘scientific’ implies that the conclusion is indeed scientific.”
- In the statement of the issue: add “and forensic medicine service providers.”
- This document will be revised as three Recommendations and a supporting Views document. This is an issue that judges and lawyers do not understand and needs a cogent place to get guidance. It is asking for a cultural change in the legal community that needs some explanation. We have both: the Views document (white paper) and separate

recommendations for the Attorney General to consider. It cannot be voted on until all public comments have been received (December 22) and adjudicated.

Abstracts

Access of Indigents to Defense Experts

The problem is to make a statement and try to give some information on it. Access to experts retained by the defense is critical to have in principle.

Notice and Demand Rules

This issue responds to a Supreme Court ruling. There are already statutes on the books. In one—a prosecutor sends the report to the defense attorney and the defense attorney has the duty to notify the prosecution that s/he wants it. They still have to have enough information for the client to execute a waiver. It also minimizes occasions where experts appear for no good reason. A document on this would be categorized in Mr. Santos' goal #2 (Improve operational and management systems of FSSP).

Judicial Vouching for Expert Witnesses

We do not want the judge to vouch for the credibility of the witness. It does not change the way you present the qualifications of the expert in front of the jury. It is just that accepting someone as an expert should not be done in front of the jury.

Comment Period

No one had registered.

Other Issues

- Mr. Santos and Dr. Butler were contacted by the New York City Office of the Chief Medical Examiner, Barbara Sampson, M.D., Ph.D. Dr. Butler and Dr. Richard Cavanagh, acting Deputy Director of NIST visited the NYC OCME on November 4, 2015. Five groups are accrediting various parts of the lab. The root cause analysis document is needed for more standards on medicolegal certification issues and improving processes of their lab.
- In addition, Dr. Butler visited the Montana State Crime Lab, the Southwestern Institute of Forensic Sciences (Dallas, Texas), the Northville lab in Michigan, and a lab in Ireland. It was valuable to visit laboratories to see what they are facing.
- The American Academy of Forensic Sciences will meet in Las Vegas in February.
- Science and statisticians should play a greater role in reviewing standards.

Mr. Bruck adjourned the day's sessions at 5 p.m.

December 8, 2015

Andrew Bruck called the meeting to order at 9:04 a.m.

John Butler: DOJ issued a press release yesterday (December 7) that addresses the Deputy Attorney General's points on accreditation. A memorandum that the Attorney General issued putting into effect the recommendations was also shared on the DOJ web site. Although it is still a work in progress, it was released to the public to be transparent.

The vote taken yesterday must be retaken because the computer did not properly save the votes the first time.

All five of OSAC's proposed standards are being considered for posting on the *Registry of Approved Standards*, but these are no longer available to nonmembers of ASTM, the Standards Developing Organization that created them.

VOTE TO ADOPT VIEWS WORK PRODUCT ON DOCUMENTATION, CASE RECORD AND REPORT CONTENTS

- 22 votes are needed for a 2/3 majority
- 90% yes, 7% no, 3% abstain
- The 2 "no" votes came from Greg Champagne and Marc LeBeau with the single abstention coming from Nelson Santos

Translation of Scientific Research into Forensic Practice

Molly Dix, BSME, MIP, RTI International Forensic Technology Center of Excellence

Fen Zhao, Ph.D., National Science Foundation

Peter Marks, M.D., Ph.D., Food and Drug Administration

Jennifer Shieh, Ph.D., National Heart, Lung, and Blood Institute, National Institutes of Health

Ms. Dix: RTI is a not-for-profit research institute founded in 1959 that now employs 3,700 scientists. Its mission is to improve the human condition by turning knowledge into practice (e.g., cochlear implants, the drug taxol, a wind-shear detection device on planes). RTI started doing technology transfer for NASA 50 years ago and now hosts the Forensic Technology Center of Excellence (FTCoE). Best practices are defined by the desired outcome, which are not always the same.

Transfer of research into practical uses relies on knowledge transfer, market acceptability (commercialization), and money for research. Furthermore, forensic applications demand that the application be able to stand up in a court of law. For NIJ, technology transfer is about people and about identifying where barriers may come.

FTCoE is run with many stakeholders. It uses three pillars: addressing key challenges to forensics; sharing knowledge (technological landscape and variation reports [e.g., highlight successes so people can build on them] and driving technology toward adoption); and portfolio management (review and transition support [e.g., evaluation of rapid DNA tests on case resolution for law enforcement]). DNA analysis is the crux of forensics.

FTCoE triages projects according to whether they need help. In general, scientists are good in science, but they need help partnering and telling the story. And that support must continue even when the main contact retires.

Dr. Zhao: The mission of the National Science Foundation (NSF), through its seven directorates, each of which aligns with a fundamental scientific discipline, is to promote progress in science and advance the national health, prosperity, and welfare. NSF funds about 80% of computer research

(e.g., Google), and helps commercialize it. In fact, NSF's focus is on trying to drive technologies out into the commercial sphere through I-Corps, which translates innovations from the lab to the market. It fills the "ditch of death" (e.g., when a professor has done the research and has results that might have commercial potential but has no experience or support to take it further). I-Corps finds ways of getting funding to the researcher, which prevents a brilliant scientist from spending time on marketing and maybe failing. The I-Corps program calls in an entrepreneurial lead and then trains the researcher as they guide him through the process. I-Corps is composed of nodes, sites, mentors, and teams of NSF-funded researchers. Most need a second round of funding (e.g., from NIH's Small Business Innovation Research [SBIR] grants). Successes include Anchovilabs software and Bioadhesive lab.

Dr. Marks: The Food and Drug Administration (FDA) engages in applied science research through its Center for Biologics Evaluation and Research (CBER). This center regulates allergenics, blood products, devices, gene therapies, human tissues and cellular products, live biotherapeutic products, vaccines, and xenotransplantation products. Some of these are relatively novel and present a regulatory challenge. FDA has about 200 labs where they also do conventional testing and deal with the chain of custody.

Three other offices are also engaged in translational research: the Office of Vaccine Research, the Office of Blood Research, and the Office of Biostatistics and Epidemiology Research. The most recent regulatory challenge has been harvesting cells from individuals and manipulating genes. However, there are also production challenges (consistency, tracking and labeling, potency), clinical challenges (pre- and post-infusion issues, dosing issues, toxicities), and other challenges (access to key reagents, intellectual property, manufacturing capacity, comparability studies, and product characterization).

Dr. Shieh: The National Heart, Lung, and Blood Institute (NHLBI), the National Institutes of Health's (NIH's) third largest institute, has a budget of \$3.1 billion for basic and applied research, and a small business program budget of \$92 million. SBIR grants are for small business technology transfer. (Later-stage investors wait until products have been tested in people.) NHLBI also provides in-kind services (e.g., helping to find leadership partners). SBIR and Small Business Technology Transfer (STTR) grants are the largest technology stimulation programs. Established in 1982 and 1992, respectively, they have an overall budget of \$736 million, which is a congressionally mandated set-aside. Funds can be given only to a small business, which submits to a rigorous peer-review process. The small business retains the intellectual property rights.

The program is structured in three phases with increased amounts of funding: phase 1 is the feasibility study (proof of concept); phase 2, continued research and development; and phase 3, commercialization (and use of non-SBIR and non-STTR funds; the researchers should be getting matching funds from private investor). Portfolios are 45% therapeutics. They also support health Internet technology. The majority of funding goes to early-stage projects, but they have helped many programs get to stage 3.

NHLBI is trying to bring in people with business development experience. Advisory experts have created a series of Webinars. They provide free market analysis for phase 1 awardees, free mentoring for phase 2 programs, and partnership programs. Many stages are involved in taking basic research to the public after they pass the "ditch of death" between academia and the second phase. They need both technology development expertise and project management expertise. Biomedical product development relies heavily on FDA regulation, so we need to bring in end-users early to deal with the researchers. The Davinci Medical Robot is one of SBIR's success stories.

Discussion

- I-Corps and NIH evaluate research to be sure it is ready to go to the next stage. In fact, the whole point of I-Corps is to determine whether to go ahead or not. I-Corps determines whether the market is ready for this innovation (e.g., Galileo did great research, but the Catholic Church made it a no-go for their market).
- Forensics within institutes includes:
FDA: adulterated products, false STEM cell therapies—the Office of Biologics deals with the chain of custody. This is not huge, but it is a very important part.
NIH can be applied to, but not thought of specifically. Small business in general looks at commercialization and significance. Then the researcher determines whether to go ahead.
NSF deals with fraud detection and cybersecurity. The computer side is data-driven, and data science review panels do see that.
- RTI: In the past, before the Human Genome Project, there was no discussion of social, ethical, or legal implications. On the social side, yes, but maybe not enough. The technology landscape report raises those considerations. Something like that was done for DNA familial searching, when they got input from various stakeholders in that area. Ms. Dix talks about technology transfer—not necessarily social transfer. The focus is on bringing something to the market because that will influence whether people adopt it.
- In forensics, we have not done the root cause analysis to determine why forensics has not produced foundational research. Why have market incentives not made products that are accurate and reliable? We need to think about a feedback loop that is not currently present in the criminal justice system to get at ground truth. We do not have the same constituency, but more of a gatekeeper role, such as the FDA evaluation approach.

Human Factors Subcommittee Report

Justice Bridget McCormack & Jules Epstein, Co-Chairs

The Human Factors Subcommittee met yesterday and had a conference call on October 19. The final work product is ready for a vote.

Ensuring that Forensic Analysis Is Based upon Task-Relevant Information

This document is a statement of the subcommittee's views.

Discussion

None.

Issues under Discussion

Survey

An information-gathering survey was sent to crime lab directors to determine how labs address issues of cognitive bias. In collaboration with the American Society of Crime Laboratory Directors (ASCLD) made available its e-mail addresses and distributed the survey. Of those who opened the e-mails, 70% responded. After the domestic results have been received (in the next few weeks), the subcommittee may send the survey to international labs. This is not statistical data, but anecdotal, informational data.

Checklists

The subcommittee had its initial discussion on checklists in the process of educating themselves. The subcommittee asked Jeff Adachi to study the use of checklists in criminal law and he gave a

VOTE TO ADOPT VIEWS WORK PRODUCT ON TASK-RELEVANT INFORMATION

- 22 votes are needed for a 2/3 majority.
- 93% yes, 7% no.
- The 2 “no” votes came from Fred Bieber and Matt Redle.

presentation. The subcommittee wants to identify areas where checklists have utility and determine if there is an initial effect may drop off or there may be ways to sustain the benefits.

Reporting Results

Reporting results has some Human Factors perspectives, although it is largely a Reporting and Testimony matter (i.e., how jurors and judges understand forensic testimony). This may be affected by labs' increasing use of information management systems and proficiency testing.

Share Point Web Site

Jonathan McGrath, Ph.D.

The NCFS Sharepoint site is used to make the public comments more accessible and organized for the Commissioners. The *Federal Register* notice provides information to submit public comments (docket number ODAG156). Notice was given that eight documents from have been posted for public comment. Within regulations.gov, search for ODAG 156 or National Commission of Forensic Science. Click "view all," and all eight work products will be shown. On the left side of the page, NCFS public comments opens to folders in chronological order, based on NCFS meetings dates, so that all public comments can be easily accessed from one location.

Click "Actions" tab and, "Open with Windows Explorer," you can copy and paste onto your own computer. The final icon is "Alert me." This allows you to be alerted when comments are added to folders you are interested in (select frequency of alerts at the right). At the top left, you can adjust the alert settings.

Documents or templates that relate to the NCFS work documents will be posted to the Shared Documents folder. Contact Danielle Weiss, Jason Cheshire, or Jonathan McGrath.

Interim Solutions Subcommittee Report

Dean Gialamas & Peter Neufeld, Co-Chairs

The 10 commissioners and two non-commission members had a conference call in November. Two documents have been drafted:

National Code of Professional Responsibility

The document is significantly changed. Three public comments have been received and adjudicated:

Comment 1: The commenter was not convinced that this is necessary or enforceable; labs need to be certified but the certification working group will include this.

Comment 2: An external body is needed to enforce the code. The IWG report said enforcement was the major issue. We are asking the Attorney General to support and urge, and we are asking accreditation boards to do it.

Comment 3: This places undue burden on scientists. Responsibility would be with the lab's quality assurance (QA) system and law enforcement, not individual scientists.

#5

- #5 relates to lab responsibility unless we add a practitioner's failure or misconduct. The document is a way to hold individuals responsible. It gives them the power to speak up in the organization. It puts the onus on people with scientific education to have ethical responsibility for what they do.

- #5, 15, and 16 are aimed at lab performance and not individual practitioners.

#14

- Lab directors are concerned that the responsibility for the individual reporting ends with that report. This could be clarified in #14. The subcommittee agrees in spirit and wants open communication but at the appropriate times and through the appropriate channels. It is a problem when the person reporting the breach reports to the person who caused it. At the same time, labs want to maintain their independence. Phil Pulaski and Marilyn Huestis will discuss this off-line.
- Service providers need to sign, so they have control over it. Management signs for some and the lab director for others. The separate document underscores the foundational aspects. Those that pertain to individuals should be distinguished from those that pertain to systems.

#16

- “Capabilities the lab has in being able to notify all affected parties” could be moved to the transparency document, but discussion would be helpful. Lab responsibility is more systemic so it does not belong in a code of professional conduct. Is everyone in that lab sanctioned? This can be seen as any irregularity in the system. It is a system problem.
- In Texas, they brought stakeholders together and devised a system of notification, and now they have protocols for how to handle notification. Inmates are most affected by DNA information so notices are sent to prisons. They can also send a form to a post office box. They have a triage team, and if something needs to go forward, lawyers will be appointed. Judge Hervey will share information on this.
- Leave 16 in and maybe suggest implementation, “in accordance with local protocols.”
- Also, there is a discovery framework in that the defense attorney will guard those rules.
- The operational part is difficult; the ethical challenge less so. “Appropriately informed” allows flexibility in the mode of execution.
- There could be separate institutional requirements, but it is important to have the institution responsible. Another issue is a whistle-blower requirement so the whistle blower is obligated.
- There is a duty to inform; the problem is the logistics of it. A quality management system comes down to people, and maybe only one or two.
- It may not be possible to notify all people affected. Logistics and practicality are important.

The subcommittee will prepare this recommendation for vote in March.

Transparency of Quality Management

All five comments received were supportive of the draft. It is, in fact, noncontroversial except for one point: documents should be readily accessible to the public, either by being posted on a Web site within a year or selecting a forensic service provider who makes documents electronically available. As for making a public recommendation, making one public that concerns root cause analysis would reduce the willingness of labs to participate in root cause analysis; however, making public cases that did not involve root cause analysis was approved. Ms. Leighton asked for opinions on making root cause analyses public.

Discussion

- ISO/IEC 17025 Standard 4.13.1.3 states that these types of records shall be held in confidence.
- The more transparent with the public that labs can be, the better, if the transparency is connected with processes.
- What about estimates of uncertainty and how to do that?

- We are asking for policy, not actualities. We are asking that you post your policies and procedures (if you have them).
- Crime scene procedures differ from analytical procedures.

Forensic Science Assessments: A Quality and Gap Analysis

Mark Frankel, Ph.D., & Deborah Runkle, American Association for the Advancement of Science

In 2009 the National Research Council, at the behest of Congress, published a report that concludes that forensic science, as currently practiced, has “little systematic research to validate the discipline’s basic premises and techniques,” but the report does not specify what in the literature supports current forensic practice and what does not. In response, the American Association for the Advancement of Science (AAAS) will conduct a quality and gap analysis of 10 forensic disciplines: bloodstain pattern analysis; digital evidence; fire investigations; firearms and tool marks/ballistics; footwear and tire tracks; forensic odontology (including bite-mark analysis); latent fingerprints; trace evidence, fibers; trace evidence, hair; and trace evidence, paint and other coatings. To decide on fields, they convened an advisory panel and are now working on the first three. Each working group includes a forensic practitioner, a cognitive psychologist or other professional knowledgeable about human factors, and a statistician.

Gap analysis will produce a research agenda. The audience for the reports is both the forensic and non-forensic communities, and for each of the 10 fields, the group will produce a technical and a more accessible report with specific findings and recommendations. The reports will be posted on the AAAS Web site and a webinar will be held. They are also meeting with members of Congress and their staff. In fact, the scholarship program brings scientists to Washington, D.C., and to Congress to help them understand policymaking. The work groups expect to release reports on fire investigation and latent fingerprint analysis in late January and on firearms and tool marks in late February.

Discussion

- The reports would be greatly enhanced if the review responses appeared as an appendix; that would counter the small-group effect.
- The template for the reports is: methods (how the report was done), conclusions, and the technical report.
- A review publication of the last 50 years for 10 disciplines is daunting (e.g., NIJ has 300 research projects ongoing that will not be published for another year). There is abundant science behind fingerprints, although the group is not studying variability of fingerprints, it is studying what the literature says about it, the status of the field in 1 or 5 years, and new information that may become available.
- The bibliographic review process begins with a staff search. We may change priorities based on the advisory committee’s input (e.g., hair analysis is not a common analysis any longer), and that report has not been done. One criterion is that the technology is important to the field and to the public.
- Not all FSSPs have the resources; we are not just looking at accredited labs but at all FSSPs.
- The Bureau of Justice Statistics will be publishing a survey of publicly funded labs and will have a breakdown of the percentage of analyses they do.
- We will have research priorities; we will check on hair analysis before investing any time in it. Visual hair analysis stopped in the mid-1990s; then DNA and mitochondrial analysis became more routine.
- We are looking only at English-language publications. Gerald LaPorte has a list of German resources and will share it.

Scientific Inquiry and Research Subcommittee Report

Jeffery Tomberlin, Ph.D. [for Suzanne Bell, Ph.D.], & Jeff Salyards, Ph.D., Co-Chairs

Dr. Salyards reported that two documents will be presented at the March meeting.

Fund Post-Doctoral Projects to Facilitate Translation of Research into Forensic Science Practice

This would help make an important transition, which is a huge step forward. As part of planning for the post-doctoral grant program, we would want to discuss the hand-off at the end, and we would want to have a cohort formed from all the practitioners, including the forensic medical field, as well as the forensic science field.

Establish the Foundational Literature within the Forensic Science Disciplines

Who decides what is foundational will be the topic of another document. This document will set expectations about how to evaluate any literature in forensics. The subcommittee needs to revise the document and clarify its recommendation.

Challenges include: What can we do now? How can we change the culture so it is easier to incorporate the science? Do we need an educational program (a possible new project)? How do we make literature affordable and accessible to forensic scientists, who usually are not connected with academia? The most contentious issue is: When do scientists evaluate this and make a determination? Everyone agrees that something must be done, but there is much confusion as to what that is. What are you allowed to say in court? The subcommittee has a working draft and expects to have a draft document for the March meeting.

Discussion

- ISO 17025 requires valid methods: Are you looking at the right material? Are you doing the test correctly? Is the OSAC able to do this?
- FDA regulates analytic diagnostics and anything that involves labs, especially if they work with patients, but it does not regulate the practice of medicine.
- We should not underestimate the possible benefits that come from blinding the analytical process.
- Case law on a learning treatise should be examined to try to address seminal studies. That criterion would not be adequate but would be a starting point.
- OSACs are not addressing validation issues or anything other than standards, although they could. Regardless, the Commission has to move forward.

Training on Science and Law Subcommittee Report

Judge Barbara Hervey & Jim Gates, Ph.D. [Not present at meeting], Co-Chairs

Forensic Science Curriculum Development

This subcommittee recommends that the Attorney General fund a fair and balanced national curriculum on forensic science issues expected to be brought before courts. This curriculum should be completed within 1 year and should be developed initially for judges and lawyers but with a design permitting future adaptability to other audiences such as FSSPs, law enforcement personnel, and victims' advocates.

Discussion

- NIST OSAC would be vital to developing this curriculum because the voice of practitioners should be included.
- We need to develop a curriculum that can be used by all groups of stakeholders (e.g., judges, lawyers). Everybody needs to know the basic science. Replace “DOJ” by “prosecutors and defense attorneys”—this must be developed by independent scientists.
- Bullet 3: “An articulation of the analysis [rather than strengths and weaknesses] of forensic evidence...”
- How much training relates to the amount of money available, which we cannot know until the curriculum has been developed?

**VOTE TO ADOPT WORK PRODUCT
RECOMMENDATION ON FORENSIC SCIENCE
CURRICULUM DEVELOPMENT**

- 22 votes are needed for a 2/3 majority
- 97% yes, 3% no
- The single “no” vote came from Bill Crane

Abstracts

The subcommittee proposes to write two Views documents: assessment tools for a national forensic science curriculum, and notification.

Assessment Tools

Assessment tools must be developed for all educational instruction in the national forensic science curriculum to evaluate the effectiveness of the education on the targeted audience and to determine whether the information provided was retained and used in actual practice long after the training ended.

Notification

Notification to a defendant and other interested parties may be actual notification (“actual notice”), and notification reasonably calculated to reach the party under all circumstances (“constructive notice”). People statewide have to be trained that protocols must be developed to ensure that people are notified about available training. The defendant’s need to know is essential to due process.

Discussion

- The subcommittee may pull out the section on notification for a working group to deal with.

Medicolegal Death Investigation Subcommittee Report

John Fudenberg & Vincent DiMaio, M.D., Co-Chairs

The Attorney General asked OSTP to convene a working group to address MDI issues. The subcommittee met yesterday and has had multiple conference calls since the August meeting, but has no final work products. The following work products are in the pipeline.

National Call Center

The subcommittee anticipates a draft recommendation for the March meeting.

Model Legislation for the Medicolegal Investigating Systems

The subcommittee will recommend that the Attorney General provide support for model legislation (which is not uniform law). The last legislation was drafted in 1954. The United States has three types of medicolegal investigating systems: medical examiner, coroner, and a mixed system. This

subcommittee is being asked to devise a model that is more versatile and adapted to modern forensic pathology and medicine.

Medicolegal Autonomy

A draft will be submitted at the March meeting.

Accreditation and Proficiency Testing Subcommittee Report

Linda Jackson & Patricia Manzolillo, Co-Chairs

This subcommittee has added two commissioners and one non-commissioner and has held one in-person meeting. Two documents are out for public comment, and two abstracts are proposed.

Proficiency Testing for Forensic Science Service Providers

This Views document is posted for public comment, but a recommendation could be that proficiency testing be implemented.

Critical Steps to Accreditation

This Views document is posted for public comment, but since universal accreditation has been recommended, labs could start getting accredited. This document outlines nine steps critical to achieving accreditation: developing written procedures, writing reports, technical and administrative reviewing of reports and supporting records, testimony monitoring, note taking, technical procedures, training programs, proficiency testing, and corrective and preventive actions. Creating a quality management system should be added. The appendix is identical to the one for the universal accreditation document.

Discussion

- Written procedures: Many times in rural areas, evidence is not collected or identified by lab staff but by a patrol officer or detective.
- Proficiency testing: Be sure this refers to a range of lab proficiencies.
- The subcommittee tried to establish how terms are used within forensic science.
- Two issues arise: the need for research to improve the quality of proficiency testing, and the need for a document on data collection and collaboration.

Abstracts

Uniform Policy and Procedures for Accreditation Programs

This responds to the fact that there is no type of regulatory process in nonmedical labs. The subcommittee has representatives of all three accrediting bodies. Implementation is another question.

Analyst Certification

The subcommittee will bring in speakers to inform members and compile a Views document as to the certification needs of forensic science. This will entail taking a closer look at accreditation and digital evidence.

Subcommittee on Procedures and Operations' Status Report and Revised Bylaws

Mr. Andrew Bruck, Designated Federal Official

1. The Subcommittee on Procedures and Operations (SPO) provided revisions for the Bylaws. . . . Subcommittees will pull abstracts into the body of the Subcommittee Report template, to have a more regular system for reporting Subcommittee updates, to save time on reporting updates during the Commission meetings. The Subcommittee Report will include projects that the Subcommittee is working on and their description and status, and will be considered an administrative document, not a work product. The SPO devised a template for the two types of work products: a View of the Commission (i.e., a white paper), which will not go to the Attorney General, and a Recommendation to the Attorney General. The latter should use bullets and begin with, "The Attorney General should...." SPO will ask the Commission to vote on the templates.
2. The next meeting will be held at DOJ, and commissioners will receive electronic binders unless they specifically ask for a hard copy.
3. For work products now in development, if a subcommittee wants to change a Views document to a Recommendation, the subcommittee should reconvene and vote on the proposed change, then send that decision to Mr. Bruck so it can be put out for public comment. Then the subcommittee can vote on it at the next meeting where subcommittees will be asked to ratify their changes. Seven documents are now out for public comment.
4. Mr. Santos distributed copies of the framework, and he invites discussion on this when members can go back to their subcommittees for detailed discussion on prioritization. The seven documents awaiting public comment will be voted on, and the remainder will be prioritized. Results will be presented at the next meeting. Moreover, we need a discussion about priorities for the next five meetings.

Discussion

- At the next meeting, instead of having panels presenting information, we should do some brainstorming about other objectives we have yet to consider.
 - All the subcommittees could be asked to consider the documents they are working on and select their top two or three priorities. Then the top five could get more discussion at the next meeting. The model of Interim Solutions might be a good one for the Commission to consider. Ad hoc bodies could deal with particular issues, and then they would sunset and their members go on to another topic.
 - This information and other decisions and issues should come to the Commission before the next meeting.
 - Subcommittees should use track changes to show what has changed in the most recent version of their documents.
1. The next meeting will be March 21 and 22, followed by a visit to NIST on March 23. Possible topics include: victims' rights and how victims' interests intersect all the topics; digital evidence; survey of lab directors (Human Subjects Subcommittee).
 2. Could subcommittee meetings be held after rather than before the Commission meeting?

Wrap Up

Dr. Butler thanked everyone for attending.

Mr. Santos congratulated Robin Jones on her new position at the Department of Defense and recognized her work and contributions to this Commission.

Public Comment Period

There were none.

Adjournment

Mr. Bruck closed the 8th National Commission on Forensic Science meeting at 4:16 p.m.

Final Attendee List

Last Name				
Albright	Thomas	Commissioner	The Salk Institute	Professor
Ambrosino	Michael	Subcommittee Member	U.S. Attorney's Office	Special Counsel for Forensics
Antell	Kira	DOJ Personnel	Office of Legal Policy	Senior Counsel
Athanas	Karin	Subcommittee Member	American Association for Laboratory Accreditation (A2LA)	Program Manager, Forensics
Barretta	Michelle	Public	American Association for the Advancement of Science (AAAS)	Project Assistant
Bartick	Edward	Public	The George Washington University	Research Professor
Bieber	Frederick	Commissioner	Harvard Medical School	Professor
Brown	Catherine	Public	Collaborative Testing Services	Vice President, Operations
Bruck	Andrew	Designated Federal Official	U.S. Department of Justice	Senior Counsel to the Deputy Attorney General
Bryant	Jennifer	Public	Homeland Security and Justice	Senior Analyst
Butler	John	Vice-Chair	National Institute of Standards and Technology	NIST Fellow & Special Assistant to the Director for Forensic Science
Cariola	Mike	Subcommittee Member	Bode Cellmark Forensics	General Manager
Casadevall	Arturo	Commissioner	Johns Hopkins Bloomberg School of Public Health	Chair and Professor
Cavanagh	Richard	NIST Personnel	National Institute of Standards and Technology	Acting Associate Director for Laboratory Programs
Celeste	Eleanor	OSTP Personnel	Office of Science and Technology Policy	Policy Analyst
Champagne	Gregory	Commissioner	National Sheriffs' Association	Sheriff
Chu	Sarah	Subcommittee Member	Innocence Project	Senior Forensic Policy Advocate
Cole	Simon	Subcommittee Member	University of California, Irvine	Professor
Crandall	Laura	Subcommittee Member	NYU Langone Medical Center	Research Scientist
Crane	William	Commissioner	Champlain College	Associate Professor, Program Director
Crouse	Cecelia	Commissioner	Palm Beach County Sheriff's Office	Crime Laboratory Director
Czarnopys	Gregory	Commissioner	Department of Justice/Bureau of Alcohol, Tobacco, Firearms, Explosives	Deputy Assistant Director Forensic Services
Daly	Deirdre	Commissioner	Department of Justice, U.S. Attorney's Office	U.S. Attorney

Last Name	First Name	Attendee Type	Organization	Title
Denton	M. Bonner	Commissioner	University of Arizona	Professor
DePaolo	Frank	Subcommittee Member	International Association of Coroner's & Medical Examiners	President
Di Maio	Vincent	Commissioner	Consultant	Forensic Pathologist
Dix	Molly	Speaker	RTI International	Director, Innovation Advisors
Downs	Jamie	Subcommittee Member	forensX, LLC	Medical Examiner
Dror	Itiel	Subcommittee Member	University College London	Consultant
Drosback	Meredith	OSTP Personnel	Office of Science and Technology Policy	Assistant Director for Education and Physical Sciences
Epstein	Jules	Commissioner	Temple Beasley School of Law	Professor
Ferrell	Rebecca	Public	National Science Foundation	Program Director, Biological Anthropology
Fienberg	Stephen	Commissioner	Carnegie Mellon University	Maurice Falk University Professor
Frankel	Mark	Speaker	American Association for the Advancement of Science (AAAS)	Program Director
Fudenberg	John	Commissioner	Clark County Office of the Coroner/Medical Examiner	Coroner
Gamette	Matthew	Public	American Society of Crime Lab Directors/Consortium of Forensic Science Organizations	ASCLD Board Member and CFSO Chair
Gaskins	Shimica	DOJ Personnel	Office of Legal Policy	Senior Counsel
Gialamas	Dean	Commissioner	Los Angeles County Sheriff's Department	Chief
Giannelli	Paul	Commissioner	Case Western Reserve University	Distinguished University Professor
Hervey	Barbara	Commissioner	Texas Court of Criminal Appeals	Judge
Higley	Jason	Public	U.S. Department of Justice	Senior Special Agent
Hollway	John	Proxy	University of Pennsylvania Law School	Executive Director, Quattrone Center
Honey	David	Ex-Officio	Office of the Director of National Intelligence	Director, Science and Technology
Howley	Susan	Commissioner	National Center for Victims of Crime	Public Policy Director
Huestis	Marilyn	Ex-Officio	National Institute on Drug Abuse, National Institutes of Health	Chief, Chemistry & Drug Dependence
Huffman	Katharine	Public	The Raben Group LLC	Principal
Humphreys	Bob	Subcommittee Member	Court of Appeals of Virginia	Judge

Last Name	First Name	Attendee Type	Organization	Title
Hunt	Ted	Commissioner	Jackson County (Kansas City, MO) Prosecutor's Office	Chief Trial Attorney
Jackson	Linda	Commissioner	Virginia Department of Forensic Science	Director
Johnson	D. Pat	Subcommittee Member	Texas Department of Public Safety	Lab Director, Retired
Kafadar	Karen	Subcommittee Member	University of Virginia	Chair & Commonwealth Professor
Kassirer	Jerome	Subcommittee Member	Tufts University School of Medicine	Distinguished Professor
Kennedy	Melissa	Public	American Society of Crime Lab Directors/Laboratory Accreditation Board	Accreditation Program Manager-Calibration
King	Pam	Commissioner	State of Minnesota 3rd Judicial District	District Court Judge
Krebs	Dee	Public	Internal Association of Forensic Nurses (IAFN)	IAFN President
Krulic	Alex	DOJ Personnel	Office of Legal Policy	Senior Counsel
LaPorte	Gerald	Ex-Officio	National Institute of Justice, Office of Investigative and Forensic Sciences	Director
LeBeau	Marc	Commissioner	Federal Bureau of Investigation	Senior Forensic Scientist
Leben	Deborah	Subcommittee Member	U.S. Secret Service	Laboratory Director
Leighton	Julia	Commissioner	Public Defender Service	General Counsel
Leiserson	William	Public	National Institute of Justice	American Association for the Advancement of Science Science and Technology Policy Fellow
Levick	Sandra	Public	Public Defender Service	
Manzollilo	Patricia	Ex-Officio	U.S. Postal Inspection Service	Laboratory Director
Marchand	Michael	Subcommittee Member	The Center for American and International Law	President
Marks	Peter	Speaker	U.S. Food and Drug Administration	Deputy Director, Center for Biologics Evaluation and Research
Martin	Kenneth	Public	Internal Association for Identification, Consortium of Forensic Science Organizers Representative	Past President
May	Willie E.	Co-Chair	National Institute of Standards and Technology	Director
Mayes	Mark	Public		

Last Name	First Name	Attendee Type	Organization	Title
McCleary	Nicole	Public	RTI International, Forensic Technology Center of Excellence	Associate Director
McCormack	Bridget Mary	Commissioner	Michigan Supreme Court	Justice
McGrath	Jonathan	Commission Staff	National Institute of Justice	Senior Policy Analyst
McShane	Thomas	Subcommittee Member	Guidepost Solutions	President of Investigations and Monitoring
Miller	Ray	Subcommittee Member	U.S. Attorney's Office for the District of Connecticut	AUSA
Motta	Gregg	Proxy	Office of the Director of National Intelligence - Proxy for Dr. Honey	Senior Science & Technology Policy Advisor
Nerheim	Michael	Subcommittee Member	Lake County State's Attorney's Office	State's Attorney
Neufeld	Peter	Commissioner	Innocence Project	Co-Director
Nolte	Kurt	Subcommittee Member	Office of the Medical Investigator	Chief Medical Investigator
Pankevich	Diana	OSTP Personnel	Office of Science and Technology Policy	American Association for the Advancement of Science Science and Technology Policy Fellow
Penchina	Daniel	Public	The Raben Group	Principal
Philpott	Kate	Subcommittee Member	independent contractor	Forensic Consultant
Pitfield	Chad	Public	Jefferson Parish Sheriff's Office Crime Laboratory	Captain / Assistant Laboratory Services Commander
Pulaski	Phil	Commissioner	Muttontown Police Department	Chief of Police
Rakoff	Jed	Ex-Officio	U.S. Courts	U.S. District Judge
Redle	Matthew	Commissioner	County and Prosecuting Attorney, Sheridan County, Wyoming	County and Prosecuting Attorney
Risinger	D. Michael	Subcommittee Member	Seton Hall School of Law	Professor of Law
Roberts	Toni	Public	FBI Laboratory	Research Program Manager
Rodriguez	Nancy	DOJ Personnel	National Institute of Justice	Director
Rohrig	Tim	Public	Society of Forensic Toxicologists/American Board of Forensic Toxicology	
Ropero-Miller	Jeri	Public	RTI International	Senior Research Forensic Scientist
Runkle	Deborah	Speaker	American Association for the Advancement of Science	Senior Program Associate

Last Name	First Name	Attendee Type	Organization	Title
Sah	Sunita	Commissioner	Cornell University	Assistant Professor of Management and Organizations
Saloom	Stephen	Public	8th Amendment Project	Director of Partner Outreach & Legislative Practice
Salyards	Michael "Jeff"	Commissioner	Defense Forensic Science Center	Executive Director
Santos	Nelson	Vice-Chair	U.S. Drug Enforcement Administration	Deputy Assistant Administrator
Scanlan	Timothy	Public	Jefferson Parish Sheriff's Office Crime Laboratory	Colonel / Laboratory Services Commander
Scheck	Barry	Subcommittee Member	Innocence Project	Co-Director
Schrotter	Frances	Ex-Officio	American National Standards Institute	Senior Vice President & Chief Operating Officer
Schwarting	Dawn Elizabeth	Public		Forensic Analyst Consultant
Sheehan	Jack	Public	Government Accountability Office	Analyst
Shieh	Jennifer	Speaker	National Institutes of Health/National Heart, Lung, and Blood Institute	Small Business Coordinator & Program Director
Spanbauer	Alan	Public	National Institute of Justice	Physical Scientist
Stolorow	Mark	NIST Personnel	National Institute of Standards and Technology	Director of OSAC Affairs
Sudkamp	Laura	Subcommittee Member	Kentucky State Police	Laboratory Director
Swanson	Winfield	Note-taker	CSR, Incorporated	
Thomas	Lindsey	Public	NAME – National Association of Medical Examiners	
Thompson	William	Subcommittee Member	University of California, Irvine	Professor
Tomberlin	Jeffery	Proxy/Subcommittee member	Texas A&M University	Associate Professor
Triplett	Jeremy	Speaker	Kentucky State Police	Forensic Laboratory Supervisor
Turman	Kathryn	Ex-Officio	FBI, Office of Victim Assistance	Assistant Director
Tyrangiel	Elana	DOJ Personnel	Office of Legal Policy	Acting Director
Vizcarrondo	Peter	DOJ Personnel	Office of Legal Policy	
Waltke	Heather	Public	National Institute of Justice	Associate Director, Office of Investigative and Forensic Sciences
Warner	Margaret	Public	Centers for Disease Control, National Center for Health Statistics	Health Scientist

Last Name	First Name	Attendee Type	Organization	Title
Weedn	Victor	Subcommittee Member	George Washington University	Professor and Chair
Weiss	Danielle	Commission Staff	Booz Allen Hamilton/ National Institute of Justice	Consultant - NCFS Staff
Weiss	Mark	Ex-Officio	National Science Foundation	Retired
Widener	Andrea	Press	Chemical & Engineering News	Reporter
Wilson	Justin	Public	The Raben Group	Senior Associate
Word	Charlotte	Subcommittee Member	Charlotte Word Consulting	Consultant
Worth	Katie	Press	FRONTLINE	Reporter
Wulff	Paula	Subcommittee Member	FBI	Acting Unit Chief
Yates	Sally Q.	Co-Chair	U.S. Department of Justice	Deputy Attorney General
Zervos	Caroline	Public	FBI	Science and Technology Branch Exec Office Liaison
Zhao	Fen	Speaker	National Science Foundation	Staff Associate, Strategic Innovation