National Commission on Forensic Science

Meeting #11

September 12-13, 2016

National Institute of Standards and Technology (NIST)
100 Bureau Drive
Gaithersburg, MD

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

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Administrative Building #101, West Square Conference Room
100 Bureau Drive, Gaithersburg, MD 20899

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1. Introduction

The eleventh meeting of the National Commission on Forensic Science (NCFS) was held on September 12-13, 2016 in Gaithersburg, MD. The meeting began with opening remarks from Dr. Victor Weedn, Senior Forensic Advisor to the Deputy Attorney General, and Dr. Willie E. May, Director of the National Institute of Standards and Technology. NCFS Co-Chair, Deputy Attorney General Sally Q. Yates, was unable to participate in this meeting. On September 12, following the opening remarks, a technical merit review panel provided insight as to how NIST could respond to recommendations proposed by the Scientific Inquiry and Research Subcommittee's work product to be voted on later that day. The panel to illuminate this topic included Richard Cavanagh (Director of NIST Special Programs Office), Robert Wielgosz (Director of the Chemistry Department, Bureau International des Poids et Mesures), and Jeremy Triplett (Chair, Forensic Science Standards Board). Dean Gialamas, member of Subcommittee on Procedures and Operations (SPO), presented the SPO update, to include the revised Views and Recommendations Work Product *Notes* as well as the discussion of the Bylaws amendment proposed at Meeting #10 regarding non-substantive edits to work products, and new language to be included in the work product development process. Nelson Santos, NCFS Vice-Chair, briefed NCFS on proposed panel topics for Meetings #12 and #13, and the NCFS Term 1 & 2 Summary Report.

On September 13, a statistical statements of relevance panel provided the Commission with an understanding of the statistical issues when extending principles of measurement and statistics to disciplines not previously subject to such analysis. Presenters included Karen Kafadar (Commonwealth Professor and Chair of the Department of Statistics, University of Virginia), Hari Iyer (Mathematical Statistician, Statistical Engineering Division, NIST), Alicia Carriquiry (Distinguished Professor of Statistics, Iowa State University), and David Kaye (Distinguished Professor of Law and Associate Dean for Research, Pennsylvania State University). Janice Rodgers (Director, Departmental Ethics Office) and Cynthia Shaw (Deputy Director,

Departmental Ethics Office) provided the Commission with their mandatory annual ethics overview and leadership from the Department of Justice's Office of Legal Policy discussed the draft methodology for the Forensic Science Discipline Review (FSDR)

Subcommittees meetings, which were closed to the public, were held during the morning of the first day (September 12). Subcommittee reports from the five subcommittees were provided on both Day 1 (September 12) and Day 2 (September 13) of Meeting #11. On Day 1 (September 12), (1) Accreditation and Proficiency Testing and (2) Scientific Inquiry and Research Subcommittees presented a total of five work products to be voted on, which all achieved the required two-third majority vote. On Day 2 (September 13), (3) Reporting and Testimony, (4) Human Factors, and (5) Medicolegal Death Investigation Subcommittees presented a total of four work products to be voted on, which also all achieved the required two-third majority vote. Over the course of Day 1 and Day 2 a number of initial draft work products, which were open for a 30-day public comment period on Regulations.gov, were introduced as well. The summary of the voting results are outlined in Section 4: Voting Results.

No public comments were made during the open public comment period on Monday, September 12. On Tuesday, September 13, there were two public comments from (1) Jeremy Triplett (president of the American Society of Crime Lab Directors) and (2) Matthew Gamette (Director Laboratory Assistance, Idaho State Police Forensic Services Labs, and Chair of the Consortium of the Forensic Science Organizations).

Meeting materials, including pdf files for presentations slides, Initial and Final draft work products, public comment adjudication summaries, and subcommittee reports, may be found on the NCFS website at https://www.justice.gov/ncfs/term-2-meetings-8-15#s11. Archived videos from the webcast of the entire meeting are available for viewing at https://www.nist.gov/topics/forensic-science/ncfs-meeting-11-webcast.

2. NCFS Meeting #11 Agenda

NATIONAL COMMISSION ON FORENSIC SCIENCE

September 12-13, 2016
National Institute of Standards and Technology
Administrative Building #101, West Square Conference Room
100 Bureau Drive, Gaithersburg, MD 20899

AGENDA – MONDAY, SEPTEMBER 12, 2016

12:30 p.m. – 1:00 p.m.	**Call to Order/Opening Remarks** *Victor Weedn, M.D., J.D., Senior Forensic Advisor to the Deputy Attorney General (for Sally Q. Yates, Deputy Attorney General, U.S. Department of Justice)* *Willie May, Ph.D., Director, National Institute of Standards and Technology*
1:00 p.m. – 2:30 p.m.	**WORKING LUNCH: Technical Merit Review Panel** *Richard Cavanagh, Ph.D., Director, Special Programs Office, National Institute of Standards and Technology* *Robert Wielgosz, Ph.D., Director of the Chemistry Department, Bureau International des Poids et Mesures* *Jeremy Triplett, M.S., Chair, Organization of Scientific Area Committees, Forensic Science Standards Board*
2:30 p.m. – 3:00 p.m.	**BREAK**
3:00 p.m. – 3:30 p.m.	**Subcommittee on Procedures and Operations Status Report** *Dean Gialamas, SPO Member*
3:30 p.m. – 4:15 p.m.	**Accreditation and Proficiency Testing Subcommittee Report** *Linda Jackson and Patricia Manzolillo, Co-Chairs* Final Work Products for Vote: Recommendation on Proficiency Testing; Views on Accreditation Program Requirements; Views on Accreditation of Forensic Science Certification Bodies; Views on Certification of Forensic Science Practitioners Introduction of Draft Work Products Open for Public Comment: Recommendation on Accreditation of Digital and Multimedia Forensic Science Service Providers

4:15 p.m. – 5:00 p.m.	**Scientific Inquiry and Research Subcommittee Report** *Suzanne Bell, Ph.D., and Jeff Salyards, Ph.D., Co-Chairs* Final Document for Vote: Recommendation on Technical Merit Evaluation of Forensic Science Methods and Practices
5:00 p.m.	**Public Comment Period**
5:15 p.m.	**Commission Meeting Adjournment**

AGENDA – TUESDAY, SEPTEMBER 13, 2016

8:00 a.m.	**Call to Order**
8:00 a.m. – 9:15 a.m.	**Statistical Statements of Relevance Panel** *Karen Kafadar, Ph.D., Commonwealth Professor and Chair Department of Statistics, University of Virginia* *Hari Iyer, Ph.D., Mathematical Statistician, Statistical Engineering Division, National Institute of Standards and Technology* *Alicia Carriquiry, Ph.D., Distinguished Professor of Statistics, Iowa State University* *David Kaye, Distinguished Professor of Law and Associate Dean for Research,* *Pennsylvania State Law*
9:15 a.m. – 10:00 a.m.	**Reporting and Testimony Subcommittee Report** *Judge Jed Rakoff and Matt Redle, Co-Chairs* Final Work Products for Vote: Recommendation on Documentation, Case Record and Report Contents Introduction of Draft Work Products Open for Public Comment: Views on Statistical Statements in Forensic Testimony
10:00 a.m. – 10:15 a.m.	**BREAK**
10:15 a.m. – 11:00 a.m.	**Human Factors Subcommittee Report** *Justice Bridget McCormack and Professor Jules Epstein, Co-Chairs* Final Work Product for Vote: Views on Facilitating Research on Laboratory Performance Introduction of Draft Work Products Open for Public Comment: Views on Use of Checklists in Forensic Science
11:00 a.m. – 11:30 a.m.	**BREAK**

11:30 a.m. – 12:45 p.m.	**WORKING LUNCH: Ethics Issues for NCFS Members** *Janice Rodgers, Director, Departmental Ethics Office* *Cynthia Shaw, Deputy Director, Departmental Ethics Office*
12:45 p.m. – 1:30 p.m.	**Medicolegal Death Investigation Subcommittee Report** *John Fudenberg, Chair* Final Work Products for Vote: Views on Next of Kin Communication and Interactions during Medicolegal Death Investigations; Recommendation on Formation of a National Office for Medicolegal Death Investigation Introduction of Draft Work Products Open for Public Comment: Views on Recognizing the Autonomy and Neutrality of Forensic Pathologists; Recommendation on Model Legislation for Medicolegal Death Investigation Systems
1:30 p.m. – 1:45 p.m.	**BREAK**
1:45 p.m. – 3:15 p.m.	**Forensic Science Discipline Review** *Office of Legal Policy, U.S. Department of Justice*
3:15 p.m. – 3:45 p.m.	**Wrap-Up**
3:45 p.m.	**Public Comment Period**
4:00 p.m.	**Commission Meeting Adjournment**

3. Meeting Summary

National Commission on Forensic Science

Meeting #11

September 12–13, 2016

National Institute of Standards and Technology

Administrative Building #101,

West Square Conference Room

100 Bureau Drive,

Gaithersburg, MD 20899

Meeting Report Prepared by:
Winfield Swanson, Consultant
CSR Incorporated

Contents

September 12, 2016

Call to Order

Dr. Jonathan McGrath opened the 11th National Commission on Forensic Science (NCFS) meeting at 12:30 PM. John Butler gave housekeeping information.

Victor Weedn, MD [for Sally Q. Yates, Deputy Attorney General], US Department of Justice

Dr. Weedn thanked NIST for hosting this meeting and giving tours of the facility. He announced news about Commission members: Dr. Suzanne Bell advanced to full professorship at the University of West Virginia; Dr. James Gates will receive the President's award at the University of Maryland later today; and Dr. Vincent DiMaio stepped down from the Commission. A notice soliciting applications to replace Dr. DiMaio will be posted in the *Federal Register*.

Dr. Weedn reiterated that forensic science is a priority for this Administration. Accomplishments include:

- The National Academy of Sciences (NAS) published an influential report, *A Path Forward,* and published with the Office of Science and Technology Policy (OSTP), *Strengthening the Forensic Sciences.*
- The Department of Justice (DOJ) partnered with the National Institutes of Standards and Technology (NIST) to establish this Commission and the OSAC.
- DOJ undertook a study of the analysis of microscopic hair samples.
- DOJ has undertaken to create Uniform Language for Testimony and Reports (ULTRs) and Forensic Science Discipline Reviews (FSDRs).
- Rapid DNA analysis has been supported.
- DOJ has funded lab sciences, training, and analyses of the backlogs on untested rape kits.
- An OSTP President's Council of Advisors on Science and Technology (PCAST) is pending.
- OSTP formed a Medicolegal Death Investigation (MDI) Working Group.

To enhance the practice of forensic science, DOJ has responded to all 12 recommendations that the NCFS had adopted prior to the June Commission meeting (mtg #10) and is currently considering the two adopted at the June meeting. Attorney General Lynch's memorandum, which was circulated, gave resolution on the following:

1. In reports and testimony, the term "reasonable scientific certainty" is not to be used.
2. DOJ is adopting a new code of professional responsibility for its forensic laboratories, based upon the recommended code but with minor edits to sections #5, #8, #15, and #16 (distributed).
3. Quality Management System documents and existing summaries of internal validation studies will be posted on-line within 18 months. (CVs and summaries of root cause analysis will not be posted on-line.)
4. The National Institute of Justice (NIJ) will explore possibilities for implementing a grant program to fund multi-year post-doctoral fellowships.

Term 2 of the NCFS officially expires in April 2017, and the SPO will report on its activities later in the meeting. The next Administration will decide whether to renew the charter.

Discussion

- Commissioner Leighton inquired about the 6 month extension added to transparency recommendation.Dr. Weedn responded that it was to give all components time to implement it, based on the experience of the Federal Bureau of Investigation (FBI)'s on-going effort to post their quality assurance information on-line, which has taken longer than expected. When asked if the documents would be available upon request, Dr.. Weedn was not sure DOJ has all the documents electronically available yet and thus does not know if they would be available upon request now, but there is every intent of making all documents available. He will take the phrase "publically available upon request" under advisement. Commissioner Leighton further inquired about the decision not to post root cause analysis reports; Dr. Weedn responded that quality assurance will be discussed at conferences where the presenter could provide context.
- Commissioner Neufeld opined that declining to implement sections #15 and #16 as written by the Commission is not minor; the subcommittee discussed both items at length. Section #15 involved individual forensic scientist, rather than the lab, communicating with the defense once litigation has begun. Section #16 involved notice of error to all affected parties. In the past, this has sometimes taken years after the conviction and often was not communicated to the defendant at all. However, in the new section #16, DOJ limits the duty of the individual forensic scientist to notifying the prosecutor through the proper laboratory management channel. So, what process was used to decide to make this change? Dr. Weedn responded that DOJ's process is that a recommendation is sent to the Office of Legal Policy where it is discussed and evaluated; then it goes to the Office of the Deputy Attorney General and then to the Office of the Attorney General for further discussion. It is a very deliberative process, which was not taken lightly. They were aware of the Commission discussions. In DOJ saw the code as pertaining to the individual forensic scientist and not the laboratory. Regarding section #15, an agency might have some kind of policy that would preclude them from making such a notification. The bigger concern was "honestly" communicating, which DOJ believes to be in keeping with an ethical professional responsibility. Regarding #16, DOJ thought it best to inform the prosecutor, who has a duty to inform the appropriate parties.
- Commissioner Gates, commented on a leak of a confidential draft report of the President's Council of Advisors on Science and Technology (PCAST), presumably by the DOJ, which resulted in an article in the media before the report was released to the President. He found this troubling and could affect discussions of the Commission. Dr. Weedn responded that he could not comment on the report or the leak, but that the point is noted.

Willie May, PhD, Director, National Institute of Standards and Technology

Dr. May welcomed everyone to NIST. Dr. May's term ends January 20, 2017, but the Associate Directorships were established to maintain continuity. Kent Rochford is Associate Director for Laboratory Programs, and he will function as Deputy Director until a new Director is appointed. Phillip Singerman is Associate Director for Innovation and Industry Services, and Mary Saunders is Associate Director for Management Resources.

Through the National Network for Manufacturing Innovation, called Manufacturing USA, industry, academia, and government partners are leveraging existing resources, collaborating,

and co-investing to nurture manufacturing innovation and accelerate commercialization. Over the past 4 years of the program, nine manufacturing innovation institutes have been established and six more will be added to the network by the end of this Administration. Each institute is designed to be a public-private membership organization that provides vision, leadership, and resources to its members. Those sponsored by the Department of Defense and Department of Energy have to have some function that relates to government, but those sponsored by the Department of Commerce need have no collateral government focus.

NIST has two campuses: the 578-acre Gaithersburg campus (with 62 buildings) and one about a third that size in Boulder, Colorado. With its $160 million in appropriated funds, NIST conducts research and measurement services for other agencies upon their request. NIST has 10 joint institutes, 3400 federal employees, and 700 scientists and engineers from around the world who work with NIST on ongoing basis. We still rigorously pursue the basic units of measurement—one of the first was a standard for fire hoses and hydrants so any fire hose can connect to any fire hydrant. The Interstate Commerce Commission unified provision of electricity, which helped prevent trains from jumping the tracks. Now, we along with several institutions will be redefining the kilogram (the chunk of platinum iridium on which it is based has shrunk).

At the same time, we address contemporary problems of society, e.g., in our Forensic Science program, we established a lab for pattern and impression evidence. The Forensic Science program is spread across the seven NIST labs in a "matrix-run program." Every other year NIST hosts a forensic meeting; the next one will be November 8–9, 2016. NIST convened an international symposium 15 months ago that focused on how to manage errors in forensic science. It was so successful that it will become a series, the next being held in July 2017. NIST is fully committed to working with DOJ, but we also need the input of all stakeholders. As a result of the 2009 report we assume three new roles to work with the Commission: We support DOJ by working with the Commission; we take the lead with DOJ to establish the Organization of Scientific Area Committees (OSAC) in this case assisting us to administer the guidance groups that are reporting to different functions across the government; and validate selected existing forensic science methods and guidelines; and develop new methods to support pattern evidence.

Technical Merit Review Panel

Richard Cavanagh, PhD, Director, Special Programs Office, National Institute of Standards and Technology

Robert Wielgosz, PhD, Director of the Chemistry Department, Bureau International des Poids et Mésures

Jeremy Triplett, MS, Chair, Forensic Science Standards Board, Organization of Scientific Area Committees

Mr. Cavanagh: PCAST has been looking at DNA, firearms, shoe prints, etc. As pilot projects, NIST will look at three: DNA, firearms, and bite marks to determine how mature the field is scientifically—what's been published, how much discourse appears in the literature, whether it is a new approach or an established approach. There have there been efforts to establish repeatability, e.g., using a statistical basis to tell how much confidence we can have in a

particular method. NIST wants to convene a meeting with experts in the field to define the problem; then have professional librarians conduct a thorough literature review (such a review would be publically available) and evaluate some of the things in the literature. Validation includes procedures for sample handling and transportation as well as calibration (see ISO/IEC 17025). Inter-lab studies will be conducted with de-identified participants. And, finally NIST will publish its findings and offer training components in the final report.

Today's forensic science research program, including OSAC Affairs, is coordinated through Dr. Cavanagh's office. NIST has a lot of expertise with statistical support, firearms and service analysis, and bloodstains, but is not so strong in medicolegal death, bite marks and odontology, anthropology, and wildlife. NIST has devoted much effort to DNA over the years (the FBI has been supportive), but new challenges continually arise with new data acquisition. NIST is working with Centers of Excellence to bring statistical expertise more resources than just staff.

The NIST response to a recommendation would be to look at three specific areas and see whether the approach is sound and reasonable, and then contribute to the technical merit and validation where feasible. Although it is an important component of the field forward, this assessment would not undertake original research.

Dr. Wielgosz represents Janet Miles, the editor of *Metrologia*, the leading journal in metrology (metrology is the science of measuring things). The office, outside Paris, France, is funded by 100 member states. It brings together organizations around the world to coordinate standards around the world. Member states convene every 4 years. Subcommittees work in various areas of measurement science to make sure standards around the world are comparable. Since 1965, *Metrologia* has published 6 issues a year. They have peer-reviewed articles, as well as a technical supplement, and focus issues, e.g., the current focus issue on dynamic measurements. *Metrologia* accepts about 120 articles from some 270 submissions per year. This journal has the potential for being a place to publish articles that emerge from these discussions. The focus issues are a good way to introduce a new field into a journal, when they would commission a guest editor. They are now considering measurement of insulin and C peptides and have used isotope dilution mass spectrometry to measure C-peptides in human serum. The usefulness of these technologies depends on trace-ability, which relates to accurate measurement.

It is not about publications in *Metrologia*, but about the quality requirements for these published methods. Is that method suitable for being used as a reference method in the clinical chemical field? How do we look at that? The technologies all need to agree with each other, and their uncertainty must be defined within a degree. Lastly, it is not sufficient to just publish a method: You have to make sure your laboratory is doing it correctly, state the comparability assessment and the measurement uncertainty. They all need to agree with additional qualifications of needed infrastructure.

Mr. Triplett: Forensic Science Standards Board (FSSB), OSAC, and the American Society of Crime Lab Directors (ASCLD) continue to improve technical meritOn June 22, FSSB convened a strategy session that encompassed all the different units of OSAC—some 30 people, including one from each committee and three from the FSSB. They developed 25 recommendations in four categories: 10 related to the structure of OSAC, 7 related to its scientific foundation, 5 related to the process of getting standards through registry approval process, and 3 regarding efficiency issues.

Recommendations that relate to technical merit include:

1. A statistician should be included on every subcommittee.
2. Each Resource Committee will detail a member to be a liaison on each of the OSAC committees.
3. Resource Committee chairs should be on the FSSB and attend all meetings.

Process recommendations include:

4. To resolve the confusion between OSAC appropriate standards and OSAC appropriate guidelines, narrow these to one registry, the OSAC Approved Registry. This could be ready by January 1.
5. The comment period should be earlier rather than later to allow meaningful changes to the document; this is still under discussion.

Foundational recommendations include:

6. Identify and eliminate confusion in terminology, including words used differently in different disciplines. They asked representatives of the various disciplines to develop glossaries of terms used in their discipline and how they are used. Their aim is to clarify the 20 terms that have the most varied definitions and are confusing and what different terms mean in different instances.
7. OSAC should develop a state-of-the-discipline activity. They began this at the summer meeting. Each subcommittee is charged with developing a document to explain the current state of each discipline, including identifying the literature used within the discipline. This helps to illuminate potential research gaps and needs to help identify commonalities across disciplines.
8. The Technical Merit Worksheet is continually improving in highlighting uncertainty and validation.
9. RE Principles of Professional Practice: The purpose is to identify overarching elements. It sets the bar for which OSAC will strive when setting guidelines.

OSAC began 2 years ago and now the initial 2-year-term members' have expired. (In future, all terms will be for 3 years.) About 65% would like to stay. OSAC has 51 new members and 15 open positions. Two new appointments to the FSSB are Dr. Jeff Salyards and Dr. Jim Gates. There is a healthy overlap between NCFS and OSAC with 18 commissioners and subcommittee members are also on OSAC.

ASCLD membership includes more than 600 lab leaders. It operates on three principles:

1. Validation studies should include forensic practitioners.
2. Only those who perform these tests daily should be doing them.
3. We need to coordinate and facilitate standards to the best of our ability as the science progresses.

ASCLD would like to act as a switchboard for forensic science to link those researchers who need people to participate to provide experts.

Discussion

- We can't move forward until we have technical merit reviews with other disciplines. To get to all the disciplines that need technical merit review, NIST wants to start with what has already been done. We will never finish because fields keep changing, but we need to see how well it works. NIST will do the best job it can and then we can answer that question. Until we get involved, it will only be a guess.

- A real challenge is the continual call for independence. We need individual assessments of the science as it exists in three areas. DNA and firearms pose a challenge because NIST has resident expertise in both so there could be a conflict of interest. NIST might bring in an external review committee to avoid a biased approach, in addition to its two major oversight groups—the Visiting Committee on Advanced Technology (VCAT), and a set of panels authorized and selected by the National Academy of Sciences.
- Mr. Triplett should add "method" and "methodology" on the list of words that require explanation.
- One problem is that people in the lab can't gain access to journal articles. For *Metrologia*, "limited open access" means if you pay a fee your article is available on open access. However, the cost of $1000 or more is prohibitive to many researchers, so this would need to be worked out. Regardless the recommendation should be made and then left to the Commission to figure out how to implement it.

Subcommittee on Procedures and Operations Status Report

Dean Gialamas, SPO Member

The Subcommittee on Procedures and Operations (SPO) recommended the following updates:

1. Non-substantive revisions/minor edits go to the subcommittee co-chairs for review, then reviewed by SPO; only reconciled documents go back to the Commission.
2. The trip-wire recommendation for revisions would be difficult to formalize, so it was not included.
3. Added to Views work product documents:
   The portion of the document directly labeled "Views of the Commission" represents the formal Views of the Commission. Information beyond that section is provided for context…. The National Commission on Forensic Science is a Federal Advisory Committee established by the Department of Justice. For more information, please visit: https://www.justice.gov/ncfs.
4. Added to Recommendation work product documents:
   Note: This document includes recommendations developed and adopted by the National Commission on Forensic Science and proposes specific acts that the Attorney General could take to further the goals of the Commission. The portion of the document directly labeled "Recommendations" represents the formal recommendations of the Commission. Information beyond that section is provided for context. This document does not necessarily represent the views of the Department of Justice or the National Institute of Standards and Technology. The National Commission on Forensic Science is a Federal Advisory Committee established by the Department of Justice. For more information, please visit: https://www.justice.gov/ncfs.
5. Add to the Work Product Development Process operational guidance:
   Note: The recommendations contained in Recommendation Work Products should be self-contained for consideration by the Attorney General. That is, the recommendations should not incorporate other documents by reference only for the specific acts proposed. This does not preclude citations in the narrative text.

Discussion

- The subcommittee members find problematic the statement, "This document does not formally recommend any action by a government entity and thus no further action will be taken upon its approval by the Commission." It seems dismissive of Views Documents. Although not a recommendation specifically to DOJ, a Views Documents represents a lot of thought and consideration, and may be used by the community and apply to action by some government entity. *Members agreed to delete sentence in question, and the SPO will discuss if new text is needed.*

Proposal for the Future

Nelson Santos

The Attorney General makes every effort to respond to recommendations submitted to her within two meetings. For meeting #13 on April 10–11, 2017 there will be a new Administration and a new Director of NIST. Commission members need to think about how to tie up all the work they have done. In short, the Commission will prepare a summary document of what the Commission did and what remains unfinished. At the next two meetings, the Commission can draft this summary document, which can be passed on to NCFS Term 3 or whatever group comes after.

Discussion

- The Recording and Testimony Subcommittee plans to have a revised Views document on Statistical Statements available for public comment and then have final vote at last meeting in April.
- Between now and January, we will see the PCAST report and it will include a number of items that would be worthy of discussion in this forum and possible incorporation into the agenda going forward.
- A summary document is key, but panel presentations could be good to supplement this report.
- We need to begin discussing issues we want to bring up, and also how we want a summary report to look.
- One thing not on the list is uniform language in testimony and reporting.
- *Pam King* volunteered to draft this the summary of what the Commission has done and to list the unfinished products. It would be a Commission Business document (not a Commission Work Product).
- Much of the information on what the Commission has done is on the Web site. More important would be a "sales pitch" to convince the next Administration that what is unfinished should be finished and that this Commission could continue to address these topics.
- This report will organize the documents we have in a meaningful way.

Accreditation and Proficiency Testing Subcommittee Report

Linda Jackson & Patricia Manzolillo, Co-Chairs

Final Draft Work Products for Vote

All four final draft work products have been out for public comment and the comments adjudicated. Of 32 voting members, we need 22 voters to achieve a two-thirds majority.

Recommendation on Proficiency Testing

Yes……..97%
No……....3%
Abstain……0%

Views on Accreditation Program Requirements

Yes……90%
No…….10%
Abstain…...0%

Views on Accreditation of Forensic Science Certification Bodies

In a friendly amendment, the sentence about paid staff was moved from the background to Appendix D.

Yes…….97%
No…….3%
Abstain……0%

Views on Certification of Forensic Science Practitioners

Voted with minor editorial changes.

Yes…….….94%
No…….....3%
Abstain……..3%

Introduction of Initial Draft Work Products Open for Public Comment

Recommendation on Accreditation of Digital and Multimedia Forensic Science Service Providers

The subcommittee convened a digital expert panel to gain information on the topic and revised the original initial draft accreditation document in light of the new input. They are now receiving public comments on the revised initial draft document.

Discussion

- Federal facilities are accredited to ISO/IEC 17020 or 17025 and OSAC isn't looking at accreditation. We should recommend that they use a particular approach.
- "Any and all means possible" implies that federal funding would be withdrawn if the lab were not accredited. It would be better to say directly that grant funding would be withheld.
- Employees at some small places wouldn't be able to get training without federal programs, so it could well be a counterproductive threat.
- Funding for state and local groups is always good.
- The subcommittee can work on this before the January meeting.
- It is important for the commissioners to know what's happening in the subcommittees. The political reality is that this is a community that will have to be brought along. This

subcommittee stepped back from their original opinions because of the many vociferous comments received.

Scientific Inquiry and Research Subcommittee Report

Suzanne Bell, PhD & Jeff Salyards, PhD, Co-Chairs

Final Draft Work Products for Vote

Recommendation on Technical Merit Evaluation of Forensic Science Methods and Practices

There is a difference between the underlying science and the application of that science. The latter is a standards document. The request is that NIST evaluate the foundational science where needed. It is not meant to be vague, but flexible.

In a friendly amendment, footnotes 3 and 4 were removed.

Yes…….77%
No……..19%
Abstain……3%

Public Comment Period

No comments.

Commission Meeting Adjournment—Day 1

Jon McGrath adjourned the meeting at 5:07 p.m.

September 13, 2016

Jonathan McGrath opened day #2 of the 11th National Commission on Forensic Science (NCFS) meeting at 8:10 AM.

Statistical Statements of Relevance Panel

Karen Kafadar, PhD, Commonwealth Professor & Chair, Department of Statistics, University of Virginia

Hari Iyer, PhD, Mathematical Statistician, Statistical Engineering Division, National Institute of Standards and Technology

Alicia Carriquiry, PhD Distinguished Professor of Statistics, Iowa State University

David Kaye, Distinguished Professor of Law & Associate Dean for Research, Pennsylvania State University

And

Reporting and Testimony Subcommittee

Judge Jed Rakoff & Matt Redle, Co-Chairs

Stephen Fienberg, PhD, Reporting & Testimony Subcommittee

Introduction of Initial Draft Work Products Open for Public Comment

Views on Statistical Statements in Forensic Testimony

This initial draft document will be revised and re-submitted as a revised initial draft at the next Commission meeting (January 9–10, 2017) based on the panel and NCFS discussions.

Dr. Kafadar: To consider probability, we must use a statistical model from which it is possible to calculate a valid probability and we must use valid data. Then we might be able to answer the question, how likely two things are to correspond and whether they came from the same source or not, i.e., specificity, the probability that two things came from the same or different sources. Sensitivity and specificity only quantify how common features are in a particular population. Lack of rigorous definitions impedes progress, e.g., what are "special arrangements," image quality, and resolution? Moreover, you don't know whether crossovers or islands are close to each other.

For all evidence we have consider measurement uncertainty—the object may have been measured by different people at different times under different conditions. Glass analysis, for instance, also depends on consistency of the manufacturing process. Repeatable measurements can give a ratio of consistency with the evidence. That kind of ratio number depends on populations and databases; it is informative but it's not what we want to know. We want to know: Given the evidence, what is the probability that the item came from the same or a different source? There is a quote that all models are wrong, but some are useful. Most important is admitting areas of uncertainty.

Dr. Iyer: We are trying to make probabilistic statements considering the weight of evidence. We compare reference sample (R) from a person of interest with sample Q from an unknown. We could use a likelihood ratio or the classification approach; both have error rates, strengths, and weaknesses.

Using the likelihood ratio, summarizing the weight of evidence has intrinsic meaning as the ratio of two probabilities for the person whose information is being computed, but not necessarily for anyone else. A likelihood ratio is proposed by an expert, but is it transferable? Similarly, is Bayesian theory transferable? Supporters claim there is no uncertainty, and that claim is valid when the likelihood ratio is used by the person who computed it. But, is it transferable? A single value from one expert is not sufficient for a calculation.

Assumption ladders are a way to organize facts, and uncertainty ranges show that all the ranges considered are plausible. Using the classification method, a score is computed—the higher value indicates one source; the lower, the other. Scores have no intrinsic value. For successful use of classification methods, databases must be sufficiently rich to allow error rates to be computed.

Dr. Carriquiry: What should an expert be expected to testify to? Databases play a critically important role. There are two major types of evidence: those that depend on comparisons, e.g., DNA, fingerprints; and those that infer effect and probable cause, e.g., blood spatters. Statistically, the two involve very different approaches. In the ideal situation experts provide testimony supported by a rich database and have a statistical model that is plausible and validated, information about variability and error of measurement, and a statement regarding weight of evidence, e.g., how rare a set of common features might be. However, the state of the art is nowhere near this.

For glass, measurements are excellent, but otherwise data to compute weight of evidence are very limited. No currently available database allows scientists to look at actual images. Furthermore, we don't know the discriminators, e.g., what to measure on shoe prints. Whenever information is not available, the expert should be expected to say, "I do not know." The expert should not be allowed to say two samples are very similar without saying "this is very rare in the population," or "I have no idea how rare it is." (The expert usually does not know the "ground truth.")

A database can be used in many ways to develop new methods and in case work. Those data are used differently and not all aspects are needed by everyone. The state-of-the-art approach assumes independence, i.e., all correlations equal 0. In the glass community, no data permit this assumption. There is a dearth of appropriate databases available to the scientific communities. A promising step forward is the Center for Statistics and Applications in Forensic Evidence (CSAFE) is a consortium of four universities that conducts research on the statistical foundation of forensic tools used to evaluate pattern and cyber evidence and provides training to forensic and law professionals.

Mr. Kaye: Statements of similarity are largely based on subjective analysis. Starting with the data, we can describe features and leave analysis to the jurors. Evaluations, traditionally giving conclusions, and quantitative statements of probability, e.g., a 99% vs 94% probability of kinship. There are statements about evidentiary value in which an expert can provide information that is transferrable to help the jury reach a conclusion.

There is an important distinction between likelihood ratio for classification and likelihood for statement of probability. Weight of evidence statements given without data to support a conclusion would not support standards for scientific evidence. What are the known error rates when an expert says there is a high degree of uncertainty? We need a way to blend approaches to validate the assessments being made.

Dr. Fienberg: Since 1929, when Wilmer Souder published a report in the *NBS Bulletin* explaining why statistics and forensic science are intertwined, statistics at NIST has been combined with forensics. It addresses how to carry out scientific experiments in a measurement-like world. In the subcommittee's discussions yesterday, we concluded that early iterations of the Views Document were too technical. After much discussion and revision, we considered the purpose of the document, namely to lay out the ingredients that would allow a forensic expert to correctly use statistics to convey an opinion. This implies the existence of a substantial database, a statistical model that substitutes for the situation empirically, systematic measurement capabilities, and a statistical statement with associated qualifications about error. This approach is consistent with the PCAST report. A common focus is on matching for identification, but some things are more complicated, e.g., blood spatters. Statisticians would characterize blood spatters as an inverse problem—going from an observation backward to infer the cause of the spatter. Time of death is another example. But, it is not appropriate to go into detail here.

What can be done if some elements are missing, e.g., there is no big database? You have to be able to report what you've done and the appropriateness of what you've done. You have to say you don't know what the database is. This argues strongly both for transparency between parties at a trial and for forensic experts to explain what their conclusions are based on. If an element is missing, the expert should say that. If all elements are missing, there is no basis for a statistical statement. Measurement error is a way to qualify that. People are concerned that this will wreak havoc with admissibility of statistical evidence; on the contrary, this will make clear what the basis of the evidence is, and there are many ways to submit evidence.

The subcommittee will include more technical detail, but the Views Document will not be a treatise on statistics. We have to be careful about terminology, e.g., probative value, weight of evidence, evidentiary evidence. We are still struggling with the preferred terms. The law community may use words differently from the statistics or forensic science communities. This document will make that explicit the fact that experience is not a substitute for data and science. We want to keep the focus on what we expect an expert to report on, polish the language, and add relevant definitions that are as nontechnical as possible.

Discussion

- Scientists often grapple with inverse problems, e.g., the Big Bang, and make inferences.
- In the courtroom, what is done when the evidence is so technical that juries may not comprehend it? For example, in our society, understanding fractions is a problem, and this state should inform the work of the Commission. An expert does who can carry out analyses with all tools and details expert must also translate the technical points.
- The issue of jury comprehension has been the subject of much study, e.g., "match" is very subjective.
- Data do not give probabilities; data + assumptions give probabilities. We want to avoid giving statements based on one model when many models apply. Show what you have; say what you did. Economic experts often appear in court to quantify damages: one says

using X model, damages are $1 billion, whereas another says, using Y model, damages are $1000. We need to say what data were used, what the data are based on, and what other models are possible.

- When you create a database, how do you account for subpopulations? How do we take into consideration the investigator? For example, 25 people in an office use a Brothers printer and ink and one prints child pornography; a flip-flop imprint was found in Alaska vs one in Florida; a size 14 shoe print was collected, but it was in a basketball locker room.
  Defining the relevant population is a very important topic. The relevant population for the printer is the population in that office. The only thing the expert is testifying to is that two things share characteristics. You have to know about the variability of the element of concentration across different examples of the same type. Occasionally you find no data for a subpopulation.
- Databases have a multiplicity of uses. The way the database is transformed to something relevant for the case at hand is the important thing. For different cases, there is different relevance. You may have data, but not the data you need to make the assessments you want to.
- How should a forensic scientist characterize findings in reports and testimony? How should lay people respond? Bill Thompson has worked on this area and he will send references upon request. There is a two-part analysis: what kinds of statements are logically justified by the kinds of data gathered; and, among the statements justified, look to psychological studies to see what is most appropriate for jurists. A problem with forensic science is that certain assessments require making assumptions not justified by the information at hand. The Views Document recognizes those issues, which is a major step forward. We are recognizing uncertainty about the best way to talk about these issues.
- We are just getting to the hard problems, and to stop now would be a mistake. We need a careful look at the quality of the data we have. We have to tell the jury the truth, including, "I don't know." And, we have to be willing to explore what we need to know. An expert must say what other answers are possible. We need to include the things we don't know, e.g., "I don't know the frequency of this feature in the relevant population." Some conclusions can be left for the jury to work out.
- When we talk about translation, we need to consider who's doing the translating. To reach what's justifiable and what's defendable, we need to think about the translator.
- Juries are not really where forensic science questions arise because, today, only about 3% of cases go to a jury trial. It's the report of a forensic expert that is most important, because once the charge is brought, the defense council gets involved, and 8% of cases are dismissed by the prosecutor because the defense council says the evidence is too weak. The third party is the judge who determines the admissibility of evidence. But, once given the information, they're more prepared to deal with it than the average juror.
- How can this document be a practical change for forensic science? Sometimes we need information to provide value. We have to deliver something forensic scientists can comprehend; if not, it will never get to the courtroom.
- Research must be transferrable. Lab scientists can tell them what research needs to be carried out.

- 3-D imaging reveals different things on fingerprints than other technologies do. An NIJ grant addresses this.
- Dr. Fienberg invited commissioners to send comments for next revision of the Reporting and Testimony Subcommittee Views Document, which will be discussed in full at the next meeting.

Final Draft Work Products for Vote

Recommendation on Documentation, Case Record, and Report Contents

Minor editorial changes were made.

Yes……97%
No……3%
Abstain……0%

Human Factors Subcommittee Report

Justice Bridget McCormack & Professor Jules Epstein, Co-Chairs

Final Draft Work Products for Vote

Views on Facilitating Research on Laboratory Performance

An amendment was made to remove footnote 26. Proficiency and performance are separate things.

Yes……100%
No……0%
Abstain…….0%

Introduction of Initial Draft Work Products Open for Public Comment

Checklists in Forensic Science

- Checklists have merit in some fields, e.g., aviation, medicine. The next step is to evaluate various places where checklists could be used. We have to come to grips with checklists' tendency to ossify.
- Errors in medicine have been reduced via use of checklists, but that is more to prevent blunders and omissions.
- We should be more careful with use of the word "error"; this refers to a "mistake." This is about mistakes and where are they made. What sort of checklist would reduce the number?
- We want forensic data to be accurate, but "generating accurate forensic data" should be reworded.
- Disagreement with the wording in the first sentence regarding "generate accurate forensic data."

- Although there is skepticism around the issue, it seems worthy of further study. How does it differ from an standard operating procedure? What is the value added?
- An error-mitigation strategy for checklists is not to ask people to check a box, but to force them to write their answers.
- The subcommittee thought about introducing a task-biasing document related to MDI, but OSAC is working on that with medicolegal death community.

Ethics Issues for NCFS Members

Cynthia Shaw, Deputy Director, Departmental Ethics Office, DOJ

Janice Rodgers, Director, Departmental Ethics Office, DOJ

Annual ethics training.

Medicolegal Death Investigation Subcommittee Report

John Fudenberg, Chair

Mr. Fudenberg announced that Vincent DiMaio is stepping down from the Commission. He thanked
Dr. DiMaio for his service. A notice will be published in the *Federal Register*.

Final Draft Work Products for Vote

Recommendation on Formation of a National Office for Medicolegal Death Investigation

Yes……100%
No…….0%
Abstain…….0%

Views on Next of Kin Communication and Interactions during Medicolegal Death Investigations

The content is good, but the document should be presented in the SPO-specified format

Yes……100%
No…….0%
Abstain……0%

Introduction of Initial Draft Work Products Open for Public Comment

Views of the Commission on Recognizing the Autonomy and Neutrality of Forensic Pathologists

- The document outlines the important and available information to both prosecution and defense. One public comment received so far.

- Restate that they should be independent, recognizing that they work with a law enforcement agency to gather other information and are not truly autonomous.
- Formatting plus the title need revision; some things are particular to forensic pathologists. Some offices have a policy that their forensic pathologist (usually employed by state and local agencies) cannot testify for the defense, so few forensic pathologists are available to the defense.
- We need to be sure those who can't afford counsel will have access to it. The discussion about the defense having access to prime lab services is a topic the Reporting and Testimony Subcommittee was addressing before time ran out. This should be added to the list of unfinished business.
- The above-cited tensions and failure to deal with other disciplines preclude supporting it.
- It should be broad and apply to every discipline.
- Changes will be made in light of these and public comments, and the document will be voted on at the next meeting.

Recommendation on Model Legislation for Medicolegal Death Investigation Systems

- This document outlines the situation and asks the Attorney General to make a recommendation to the Uniform Law Commission, which develops model laws. The last model law was introduced in 1954. (Critical elements of the uniform law appear on third page of document)
- Is such a recommendation appropriate to go to the Attorney General, or should it be a Views Document?
- The intent was to list the elements of an accredited coroner's office, and an accredited medicolegal pathologist's office.
- Under "Other," it proposes including a "good-faith immunity clause," but doesn't say what that covers.
- Add "interoperability" so it operates as one system of communication.
- OSTP's medicolegal death investigation report was released today and covers this sort of thing.

Forensic Science Discipline Review

Jonathan Wroblewski, Kira Antell, & Kevin Scott, Office of Legal Policy, US Department of Justice

Mr. Wroblewski: The goal of the Forensic Science Discipline Review (FSDR) is to examine and strengthen the use of forensic science in collecting evidence and in the court room. This all focuses on the intersection between science, statistics, and the legal framework. Many steps have been taken to do this, and the Office of Legal Policy (OLP) continues to support research to expand on that. OLP heard the strong recommendation that their efforts should include consultation with statisticians and held a roundtable in July, which stimulated helpful discussions.

Mr. Scott reviewed the timeline for the FSDR and noted that OLP had presented the framework for the FSDR at the March Commission meeting and the draft methodology was presented at June Commission meeting. He explained that these documents were posted online for notice and comment. He reviewed the revised methodology and explained that the plan is to begin

implementation after this meeting. He stated that to advance use in the courtroom we need to understand current use and be sure it is consistent with scientific principles. He stated that the FSDR will be housed in DOJ and managed by a Department employee but much of the work will be conducted by an independent contractor with expertise in social science research. He explained that the FSDR will consult with a non-departmental data committee, an idea that came from the statistician roundtable (referenced above). He reiterated that the study time frame is 2008–2012. He stated that the roundtable participants and commenters agreed that a pilot study would be the place to start. He described that in phase 1, transcripts will be read to identify what data can be collected and then used to validate the methodology.

OLP proposes to notify prosecutors and defendants in cases where there was a nonconformity. It is not within the purview of the FSDR to determine materiality, but such notification is not necessarily in conformity with standards. The "thread" is an artificial construct intended to give context to the analysis; it is not a useful unit of analysis. Reporting occurs at the level of the testimony. The data they have can be used to develop training material within the Department. The FSDR will publicly report whether it conforms to the standard.

Mr. Wroblewski: OLP had intended to use a modified version of the Uniform Language for Testimony and Reporting (ULTR) as a standard but there is no consensus. The ULTRs have received more than 175 comments on them. The goal of the ULTR project is to give forensic examiners and prosecutors language to ensure that statements of relationship are properly described.

Comments received during the public comment period on the ULTR and the FSDR suggested that no statement of relationship is appropriately made in some disciplines; by contrast others say you can make a statement of relationship, but it must include an error rate. He introduced the concept of reviewing testimony for compliance versus correctness. He also explained that many commenters believed that failure to review the corresponding reports would be a serious flaw.

As such, OLP determined that the FSDR should evaluate the testimony to be sure it is consistent with the report as opposed to the unsettled ULTR. In addition, reports are reviewed by several people, which is the proper way to proceed. OLP wants an independent outside body to review the testimony and reports.

Ms. Antell: Ms. Antell introduced the ULTRs and explained that the group would discuss how to move forward on the ULTRs. She shared two draft documents for discussion, one for fiber and one for latent prints. OLP would like to engage the Commission to take comments back and come up with a "ULTR 2.0."

Discussion

FSDR

- The idea is to get data and take an introspective look. The bigger picture is to try to identify patterns and figure out how to do things differently.
- FSDR is looking at transcripts to assess the testimony against policies that existed at the time of the case. In addition to transcripts, you should also consider jury instructions and other influences. The research question was whether the testimony stayed within the goals. If the testimony is not within the goals, we will notify the prosecutor, the defense,

and the judge and let them deal with it. People working on the FSDR have spoken to the people in Texas who are also doing this.

- Efforts to get a handle on the problem and to convene the roundtable were excellent, but the standard of review didn't frame the question completely.
- The third consideration is whether the community standard at the time is consistent with the science at the time, e.g., evidence given on hair analysis in the 1970s and 1980s went beyond the science at the time.
- This is equivalent to repairing a plane in flight. This study rests on a technological foundation because machine learning can build on this task. We have to anticipate the opportunities computer technology will offer at the base level.

ULTR

- The document on fibers contradicts and omits requirements given this morning. Namely, the association statement must be accompanied by the frequency in the population.
- For analysis of synthetic fibers, infrared must be included to identify polymers, as well as optical analysis. In the fiber examination, you're not allowing the examiner to opine on the commonality of things. We need to figure out how to allow for the expert's experience.
- What do you do with a forensic discipline where you have insufficient research to have a known error rate, e.g., shoe prints or tire treads?
  This was discussed at the roundtable, and scientists were uncomfortable with saying more. You have to know how far you can go in explaining the probative value without going beyond the science because if you don't present the whole picture, the risk of misleading the fact-finder is enormous.
- For the latent print document, we know there's a false positive rate. Should the witness say all that?
- Be careful with the word "the same."
- The first version of the ULTR had the probability statements, and they were criticized because if you can't put a number to it, you should not use these words to differentiate levels of probability. But, it's not either/or—there are viable compromises.
- This should not be crowd-sourced and you should not seek to please everyone. The opinions of the lawyers should count the least. This disagreement points to a failure in how the project started, namely, we failed to bring in independent statisticians. That doesn't reflect that the disciplines are learning from each other; it's a failure to identify limitations. If the Statisticians' Roundtable had been part of the ULTR process, it might have been different.
- The document makes statements of relationship throughout (indicating some level of probability) and you have to deal with that honestly. You have to say you don't know what the error rate is, but it is more than 0.
- We need to engage more statisticians and we need to ask academics, not just post a question on our Web page and hope they see it.
- As for the definition of identification, "wouldn't expect" is a probability framework with no metric except the individual examiner. This gets to utility vs the risk of a jury's over-utilization. There's the risk of identification to a source, and we're not sure the science is there today.

- OLP needs help to figure out what the words should be to provide the level of relevance. The subcommittee is trying to come up with wording for things you can say rather than only listing what the examiner cannot say. This could help ULTR project.
- Yet, this document doesn't seem to capture the spirit of the roundtable. The first version of guidelines contained pseudo-science and pseudo-statistics. We should make these consistent with the Commission's documents moving forward.
- Review of testimony could be useful, and there is no need for consensus on the way to testify before you report on how they are testifying. We need a taxonomy that allows classification of the kinds of statements being made. Once data from these transcripts have been compiled you should make them public so academics can add their commentary.
- Someone needs to come up with standards to guide the expert giving testimony, but are OLP employees the best people to do that?
- The Deputy Attorney General wants to know whether DOJ experts are testifying consistently with some standard. So it's a compliance study, not a correctness study.
- ULTR should consider the current state (what now) and the future (what should we work for). It will shape some things we need to look for but may not have data now. As for probability statements, the caveat is "when not established and known." The struggle between the current and the ideal is constant.
- On the Bullet Lead Committee, they found about 30 instances of inconsistencies. Sometimes the statement was fine, but the prosecutor's closing argument was not consistent and the testimony did not match the lab results or the protocol. The process is important to see how attorneys characterize the evidence. Although that is not part of this review, they can start to collect data that would be useful for such a study.
- OLP has been given an impossible task. There's lack of consensus, fundamental disagreement on the probative value, and fundamental disagreement about how forensic science should talk about their views (US vs European, etc.). The Commission's Views Document is inconsistent with the document distributed for the ULTR project. Maybe this will be impossible until there is more agreement in the community, e.g., within 5 years. Nevertheless, OLP needs to serve the employees of DOJ who appear in court daily and need guidelines.
- This group should not to rush because the project is so big and complicated. The training material should be published for maximum availability. This is about the state of forensic science in the past, but forensic science has been so underfunded for so long. They may know other technologies existed at the time, but did not have access to them.

Follow-up on Discussion of the Path Forward

John Butler & Nelson Santos

The Commission will draft a Summary Report to discuss what the Commission has accomplished in Terms 1 and 2, and what still remains to be addressed (unfinished business). Over the course of the next two meetings, NCFS will select panels that will inform, and bring context to, the unfinished business topics identified by the Commission. This Summary Report will serve as a NCFS Commission Business document and can inform processes that may address unfinished business topics identified by the Commission

- Dr. Butler proceeded to present potential panel and unfinished business topics for the January and April NCFS Meetings. These topics were selected from input provided by Commissioners, and are as follows: PCAST report
- Scientific research
- Victims' rights
- Prosecution issues
- Defense issues
- Forensic science access
- OSAC issues
- Digital issues

Dr. Butler went on to commend the Commissioners on their success. In this meeting alone nine work products were adopted (five recommendations and four views)for a total of 39 work products adopted by the Commission during its existence, and five documents are out for public comment

The Commissioners were then solicited for input regarding the potential panel and unfinished business topics as well as the NCFS Summary Report. The following input was provided from various Commissioners:

- Scientific research should be broadened to include government as well as non-government, e.g., the Arnold Foundation and the American Association for the Advancement of Science (AAAS).
- Computer science, information processing, et al. could be of enormous value for how they can be brought to bear on what this Commission considers.
- The distinction between tools and technology—both the Arnold Foundation and AAAS have targeted tools, which is a different focus.
- A victims' panel would flesh out things such as evidence retention, evidence testing (when could a victim pay for private testing and how might that be done to not interfere), when might advances in evidence testing trigger a new testing of evidence, or the legal rights to victim notification.
- Hearing from a person exonerated by forensic science would give a broader view of post-conviction testing. This would not be limited to the Innocence Project—there are more than four dozen efforts collaboratively funded by the federal government to review cases, in addition to prosecutors' offices.
- It would be helpful to hear about a complex case where forensic science was used. An effort is underway on science technology and the law.
- Presentation of efforts already underway regarding training on science and the law.
- We could combine some of these issues in one panel, e.g., a case victim and the wrongfully convicted.
- A panel on developing guidance on what makes a robust database, how you describe the limits.
- We also need a conversation about how the recommendations are being implemented.
- If we look at existing Views Documents we can determine how many constitute unfinished business.

- How consumers mishear evidence and testimony would inform much of what we do.
- Ethics remains a critical issue. Some are disappointed by the way the Attorney General addressed the ethics code we recommended. She imposed a policy for DOJ, but the issue goes beyond DOJ. Can this be addressed again? The Recommendation stands as it is.There are subtleties in how DOJ decides to deal with all NCFS recommendations.
- Research would give an idea of what's coming, so it would be good for the last meeting.
- Professional responsibility could be included.

The SPO will work to prioritize these issues and talk to Ms. King about drafting the summary document.

The next meeting will be January 9 and 10 at DOJ.

Mr. Santos thanked the NIST people who hosted the meeting and made yesterday's tours possible; and he thanked all the participants and especially Dr. Butler.

Public Comment Period

Jeremy Triplett, President of American Society of Crime Lab Directors (ASCLD): The ASCLD is trying to engage with the NCFS to advance forensic science. Their members have attended all meetings and they are trying to comment on every document the NCFS produces. Mr. Triplett suggested that the NCFS comments and adjudication only be applied to the version for the document for which the comments were submitted, that the NCFS continue to work toward a uniform approach for adjudicating the public comments across subcommittees, recognize the critical nature involving critical science in initiatives, and finally that the NCFS consider a final user recommendation that evaluates the financial and operational impact of implementing the NCFS recommendations and addresses how the federal government can financially support them. ASCLD, in its public comments, tries to provide helpful feedback on the operational and financial challenges that may result from implementing a recommendation. ASCLD is attempting to help NCFS understand the day-to-day operational climate in labs and illuminate challenges that would impede implementation of recommendations. They are trying to provide additional information that could change perceptions. Foremost, ASCLD supports the furtherance of forensic science and thanks NCFS members for their work.

Matthew Gamette, Laboratory Director, Idaho State Police supports and encourages DOJ to support reauthorization of the Justice for All Act. He appreciated the comments made above and wholeheartedly supports the DOJ budget being increased for forensic science research. The Paul Coverdell Forensic Science Improvement Grants Program is critical for forensic science services, and Mr. Gamette encouraged the Attorney General to recommend funding for it. This funding is essential for the advancement of forensic science in the United States. He also thanked the National Association of Medical Examiners for the fast-track group working on the medicolegal death investigation system. He encouraged DOJ and other federal agencies to take action on the recommendations in their report to support the medical examiners in this country. Mr. Gamette hoped these activities would lead to better coordination, discussion, and funding for these initiatives.

Commission Meeting Adjournment—Day 2

Jonathan McGrath adjourned the Commission meeting at 4:00 PM.

4. Voting Results

Vote	Document or Vote Question Asked*	NCFS Business (*ex-officio* voted)	% Yes	% No	% Abstain	Total Votes	# Yes	# No	# Abstain	Comments
September 12, 2016										
1	Views Document on Accreditation of Forensic Science Certification Bodies	-	97	3	0	31	30	1	0	**No**: Greg Czarnopys; **No response**: Cecilia Crouse
2	Views Document on Certification of Forensic Science Practitioners	-	94	3	3	31	29	1	1	**No**: Phil Pulaski; **Abstain**: Judge Barbara Hervey; **No response**: Nelson Santos
3	Recommendation on Proficiency Testing	-	97	3	0	32	31	1	0	**No**: Troy Lawrence
4	Views Document on Accreditation Program Requirements	-	90	10	0	31	28	3	0	**No**: Ted Hunt; Greg Czarnopys, Judge Pam King; **No response**: Peter Neufeld
5	Recommendation on Technical Merit Evaluation of Forensic Science Methods and Practice	-	77	19	3	31	24	6	1	**No**: John Fudenberg, Greg Champagne, Phil Pulaski, Ted Hunt, Marc LeBeau, Greg Czarnopys; **Abstain**: Nelson Santos; **No response**: Paul Giannelli
September 13, 2016										
6	Recommendation on Documentation, Case Record and Report Contents	-	97	3	0	32	31	1	0	**No**: Greg Czarnopys; **No response**: Kathryn Turman
7	Recommendation on Formation of a National Office for Medicolegal Death Investigation	-	100	0	0	31	31	0	0	**No response**: Cecilia Crouse, Jim Gates
8	Views Document on Communication with Next of Kin and Other Family Members	-	100	0	0	30	30	0	0	**No response**: Jim Gates; Stephen Feinberg, Kathryn Turman
9	Views Document on Facilitating Research on Laboratory Performance	-	100	0	0	30	30	0	0	**No response**: Cecilia Crouse; Peter Neufeld, Kathryn Turman

5. Attendee List

11th Meeting of the National Commission on Forensic Science, September 12-13, 2016			
Full Name	**Title**	**Company/Organization**	**Attendee Type**
Albright, Tom	Professor	The Salk Institute	Commissioner
Ambrosino, Michael	Special Counsel for DNA and Forensics	U.S. Attorney's Office, D.C.	Subcommittee Member
Antell, Kira	Senior Counsel	Office of Legal Policy	Speaker
Bell, Suzanne	Professor	West Virginia University	Commissioner
Bieber, Frederick	Professor	Harvard Medical School	Commissioner
Butler, John	Vice-Chair, National Commission on Forensic Science	National Institute of Standards and Technology	Commissioner
Cariola, Mike	General Manager	Bode Cellmark	Subcommittee Member
Carriquiry, Alicia	Distinguished Professor	Iowa State University	Speaker
Casadevall, Arturo	Professor and Chair	Johns Hopkins Bloomberg School of Public Health	Commissioner
Cavanagh, Richard	Director, Special Programs Office	National Institute of Standards and Technology	Speaker
Celeste, Eleanor	Policy Analyst for Medical and Forensic Sciences	Office of Science and Technology Policy	
Champagne, Greg	President	National Sheriffs Association	Commissioner
Chu, Sarah	Sr. Forensic Policy Advocate	Innocence Project	Subcommittee Member
Cole, Simon	Professor	University of California, Irvine	Subcommittee Member
Crouse, Cecelia	Crime Laboratory Director	Palm Beach County Sheriff's Office	Commissioner
Czarnopys, Greg	Deputy Assistant Director Forensic Services	Bureau of Alcohol, Tobacco, Firearms and Explosives	Commissioner
Daly, Deirdre	U.S. Attorney	U.S. Department of Justice	Commissioner
Denton, M. Bonner	Professor	University Of Arizona	Commissioner
DePalma, Lindsay	Contractor	National Institute of Justice	Commission staff
Drosback, Meredith	Assistant Director for Education and Physical Sciences	Office of Science and Technology Policy	
Epstein, Jules	Professor	Temple Beasley School of Law	Commissioner
Ferrell, Rebecca	Program Director	National Science Foundation	Commissioner
Fienberg, Stephen	Maurice Falk University Professor of Statistics and Social Science (Emeritus)	Carnegie Mellon University	Commissioner
Fudenberg, John	Coroner	Clark County Office of the Coroner/Medical Examiner	Commissioner
Gates, Jr., S. James	Professor	University of Maryland	Commissioner
Gamette, Matthew	Lab Director; Chair, Consortium of the Forensic Science Organizations	Idaho State Police Forensic Services Labs	Public Commenter
Gialamas, Dean	Chief	Los Angeles County Sheriff	Commissioner
Giannelli, Paul	Distinguished University Professor	Case Western Reserve University	Commissioner
Hervey, Barbara	Judge	Texas Court of Criminal Appeals	Commissioner

11th Meeting of the National Commission on Forensic Science, September 12-13, 2016			
Full Name	**Title**	**Company/Organization**	**Attendee Type**
Hollway, John	Associate Dean & Executive Director	Quattrone Center for the Fair Administration of Justice at Penn Law	Subcommittee Member
Honey, David	Director, Science and Technology	Office of the Director of National Intelligence	Commissioner
Howley, Susan	Public Policy Director	National Center for Victims of Crime	Commissioner
Huestis, Marilyn	Professor	University of Maryland School of Medicine	Commissioner
Hunt, Ted	Chief Trial Attorney	Jackson County (Kansas City) Prosecutor	Commissioner
Iyer, Hari	Mathematical Statistician	National Institute of Standards and Technology	Speaker
Jackson, Linda	Director	Virginia Department of Forensic Science	Commissioner
Kafadar, Karen	Professor	University of Virginia	Speaker
Kaye, David	Professor	Pennsylvania State University	Speaker
King, Pam	Judge	Minnesota 3rd Judicial District	Commissioner
Koblinsky, Lawrence	Chairman and Professor	John Jay College	Subcommittee Member
LaPorte, Gerry	Office Director	National Institute of Justice	Commissioner
Lawrence, Troy	Sergeant	Fort Worth Police Department	Commissioner
LeBeau, Marc	Senior Forensic Scientist	Federal Bureau of Investigation	Commissoner
Leighton, Julia	Retired	Public Defender Service for the District of Columbia	Commissioner
Manzolillo, Patricia	Laboratory Director	U.S. Postal Inspection Service	Commissioner
May, Willie	Director	National Institute of Standards and Technology	Commissioner
McCormack, Bridget Mary	Justice	Michigan Supreme Court	Commissioner
McGrath, Jonathan	Senior Policy Analyst	National Institute of Justice	Commission staff
Motta, Greg	Senior Science & Technology Policy Advisor	Federal Bureau of Investigation	Proxy Commissioner
Nerheim, Michael	Lake County State's Attorney	Lake County State's Attorney's Office	Subcommittee Member
Neufeld, Peter	Co-Director	Innocence Project	Commissioner
Philpott, Kate	Independent consultant	Self-employed	Subcommittee Member
Pulaski, Phil	Chief of Police	Muttontown Police Department	Commissioner
Rakoff, Jed	U.S. District Judge	U.S. District Court, Southern District of New York	Commissioner
Redle, Matthew	County and Prosecuting Attorney	Sheridan County and Prosecuting Attorney's Office	Commissioner
Risinger, Michael	Professor of Law	Seton Hall University School of Law	Subcommittee Member
Rodgers, Janice	Director	Department of Justice Ethics Office	Speaker

11th Meeting of the National Commission on Forensic Science, September 12-13, 2016			
Full Name	**Title**	**Company/Organization**	**Attendee Type**
Sah, Sunita	Assistant Professor of Management and Organizations	Cornell University, Johnson Graduate School of Management	Commissioner
Salyards, Michael	Executive Director	Defense Forensic Science Center	Commissioner
Santos, Nelson	Vice-Chair, National Commission on Forensic Science; Deputy Assistant Administrator, DEA	Drug Enforcement Administration	Commissioner
Scheck, Barry	Co-Director	Innocence Project	Subcommittee Member
Schrotter, Frances	Sr. Vice President & COO	American National Standards Institute	Commissioner
Scott, Kevin	Director, Policy Analysis Unit	Office of Legal Policy	Speaker
Shaw, Cynthia	Deputy Director	Department of Justice Ethics Office	Speaker
Sudkamp, Laura	Laboratory Director	Kentucky State Police	Subcommittee Member
Taylor, Melissa	Senior Forensic Science Research Manager	National Institute of Standards and Technology	Subcommittee Member
Thompson, William	Professor	University of California, Irvine	Subcommittee Member, Proxy Commissioner
Triplett, Jeremy	Forensic Laboratory Supervisor	Kentucky State Police	Speaker
Uhle, Aaron	Unit Chief	Federal Bureau of Investigations Laboratory	Proxy Commissioner
Weedn, Victor	Professor and Chair	George Washington University	Commission staff
Weiss, Danielle	Contractor	National Institute of Justice	Commission staff
Wielgosz, Robert	Director, Chemistry Department	Bureau International des Poids et Mesures	Speaker
Word, Charlotte	Private Consultant		Subcommittee Member
Wulff, Paula	Unit Chief, Forensic Science Law Unit	Federal Bureau of Investigations	Subcommittee Member

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PART I

MODERATOR: All right, we'll get started. Welcome to the eleventh meeting of the National Commission on Forensic Science, so we'll kick it off and turn it over to John Butler for an opening.

JOHN BUTLER: I just want to make a few announcements, particularly regarding safety and comfort, where the restrooms are, and where to go if there's an alarm of any kind. So, if there is a shelter in place alarm, like if there's a tornado or something that is coming, then what we'd do is go down the hall here to the green auditorium, and that will be on the left. If there's a fire alarm, then we go all the way down the hallway to the end, you go outside, and then you gather in the parking lot by the flag pole, there's actually some signs by the door, that actually show that, but I don't expect you to look at the sign if you have to rush out. Hopefully there won't be any alarms, but I just want to make everybody aware of that. And, finally rest rooms for you comfort, there are multiple sites that you can go. The closest one is about 20 meters down the hallway here, and on the right. There's a couple men's and women's rest room. There's also, if you keep going down the hallway to the green auditorium, on the other side of the green auditorium and the red auditorium, there's rest rooms.

And, then there's rest rooms as well, down the hallway, by the library, by the Wilmer Souder exhibit right there. And, there's some when you first come in to this campus. So, there's multiple places you could go if you needed to. I just wanted to thank those that led the tours, and hopefully you enjoyed the tours, you're gonna have a chance to see all the tour stops will be in the reception area, which will be in here in the afternoon, after the public comment period. That will be from about 5:15 until 6:30 today. So, we're excited to have the chance to show off some of the things about NIST, and Director May will go in more detail on those things. So, we're gonna begin with the opening remarks from our co-chairs, and unfortunately Sally Yates, our Deputy Attorney General cannot be here, and Victor Weedn will be giving those, so I'll turn those over to him and then Willie May will speak after that.

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VICTOR WEEDN: Thank you, John. Welcome. The Deputy Attorney General, Sally Q. Yates, wishes to express her regrets, and again not being here personally, but she has a scheduling conflict, and has asked that I speak here today in her stead. Since my detail to the Department of Justice it has been my personal pleasure to work with John Butler, Nelson Santos, Jonathan McGrath, Lindsay DePalma, Danielle Weiss, and all the various others that support this commission. DOJ wishes to thank NIST for their generosity in hosting this event at this facility. The tours today were quite valuable. The commission membership. I want to start by announcing, and giving congratulations to Suzanne Bell, who has advanced a full professorship at the West Virginia University. I also want to announce, and give congratulations to Jim Gates, who is receiving the President's medal from the University of Maryland later today. Congratulations.

Dr. Vincent DiMaio has submitted a resignation letter that announces that he will be stepping down from the commission after this meeting. He is not here today, and he has submitted his votes to John Butler. We wish to thank him for his service over the past two years. I think you know he has also been serving as Chair of the Texas Forensics Science Commission. We will use the same process to fill his vacancy as we have for others, and we will be posting a Federal Register notice to solicit applications, within the next few days. Dr. DiMaio has asked me to convey the following message. "It was an honor to be appointed to the National Commission on Forensic Science, which has done excellent work. It was a pleasure working with everyone, and complements to all of the agencies involved."

Taking stock. I would like to take this opportunity to reiterate that forensic science is a priority for this administration. Shortly after President Obama took office, in February of 2009, the National Academies of Science, supported by the National Institutes of Justice funding, published it's influential report *Strengthening Forensic Science in the United States: A Path Forward*. Later that year, in July 2009, a Subcommittee On Forensic Science (SOFS), was created under the Committee Of Science within the White House's Office of Science and Technology Policy (OSTP), which included various inter-agency working groups under it. This body completed its work in December of 2012, and published its report entitled, *Strengthening the Forensic Sciences*, in May of 2014. In 2013, the Department of Justice worked with the National Institutes of Standards and Technology, and committed to Memoranda of Understandings to establish this body, the National Commission of Forensic Science, and the Organization of Scientific Area committees.

In response to a series of exonerations, beginning in 2012, the department took upon itself to undergo a review with the collaboration of the Innocence Project, and the National Association of Criminal Defense Lawyers, of approximately three thousand closed microscopic hair comparison cases. The Department of Justice has ensured that the public had been kept informed of the department's efforts, which began earlier this year, to establish Uniform Language for Testimony and Reports, and to conduct Forensic Science Discipline Reviews. I was brought on board as the Senior Forensic Advisor within the Office of the Deputy Attorney General in mid-April of 2016.

Of course, the Department of Justice forensic laboratories and components have continued their pioneering new initiatives and research efforts. The Department has supported the legislative efforts to establish rapid DNA identification capabilities at booking stations, In 2015, NIJ distributed 26 percent ($27.5 million) for research, development testing, and evaluation; 67 percent ($69.8 million) for support of publicly-funded laboratories, police departments and law enforcement agencies; and six percent (

$6.6 million) for training and technical assistance. NIJ funds more than a hundred million dollars of forensic science and DNA-focused programming and forensic science research, forensic science practice improvement, and reduction of backlogs of untested sexual assault cases.

Outside of the DOJ, the President's Council of Advisors on Science and Technology (PCAST) within the OSTP has been working on a report on forensic science, which is soon to be released. OSTP has also recently formed a Medicolegal Death Investigation Working Group, and is forming a Forensic Science Research and Development Task Force.

Updates on NCFS recommendations. As the Department continues to make strides to enhance to practice, and improve the reliability, of forensic science, I want to recognize the efforts and contributions of both the Commission, and the subcommittee members toward the completion of these important work products. The department is committed to responding to each NCFS recommendation as soon as possible—typically within two meeting from the date of passage.

As of the conclusion of NCFS meeting number ten, in June of this year, the NCFS had passed 14 recommendations to the Attorney General, including two at the recent June meeting. The Department has responded to several of these recommendations during the past three NCF meetings, held in December, March, and June. The two recommendations adopted at the June NCFS meeting are presently under consideration. I would now like to update the Commission on the Department's response to the recommendations that were adopted at meeting number nine, held in March of 2016, which involve, one) the use of the term reasonable scientific certainty, two) a code of professional responsibility, three) quality management system transparency, and four) post-doctoral research. The memorandum from Attorney General Loretta Lynch, was released and circulated to the commissioners within the last couple of days. It directs the Department components to take several steps to support these goals.

Specifically, you recommended that the discontinuation of the term reasonable scientific certainty. The Department is adopting the core of this recommendation. Department forensic laboratories will review their policies and procedures to ensure that forensic examiners are not using the expression "Reasonable scientific certainty", or "Reasonable *such and such forensic discipline* certainty" in their reports or testimony. Department prosecutors will abstain from use of these expressions when presenting forensic reports, or questioning forensic experts in court, unless required by a judge or applicable law. I will write an article explaining this move to US prosecutors in the USA Bulletin.

You recommended the adoption of a new national code of professional responsibility. The department is pleased to announce that we are adopting a new code of professional responsibility for the Department forensic laboratories, and their forensic scientists. This code builds on the Department's existing Scientific Research and Integrity Policy. After due consideration, and discussion, with our own forensic scientists, we did make minor changes, as follows:

- Section five now reads: "Conduct research and forensic casework using the scientific method or agency best practices. Where validation tools are not known to exist, or cannot be obtained, conduct internal or interlaboratory validation tests in accordance with the quality management system.

- Section eight now reads: "Conduct examinations that are fair, unbiased, and fit for purpose."
- Section 15 now reads: "Honestly communicate with all the parties (the investigator, prosecutor, defense, and other expert witnesses) about all information relating to their analyses, when communications are permitted by law and agency practice."
- Section 16 now reads: "Inform prosecutors involved through proper laboratory management channels of material non-conformities or breaches of law or professional standards that adversely affect a previously issued report or testimony."

We will distribute this new code to you, and it should be shortly published in the DOJ website.

You recommended greater transparency in our quality management systems (QMS). The Department's forensic laboratories, that support criminal investigation and prosecution will post current QMS documents and existing summaries of internal validation studies online within 18 months. QMS documents and existing summaries of internal validation studies may be posted in a format of each laboratories choice, and redacted for security, investigative, intelligence, and other statutory exemptions. This mandate does not alter existing discovery obligations. I note that the department is not adopting the recommendation to post curricula vitae CV's, or summaries of root cause analysis, RCA's. After consultation with our forensic laboratories, we decided that neither of these categories of records were appropriate to post online. We found that the need to post CV's, due to the frequency with which examiners testify, is just not present for department examiners, and we believe that posting CV's for our examiners poses unique security issues that may not be present for other forensic examiners. CV's will continue to be provided as appropriate during discovery. As for posting summaries of root cause analysis, we believe that RCA's have limited meaning in isolation from the entire corrective action process and aren't the best way to serve the commission's purpose to educate other forensic providers. We think a better way is for department laboratories to share information at forensic science conferences and workshops about specific corrective actions that have been taken. Of course, when RCA's are requested during litigation, they will continue to be provided to the extent they are deemed relevant by laboratory management in consultation with the components legal counsel and the prosecuting attorney.

You recommended a post-doctoral program. The National Institutes of Justice already has some opportunities for post-doctoral research, but nonetheless, NIJ will explore the possibility of implementing a specific grant program to fund multi-year post-doctoral fellowships at federal, state, and local forensic science service providers.

Future of the commission. As you will hear in a few minutes during the Subcommittee on Procedures and Operations report, the SPO report. The SPO has decided to explore the development of a report to document the efforts of this commission during the first two terms, as well as any unfinished business.

As you all know, the commission's current two-year charter expires in April of 2017, about three months after the next administration begins its term. As we have said in the past, it is ultimately up to the next administration to decide whether to renew the NCFS charter, and so we want our staff and commissioners to be prepared for any possible outcome. As always, we appreciate your valuable efforts in helping to improve the forensic sciences in this country. Thank you.

MODERATOR: Any comments out there? I guess before I start, are there any questions or comments regarding Victor's presentation? Julia? Then Jim Gates?

JULIA LEIGHTON: I had a couple of questions that you answered some of about the reasoning you gave, but on the transparency recommendation, there were also conversations about making them immediately available on request electronically, even though we understood it would take some time to post. I notice you extended that time by an additional six months over the year that was suggested--so, I was wondering about that. Also, there was a recommendation about not using FSSPs when it was within the prosecutor's discretion, where the FFSPs don't make these documents available electronically. And, about supporting local efforts, we recommended that local efforts also engage in transparency of posting SOP's, and you gestured at that one. You said you didn't see why a lot of local labs might not be able to post their CV's, like there's something special about you all. I was wondering if you could respond to those recommendations, and the decision not to adopt those.

VICTOR WEEDN: Sure, I can comment. First, it can be noted that the FBI was actually already in the process of posting some more information on quality assurance online anyway, and one of the things that that experience showed was that it was actually more difficult than anybody had supposed, and more costly. So, that led us to consider the extra six months, and we believe that that was necessary to make sure that we could do this across the Department of Justice. We do intend to have it online so that it would be immediately available. And, we do think the Department of Justice stepping out like this will actually help us to provide leadership to some of the state and locals. Although I will say there are several state and local crime labs that currently publish them online, and really are ahead of the Department of Justice in this way. Did I answer your question, Julia?

JULIA LEIGHTON: Well, the issue was that in the interim we had recommended that they be available electronically upon request, even if you wanted to post them. So, there's that issue, and not using FSSP's when it's within your discretion to select an FSSP that makes their QMS system available to all the parties.

VICTOR WEEDN: So, so I'm not sure to what extent we have all the documents electronically now, so I'm not quite so sure that we can make it electronically available, but there is every intent, as we have all along, to make documents available when it is requested, and we will certainly comply with discovery requirements going through the court channels.

JULIA LEIGHTON: I mean, the people we are talking about in this document wasn't just making them available to the defense, but to the public, not that there'd be a discovery battle.

VICTOR WEEDN: I see, I see. The public.

JULIA LEIGHTON: So, the intent is to put them online anyhow, in 18 months, but the follow-up recommendation was in the interim just simply make them available upon request.

VICTOR WEEDN: Okay so it's publicly available upon request. Let me take that under advisement. I certainly understand your comment, I imagine that the issue is simply trying to make that happen.

JULIA LEIGHTON: We are.

VICTOR WEEDN: As we said, we are in the process to put them online.

JULIA LEIGHTON: And, it seems to me, on the root cause analysis, sort of odd that you would share it at conferences, share it at events, and yet not make it generally available to the public. It seems to me that's a bit of an inconsistent reasoning, that either it's something you think you shouldn't share at all, or that there's no reason why the public shouldn't have access to it, if you're sharing it generally with the forensic science team.

VICTOR WEEDN: Well, I clearly said in my remarks that we didn't want them taken out of context, and public venues, when we speak to specific actions, we could put the context around them, and talk with other people who have similar issues. So, you know, that's what we have really done in the past, and we intend to continue.

MODERATOR: Thank you. I'm not sure which tent went up first, let's just go counter-clockwise. Peter?

PETER NEUFELD: Thank you. Thanks for Ms. Yates finally getting rid of "to a reasonable degree of certainty." Having just tried a case where the expert testified for 40 minutes without mentioning reasonable certainty once, and then the judge at the conclusion saying, "Well for all those opinions, do you have them to a reasonable degree of scientific certainty?" And the expert looked up not knowing what to do, I'm glad that you're going to move in a direction to finally get rid of that.

I'm concerned on the code with 15 and 16, and my concern is that I don't think that your characterization that they were minor changes really holds. Both of those items were discussed at length by this group, and for instance on 15, which talks about the duty of the forensic scientist once the case is in litigation, to actually open himself, or herself, up to a call from opposing council to discuss their findings. One of the things that was raised was in addition to the law not permitting it, we would carve out a separate exception if the agency didn't permit it. And, that was rejected by this body, very clearly, and this is the way it was passed, that only if they were instructed that a legal privilege, protective order, or law prevents disclosure, then the scientist working for the forensic laboratory would be obligated to speak to council. And, with the, sorry, what DOJ did is it put the agency exception right back in, and says that "Only when communications are permitted by law, and agency practice." And, so what happened is that a decision was obviously made by the department to create an exception that follows the rule, because this code doesn't just apply to individuals, it applies to the laboratories themselves. So, what DOJ did is it actually made a conscious decision to decline to implement a key component of the transparency intended by number 15. And, so I would like you to be able to tell us what the process was for reaching that decision, and what the reasons were that were articulated.

And, before you do that, I'd also like you to do it for number 16, because number 16, as you may recall, was the notice provision, and it was the sense of this body that separate and apart from what prosecutors and lawyers do, that scientists themselves, or the laboratories themselves, have an ethical obligation to notify affected people within reason, and not just notify a prosecutor. And, what number 16 does is it limits the duty to notify, to notifying the prosecutor. And, of course, the problem with that has been illustrated thousands of times where information is imparted to a prosecutor, it could be years

after a conviction, and then under the prosecutors understanding of what the law is, what their ethical obligation is, it doesn't get communicated to the defendant. We had a case ourselves where the Justice Department, and the FBI did a review of someone's work, they said it was unreliable, it was shared with the prosecutor, the prosecutor never shared it with the defense council, it was shared with the US attorney, and never shared with defense council, and the person spent an additional six years in prison, because of that failure to notify.

MODERATOR: Peter, can we sort of--

PETER NEUFELD: Sure, so what I'd like you to do is tell us what the process was at DOJ for declining to implement those two very important provisions that this body voted on, and what the reasons were, that were given, for that failure to implement.

VICTOR WEEDN: All right, the process the Department of Justice uses to evaluate the recommendations is to first have the recommendations go to the Office of Legal Policy, where they discuss it. They have a committee that involves the various components that would be affected by this, and they go through a process of discussion, and reevaluation. It goes from there to the Office of the Department of the Attorney General, where I and others look at that, and then it goes up the AG's, and the AG's office looks at these policies before the AG would ever sign off on any of the recommendations. So, the key here is it's a very deliberative process. One thing I can say, in terms of this National Code of Professional Responsibility recommendation is it was recognized that there, in fact, was a lot of discussion, and particularly on these particular provisions. So, it was not something taken lightly at all, and we tried to expose both sides of the argument here within the commission on these various areas. I think actually we do end up with something that conforms to the basic tenor of what was thought as the basic issue for each of the provisions. We may quibble to some extent on some specifics here, but I would say that part of the rationale has to do with the fact that we saw this as being a responsibility of individual forensic scientists, and not the overall laboratory. So, for instance, when we talk about informing the prosecutors, through proper laboratory channels, we're really talking about the duty of the individual forensic scientist. I certainly can recognize that that process may break down on given occasions, but clearly the thought is that the forensic scientist wouldn't reach out beyond--that was more a responsibility of the agency, or the office. On section 15, I think our bigger concern was really about honestly communicating, so now the language is honestly communicate, which we think is in keeping with an ethical professional responsibility.

PETER NEUFELD: I have just one follow-up question very quick. What was the reason for adding that it would not have to be turned over if the agency had a practice of not disclosing it?

VICTOR WEEDN: Well, we did make a decision, as you say a conscious decision, to say that there may be a reason for the agency to have some kind of policy that would preclude that particular communication. But, the tenor here, Peter, is that we actually do go out and inform, I think we really do believe in the basic mandates of the code as promulgated by the commission.

MODERATOR: Okay, let's move on, I never swore the witness in. Professor Gates.

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JIM GATES, JR.: Thank you, and greetings to all of my colleagues. Thank you, Victor, for that wonderful overview. Of course, all of us on the commission here commend the department for moving forward with recommendations that it finds overlap with things that we hold as dear values. The use of language of scientific certainty is certainly something that those of us who are scientists always cringe when we hear that in the context of forensic science.

And, I'm sure that every person in this room is convinced that justice ought to mean convicting the guilty and exonerating the innocent, and when we use the expression forensic science, I think we mean science should be applied to reach that goal. And, I think these are values that we all hold in this group. You mentioned in your overview, the PCAST report, and last week something very unfortunate happened, and I'd like to put this in your foreground, maybe you want to respond, maybe not, but certainly something that colors, sort of, my view of what's going forward. PCAST is in the process of writing a report on forensic science. It has been in the process of confidentially sharing this with the department, as you are probably well aware, because PCAST never in doing these reports for the President, never relies only on its internal competences and expertise to write a report. We talk to the true disciplinary experts, and in this case, that would involve the Department of Justice. These discussions are confidential, because the report, as you mentioned, the report has not actually been released, and yet there was a leak last week.

It showed, there was a version of the report, that showed up in the Wall Street Journal, discussed in the Washington Post, and this version led Mike Ramos, the President of the National District Attorney's Association to make the following comment. He said that the NDAA will continue to serve the citizens of this nation in part by defending the criminal justice system against those who would seek to undermine it. Now, to me, that's a very powerful statement, because part of the reason we're here is because the scientific community has been sought to bring it's values and expertise to the quality of forensic science. If when we express those thoughts, it is viewed as undermining the system, then that speaks to a process that is not very likely to be successful in the end of the day.

So, for me personally, you know, I looked at this and I thought this is, you know, it's a little bit like the villagers are going to burn down the castle, and Igor hasn't stolen the brain yet, right? I mean, we've got this thing out there that's roiling the waters, it's a leak that probably didn't come from OSTP or PCAST, because you don't need to do forensic analysis on the documents to figure out where the leak was, and so my main concern is that as this body goes forward, there may come, if it should exist in the future, there may come a time when some confidential conversations will have to take place between either the commission, or some of its sub-committees, or some of the other active bodies it appoints to carry out that communication on a confidential basis, and yet here we have an example of a breech that can be terribly troubling to reaching any kind of consensus on how to move forward.

And, so I want to make sure that this is viewed in your department as a serious issue for some of us who are on the outside. We don't know whether it was an authorized leak, we don't know whether there's an investigation, but this is extraordinarily troubling when DOJ has been asked to play such a leadership position in the class of issues. And, so if you have a response, I'll hear it, or I'll take it offline, or however you wish to respond.

VICTOR WEEDN: Well, I hope you weren't comparing me to Igor. So, the Department of Justice has not seen the final report, so we really can't comment on the report itself. You comment specifically about a leak, and I really can't comment on that, but your point is noted.

WILLIE E. MAY: Okay, thank you. First of all, to all of you, welcome to NIST. For those of you who went on the tours, I'm sure you observed that we have very enthusiastic staff who are more than willing to, and very happy to share with you the work that they do, and I'm sure they were very enthusiastic in their sharing of that, because we like to invite people in so we'll tell them what we do, and why we do it, and why you should care, and we are open and willing to hear your thoughts on how we might conduct that research in a manner that would provide greater impact to US citizens.

As you see, we are part of the Department of Commerce, and you'll see our mission there, won't read it, but--The Senior leadership, I guess I'm a short-timer. Guess my term ends January 20th of this year. In order to provide greater stability for NIST, about six years ago now, we reorganized and established three associate directors, in fact I was the first associate director for laboratory programs, and you can see how stable that made me, I decided to drink the Cool-Aid, and become more political, and I'll be leaving in January. But we learned from that mistake, and I appointed-- So, Kent Rochford, and Kent will you stand up? Kent is the Associate Director for laboratory programs now. We will expect that he will be here for a while, and one of the responsibilities for the ADLP, as it was with me, would be to function as the Deputy NIST Director, and Deputy Under-Secretary, so Kent will have the keys to the kingdom starting in January. So, that will be the guy you will be working with.

And, again we have Phil Singerman, who is the Associate Director for Innovation and Industry, and that means our outwardly facing grants programs, for the most part. And, Mary Saunders is the Associate Director for Administrative functions. Who are we? We are, it says, a world class, a world leading scientific research program. And, since I'll soon be a civilian, I can just say without any concern that NIST is the world's greatest measurement standards program. We intend to keep it that way in the long term. And, that's the part of the organization that's been around since 1901. In 1988 we established a manufacturing extension partnership, where we work with MIT, and small size manufacturers to assist them to compete globally. There are 60 of these manufacturing extension partnership offices around the United States, at least one in each state.

There's an advanced manufacturing national program office, and I'm free now to not say in NMMI because it doesn't roll of the tongue very well. The public name of that function will, from today, be Manufacturing USA, in fact the secretary is announcing that about this time in Chicago right now. So, Manufacturing USA will be the name of a national network for manufacturing engineer innovation. And, we run the national program office that coordinates the activities of the Mountain Nine institutes at the end of this administration we have that targeted to be 15. Up to two will be announced by NIST and the Department of Commerce by the end of the year, and the thing that differentiates the commerce institutes [Inaudible] from the others is that the one sponsored by the Departments of Defense and Energy have to have some function that relates to a DOD mentioned issue.

Now, things like Miracle Makes and 3D printing, we know it has several, several commercial application, but also you can see if a tank gets stuck in the mud, in the war theatre, it would be great to have the ability on the tank to, sort of, manufacture the part that went afoul, and put it in, and keep rolling,

things like that. But, the ones for commerce need not have any collateral government function. Ours will be focused primarily on the needs of US Industry, and they are no target topics. So, you'll hear more about that perhaps by the time we meet again, we should be six institutes including one or two from the Department of Commerce should be public. Then we have a program on performance excellence, it's the Baldridge Program, where we confer a Presidential award in several areas each year. We have two campuses, one that you're on now used to be a 600 acre campus back when we started in and 270 was a lot smaller, and Muddy Branch Road was just that, a muddy branch to us. The campus, I guess those roads have expanded, and we've been constrained, so we have about 578 acres here, 62 buildings on this campus.

And, we have a smaller campus in Boulder, Colorado about one third the size. You can see some of our budgetary numbers here. About 964 million dollars in appropriated funds, and each year between 170 and 200 million in work that we do for others, a large portion of that are inter-agency agreements. Part of our founding charter calls for us to provide measurement services, research and measurement services for other government agencies upon their request, on a cost-reimbursement basis. I talked about the 60 MAP centers. We have ten joint institutes. These are primarily academic institutions where we are engaged in a formal basis, where we actually have our staff embedded on some of those campuses.

And, we have 3,400 Federal employees, there are 3,700 scientists, engineers from around the world who work with us on an ongoing basis. Think you see those are the joint institutes and centers of excellence that due to time, I won't spend a lot of time on that. You just see one of those is the recently established CSAFE, you can see there, that will focus on applying statistics in a more robust fashion to pattern evidence in forensics. From the beginning, you can sort of see the initial functions for NIST, or the National Bureau of Standards. They really haven't changed a lot over the last hundred and some years. We still rigorously pursue the basic units of measurement, in fact we, along with several other institutions around the world, will be redefining the mole, the kilogram, the ampere, and the kelvin, probably in 2018. It shouldn't affect any of your daily lives. However, it opens up some interesting possibilities, for example, the kilogram is a hunk of platinum meridian that's kept in the basement of one of the buildings on the campus at [Inaudible].

It's from, you can understand that a comparison between kilograms are possible, although there is a bit of dispersion in the seventh decimal place among the LeGrande K, and it's sons and daughters has been documented, but suppose you're trying to compare that kilogram with a nanogram, a picogram, that becomes difficult. So, that's one of the reasons that we are changing so that you don't have an animate, at least a physical artifact, and actually basing that on a more scalable function, which will be [Inaudible], and I won't go into a lot of details there, but when you have time, I'll bend your ear until you decide to walk away.

MODERATOR: At the reception.

WILLIE E. MAY: Maybe then. If I have no one around me, I know you're not that interested. But, in addition to realizing these fundamental constants, and doing similar work that we geeks here, we love to do that stuff and talk about it, we recognize in order to be relevant for our country, we have to also spend a significant portion of our research resources on addressing a contemporary problems of society.

And, we didn't just start doing that, back in the 1900's one of the first standards that we developed was a documentary standard, actually not a measurement standard, but it was a documentary standard that established the relationship between fire hydrants and the hoses on fire trucks. There was a fire in Baltimore, the whole city, half the city burned down, because even after fire trucks from all around, Wilmington, Philadelphia, Pittsburgh, Washington, they came and they all watched the city burn down, because their hoses on the fire trucks would not couple to the fire hydrants. There were no standards.

So, that was one of the first standards, and then Thomas Edison had invented the light bulb, but there was no guarantee that you could go down to your hardware store and get a light bulb that would work reliably. We were in the middle of the industrial revolution, lots of buildings, but building materials were of unequal quality, and lots of trains were jumping the track also. So, we got involved with Interstate Commerce Commission to work and fix that through some measurements and standards. You fast-forward to 2016, we're not doing, although we still have some building material standards, we have a standard for a cement that we established and we re-certified over the years. But, if you look at 2016, the topics get different, advanced manufacturing, advanced communications, and you'll see forensic science is one of those. So, we try to change the focus, so now if you went into this, you realize our scientists are very entrepreneurial, we want them to be that way, so we're working on almost anything you can imagine on measurement science, but as an institution that has to be a limited number of hills that we decide to take, so that's what you see there.

And, forensics is indeed one of those. We've had a forensics program at NIST for a long time. I'd say we have probably as expansive a forensics science program as any institution in the world that doesn't do crime scene investigations, we don't actually go out and investigate individual crimes. That program is spread across our laboratories, almost each of our laboratories has a component of that, and that's part of the strength, it's not centralized. As you can see, the special program office that Rich Cavanagh leads, forensics is a matrix run program, where we can draw upon the strengths of all of our technical experts to support that. We've been in forensics a long time, I guess we had one of the nation's first forensic scientists, Wilmer Souder, who actually helped to form the FBI laboratory back in the 1930's, and was very instrumental in identifying the Lindbergh baby kidnapper, in addition to many crimes that he helped to solve during the early NIST. And, for those of you who were not able to take the tour, we can allow you to take a self-tour, it's not too far from here, and any of our staff can direct you down if you'd like to see that later. Two upcoming meetings of interest.

Every, is it every other year, I think every other year, we have a forensics at NIST, and that's primarily to inform the community, and our staff, all of the very great work that we are doing across this laboratory program that impinges on forensics, so that activity will be the eighth and ninth of this year. Any of you who are in the area are certainly welcome, but if you care to venture back here, we'd be glad to have you. And, tell your friends and family about it also. Also, a couple of years ago, almost a year and a half ago, we convene the, there to convene an international symposium that focused on how you manage errors in the forensic science. I mean, we admitted that there were errors and talked about how you could manage those, and try to mitigate those, and hopefully over time, the footprint of those errors will decrease. That was a very, very profitable meeting, and we were convinced to make that a series, so we plan to convene the second international forum on forensic error management in July of this year, and again, well this, I guess it is next year. I'm getting out of here too soon.

Next year, and again you are all invited and welcome to attend. Let me just say, something Victor said, we don't know what the future of the commission is, but I can say on behalf of my colleagues here at NIST, and I hope they'll have my back, since I devoted 46 years to this place, almost. We are fully committed to working with the Department of Justice to strengthen this science that underpins the forensic evidence that's used in court every day to, as Jim said, convict the guilty, and exonerate the innocent, we are fully committed to doing that. But, we can't do that alone. We need the efforts of all stakeholders who work with us to make that happen, and clearly the future in that regard is in our collective hands. Thank you for your attention, and now I think we are ready to move to the next portion of the meeting, the technical merit review panel that I will chair, so if anyone needs to go out and visit the conveniences, this might be a good time to do that, and we'll move into that session in about the next two to three minutes. Well, we'll give you five.

PART II

WILLIE MAY: So this afternoon there will be a vote on three recommendations developed by the Scientific Inquiry and Research Subcommittee. In fact that vote will be this afternoon starting at 4:15. So to inform that vote, we thought we would have a session here to talk about, at least to illuminate, the topic that you will be voting on.

As a result of the 2009 report, the NAS report, we at NIST assumed three new roles. One was to work with the Commission to – ah, with the Department of Justice – to establish this National Commission on Forensic Science. The other was to – in this case we are supporting the Department of Justice.

The second component of our new role was to take the lead with the Department of Justice in this case assisting us to establish the OSAC and administer these guidance groups that were reporting into different functions across the government. So to put together a program so that we could bring these entities together and have maximum impact.

The next two were to validate selected existing forensic science methods and guidelines on an as-needed basis, and how do we define as needed. And develop and critically evaluate new methods with a focus on these methods being sort of metrology to support pattern evidence.

So this is sort of how we interpret it, our role going forward.

And the Technical Merit Panel, as well as some discussions with the Innocence Project and some discussions with PCAST, to be honest with you, and it all seemed to coalesce on these topics. So there were three recommendations. You can read the first. I won't go into a lot of detail because our first speaker will talk about how we plan to carry out this. So one is that we should establish an in-house entity and capacity to conduct independent scientific investigations. The second one talked about further on that same topic. And the third speaks to how we should be working and leading the OSAC organization.

So we have three panelists. We have Rich Cavanagh, who is the Director of our Special Program Office here. And, again, that's an office that sort of coordinates our forensic across NIST.

We have Robert Wielgosz here. The guy who needs no mic, as you'll hear. Who is the Director of the Chemistry Program at the International Bureau of Weights and Measures. He's here representing the Director, at least the Editor of Metrologia, which is a magazine, at least a journal, that's issued by the International Bureau of Weights and Measures, and it's an online public magazine – magazine, journal. And the reason Robert is here is primarily because I invited him. But also there have been some discussions about having Metrologia become a journal that is very accepting to articles – metrological

articles – concerning forensics. And just wanted him to give a presentation on what Metrologia is and what they might be willing to accept.
And finally the third member of our panel is Jeremy Triplett, who is President of ASCLD and also is the Chemistry Supervisor of Kentucky State Police Crime Lab.
So they will all give their perspectives on how we should be responding – how they expect NIST to be responding to these recommendations. Starting with Dr. Cavanagh.
RICHARD CAVANAGH: Well, welcome again to NIST. I hope you haven't gotten too tired on the tours. I was commenting to Willie that one thing we know at NIST when we do tours, everything ends up behind schedule, and that must be the reason we're a little behind schedule. I can't imagine any other explanation.
So we're going to – although we have three speakers, we're not actually going to speak to three distinct components of the recommendations you're looking at today. But I'm going to start by talking about what the NIST plans could be to deal with the technical merit issues that were raised in your recommendations.
And, again, just so I can stay focused, reminding what was in your recommendation, it was looking at research performed by other agencies and by other laboratories. Looking also at NIST research as it contributes to this field. And take a good look at what's out there in the documented literature.
So clearly this comes on the heels and along the lines of what's been talked about in the PCAST report. From listening in on their web meeting on the first of September, they've been looking at a number of topics including DNA, bite marks, footwear issues, firearms, latent fingerprints. I think there were a couple of others. I didn't write them all down. And the NIST thoughts are that we would make an attempt, try something that we actually haven't tried before, and that was we'd start by looking at the three topics. Three of those align very well with what the PCAST has looked at. We'd look at DNA. We'd take a deep look at firearms. And we'd also take a deep look at bite marks.
The reason we're trying those three different topics as our first approach is we have a longstanding expertise that's quite deep in the DNA area. In firearms we have a relatively newer program that's strong but not nearly as well established as DNA. And in the area of bite marks, we're pretty shallow. So we want to see if the same approach can work where NIST has different degrees of expertise as we take them on.
So some of the questions we think of when we think about technical merit are how mature is this field scientifically? What's the underlying measurement or the underlying data? Have there been comparisons made? Are they out of the literature? What's been published? What's been reproduced? And how much discourse is there in the literature today and in history. So that's one component that we want to take a close look at as we dive into these three areas.
A second thing we want to look at is a new emerging approach that the forensic science community is looking at applying in the field or is it an approach that they've been using for a long time? The way we approach these deep dives will look different for those different kinds of situations. And, have there been efforts directed at establishing reproducibility, repeatability, and accuracy, both within a single organization as it spans multiple organizations across the country and around the world. Questions like a statistical basis for understanding how much to expect from a test method. How much confidence should there be in that test method or in that documented approach?
So those are the kinds of questions we think would be interesting to look at to get a better understanding of where those fields stand, and so this is sort of an outline, this slide and the next, of how we see that happening in each of these areas.

One, we first want to convene a meeting where we bring in experts in the field. So we would host a workshop and help, through that workshop, talking to the experts, to help establish what the right criteria and what the right aspects to look at in that specific measurement domain within a discipline of practicing forensics.

The second thing we want to do is conduct a thorough literature review. And to do that we recruit, well, we work with, I don't know if recruit is the right word, the professional librarians and the library scientists around to do a complete, thorough investigation using the most modern tools to do that literature assessment. Not leaving that to a researcher who might be very good in the laboratory but might not know the best ways to explore the existing literature. And that literature review would then be made publicly available as we release our report. So that work of that assessment of literature wouldn't be trapped inside our organization but available to all.

And also, then, evaluate some of the things we see in the literature to see if appropriate laboratory studies have been done to support those claims.

The second half, or the continuing three bullets, in this area, is in the area of inter-laboratory studies. It's not going to be the case where we can undertake and do every single inter-laboratory study that needs to be done to look at validation issues, but where that work has been done, and it's out, and it's available, we would like to avail ourselves of that information. And if there's a space where we could actually take some steps to extend the existing validation work, we'd like to do that. But in our opinion we have to make sure that the participants in that work are de-identified. So people will be free and happy to participate knowing that someone's not going to come back and say, I gotcha. So everything that we've done in inter-laboratory studies in the past has maintained that anonymity so we can get an accurate representation and people willing to share exactly the real results as we'd expect to see them in the field.

Finally we'd like to publish those findings and recommendations. Right now we're thinking the NIST Journal of Research is one place that is openly available to everyone. We also have things like NIST special publications. We're discussing whether there's other places to publish at. Some of this may be picked up by the next speaker as part of that discussion. But right now we absolutely want to be sure this always is an open access journal so there's no barriers to access to these reports.

And finally we want to look at what training components would be provided in that final report so it's not just of interest to metrologists around the world who want to measure things to one more decimal place. We want to make sure the practitioners, jurists, lawyers, judges, will all be able to understand what is contained in this assessment we conduct.

So those are sort of the six components we would like to have in each of the areas that we would look at. Sort of core) to how we think about validation is looking back, is in ISO70.25 where they talk about validation of methods. They say that validation is the confirmation by examination and the provision of objective evidence particularly requirements for specific intended use are fulfilled.

And reading on in the next paragraph, they talk about non-standard methods where you have a laboratory-designed developed method, standard methods used outside their intended scope, amplification and modifications of standard methods. Very specific language around what validation needs in the standards world, understanding that all this language works very well for fields like analytical chemistry and other areas of analysis. We may need to be a little more broad in how we undertake that depending upon the system we're looking at.

Also when you look at 17025, there are notes that say validation includes procedures for sampling, handling, and transportation, and also looking at calibration using record standards. Comparison of results achieved with other methods. Inter-laboratory comparisons. Systematic assessments. Factors

influencing results. There are a lot of elements called out by standard – sorry, from ISO 17025 of what one should include when talking about validation.
So, again, Willie has talked about the various technical capacities that exist on the campus. Again, under the Associate Director for Laboratory Programs, who was introduced to you earlier today, Kent, my office exists, it's a little box off on the side, it's called the Special Programs Office. Today the forensic science research program at NIST is coordinated through my office. The OSAC affairs efforts at NIST are coordinated within my office. And the co-Chair – the Vice co-Chair – for this Commission resides in my office. So we already have a central point where we can coordinate the work that is done in forensics across all organizational structures shown below. And I'm just showing five of the seven organizations. These are not the user facilities, and I can assure you that all five of those have interesting expertise to bring to bear on forensics. So I think the first request from the Commission, we're really well positioned to implement, in terms of having a single coordination office to deal with this work, and I think we have a plan for what we will do in the studies that have been suggested by that Commission.
So, again, I commented we have pretty deep technical expertise in a number of areas. We do a lot of work with fire modeling. Some people I know were taken out to the combustion facility. So if you've got anybody home you want to burn down, just bring it over, put it in that facility, and we'll burn it down for you. But you got to bring it here.
We also have a lot of strength in chemical analysis. Chemical analysis has been around since NIST was initially founded.
Clearly the expertise in human DNA analysis is well-recognized around the world. The guy who has written at least five or six of the books happens to be close by.
We have a lot of expertise in digital multimedia.
We have a strong area of statistical support.
And we also have expertise in firearms and service analysis.
Areas where we aren't so strong is medical-legal death. We're not real strong in odontology. We're not real strong on anthropology. Wildlife. We've got a lot of deer, but they're not on the payroll, we can't really count on them when you need them.
And we don't have a lot of expertise at bloodstain.
RICHARD CAVANAGH: I'm going to at the next slide.
And as Willie points out, well, two more slides, I'll answer Willie's question.
So here's where we're going to start. We're going to start with DNA. Again, there's a long history there. We obviously have resident experts in that space. Not just John Butler, but there are a number of people who've been brought in over the last 20 years who have expanded expertise in that area.
That effort over all those years has been a product, not just of NIST funding, but it's been strongly funded by other agencies. The FBI has been extremely supportive of that work. I mean that in all ways you can take supportive. And yet that's obviously an area where there are continually new challenges arising that need to be looked at. So I think we're in a good position to assess that field.
Firearms and tool marks. We have strong expertise in image analysis and data acquisition. We have a very strong connection in the bullet casing, bullet program, working with our statistical experts. That effort has also been well integrated with practitioners. I think although it's not part of the forensics effort, we recently imaged the bullets used in the Kennedy assassination so they have a permanent digital record of those bullets so they don't degrade, and the whole public can have access to those digital records if they want to look at those bullets on their home computers.
And again, we also are working with our Center of Excellence, CSAFE, to bring in statistical expertise to try to look at those issues, giving us more resources than just our NIST staff.

Again, as I said, in bite marks we're probably not as strong. We do have expertise in nano indentation. We have expertise in characterization of soft materials and polymers. But we would need to reach out to others. One potential was to reach out to the American Dental Association. They've been on this campus – well, not this campus, at the NIST campus here and in D.C. for 88 years with a permanent presence. In fact, there's a lab chair – there's a lab – a room with a dental chair in it, just to prove my point. But what I mean is we have long interactions in this area, and that's one area where we hope to help make inroads when we get to bite marks is to work through those connections to get in touch with the right people to do that kind of work.

So, just in summary, our response to the recommendations coming from the Commission would be to look at three specific areas to see if our approach is sound and is reasonable before we try to take on any more. We want to test three extreme cases.

We will look at (inaudible) the technical merit, and we'll look at validation where it's feasible, because it's not always going to be feasible.

But this assessment is not going to undertake original research. And I think that's an important component of moving the field forward, but that's not part of our response to this program is not to conduct original research and sometimes validation requires original research, so - .

WILLIE MAY: Okay. Before – a bit of introduction to the next speaker.

Now certainly we could publish these results in the NIST Journal of Research since we own the journal. However, what this experiment that we are conducting here that is this Commission, is one that's really being looked at around the world. And certainly I think you have set a very, very ambitious example. And I think it would be a shame if this were looked upon as only being a national effort. I think that we are blazing new grounds that can be shared with the entire global community. Because we have – our citizens travel around the world, and we would like to make sure that they get proper jurisprudence no matter where they go. So that was one of the reasons that in our discussions with PCAST I suggested that we consider an international journal to host some of these activities, and the first one that came to mind was Metrologia, and that speaker will share with you perhaps why I was thinking that way.

Dr. Wielgosz.

ROBERT WIELGOSZ: Good afternoon. So thank you, Willie, for the introduction.

So I've put some slides, at Willie's request, to talk about Metrologia, our journal, and its potential for being a place where Commission on Science and Forensics articles would be published. So I'd first of all like to say that I'm presenting this very much on behalf, with the input of Dr. Janet Miles from the BIPM, who's a Metrologia editor.

So before I dive into our journal, I think one should say where one comes from, so Willie already said that I come from the place where that hunk of metal kilogram lives. So just to put that a bit more formally, so I'm from the International Bureau of Weights and Measures,

Bureau International des Poids et Mesures. As you can guess we're based in France, but we're an international organization. So the land we work in is not France, in fact it's given by France to be an international organization, and we're funded by all our member states which, of course, the United States is an important member.

So what's our role as an international organization? Well, we're the one that works on measurement standards. So what do we do? We bring together organizations, national organizations like the National Institute of Standards and Technology, from all around the world to decide on measurement standards and make sure those standards are the same all around the world. If you can't do that, you can't trade, and of course that goes back to the late 1800s where Industrial Revolution was happening. And as we

may show, although we may have started in the physical areas, we've moved on to new areas including quality of life issues, chemistry, and biology, all of which standards and measurements are important.
So we're based just outside Paris in the Pavilion deBreteuil. For those who follow history, the Pavilion de Breteuil has a rich history. It's on the way to Versailles. It used to be owned by the brother of Louis XIV, Monsieur Philippe Duke d'Orleans, and has passed through several hands and finally into international hands of the BIPM.
We have 100 member states. Sixty of those member states, 40 associates. And that covers most of the industrialized world.
You can't read that, but that's our structure, just to say that we have a structure of an international organization. We were set up by a treaty, the Metre Convention. And every four years the member states come together in general conference to decide the many issues including funding. And we have a permanent management board called the International Committee of Weights and Measures, which the Director of NIST is a member and Vice President. And then we have subcommittees that work in various areas of measurement science including chemistry, biology, and physics. And we have the International Bureau of Weights and Measures, which hosts technical coordination committees, but we also have laboratories and coordinate international comparisons, but I won't talk about those activities today.
More importantly, our role is to make sure that measurement standards are the same around the world, and we do that by mutual recognition. And the way we do that is to compare standards, look at the comparability, and internationally vet on measurement capabilities and agree upon them. And once you can agree on measurement standards, then you can freely trade and make other agreements important to countries in the modern day.
We like to think of metrology, the science of measurements and standards, as an important part of the structure of a nation's quality infrastructure. So it's not just measurement standards. You need written standards, and we see international standards, organizations and national standard-writing organizations, and we see laboratory accreditation showing competence. All those aspects are necessary in order to have reliable and comparable measurements.
And I say this is not the first time that we're talking to the forensics community. So about ten years ago, together with the European network of forensic science institutes, we had a similar set of meetings, not only with the Commission, but lectures talking about equivalence and measurements. And I think in that case, with Europe really driven by requirements of accreditation and adoption of 17025 and needs to look at issues such as traceability and uncertainty in the measurement. And, indeed, a number of experts around the table here gave presentations showing what was actually happening within the United States of America as well.
So the main topic today is Metrologia. And I want to introduce that journal to you as a possible place to publish articles on measurement science and forensics. So what I'll do is go and talk to you about the scope and the audience of Metrologia at the moment. Key statistics as a journal looking at its impact factor. Appropriate articles for Metrologia. So what is measurement science and forensics, at least as far as Metrologia understands it, and what would you publish.
I'll talk about focus issues, which is a way of introducing new topics into the journal. And then Willie asked me to look at an example in chemical analysis to look at the quality infrastructure and reference methods and metrological science in a related area, and I've picked an example from chemical analysis which has some overlap to the forensic area. And then finally talk about benefits to authors for publishing in Metrologia.
So Metrologia is a leading journal dealing with pure and applied metrology, metrology being the science of measurement. So it dates back from 1965. It's owned by the International Bureau of Weights and

Measures. And it's published together with the Institute of Physics. And we publish about six issues a year of that particular journal.
So what's our scope of our journal? Well, as you heard, the history of NIST also revolves around the SI system-base units and so that's part of the scope of Metrologia. But we also deal with difficult measurement problems. And that's the link, probably, to this area where we need to have new methods of measurement where measurement science is looked at for difficult measurement problems.
So just looking at some statistics. We have about 120 articles published from 2014 from about 272 submissions. Over 150,000 downloads in 2015. Almost 3,000 institutes have access to the journal. And we have an impact factor of 2.5, which is very high. The top level in this particular category is not very high compared to nature, but in the area of measurement science it's a good impact factor. And we had over 2,700 citations of articles in Metrologia in 2014.
So we always have a number of articles. We have the six publications. The normal journal comes out, we always have review articles and a technical supplement. But probably most of interest to you is focus issues. So focus issues which we devote to single topics which are of timely interest. The nice thing is that these can be done electronically, so in essence they can be published at any time, but we pull them together electronically and you can have a special interest on measurement science in forensics. So it's quite adaptable, and for the moment we're running a focus issue on dynamic measurement, so that's an example of how it's being used at the moment.
UNIDENTIFIED SPEAKER: what are dynamic measurements?
ROBERT WIELGOSZ: So dynamic measurements are, so, for example, here, in this case, it's measuring – if you measure pressure statically, so what is the pressure in this box, is really quite a different measurement problem for suddenly having a very rapid pressure change and looking at the accurate measure in that system. So that allows you much more complicated and applied measurement of pressure than the standard pressure standard, if you like. So that's what dynamic measurements are. And they're applied in a whole load of fields. Okay?
So, what are the focus issues? What's the advantages of using that sort of mode of publication? Well, it finds us a model to focus on a highly important, highly relevant area in a specific field. The way we do that is to commission an expert in the field who acts as guest editor. We can publish those articles, as I said, in numerous issues and then pull them together electronically so they can be published at different times. And it's a very nice way of introducing a new field into a journal. So it allows you to publish over a certain period of time and then you pull it together and you say here is your focus issue, your first focus issue, in this particular area.
So if one was going to move forward in that way, what would we do? Well, very simple. Need to get a guest editor. Need to agree on number of submissions. And then move forward. So relatively easy to start if this Committee, this organization chooses that's the way it wishes to go.
That does leave some questions as what sort of article would be appropriate published in a measurement science journal? So that's something that probably needs to be looked at in a little detail by the Metrologia editor and guest editor. But we put together these four points. So really we're not looking at all publications albeit it might be important to forensics, but really those ones which focus on metrological evaluation of the methods used for forensic applications.
Looking at the science behind the method and evaluating the probability of getting the right results. Careful description of the method including the measures involved and validation. We heard about validation before.
And very much looking at uncertainty or probability, depending on which field you're looking at.

So what might be a good article? Well, I chose as an example an analyte that we already know from another area, which is insulin and C-peptide. So I came across this article which is a review by insulin: suspected, purported, and proven – a review. Now I don't often read these type of articles, but I found it very interesting, and I found out that this is not a very good way to kill someone because you can recover from it rather quickly. So at least I've done that.

But more importantly, something which you – which it probably is difficult for you to read, where this is not the type of paper that we publish in Metrologia. But it (inaudible) picks up on some aspects, and it's actually the last few sentences that are interesting. Amino assays suitable for clinical use to detect and measure insulin and C-peptide are subject to random errors and cannot be relied upon unless special proportions, including separation by gel filtration or HPLC are undertaken prior to analysis. They do not detect or measure accurately a new generation of synthetic insulin analogs. Mass spectrometry will be required to do this and to validate clinical amino assays upon which convictions have always had to rely on in the past.

So it's that part on the measurement side that would be the focus of Metrologia.

So what I wanted to do was just to show you that measurements of insulin and C-peptide are important to clinical chemistry as well. So what are the sort of measurement science-type articles that appear in those areas and that could be published in Metrologia?

So just to – for those who don't work with insulin and C-peptide, obviously we know that insulin is a hormone that is used to regulate blood sugar. It comes from another peptide called Pro-insulin, which is cleaved from C-peptide and insulin. And when needed, both of those are released into the blood to control blood sugar.

Now the insulin obviously has a (inaudible) effect. The C-peptide has an unknown effect. But it's released in a one-to-one molar ratio. And obviously insulin is cleared by the liver, and is cleared – has a lifetime about three to five minutes, whereas C-peptide is not cleared by the liver, ends up having a lifetime of about 30 minutes. So normally what you find is the ratio of C-peptide to insulin in a healthy individual obviously depends on the lunch you've just eaten, but will be in the ratio of somewhere three-to-one to ten-to-one. Okay.

Obviously, is someone is suddenly injected by a large amount of insulin, that ratio changes, and that can give some diagnostic of inappropriate use of insulin.

In the medical sphere, mass spectrometry is used to set up the traceability chain of reference methods to clinical methods used for patients. So if we're going to measure C-peptide, and I'm taking C-peptide here but I could have done this for insulin, we have to define the measurand. We have to start with a pure reference material, which we used methods to define. We've done that in my laboratory. NIST has similar capabilities. You sent up a primary calibrator. Then you set up the mass spectrometer method to measure C-peptide in serum to set up a reference material. That reference material can then be used to calibrate your clinical diagnostic measurements ensuring comparability of measurements.

So it's really these methods here, these mass spectrometer methods that are the basis of publications. And also those methods used to value assign standards. So that's the metrology part of it.

So, in essence, for C-peptide we have a number of publications. They've been published, not in Metrologia but in other journals. And, for example, this is a method of cation exchange chromatography using isotope dilution mass spectrometry to measure C-peptide in human serum.

Now you wouldn't use this routinely in a clinical lab because you can't do it fast enough, but it's suitable for high-accuracy methods to find a reference value which they would be calibrated against. So that's why it's a reference method.

Just going further in the clinical area, there are regulations for in vitro diagnostics around the world. So if you want to sell in vitro diagnostic devices, you have to meet some of those. Some of them in Europe, a very famous European in vitro diagnostics directives. And it has requirements on traceability. Relates to measurement. And the way that works is that the technical parts of those diagnostics are developed in harmonized standards, and those are the standards that are necessarily telling you how to set up traceability, how a method should be written, what it should contain. And what reference material attributes you should have as well as how reference laboratories should be working to make sure they carry out those measurements.

So the next part isn't really about publications in Metrologia, but it's talking more about the quality requirements for these published methods. So a method can be published if that method is suitable for being used as a reference method in the clinical, chemical field.

So how do we look at that? Well, one has to say it does it meet the requirements of this particular standard?

So I have to say that to do that, in essence what we set up, and Willie May, Director of NIST, at the time he was not Director of NIST, he was head of CSCL, set up a joint committee, international committee, to look at different publications and to see if they met the requirements of the international standards. So it's not enough just to publish a method, then it's assessed by experts independently – that's not part of the publication process – to see if it meets the standards which will then meet the regulations. So there are a number of experts here in NIST work in those areas, and this is an active process where every year people put forward methods and our teams assess them for their comparability with – their consistency with those standards. And all those methods are contained in a database. This is called the Joint Committee for Traceable Laboratory Medicine. And it's a database on reference methods and measurement procedures and services that are offered to industry that can be used to set up traceable methods so they can maintain their accreditation.

And if you look in that database, and you look for insulin – sorry, if you look for C-peptide, you'll see that the method that I showed you in the traceability scheme that you published, it tells you how that method works, with which uncertainty, and how it's been assessed. And, in fact, there is a second method which differs slightly in the extraction procedure, and derivatization procedure. It's also been assessed and found to be comparable. So either one of those two methods could be used to set up this traceability chain and has the metrological characteristics to be used for that type of measurement.

So the last thing is it's not sufficient just to publish a method. You have to use it in the laboratory and make sure your laboratory is doing it correctly. So you enter into the field of laboratory comparisons, proficiency testing. And this is an example. We don't have proficiency test results at the moment with C-peptide and insulin, but glucose, which is part of the system there, you can see this is a comparability test. We saw (youden plots and the lab told us that youden plots two samples were sent around to laboratories. They had to measure them. And they had to state the measurement uncertainty which the box. And they all need to agree with each other.

So within clinical chemistry, you have reference laboratories carrying out proficiency tests. You always have clinical field laboratories. In some countries they have to participate in this on a regular basis, and they must get their measurement result within the uncertainty defined by the reference laboratory. If they don't do that, they fail, they can no longer do those measurements and they have to put in corrective procedures. So that's how the system holds together.

Okay, so I think I gave you an idea of how Metrologia, what types of publications it can accept. And then some ideas about additional quality infrastructure as needed to assess the quality of publications in a

specific field, which may or may not be of relevance also to the forensics area should you wish to develop further quality-type infrastructure.
So just some further benefits. Metrologia, no page charges. We can host free supplementary data on multimedia files. We have hybrid option action options. We can afford cite and ref links of your papers. We use all the appropriate abstract systems. We have an alerting system. And we have professional proofreading and typesetting.
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So if you want to quickly find where Metrologia is, it can be found via our website or just type in Metrologia into a browser, and it's under our publications area. And there you can go to Metrologia home page and search and look at the publication and focus issues.
And I think that – thank you for your attention, but not any questions because I'm passing over to the next speaker.
WILLIE MAY: There will be hopefully time for questions of all of the panel members after the next speaker.
JEREMY TRIPLETT: Great. Can you hear me? This is kind of –
JEREMEY TRIPLETT: Well, it doesn't, so. Hold on, it does. Never mind. The very first thing I said was a lie. It does move. That will be the only one.
They did not tell me when they set this up that my Kentucky drawl would follow someone that is so wonderful to listen to speak. So I apologize to you for that. It's downhill from here.
WILLIE MAY: And he's not really from France, he just lives in France.
JEREMY TRIPLETT: I was going to say no, I'm not. You can tell that. All right. You can tell that. All right. Good afternoon. It's always a pleasure for me to be here and present to you about OSAC. My portion of the talk is going to be a little different from the actual technical merit recommendation before you today. But I think the co-Chairs thought this was also a nice point while we are talking about technical merit for me to give you some updates on OSAC and how we continue to strive to improve technical merit of the standards and the guidelines that are developed. There has been several things happen since I presented to you last time, so I'm excited to talk to you about that.
All right. So just quickly about me. My education is a Bachelor's in Chemistry from the University of Kentucky. Masters in Pharmacy from the University of Florida. My day job is that I work for the Kentucky State Policy in the Drug Chemistry section. Have been there for 13 years. Move this a little bit so I can actually see the slides.
And then I like to say I sort of wear a lot of hats these days. I don't know if you can drown by hat, but if you could, I would be in the throes of it right now. I pretty much exclusively read children's books these days because I have a four-year-old and a one-year-old. So as I was reading this the other day, I thought this is a great photo for my presentation. This is from the children's book Hats for Sale. That's how I feel most days, although I couldn't find a Clip Art with the guy actually buried in a heap of them.
At any rate, apart from my day job I'm also the Chair of the Forensic Science Standards Board of OSAC. And for about the next eight months I believe I am the President – no, I know that I am for about, I believe, the next eight months, I am the President of the American Society of Crime Lab Directors, which you may have heard of.

The following transcript is provided for informational purposes only and may not provide exact quotations from the meeting proceedings. For an full account of this NCFS meeting, please visit the following link for the recorded webcast: https://www.nist.gov/topics/forensic-science/ncfs-meeting-11-webcast

So I'm going to talk to you about two different things. Today I want to talk to you, the majority of my presentation will be about technical merit as it relates to the FSSB and OSAC from my FSSB hat. And then I have a few comments at the end just from my ASCLD hat on things that ASCLD feels are important about technical merit studies and research and validations. And a couple things that ASCLD is actually doing to hopefully participate in the arena as well.

So let's start with the Forensic Science Standards Board. I have four things to talk to you today about how the OSAC and the FSSB is continually improving the technical merit of the standards and guidelines being developed. I want to talk to you about the OSAC leadership strategy session which we just had in June. I want to talk to you about strengthening the technical merit worksheet, which is a required document that accompanies standards and guidelines as they go through the process. I want to give you information about a newly-adopted document called the Principles of Professional Responsibility. And then I want to talk to you about where we are with OSAC membership staffing, not in terms of employment staffing, but the membership terms that are set to the first round, which are set to expire in September. And I have some exciting information for you about membership.

So quickly. Earlier this spring, the Forensic Science Standards Board had a meeting in Kentucky, at my lab. I was excited to host. And among many things, we did sort of a breakdown of where we were with OSAC, wins, challenges. And we developed what we thought was an idea – a need for a strategy session that encompassed all participants – not all participants, but all the different units of OSAC as much as is feasible in one meeting. And we thought that we would just do a state of OSAC discussion among those who could attend.

So we did that. That was on June 22nd in Dulles, Virginia. And we invited three representatives from the FSSB. Each of the three resource committees. The STG, which is the Statistician Task Group. There's an OSAC-wide Stats Task Group. And three members from each of the five scientific area committees. Subcommittees were not involved simply during this first meeting for, you know, efficiency. We had 30-some people already in the room. This was the first trial to see what works. I think going forward we might do one person from each of those units I just mentioned plus one from each of the subcommittees. So we're experimenting with what works best.

But during the day that we met in Dulles, we developed 25 recommendations. And the goal of this was for the OLLS participants to develop recommendations. We captured everything we possibly could. We didn't vote on it. We just captured all the information we could. Those 25 recommendations were sent to the FSSB to evaluate, determine if, how, when, where to implement those recommendations for improvement.

OSAC Affairs was kind enough to help the FSSB categorize those 25 recommendations, and they came down to about four categories. Ten recommendations related to the structure of OSAC. Seven recommendations as it relates to foundation – foundation meaning foundation of the science, foundation of the standards. A scientific foundation of what we're doing. Five recommendations related to the process of getting the standards through our registry approval process. And we had three that were sort of administrative in nature that could be handled by OSAC Affairs. Sort of efficiency issues.

So I'm going to share some of those with you. I'm going to share the ones that FSSB has had an opportunity to work on.

We had a meeting last week where we went through most of these. And I want to report to you the recommendations as I believe they relate to technical merit and what the FSSB is going to do moving forward.

One recommendation under structure was that we ought to have statisticians on every OSAC subcommittee. The FSSB absolutely agrees with this. And the FSSB actually in that April meeting in

Kentucky made the same comment. We have a Chair of the Statisticians Task Group, Karen Kafadar. She's wonderful. She has been diligently working for the better part of the last eight months to a year to attempt to staff every subcommittee with a statistician. We believe that's important. And so we wholeheartedly accept the recommendation because we also believe that to be true, too. So we are currently attempting to find a statistician that would sit on every subcommittee.

Second it was recommended that the Resource Committees should be imbedded into the OSAC committees. And so there's a lot to discuss with that in terms of mechanics. And, indeed, some of it comes down to bandwidth. Do those individuals have the bandwidth to participate on multiple different units, OSAC units. But in general the FSSB agrees. We have seen in the first couple years that there's a lot of value in integrating the Resource Committees and the task group individuals early in the process of the development of a standard rather than later in the process. It's a lot easier to effect change when we have early deliberations on what should be modified, particularly before a standard may be sent to a standards developing organization where they will come out with a final product that OSAC will approve for its registry. So that is something we have – we have empirical evidence that's been official in the times that we've been able to do that. So what we decided last week is that each Resource Committee will detail essentially one of their members to each of the five SACs. Rather than – some of the Resource committees are not big enough to send 29 individual – 30 individuals, the 25 subcommittees and five SACs – some of them aren't big enough to have 30 people to do that. So at a minimum, Resource Committee members will have one individual who is –they're not leading the Resource Committee, they're essentially acting as a conduit that is a permanent member on that SAC, that Scientific Area Committee, to facilitate communication as early as possible.

The other recommendation we see about imbedding Resource Committee members was that the Resource Committee Chairs should be on the FSSB, and we agree. So last week we voted to do that. That's going to take a little bit of working with our charters and bylaws and just because it is an organization that has procedures and documents that have to be amended before you see sort of public reflection of that. It will take a little while to draft up those changes, vote on those changes, but we have invited all three of the Resource Committee Chairs to be a member and at all the meetings of the FSSB. In fact the Statistician Task Group Chair has always been there, so we didn't leave Stat Task Group out either.

But what we have seen, we've slowly been moving in that direction. We invited – it was probably six months ago where we began inviting – the Forensic Science Standards Board has two meetings a month. We began inviting the Resource Committee Chairs to one of those two meetings – teleconferences, not in person, and found extreme value in that. We also invited them to a day – one day, I believe is right – of our April meeting. We thought that was valuable. So we invited them to both days of our meeting last week. We continue to evolve and find ways to bring in the Resource Committee Chairs and integrate them. We think that's positive.

Recommendations related to process. We recognize, or the OLSS recognized, that there are some confusions – some confusion as it relates to standards versus guidelines, especially terminology that some SDOs use. It's just a standard guide, or this is a standard test method, or this is a guideline. So moving forward – we also recognized that there was some confusion over what goes to the OSAC Registry of Approved Standards and the OSAC Registry of Approved Guidelines. And one of the recommendations from the leadership strategy session was that we go down – we essentially narrow down to one registry. It will be the OSAC Registry – Approved Registry – or we have to find another word at the end – Registry of Approved somethings, documents. And then those documents themselves will essentially declare what they are with the verbiage that's contained. So we're seeking to eliminate the

confusion, sort of an artificial barrier that exists between the Registry of Approved Standards and the Registry of Approved Guidelines.
That also will take a while just to make the mechanics work. So we are expecting January 1 is when you'll actually see that change and the Registries merged. But the process has to be revised because there was a little difference in the process between a guideline and a standard. And obviously the charter and bylaws need to be revised and the pertinent procedures.
Another thing that was highlighted at the OLSS that we also recognized is there's a need for the comment period – I'm going to say optimization, and that's my word. Whether we need two comment periods, whether we need one comment period. One thing we know is that we need to find an optimal time for public commenting. And as far as we know to date, that optimal time is early. Earlier than later. So this is not something that is finished, but it's something we're discussing is where is the most effective public comment period that actually results in comments that can change a document. If a document is set and all the editing has already occurred, it's really hard to go back in and re-, you know, do another cycle of revisions on that, so getting comments early, constructive comments from all the stakeholders is important to happen earlier when documents can be or are in the process of being modified.
Some recommendations occurred that we categorize as foundational. And one was to identify and eliminate confusion in terminology. And terminology is really broad – meant to pertain broadly here. Terminology in the OSAC, standard and guidelines, standard guide, standard test method. But also terminology used in different disciplines. And I think that's something that the National Commission has certainly recognized in many of your meetings that terminology is important and that some work can be done to eliminate confusion about terminology. And what we've learned is that words matter, right? So we are working on that.
What we've done, throughout this year we are working on – we're close to the end. We asked the subcommittees to develop more or less a lexicon, a glossary, of terms as they are used in that discipline. And not to develop one definition per term but give us the landscape of terms and how they are used in that discipline. All of those terms were forwarded to the QIC, who is currently collating those terms. And we're going to identify – the goal right now is to identify the 20 terms that are probably the most varied or have the most varying definitions or are confusing, and we're going to try to highlight 20 terms that are the most difficult. We're going to go from there. I don't know if that means we get one definition. I don't know that we'll ever get there, or that we just simply better elucidate – not elucidate – better advertise what these different terms mean in these different instances.
And then lastly from the OLSS recommendations at this point on foundation is recommendation number one, the first and the most widely positively accepted of all the recommendations was to perform an exercise that we're calling the State of the Discipline Exercise and Documents. Specifically the wording from the recommendation is, OSAC should perform a foundational exercise to develop a state of the discipline document. As I've already stated, there's uniform OLSS agreement. The FSSB concurs.
So here's what it looks like. For a while we were talking about making this sort of a put a stake in the ground, but if there's one thing I've learned in the last two years it is that we must continue the naval analogy, and so instead of putting a stake in the ground, I'm going to say we're going to put a buoy in the water to mark where we are. And that's a seal there that is pontificating what I think every day is maybe we should just go off over this thing.
So we're going to perform a foundational exercise. We've already begun the first few steps of that at our summer meetings, but it was sort of late developed during this year, so the bulk of this exercise is going to be going forward. Each subcommittee is charged with developing a State of the Discipline

document, or State of the Discipline documents, that describe where you are currently in training, equipment use, methods, processes, measurements, traceability, reporting, potential for bias, and that etc., etc. thing. This is meant to capture where we are. Put a buoy in the water that locates us somewhere right now. And then ask questions about those.
What are the questions that we ask in this forensic discipline? What products do we generate in this forensic discipline? How well can we currently answer those questions? And how are our answers validated today?
So that is an exercise we are currently – we were just really launching at our summer meetings this summer in Phoenix.
The benefits of doing this exercise for OSAC, and these are my thoughts, not the FSSB's. It does identify where we are. It identifies the current state of each discipline. It identifies the landscape of documents that are currently being used today in forensic laboratories. And then it allows us to develop a roadmap for those individuals that are evaluating the documents coming from the OSAC's disciplines.
Something we learned from actually the Toxicology discipline, I think it was Mark LeBeau's brainchild, is Mark LeBeau provided to the Resource Committee, the Toxicology provided a roadmap. Because sometimes when you're reviewing the document without context, as we talked about earlier, someone not familiar with what that subcommittee is doing or planning in the future could say, this document lacks X, Y, and Z. But as Toxicology has done, they've said, here's what we plan to present, here's our roadmap of the documents we're going to present, so that the evaluator – in this instance this was provided to the Resource Committees – can say, okay, I can let go of X because it's coming in the next document. It provides context that each of those documents fits in.
So if each subcommittee were to develop – identify its current state and the current documents being used, they can develop a roadmap that informs the reader and the evaluator of what's to come, so to speak.
It also lets us know where we have potential gaps. One thing I reported to you last time was that we are now identifying – subcommittees are self-identifying research gaps and needs, and they're posting those on the OSAC website. So it allows us – if we identify our state today, we can identify what we need from granting agencies and researchers to work on.
And the last thing is – on of them – the last thing that I highlight here is that it identifies some commonalities across disciplines. What is broad scale things we need to work on, as a big forensic science. And what are things that this particular subcommittee needs to work on to move forward.
Briefly, the OSAC technical merit worksheet. We continue to try to improve the technical merit worksheet. It's an iterative process. It's constantly improving. We expect to release a new version later this year. And current areas of focus on improving the technical merit worksheet are references, so publications. Limitations of the testing or the standard. Uncertainty. And validation of methods. Those are areas we're highlighting to make improvements to the technical merit worksheet.
Last week the FSSB adopted a document called the Principles of Professional Practice. The purpose of this – this is not really a code of ethics, so to speak. This is a document that states how OSAC will accomplish its goals. How will OSAC focus on generating standards and guidelines. What is the general framework to which we agree as we seek to create standards and guidelines. The purpose is to identify overarching elements that define the practice of forensic science across disciplines and the standards developing process itself. The scope is not going to set a standard or a guideline for individual disciplines, so the Principles of Professional Practice wouldn't speak to drug chemistry, but they would provide a general framework for the development of discipline-specific practices, so what should the

drug chemistry subcommittee think about when they are drafting or working to support standards and guidelines.
The Principles of Professional Practice sets the bar for which OSAC will strive in supporting the development of discipline specific and interdisciplinary standards and guidelines.
A brief update here, and I'm going to try to wrap up.
OSAC began two years ago with official terms. And initially in order to create a rotation, everyone on OSAC drew straws for a two, three, or four-year term. Going forward, all terms will be three years, for the most part. The only caveat would be if we add positions to a unit that isn't in the course of general business. If we add, say, ten positions to subcommittee X, we might have to do an initial rollout of those ten positions that would give a two, three, four-year term so we don't have ten people vacate in three years. Nonetheless, the vast majority of all terms going forward are three-year terms.
But now we reach a point where the initial two-year term members, their term is up. They can renew once. So the FSSB has discussed a two consecutive terms term limit.
So at this point, this was a big undertaking with a 500-plus person organization, a third of which are up to decide whether they are going to continue or whether they are not. And then if they are not, evaluating who is going to take their spot. At this point, of those eligible to renew, about 65% have said they would like to stay. So there is a decent amount of turnover, even on the first term expirations.
I have two different numbers that I got when I was looking at data. So I have included my appropriate measurement uncertainty there with my 65%, though now I realize I don't have my confidence interval, so I do apologize for all the real statisticians. I'm not one.
So we have about 51 new OSAC members this fall, starting October 1, and we still have about 15 positions that are open. We couldn't fill them now for – we just didn't have the people. So some of the disciplines obviously have less people that operate in that space than others. And filling those is sometimes a lot harder than others.
What I'm really excited to talk to you about today is we have five new appointments to the Forensic Science Standards Board. I'm only going to tell you two because they are the most pertinent to this Commission, I would say, not to disparage the other three. But also primarily because the other three have not been notified.
I took the opportunity to make sure these two were notified and agreed to let me announce. But two new members of the Forensic Science Standards Board are Dr. Jeff Salyards and Dr. Jim Gates. I couldn't be – oh let me first say that my next comments have nothing to do with who are leaving those positions. They were imminently qualified people. They're wonderful. But I could not be happier with the two individuals sitting here in this room that will now be on the FSSB as well. There is no one that is a bigger fan of Jeff Salyards. I've had the opportunity to meet him over the last few years. I think he's going to be great. And I find Dr. Gates enamoring with the work that he's done. I've watched all of his YouTube videos, and I think that his addition is going to be great. He can also – I'm hoping he can help me with my taxes.
So what I'd like to highlight with this slide is that there is a very healthy overlap, I believe, between the National Commission and OSAC. We currently have eight Commissioners sitting here, I think one might be absent, we have eight Commissioners that are on OSAC at some level. And then I went through and to the best of my ability, not to a reasonable degree of scientific certainty but to the best of my ability, I counted 18 Commissioners and subcommittee members that are also on OSAC. So I feel like that's a very healthy overlap.
Very quickly, putting on my blue fedora, which is the ASCLD hat, what is ASCLD? ASCLD is a nonprofit professional society of crime lab directors and managers dedicated to providing excellence in forensic

science through leadership and innovation. That's the formal mission statement. We have more than 600 laboratory leaders across the U.S. and abroad that come from local, state, and federal labs.
As it relates to technical merit, ASCLD has three principles we would like to share with the National Commission. One is that validation studies should include forensic practitioners. They need to be included in validation efforts and standards development. I don't think ASCLD has any concern with NIST performing research or doing the evaluation we're talking about, but forensic science practitioners should be included. It's our belief that no one understands the concept of fit for purpose better than those that do that every day. And as the NCFS highlighted in March, of course, practitioners were an integral component to the success of forensic DNA methodologies as they progressed in the last decade.
ASCLD also believes that OSAC has the composition of expertise necessary to coordinate among research practitioners, measurement scientists, legal, and human factors communities. And OSAC – ASCLD – sorry, I put the different hat on for a second – ASCLD believes that the standards development process within the OSAC should not be halted but be allowed to be iterative. Let's coordinate and facilitate standards to the best of our ability today as the science progresses, we'll obviously progress as well.
Lastly, I'm excited to share this with you, too. This is sort of a brainchild between me and the future Chair of this Committee, which I haven't asked if I could announce, so I won't, but they are in this room. And I've already said his name and it's not Jim Gates. So – sorry. ASCLD has a Forensic Research Committee. And while ASCLD's not positioned to be able to do research or fund research, what ASCLD would like to do with the Forensic Research Committee going forward is to act sort of as a switchboard or an operator. And for those researchers that are doing black box, white box studies and need practitioners to be involved, ASCLD would love to sort of link up those people. I keep hitting your water. Here's a researcher needing participants in a – well, let's talk about the Ames firearms study. ASCLD was very involved with that finding people to participate. We recently found participants for the Noblis Indiana University white box eye tracking study, fascinating to me. So ASCLD would love to be a conduit going forward to link up researchers needing people to participate and the laboratories out there who have the practitioners that have the time and ability and want, you know, can participate in things like this to provide experts.
So that's what we have in store for right now. Thank you for your attention.
WILLIE MAY: We are actually, if you look at the agenda, we are out of time for this session. But I'll make an executive decision and grant about 15 minutes for discussion if you would like.
Let's see, I guess I see two tent cards up. Ladies first.
MARILYN HUESTIS: I was. Thank you.
So thank you all very much for your presentations.
So Dr. Cavanagh, we've already had the IWG group start a literature review for certain forensic science disciplines, and we've had the National Science Foundation is in the process of doing that, too. So do you plan on coordinating with them instead of, you know, repeating the effort? And the second question, I'll come back because I'm afraid they'll take it away, the second thing is I think it's fantastic that NIST is going to attack these first three disciplines and go. But realistically, how long will it take NIST to get around to all the different disciplines that are going to need this technical merit review?
RICHARD CAVANAGH: Well, in terms of your first question, you know, hopefully we're not going to reinvent the wheel, and so we'd like to work with people who have already started to do the literature search and build on that. So we don't want to dismiss the work that has already been ongoing in this space.

Secondly, the question is how long is it going to take. I mean, honestly it's a job that will never finish because the field keeps changing. This approach, we're guessing, as an estimate, it might take two years for any one of these to go through. And of course you're never certain and so you leave some window.Some might go faster, some might go slower. So we want to take three, do an experiment for a couple of years to see how well it works, and how effective it is.

MARILYN HUESTIS: Right. So it's just the issue of what about the other disciplines and how long it's going to take to get to them as far as what the Commission is recommending as far as evaluation and that things can't go forward. And I'm on the OSAC, as is Jeremy, many of us are serving both capacities. And the individual disciplines, the way – I know that there has been great effort to expand this and to make potential other roadways open for doing this. But I see that it could be very detrimental that it takes such a long time to get to all the disciplines.

RICHARD CAVANAGH: I guess I'd like to answer that question in a year, when we've had a chance to see if it works at all. It may be, I mean, worst case scenario says that after you do the first three you don't do any more because they don't work. I don't think that's going to be the result, but I'd like to see how well they work and how long it takes in order to get a better estimate.

WILLIE MAY: And also I think you must recognize we do a whole lot here beyond forensics. And we don't have a dedicated forensic staff for the most part. And we can't be all things to all people at the same time. And I think I fully support Richard's response to you. We will do the best job we can on these limited numbers. We will present them to you to make sure that they are of sufficient rigor. And then we can answer that question. But at this point it would just be an idle guess, and the uncertainty on that guess that we would give you would be overwhelmingly large.

MARILYN HUESTIS: Yes. Please don't take this as any criticism of NIST. It's not. The point is that these things are going to take a really long time to do it correctly. It's the idea that we can't move forward with other initiatives without a technical review. That's the problem. Because OSAC is trying to move it forward at the same time.

WILLIE MAY: We understand.

STEPHEN FIENBERG: Rich, I was very impressed by the way in which you laid out both the NIST capabilities and the way in which you're going to try to approach these initial assessments. What struck me was that there is a real challenge. I have been a member of the subcommittee that's been trying to fashion this recommendation and has iterated with NIST. And the key word in the assessment that I constantly hear among my colleagues is the word "independence." That is, the expertise that we hope NIST will be able to bring to this enterprise is an independent assessment of the science as it exists.

So what's the challenge? Well, you laid out three areas. Bite marks I don't think is going to be as big a problem because I know something about the literature, or the lack thereof. But DNA and firearms actually pose an interesting challenge. NIST has resident expertise. And it's part of the controversy. So let's take DNA and DNA mixtures. There are four or more popular programs and ways to carry out that assessment. And one of the two most popular ones is a method developed by somebody who is now on the NIST staff. And so that's a plus in the sense that you have the expertise. But it's also a potential conflict of interest.

Firearms, again, poses a similar challenge. You have an excellent group doing research within NIST at the moment. Really interesting things. You're funding what I think of as very good research in CSAFE, being done in part by my colleagues that I think, at least later on downstream, will be pointed to as really being definitive. But that means that we're not independent. And you need somebody to be able to assess your own group and our activities within CSAFE. Have you thought about that?

RICHARD CAVANAGH: We've thought about it a little bit. One of the notions that we might go down is to potentially bring in a review committee of external people to look at the process and the work product so it's not just under the eyes of NIST but actually brings in external experts to see how well we're doing that job. Not that we – whether we picked the right area to look at, but is our approach not biased one way or another. And we are certainly sensitive, I mean, having experts in the space on our staff gives us a leg up and also is the risk that we get narrow minded and just look at it from that one perspective.
WILLIE MAY: I would just add that NIST has two major oversight groups. We have one called the Visiting Committee on Advanced Technology and they are typically CEOs, university presidents, and they sort of help us to determine what we should do. We have another set of panels that are authorized and selected by the National Academy of Science that looks at how well we do the limited things that we've chosen to do. And perhaps if we go down this road, we could ask them to help us in that regard to sort of give some oversight and comments on the independence that we are – well, take a look at the recommendations.
Ted.
TED HUNT: Thank you, Dr. Cavanagh, for your explanation. I fully support what NIST is proposing to do. I think that's a fantastic step forward.
To Jeremy, I'd make a motion I guess to get the word "method" or "methodology" on your 20 most confusing words because depending upon who's talking, that term is being used in a very narrow sense and others are using it in a very broad sense. I think Dr. Cavanagh is talking about method as almost entailing certain disciplines, for example, ACE-V with latent prints. Whereas if you move over to a more quantitative discipline like drug chemistry or DNA, you have potentially dozens, or even hundreds, of different test methods. And being on the LRC in OSAC, I know that some of the concern of some members. The Resource Committee's was something that probably led, in part, to this pending recommendation, which is their vision, and I don't want to speak for them, they can certainly correct me if I'm wrong, was to have discreet documentary, standardized test methods and practices that are candidates for the Registry to be reviewed by an independent body such as NIST. As I understand it, that's not what you're proposing to do. In other words, you're not getting any feed of independent documents that are candidates for analysis, evaluation, or so forth. But depending upon how you look at the latest iteration of this recommendation, it could go either way. It's not exactly clear about what the Commission, to me at least, is asking you to do. It seems like you're taking a more broad view rather than evaluating every candidate documentary test method in practice. Is that the case?
JEREMY TRIPLETT: I think that's the case. I mean, my understanding is you haven't voted yet, so in a sense there's no recommendation yet.
TED HUNT: Right.
JEREMY TRIPLETT: And once the recommendation comes in, the DAG will likely turn it over to the fellow next to me, who will then come up with a response, what will happen. So the way we're looking – what we're talking about, the way we would respond, is in this broader way.
TED HUNT: Okay.
JEREMY TRIPLETT: I don't channel this fellow perfectly every time.
WILLIE MAY: Dr. Bell.
SUZANNE BELL: Thank you. Actually I have a question for Robert about Metrologia. Thank you for that presentation.
On the open access question of that, if you do – when you say limited open access, I was – for example, if you did a special issue on forensic science, would everybody who has an internet connection be able

to get that? I mean, how does that work? Because I think one of the problems in our discipline is that the folks in the labs can't get to the literature that they need. Thank you.
ROBERT WIELGOSZ: Open access means if you paid a required amount, your particular paper will go open access. So that's what it is. So we have both possibilities.
You're asking the wrong person. I didn't come with a price list, but I think it's reasonably priced.
WILLIE MAY: Robert, can you commit sort of an estimate though?
JOHN BUTLER: I can mention that. For other journals, for example, like Elsvier, it can be $2,500.00 to $3,000.00 per article. So it might be in that ballpark.
MARILYN HEUSTIS: But that's prohibitive for almost – many authors.
WILLIE MAY: Certainly for this to work, that issue would have to be solved, and I think we would have to collectively find a way to do that because I agree with you, most folks, that isn't open access. That is a barrier.

PART III

NELSON SANTOS: Okay, we're going to continue with the agenda; and the next portion is our SPO update, which will be provided by one of our SPO members, Mr. Dean Gialamas. So I'm going to be turning it over to Dean.
The slides should be coming up here soon, Dean.

DEAN GIALAMAS: Sure, thank you, Nelson.
Either everyone didn't want to hear me speak, or everyone's really enjoying their break. For those that are back, thank you.
I'm going to hold on and see if the slides come up.

JOHN BUTLER: The slides are up on my computer.
NELSON SANTOS: Kind of need the slides in order to show the changes we made; otherwise, I'd tell you to go ahead, Dean, but….
DEAN GIALAMAS: Just trust me – thank you very much.

GERALD LaPORTE: If you'll notice, we never have these problems at DOJ.

NELSON SANTOS: That was Gerry LaPorte by the way – just to be clear. Well, we do have the eBinder though, right? We do have the eBinder. Maybe we can follow through that.
Let's do that, Dean. Why don't we start? If everybody has their eBinder up and running, we'll go that route.

DEAN GIALAMAS: All right, well, I'm going to start with slide No. 2, which you can't see but is on your screen hopefully -- just four topics for update.
Just to give everybody an idea of some of the bylaws considerations that we talked about on the Standards and Procedures Operating Subcommittee, a note that will be discussed and included for views and recommendations and a footnote that goes along with that. And then we will talk about some of the proposals that have come forward for the next two meetings for discussion to include for us.
Regarding the bylaws, there was a discussion last time about including some language that was going to be recommended to be added. And there was a lot of discussion by the Commission about that

language. That language was to include: "When work products are adopted by the Commission, technical and conforming authority will be granted to Commission staff."
There was a lot of concern about the variability of the rights, if you will, of Staff and the Subcommittee to make changes to the recommendations and the views documents that were being put forward. And there was some question about the terminology of "technical and conforming authority." So based on a bylaws review, and based on a couple of our workgroup meetings, we decided that the very simple thing is that we're not going to add that language. So that will be removed; there's no need to include it. And that there already is some language in the bylaws that allows for non-substantive changes to be made to documents for the purposes of just procedurally moving them forward.
So the convention that the SPO is recommending, and we'll be moving forward with, will be that if there is a non-substantive revision or minor edit to a document, it will go to the co-chairs of that subcommittee, just to make sure and ensure that the spirit of those changes has not affected the document based on the intent. And that any reconciled document that has any changes that would be deemed somewhat substantial would actually come back to the Commission for review and vote, if necessary. That way, we just ensure the process moves forward. We're not bogged down with bringing bureaucracy to the Commission level; but at the same time, anything that's significant we will bring back to the Commission for review so that there's an assurance that nothing is moving or being changed in a document inappropriately.
There was also a recommendation for a "trip wire recommendation." This is slide 4 now. And that recommendation was something that we discussed and considered over a couple of our conference calls. We, however, found that it was going to be very difficult to formalize the process. We felt that what we just talked about – the idea of non-substantive versus substantive changes – would include that, and that we would include any revision or amendments on the document itself, just like typical document control.
So also it was a good recommendation, we decided that we weren't going to move forward with the trip wire concept just because it was so difficult to formalize in our process moving forward.
Moving on to slide 5, in your notebook there's a Views and Recommendation note that will be added just as an administrative piece. And slides 6 and 7 represent what those are. So on Views Documents, the green language that's on the slide will be what's added. And basically, it's adding two sentences. One is indicating that the portion of the document directly labeled "Views of the Commission" represent the formal views of the Commission. And then information beyond that section is provided for context – very similar to what we have discussed in the past about making sure that the discussion of the document doesn't become the argumentative piece of the document -- that we're focused on what really the core business is, and that's the View and Recommendation.
There's also another sentence that's been added, just indicating that the National Commission is a Federal Advisory Committee established by the Department of Justice and folks can seek additional information – just clarifying our role with the Attorney General.
On a Recommendation Document, the same note is going to be added. So we have a note for Views, and we have the same note, basically, for Recommendations. And it's adding the language – the same sentences that I just read you. But in addition to that, it's just that the National Commission is proposing specific acts that the Attorney General could take to further the goals of the Commission. So it's just, again, outlining what the Recommendation is.
When we get to slides 8 and 9, all this is really doing is just formalizing this process by including that note in our work development process. So this is kind of going in as a supplement to the document,

indicating that when we produce documents, that language will be in our either Recommendations or our View. That's simply all that that's saying.
I'm going to stop there. That's really the summary of what we did on the Committee. Before I move forward to proposals for the next meetings, are there any concerns, thoughts or questions?
Okay, Julia?
PAUL GIANNELLI: So this question was raised about the Views Document, the note addition. Am I on the right page here?
DEAN GIALAMAS: Yes.
PAUL GIANNELLI: Okay, so the sentence that was already in there – "This document does not formally recommend any action by a Government entity; and, thus, no further action will be taken upon its approval by the Commission." And so in several of the subcommittees, talking to other people, they found that problematic. Is this the time to raise that issue?
DEAN GIALAMAS: Well, I suppose it could be; but that wasn't an area of the document we were editing based on our last discussion. So that would be a new item. And I suppose if it was a new item, it could be brought up for us to consider; but it wasn't part of the work that we just did based on what we're reporting on our activity.
Julia, do you have something to add?
JULIA LEIGHTON: Yeah, if I could add to add to that, I guess then I would ask that you take a look at it. And I apologize for not having thought more carefully about this language that was being put on there. But it seems to me that it's not intentional, but it's very dismissive of the Views Documents. And when I think about the kind of work we're putting into them, the kind of leadership we'd like to show through them, the statement of "Here's our view, but you don't have to do anything about it; nobody has to do anything about it," may not be what it means.
I know what we're trying to say. I mean, really what happened was we were producing views documents; and the Attorney General said, "I'm not going to act on them. If you want me to act, call it a recommendation."
And so we've changed how we do things, but I don't think that that takes away from what we thought the import of the Views Documents that we were producing. So I'd ask you to take into consideration, whether it ends up being statement that this document does not formally recommend a specific action or actions by a specific Government entity, and is instead a view that *any* entity that engages in forensic science or uses forensic science should consider when developing policies and procedures – or something like that. We're asking people to take this into consideration; otherwise, we should stop doing Views Documents.
DEAN GIALAMAS: Sure, and I think the intent for that language originally was directed towards the Attorney General. And I think your view is directing it to the community at large, so I think that's a valuable point. If you would do me a favor and just send that to me or share it with me later, then we can certainly add that to our discussion for one of our next committee meetings.
Bill?
WILLIAM THOMPSON: Dean, the sentence just discussed was also a topic of discussion during the Human Factors Subcommittee meeting. And I think the sense of the Human Factors Subcommittee is consistent with what Julia said.
The sentence, as written, has some serious problems. I mean, the first part of the sentence – "This document does not formally recommend any action by a Government entity…." – that's simply not true. If you look at the Views Documents that have been approved so far, the great majority of them recommend that some government entity, do so. So the first part is untrue.

The second part of the sentence – "No further action will be taken on its approval by the Commission…" – I think that's something we all sincerely hope is untrue. We certainly hope that as the result of promulgating these Views Documents suggesting that some governmental entity, whether it be a lab or something, we hope that something will happen. And so I would recommend – in fact, I would even move, if it's appropriate to do so -- that the sentence in question simply be removed. I don't know what the purpose was; but clearly, the way it's written is not achieving whatever purpose was intended. And so I think you should take it out and substitute something else, if appropriate.

DEAN GIALAMAS: Sure, we will take it on advisement. I do want to note though that there was a distinction between a formal recommendation and a view. We had a lot of discussion on this Commission about that. And if we simply remove that, I think we're removing a lot of discussion about the spirit of why we had a Views Document and a Recommendation Document.

I hear what you're saying, Bill; and I think we need to try to probably massage that language a little bit so that we're not misrepresenting what the intent is with a Views Document.

WILLIAM THOMPSON: Yeah, I think Recommendations Documents are recommendations that the Attorney General do something; whereas the Views Document often reflect the view that some other entity, such as laboratories, OSAC – I mean, I looked through the Federal funding agencies, et cetera. So there are a number of views expressed that some government entity should do something, whether it be provide more funding for certain kinds of research, look into something, change procedures, et cetera.

So I think the way you'd separate it is to say something like this is not a recommendation to the Attorney General to take any action, and no further action will be taken by the Attorney General. If you simply said that, then I think it would clarify your intent; and that would remove the unfortunate wording that seems to imply something else.

DEAN GIALAMAS: Sure, sure.

JULIA LEIGHTON: Actually, I wouldn't even say that no further action will be taken by the Attorney General. Presumably, if the view is a good one, then maybe some action will. We're just not dictating what that action should be when we write the document.

DEAN GIALAMAS: All right, okay.

JULIA LEIGHTON: I think what we're saying when we do this is we're saying, again, we think that people engaged in forensic science or using forensic science ought to consider these views, whatever they are, when they do whatever they're doing with forensic science.

DEAN GIALAMAS: And I hear that sentiment that even though it's a Views Document, we still are encouraging some action to be taken; otherwise, we wouldn't have that view to present. So we'll take that spirit back. We'll come up with some language and have something for everyone to digest next time.

Just for clarity purposes though, for me, I'm assuming that since that was a new item that Paul brought up and a few others, the language that is in green is not the controversial piece at this point. It's just the other language that was already there that we'll revisit, so thank you for that clarity.

NELSON SANTOS: Dean, if I can add – I mean, we have two meetings left, and we're still working on trying to (inaudible) our procedures. I'm looking at that, and I don't have a problem with eliminating it. I don't know what – I know the SPO – let's just, unless there's some major controversy, it clearly says that it's a view of the National Commission. It doesn't represent DOJ or NIST. It goes on to speak, so taking that out – and people agree on the green aspects – I would say let's do it because I don't know what's going to happen in January.

DEAN GIALAMAS: I see no harm in taking that whole sentence out.

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NELSON SANTOS: Right, so unless there's a major – we can do a business vote --
DEAN GIALAMAS: Certainly the second half is inappropriate.
NELSON SANTOS: so we can move on because I don't want to address this again next meeting. Okay, let's just – a show of hands – if we eliminate that, is everybody okay with the language in there?
[Show of hands]
NELSON SANTOS: Passes – we don't need John's clickers.
Thank you, Dean.
DEAN GIALAMAS: Well, with that, I get to turn the mic back over to you, Nelson, because we're going to talk about the proposal for the next couple of meetings.
NELSON SANTOS: Okay, thank you.
There's been a lot of talk about winding down and what are we going to do and how we move forward. And I just want to quickly review – I had some slides, but I'll do my best because these aren't in your eBinders.
Is it up there?
Okay, anyhow, one of the things that we discussed at Meeting No. 9 was that we had former meetings and that the attorney General has two meetings, theoretically, to provide an opinion on a recommendation. So any recommendation that we give today, theoretically, by April, you'll be able to get some feedback on. Anything that comes out a recommendation – like, for example, I think there are two that are in Public Comment – I don't know what's going to happen to those recommendations. So I just want to discuss those issues because Meeting No. 13 is April 10th or the 11th; that is certainly a new Administration, regardless of what party. And we don't know what the climate is going to be with them moving forward.
You heard Willie May talk about a January departure. So in the April meeting, there will be a new Director of NIST as well. So I think we need to start thinking about how we can kind of tie up all the work that we've done. And although we have all these documents out there, I think it would be nice – and we discussed this with the SPO – to have a Summary Document, something to kind of say here's the first two terms of this Commission; here's what we did; kind of organize it nicely, provide it; and then add the unfinished business part to the end of that – and here are the areas that we think.
So I'm proposing – can you put the next slide up?
Just to review, so we have these four recommendations that are for final vote today. OLP may get on it and be able to get back to you in January, but it's going to be kind of tough with everything else they're doing. So this is why I'm bringing this to your attention. The four that we're voting on today, I don't know what the status is going to be for April. And I'm just talking reality here.
We have five Views for final vote now that we've cleared up the Views wording, those are fine to go. We have three Views introduced; again, I'm not worried about those because we can vote on those next time and they'll serve us well. And then we have two Recommendations that will likely not get AG action. Those are my words; I have not discussed with anyone. I'm just, just on timing, how things are worked out.
So what I'm recommending is that we don't have any more documents, and that we spend our time for the next two meetings discussing the panels that we could have inform the Commission on unfinished business and begin drafting and putting together this Summary Document. If there's a Views Document that some subcommittee feels very strongly about, then let's discuss that and we'll move forward; this is just what I'm recommending. I'd like to see us have a strong document that we can pass on either to the next Commission or to whatever body wants to see what we did and what remains to be done.

And we can use the structure we have. We can break it down to various sections, so we can put something nice together. That's what I'm recommending, which Willie would take the subcommittees in a different direction. But I think it would be the best use of our time. Honestly, we're probably looking at January as the most productive ending meeting; and I don't know what's going to happen in April in terms what's going to be – what can happen.

We can always meet and we can deliver this document, but we're delivering it almost as a view of the Commission and at the end, a summary report. So we can discuss this in more detail at the wrap-up, but I did want to use this time to begin this process because we did send out some potential panel discussions for the next two meetings. And we're really open to whatever the Commission wants to do in terms of panels, in terms of documents. So I wanted to throw this out now because I think this is the best way of handling it.

If the next Administration decides that this Commission, as it currently is structured, is going to continue, we just start right where we left off and move on. But I don't want subcommittees to be working – I hate to say it – without no action at the end. And then they just have this document that sits there, and it's been a lot of work. I think we've reached a point where the subcommittee has done what they can do, and we should focus on some other Summary Document.

Yes, Judge?

JUDGE JED RAKOFF: This is, I hope, not inconsistent with what you just said. But the Reporting and Testimony Subcommittee, which has a Views Document that's coming out tomorrow on statistical statements, but at our meeting this morning, we decided that we wanted to make some material changes in that document, partly based on comments that have been received, partly based on what we think will be comments coming from the panel tomorrow and from the Commission itself.

So our plan had been to then have a rewritten Views Document of some statistically significance put out again for public comment since it would be changed substantially from what's there now and then have it come up for a final vote at the last meeting in April.

NELSON SANTOS: And as a Views Document, that would work.

JUDGE JED RAKOFF: Okay.

NELSON SANTOS: Because we control the Views Document, so we can vote on it in April. I don't think it's wise to have a totally new document that hasn't gone out there.

Now, that doesn't mean – if there's a Views Document that a subcommittee has had on the docket there and we just haven't gotten to it, please, let's bring that up. Again, in the wrap-up I think we're going to have more of a discussion about a path forward. I'd just like to see our energy put together in a nice Summary Document, in some format that's organized, well-written – so it's not just so many documents that are sitting out there. Do you follow me? You could point to them. I think that would be an elegant way to kind of sunset our term and then let the new term do what it needs to do – if there is a new term.

Stephen?

STEPHEN FIENBERG: Between now and January, I think with probability essentially one, we will actually see the PCAST Report. There was some probability it might have appeared before today, but that has gone to zero. I think that there are a number of items that will appear there that would be worthy of at least some discussion in this forum, and possibly incorporation into the agenda going forward if they're not already there. And I would hope that that could be done.

NELSON SANTOS: Yes, I think one of the things in anticipation of the PCAST Report being issued, we were considering having a discussion panel on that particular issue, which then we can decide on how we take that information and put it in this unfinished business. And I will say that some of you did

provide us some feedback on the unfinished business, which is what you saw; and again, I think we need to continue to have that so we just don't have a list, so we have kind of a well-thought-out idea of what are the things that we think we need to get done – again, as part of the Summary Document.
Marilyn?
MARILYN HEUSTIS: I think that doing the Summary Report is really key to show the progress and to show how everything fits together. So I'm totally in support of that. But I also thought some of the ideas for the panels were great, and there's no reason we couldn't have our working time be part panel that might actually go into that Summary Report. And I really support the PCAST being one of the things we talk about.
NELSON SANTOS: Yeah, and that's exactly the idea. That's why we sent out a list of panels, and we can discuss that—
JOHN BUTLER: It's up on the screen.
NELSON SANTOS: Yeah, that one – I can't see it here. So, yeah, and I think it would be helpful to have the panels inform our unfinished business so that we can maybe put some context about why we think it's important; but that's up to you.
My idea was that we have very little subcommittee time – more time discussing the Summary Report and panels. That's how the format of the next two meetings. Now, if there's some pending Views Document, as the Judge referred to, or some voting that we need to do to finish up some other ones – absolutely, we'll do that. But that's kind of the plan that I was thinking moving forward.
I wasn't on your SPO meeting, but I believe that you folks kind of agreed on the Summary Document to some extent.
I think Julia was up next, Pam – I think.
JULIA LEIGHTON: One thing that's not on the list – and maybe I just haven't read the agendas correctly of whether or not we've been set up to engage on this – while we're engaging with DOJ on this review or how they're going to do the study review, we haven't had a real opportunity to engage on the uniform language for testimony and reporting. And I think the fact of the publication of those drafts is an important event, and it seems to me it's something that we ought to weigh in on – and I'll give away some of my view on this – because in no small part, I think asking us to do it on Regulations.gov is sort of a crowd source way of looking at something is not appropriate for what the topic is. It's something that we should engage on – both on the process of producing them and on what has actually been produced.
NELSON SANTOS: Tomorrow afternoon we are going to have a chance to hear on the OLT the forensic science discipline review.
JULIA LEIGHTON: Yeah, I know they've already been engaging with us on the review. But I'm talking about these –
NELSON SANTOS: The ultra.
JULIA LEIGHTON: The ultra – is that what they…? And I don't think we've really engaged with DOJ on that, and I think those are…
NELSON SANTOS: Well, what I think we should do – and we're kind of short on time – and to wrap up, if we've got any time, is begin discussing these issues that we want to bring up, whether it be the ultras and you want some feedback, and as a Commission talk about this unfinished business and think about what a Summary Report can look like as well. I don't think a 190- or 200-page report is what we're looking for. I think we're looking for something that just kind of coalesces everything.
Go ahead, Pam.
PAM KING: Just to catch Nelson up a little bit too, I think this is a really important idea. We had this discussion in the SPO Subcommittee. I, at that meeting, volunteered to draft or begin drafting – I can't

promise well-written, I can promise at least drafted and organized – but I did commit to doing that, at least to do sort of a summary of what we've done and being to identify and at least someone to take on at least all or part of the responsibility of doing that for the group because I do really think that's important.

The other thing we talked about, just to highlight something I don't think has been said yet, is just that at least within that group, we were talking about what this could look like as being something that's not going out for public comment and that kind of thing, but a business record. So it's coming specifically from not only those of us that sit on this Commission as voting members, but of the entire Commission, including everybody that's at this table, so that it's something that really is a business record generated from the Commission.

So we have had some of those logistical discussions. We'd love to hear later about what other ideas people have. But I did want to just reiterate that that was discussed in that call.

NELSON SANTOS: Thank you.

Gerry?

GERALD LaPORTE: Nelson, obviously I think it's very important to put together a good summary. I think we have a lot of that on the website, and there are lots of documents to do that with. But I think more importantly, sort of a going forward and if this Commission sort of all agrees with each other, I think we need to put together a sales pitch for the next Administration to say why this should continue and sort of what's unfinished business and what this Commission can do to address that unfinished business.

So any business plan, you can talk about what you did that was great; and most people really don't care. They want to know what's going forward. So I think if you put together a nice didactic approach of this is what we've done, this is what we have unfinished, and this is what we'd like to do – and we kind of pitch that to the next Administration.

NELSON SANTOS: This is sort of the dialog I think we need to have to decide what we want.

Judge?

JUDGE BRIDGET McCORMACK: I guess I want to perhaps be a little bit of a voice of dissent on preparing our funeral. (Laughter)

I don't object to a comprehensive pitch document; I think that makes a lot of sense. But I'm not ready to – but it's September; it feels a little early for us to put the brakes on the good work that we're doing. And this is coming from a subcommittee that does not even have another thing in the works. So this is not me trying to – I mean, we will, we'll come up with something really good, don't get me wrong. (Laughter) But we don't have something right now that I'm worried about.

So it's more I'm proud of what this Commission has done altogether, and it feels a little bit early for me to start thinking about sunsetting. And I believe part of a good pitch for the next Admission – and I thoroughly can see that some of you probably know more than I do about whether a Clinton Administration would be interested in continuing this work; but a good pitch would make a difference. A Trump Administration – I don't believe any of you know what a Trump Administration wants to do because I'm not sure anybody does. But I think a good pitch is good for anybody.

But there's even – I mean, I haven't done my ad law homework, but this President feels incredibly strongly about this work. And can you renew a charter in January even though it doesn't expire till April? Has anyone done that homework yet? I'm just saying there are a lot of ways in which this work might continue. And so I feel like it's a little bit early for us to put the brakes on and just talk about a Summary Document – which Pam has already said she's going to do, so it frees up the rest of us to do other things. (Laughter)

NELSON SANTOS: It's not putting a stop to the work. It's like a realistic approach of what we have. I think we can spend our energy putting more documents out, certainly, where the current Attorney General will not have an opportunity to respond to. So we looked at it – and, again, I wasn't at the SPO meeting. Like I said, if there are Views Documents that you want to put out, certainly.
JUDGE BRIDGET McCORMACK: But even if she doesn't respond to them and they're part of the pitch for why the next Administration should continue the work – I don't know.
NELSON SANTOS: Right, but the energy in making that case – rather than spending it in subcommittee, why not spend it discussing what we can do to sell it? In other words, here's the unfinished business -- and there are different ways of skinning the cat; I'm open. I'm just bringing to your attention. I'd like to see – personally, I think there's a lot of work that went into it. I don't think the documents are organized in a way that anybody can pick them up and say, oh, I see what they're doing; they're just organized by title.
JUDGE BRIDGET McCORMACK: Pam on that.
NELSON SANTOS: It would be nice to have them in sort of organized approach to say here are the areas that we looked at, here's what we did, and here are the areas that we still think need to be examined, and we believe whatever we want.
JUDGE BRIDGET McCORMACK: I just think with all this talent around this table, we can be more ambitious than that. That's my only message.
NELSON SANTOS: That's pretty ambitious – I mean, putting that document together is pretty ambitious. But, listen, we're open for a discussion. What I would propose is that we kind of go on to the subcommittee reporting, come back to this in the wrap-up. During your free time, talk about it; and then we'll discuss it again. I'm just proposing a path forward, looking at the realistic aspects of what could happen and the fact that this Administration has said that they aren't going to act on it until the next Administration – so that's all, that's all.
Okay, let's move on. Who's next here?
Accreditation and Proficiency Testing – ladies, are you ready? Obviously, we're having technical difficulties.
JOHN BUTLER: Which document do you want up first? We'll have all the documents only on here, unfortunately.
LINDA JACKSON: Right, I think the Proficiency Testing Recommendation – yeah, page 16. We'll try and go in order.
PATRICIA MANZOLILLO: It's page 16 on the PDF.
LINDA JACKSON: Yes, page 16 on the eBinder, or page 18 if you want to see the red-lined version. So we have four documents that are up for a final vote. One is a Recommendation, and the other three are Views Documents. All of those have already been out for public comment. We have adjudicated those comments, and the adjudication documents were included in the eBinder. And we'll go through just briefly a few of the changes, but don't want to belabor since we have plenty of other things to talk about it seems like.
With the Proficiency Testing Document, we did address the few comments that we had. We tried to make it clear that the three years that was recommended in the Proficiency Testing Recommendation was not that someone should have to take a proficiency test every three years. But if you're not already participating in a proficiency testing program that you should begin doing so within the three-year period.

And also, we just changed some of the language in the Recommendation to encourage all forensic science practitioners outside of DOJ. We changed some of that language to be a little more carrot-like and a little less stick-like – just as the manner in which it was presented.
And really those are the only major changes that were made. Does anybody have any questions about any of those changes?
If not, I would see if John --
JOHN BUTLER: What do you want to do? Do you want to go ahead and vote?
UNIDENTIFIED FEMALE: Move to vote.
UNIDENTIFIED FEMALE: Second. (female)
LINDA JACKSON: Sorry, this can't actually be the show of hands; it has to be the clickers.
NELSON SANTOS: No, I'd have to establish a quorum first – just a second. I just want to go through who we have here for voting. The Ex-Officios will not vote on this. The voting members that are not here: Jules, he has a proxy with Bill Thompson; Phil Pulaski has provided votes; Vince Di Maio has provided votes; and John Fudenberg has provided votes. Jon McGrath has the clickers for those. And so we'll need to have 22 votes to get two-thirds.
Okay, so the first one up is the Recommendation on Proficiency Testing – Yes, No, or Abstain.
[Pause for voting]
The other person that left was Marc LeBeau; and he gave me his clicker and his vote, so I have that as well.
JOHN BUTLER: We're at 32 of 40, and that should be everybody because we don't have the other 8. So we have 97% Yes, 3% No, so this passes.
LINDA JACKSON: All right.
UNIDENTIFIED MALE: John, just for the record, does that vote include the non-present members as well – that 97%?
JOHN BUTLER: Yes, so all 32 clickers that were assigned to somebody have been clicked because Jon McGrath has the votes from everybody; so he's putting in their votes.
Okay, next document you want up?
PATRICIA MANZOLILLO: The Views Document on Accreditation Program Requirements?
JOHN BUTLER: Which page – do you want to do it off of the PDF?
PATRICIA MANZOLILLO: Sure, the clean page will be page 22 in the PDF, tracked changes in page 25; and if you wanted to see the specifics of the adjudication, that's on page 28.
JOHN BUTLER: We can pull up all based on what people want; I have them all here.
PATRICIA MANZOLILLO: You might want to go to page 25, the tracked changes, so people can see.
We had actually four different commenters on this. We addressed every specific comment that was made from each of the four in the Adjudication Document, lining out exactly what was said and then how we responded. One of them did call for to make this a directive recommendation, and we did explain that we didn't feel that was appropriate for the nature of what we were discussing here or the action because there was really no action that could be asked of the Attorney General in terms of this or what this is talking about.
Some were grammatical, and there were many others that talked about the language was very confusing; it needed clarification – what were you really talking about? Some of the comments also recommended the fact that we were asking things sometimes of the accrediting bodies, sometimes of maybe what a forensic science service provider might do, or what standards might be set for the forensic science service providers to meet. So we did some clarification.

There was also an ask for some additional background on why did we even have this – why are we putting this document forward? So we did add an entire paragraph section into the background area, talking about the variation that currently exists, just giving a few limited examples between the accrediting bodies. All that are accrediting to 17025, but just how even those standards you can get and have variation.

And then we did go through – on each of the specific bullets that we had talked about under the Views section, and we clarified the language. We made sure we were being specific when we talked about assessments versus surveillances, using the correct accreditation language. And we also separated out what specifically we would ask of the accrediting bodies versus what would be changes to standards that the forensic science service providers would meet.

The other thing we didn't do, which was also asked, was why aren't you recommending specific things? Why aren't you saying how many times? Why aren't you saying how many times you should do this, how often – these things?

And that really wasn't the goal. The idea of this document was to recognize the good practices that already exist in accreditation of forensic science service providers and just recommended those be built upon – understanding that there are going to be costs associated with all of this. But it was not to criticize what currently existed or to specify a certain amount going forward, but instead to build upon existing good practices. And so that is in some of the Adjudication Document that we answered back.

We did have one other recommendation that came and said that we should also be considering whenever changes are being made for accreditation standards that it should look to other sources. It should look to things such as what is being produced by the OSAC or other organizations out there. So we did add a specific reference to that into the document.

And so that is basically – I don't know if we have any questions on this or other comments?

Peter?

PETER NEUFELD: On the additions, it says: "These sampling plans should include targeted and random sampling of case records." Now, we use the term random sampling of case record; when we use that term with the Joint Commission when there's a hospital accreditation, that means that the inspectors go there and all of a sudden they say, "We want everything from the first week in January 1995." Is that what you mean by that, meaning that the lab doesn't know in advance which record is going to be requested and it's just (inaudible) by the inspectors.

PATRICIA MANZOLILLO: Right, so that exists now in laboratory accreditation; but we wanted to specifically put that language in there because it may or may not always be done. But, yes, exactly – that there will be specific ones, but also they could randomly ask for others.

Anyone else I'm missing and can't see? Okay, then I guess we'll call for a vote on this one.

LINDA JACKSON: So moved.

UNIDENTIFIED MALE: Second.

JOHN BUTLER: For the Views Document, Accreditation Program Requirements – Yes, No or Abstain.

[Pause for voting]

We're looking for 2 more; we've got 32. All right, still missing one. Click one more time with all your clickers. We tested them all – all Yes's worked and all No's worked earlier today – but then the projector worked earlier today when we tried it too.

Okay, so that gives us 90% Yes and 10% No, and we'll go back and figure out who the missing person is and identify that later. Okay, so that passes.

LINDA JACKSON: The next two documents are related to certification. And Cecilia Crouse is going to present those two.

CECILIA CROUSE: On page 42, tracked changes, the first thing you'll notice is that we eliminated in the title "and recognition of." It became very confusing as to who was being recognized, so we decided not to recognize the recognition and got rid of it.

We had five comments on this particular document; and this document, of course, is about forensic science certification bodies becoming accredited. And all of the comments, both for this and the second one, were extremely thoughtful and helpful. ASCLD Lab Board of Directors submitted some concerns, and they were pretty much the same as the Association of State Criminal Investigative Agencies. They had the same concerns, and it was specifically about anything from compensation and benefits and hiring practices and employment contingencies.

And we have an Appendix D, which they applauded, because that particular appendix does cover all the considerations for the certifying bodies. We did add one more thing to that, but I'll tell you about that when we get to the certification of practitioners.

All of the comments were adjudicated. I am very, very grateful for the number of people, especially AFTE, that responded to differences in Appendix A. Appendix A was originally written in 2010 with the IWG, and some things had changed. And we thought we had gotten them all and reached out to everyone – and, well, silly us. There were some things that really needed to be clarified and changed. So we did all of those, regardless of who the commenter was.

And Ted had some formatting concerns -- which we changed every one -- and some clarification of some sentences that specifically on page 3, there was a sentence that had to do with implementing new policies and procedures. And in his words they were a bit cryptic. And when we read it, we said, "Yes, this is a bit cryptic." So we actually added a new sentence that we hope is non-cryptic that has to do with a forensic science service provider may also be impacted and that policies and procedures must be written to address Certification Program. These may include the addition of a certification statement and job descriptions, designation of approved certifying bodies, defined time intervals for certification, and defined personnel actions based on successful or unsuccessful certification. So we were grateful for that comment.

Are there any questions?

TROY LAWRENCE: On the very last paragraph on the last page, it says: "Many certification bodies rely on unpaid volunteers; but requiring compliance with ISO 17024 may require these bodies to hire staff for administration and quality control." Why is this in here?

CECILIA CROUSE: That was a comment that was actually made by an individual on the subcommittee who seemed to feel that the greater majority of certification bodies – for example, ABC has a large contingency of volunteers. And they just felt that for consistency and purpose, that if there were more paid staff that they would be able to march to accreditation in a more uniform way.

TROY LAWRENCE: But does it really matter if an all-volunteer organization can do it by themselves?

CECILIA CROUSE: No, but I think that's automatic that that includes that.

TROY LAWRENCE: I just don't know why it's included if it's not a requirement.

CECILIA CROUSE: Well, we were responding to the overall comment that was made by a subcommittee member who felt very strongly about this.

TROY LAWRENCE: Because I'm a Board of Director for a certifying body, for IACIS. And we are completely volunteer, and we are accredited through FSAB with no paid staff. But this seems to make it look like we're not capable of doing it without having paid staff.

CECILIA CROUSE: No, that certainly wasn't the intent. And this doesn't say "should have" or "may." It just simply says that there would be most likely – I'm thinking administrative staff more than anything. Do you find this insulting?
TROY LAWRENCE: Well, I just don't know the purpose of it.
JOHN BUTLER: Right there, "may require," that I have highlighted, is that the issue?
LINDA JACKSON: Troy, I think that this followed on from the paragraph before that the Commission acknowledges that there will be challenges for requiring forensic science certifying bodies to attain the accreditation. I certainly don't think that this means that you will *have* to hire someone else. But there may be some certifying bodies that because of staffing limitations from their volunteers may *have* to. I think it's just acknowledgement of a challenge that could be real for some bodies.
CECILIA CROUSE: Do you think this would be better in Appendix D as a potential concern and not in the body of the document?
TROY LAWRENCE: I don't know that it's needed at all. If you read this stricken last paragraph, it was even more critical: "An accredited forensic science certification body consisting of paid staff assures…," no it doesn't.
CECILIA CROUSE: That's why we got rid of it.
TROY LAWRENCE: Well, I still think the sentence above it has nothing to do with whether it's a good certifying body; if you can meet it with all volunteers, great.
CECILIA CROUSE: Okay.
JULIA LEIGHTON: I think that I read the tenor of this the way I read the tenor of actually of the documents that have been produced by this subcommittee, which is that in each of them we recognize the challenges that are involved and that there are resources involved. And I think that it would be fair to say that the community that has commented to us has been *very* concerned about that and that we want to make clear that we understand that in some instances, this may cost more. It may require more resources than currently. And to not acknowledge that was insulting to the community.
And so I think both here, where we say just "may require," and where else what we're (inaudible) to, is this takes resources. Doing it right takes more resources – whether it's more time of your volunteer staff or whether it is that you have to hire staff or bring in more volunteers. But the tenor of the comments that we've gotten is that we need to acknowledge that we understand that and we're still calling for this.
CECILIA CROUSE: I mean, I volunteer on a certification board as well; and I didn't take it the way that you did, but….
Judge Hervey?
JUDGE BARBARA HERVEY: I didn't take it that way either. But would it help if you added "may require these bodies to *additionally* hire"? I don't know if that makes a difference or not; but then you've got volunteers and, if you need it, you can have paid staff. But I didn't see it as hitting the volunteers.
MATTHEW REDLE: Frankly, I think that Cecilia put her finger right on it. Where this belongs is in Appendix D at the end because it is an additional consideration for implementation. Some bodies may be able to go ahead and do it without paid staff, and some may find it necessary to hire staff.
JEFF SALYARDS: Troy, just a question – I'm wondering for IASIS if, as a result of this Views Document, if your demand became an order of magnitude greater, would you want that sentence in there to help you advocate with your body or to NIJ that you needed a paid assistant?
TROY LAWRENCE: No, I don't think having it in this document is going to help us hire somebody; we'll do that whether we need to or not. It comes down to whether we can fulfill the request that our customers have. My concern was the previous sentence that got stricken out saying that it ensures that

– that paid staff ensures compliance. It doesn't. And I still think that while it was even stricken from the previous document, I can live with it being in the appendix. I just don't think it belongs in the body of the document itself.

MARILYN HEUSTIS: Can you fix it by just saying – skip the first introductory statement and just say "requiring compliance with may incur additional costs on behalf of the certification body"? That has no qualitative –

CECILIA CROUSE: We did that in Appendix D actually. We added another bullet: "Budgetary constraints may impact the ability to obtain and maintain certification." But that was more of a process for an individual taking care of your staff.

LINDA JACKSON: All right, I am fine just moving that sentence to Appendix D if that will satisfy.

PATRICIA MANZOLILLO: And then we'll not change the document, moving it to one location.

JULIA LEIGHTON: So I move that we vote on that amendment.

MATTHEW REDLE: Point of order, do we even need to take a vote if the friendly amendment is accepted?

PATRICIA MANZOLILLO: We accept it. We're just moving it from one page to another.

CECILIA CROUSE: Thank you, Troy.

JOHN BUTLER: So it's been changed in the document.

LINDA JACKSON: And that wasn't in the Official Views part any; it was in the Background. It just went from Background to Appendix.

UNIDENTIFIED FEMALE Move to vote.

UNIDENTIFIED FEMALE Second.

JOHN BUTLER: Ready to vote.

[Pause for vote]

It's only getting 31, so someone's clicker is slow or something. Okay, 97% Yes, 3% No; so it passes. Okay, next document?

CECILIA CROUSE: The next document is the Views of the Commission for the Certification of Forensic Science Practitioners. You may find the tracked changes on page 68.

We had nine comments and they were all excellent; they were, again, very well-thought-out. Please note that the appendices essentially are the same. So whatever was changed in the appendices in the accreditation certification bodies was also changed here, and so all updates have been made.

One of the concerns of several individuals that commented, including the ASCLD Board, was the first bullet. And they seemed to feel that we were giving people a loophole about specific individuals. So we changed the wording around; and it now reads: "Review available certification programs" -- now, this is the forensic science service provider – "giving preference to certification bodies accredited to ISO/IEC17024 or to those in the process of obtaining accreditation and apply certification requirements to job descriptions for specific positions, including but not limited to, managers, analysts and technical support. For those positions in which certification programs do not exist, review of a State or local agency certification program should be considered."

There was also a recommendation that Appendix D, the one that we just discussed, be also in this document. And so we transferred that as well. So we're going to have to transfer that – no, we don't because that's about accreditation bodies; so that Appendix D is fine. I think I'm talking to myself.

Okay, there was also a concern about entry-level examiners having had certification if they haven't done independent casework. And we feel that that first bullet makes the forensic science service provider responsible for making sure that the individuals are not programmed for failure simply because they don't have experience.

And again, there was a concern about budgetary constraints, so we did add that to Appendix D as well. There was an individual comment about time frames, and once they're hired and how do we make sure that that works and what have you if they don't pass the test. Again, that's reiterated in that first bullet – that the forensic science service provider should be responsible for that. But we did add the sentence: "Certification of forensic science practitioners –"

JOHN BUTLER: What page?

CECILIA CROUSE: It's in the Appendix for Certification of Forensic Science Practitioners. And Appendix D says: "The Commission acknowledges there will be challenges for agencies requiring certification." And then we, of course, listed all of those.

There was a comment specifically from another individual saying that there are individuals who have a comprehensive or general criminalistics certification, and that was not included in Appendix A. And we thought that was very important, so we added that as well.

There was another comment about – they said that forensic science practitioners should not be forced regarding personal certification. It's not necessary, as forensic science is different than other occupations because the work is scrutinized in court. We disagreed with that statement and said that just because forensic analysis ends up in court, it does not mean that certification is not necessary. And we actually didn't see the link in that.

There was another individual comment that said that we should require certification as a condition of testifying at trial. We felt that the scope of this View Document is specific for the practitioner, and the forensic science service provider is responsible for implementing and maintaining staff certification; so we did not add that.

There were several comments, again, about Appendix A.

Another individual said that we should add the word "inspection" to the list of tasks for the footnote regarding the definition of forensic science service practitioner; and they provided rationale. But we cited that we had already voted on that specific terminology and that we could not change that.

Ted gave some excellent ideas with regard to the clarity of some sentences, as well as some grammatical errors; and we corrected those. I did want to mention that he specifically wanted to know about who's making something mandatory and that there was a concern. And we, again, feel that View bullet No. 1 takes care of that. And we did add the sentence: "Requiring forensic science service providers to mandate certification of their forensic science practitioners, et cetera." And that was on the last page. And then we made the other changes that he wanted.

So there were nine comments on that. Are there any questions?

TED HUNT: Mine is just that question about a typo. On the copy I have under "Overview," is the second sentence supposed to be "providers" instead of "practitioners" since you're talking about accreditation?

CECILIA CROUSE: Certification? Well, this is actually divided into two. The first view is for the forensic science service provider. They're the ones that are going to design and develop the program.

TED HUNT: The part I'm talking about, it says, "Complements the accreditation of forensic science *practitioners* who don't get accredited."

CECILIA CROUSE: Oh, got you, thank you. Oh, wait a minute –

TED HUNT: That's the second sentence under Overview. It should be "providers" there.

CECILIA CROUSE: Yes, thank you.

Troy?

TROY LAWRENCE: I asked this question when we had our subcommittee meeting on the phone. And I would just like it on the record – an answer, if we can. I support the Certification Document as it's

written. I'm just curious why the NAS Report says that accreditation and certification should both be implemented to enhance forensic science. Yet we make this a Views Document instead of a Recommendation, but we make a recommendation on accreditation.

And I would like an answer for the forensic science community as to why we're going with views on this but a mandate on recommendation on accreditation.

CECILIA CROUSE: Linda, you had originally answered that question during the subcommittee.

LINDA JACKSON: Again, directive recommendations versus Views Documents are also based upon what can actually be achieved. Accreditation is something that can be directed and mandated within DOJ by the Attorney General. Certification, because of some of the complexities that we've listed out in the document about physician descriptions, Union requirements, a variety of other issues – it's more complex than you can just say, "Just become certified."

So especially in the Federal Government, which the Attorney General, if we made it a directive recommendation, would have control over – that wouldn't happen. So we made it a Views Document because that's as strong as we can make it at this point.

TROY LAWRENCE: My concern is that we're putting time frames that you should be – I think the recommendation said you must be certified within five years, but there's no enforcement mechanism behind this. It's the view that we should all be certified within five years from implementation of this document. If it's a Views Document, shouldn't the view be that everybody should get certified and not start putting timelines as to how fast they should get certified?

And the second thing is I'm sorry for the Federal Government having problems with implementing certification on their people; but you're forcing, or trying to force, accreditation on all the state and locals. And I think you should make them the same – make them both Views or make them both Recommendations from the Attorney General. She can still mandate certification of her people.

LINDA JACKSON: I was just going to see if somebody that's within the Federal Government wanted to speak to that at all, who understands the –

NELSON SANTOS: Well, she certainly could tell us; but all our personnel management is controlled through OPM, the Office of Personnel Management. We actually tried this to do certification of all forensic science examiners; and it has to be something that anyone with a GS-1320, for example, for chemist, it's across government. Can it be done? I assume, if there's enough effort, that OPM could do something like that; but it was very difficult to implement outside of that.

I didn't have an opinion on this either way.

UNIDENTIFIED MAILE: Well, it's also difficult to mandate accreditation on all the one-man shops that are across the country at state and local levels too, but we're doing that.

LINDA JACKSON: Julia?

JULIA LEIGHTON: Our recommendation actually didn't mandate -- I think that our *view* is that all places should get accredited. But our mandate, our recommendation to the Attorney General, only deals with her shop.

And I also think the sort of history of how we've worked is incremental; it's how we work together to get agreement that certification is a good thing. And then we do a deeper dive to figure out, okay, what is it the Attorney General could do within her purview, to make this happen. And so your suggestion, I think, is part of the unfinished business. If we could do it all at once, it would be too big a document. So I think it's part of a process that Pam's going to elucidate as she goes through and shows, literally, each stage that the documents have taken.

But we actually started with a Views Document on accreditation, and then we went to a Recommendation that was specific to what the Attorney General could accomplish. And likewise, we've

done Views Documents on documentation; and now we've gotten more specific. And I think that this just goes to the unfinished business that still needs to be done, which is to figure out what it is the Attorney General could do to implement this within DOJ.

LINDA JACKSON: Thank you, Julia.

Dean?

DEAN GIALAMAS: I have one comment and one question. The first question really is, bullet No. 1 is in italics; and I didn't know if there was reason why that was there in emphasis, or was that just a grammatical or editing carryover?

CECILIA CROUSE: No, it was italicized in the adjudication comments.

DEAN GIALAMAS: That's fine, I didn't know if there was significance; that's why I was asking – like, hey, do this one first or this is really important.

CECILIA CROUSE: No, I appreciate that.

DEAN GIALAMAS: And on the third bullet, which is the top of the next page of that document, it says, "Include certification requirements and position descriptions where possible." It's a philosophical thing with me. I fully support this. I've certified myself; I've been certified for 21 years, since the program even came out, so I have no issue with the concept.

However, putting my crime lab management hat on, to "force," in quotes, certification onto entities creates a huge burden when it comes to personnel issues, pay scale issues, Union issues. And when it says "include certification requirements," I'm wondering if maybe better language might be to say "encourage, and include where possible certification requirements." Because I think the idea of the Views is we want the view that everyone wants to pursue this. But I just don't know, because I wasn't part of your subcommittee, why you would just say "include certification requirements." I'm just really concerned about the burden it places on laboratories in some areas, where they have no control over the ability to provide a pay scale structure, which is typically tied to certification.

CECILIA CROUSE: I think, Dean, that this was included in here because of the success in our lab, maybe. When the NAS document came out, we had 16% of our laboratory certified; and we're now almost at 90%. But we made a concerted effort; we knew it was going to take about five years. We had to get together with the Union; we had to get together with the people that had been there a long time. The only way that we could make this work is to make sure that in the job description, from this point on, that there was awareness there. But there are time increments that are given and experientials that are given and all this other stuff.

So I think to say that we could encourage it, I think that that takes away from what we're trying to do. If you're going to say that it's important that everyone be certified, they need to know coming in that that's how you feel or that's what the mandate is – not how you feel, but that's what the mandate is. So that's why it just says you should include this in your job description.

And I will say that there were issues with people saying, "That's not in my job description." And that's part of the 10%. So this is here on in. So I actually feel kind of strongly about making this a stronger statement.

JOHN BUTLER: So you can have until 4:30 p.m. - we just checked with Jeff and Suzanne – in order to finish the vote on this and then introduce your other document.

LINDA JACKSON: Okay, thank you.

Were there other…?

I'm not sure we agreed on any changes other than deitalicizing that first bullet and changing "practitioners" to "providers." I guess we are ready for a vote if there are no more discussions.

UNIDENTIFIED MALE: So moved

UNIDENTIFIED FEMALE: Second.
[Pause for voting]
JOHN BUTLER: We have 94% Yes, 3% No, 3% Abstain; so it passes. And we had 31 votes, so I have to track down who the missing vote is from; but I'll do that. Thank you.
LINDA JACKSON: All right, so our last thing that we wanted to talk about was, as you remember, the Attorney General had come back with the specification that the DOJ would be moving forward with implementing universal accreditation, but that she requested us to go back and look at how that would really best apply to digital evidence because, A, they were not part of the original charter and that community had not had an opportunity to comment on the document when it was out the first time. And so what we had done, in order to try and elicit the most comments possible, was we pretty much took the original universal accreditation document, made a few changes to make it applicable to digital evidence, and put that out for Public Comment to elicit those comments. And at the same time, we put together a digital evidence subject matter expert panel that could assist us with really educating us about some of the differences between where that digital evidence discipline is -- not only with accreditation in mind, but also just where they are in the investigation process versus the evidence in court process. There was a lot more to learn about that.
And with that original document, we had received – I think it was 77 comments, quite a lot of comments, with some very strong feelings in those comments. And we appreciated that; we were able to use those comments, as well as all the great information that the subject matter experts – some of which spoke to the Commission at the last meeting in the panel.
And so from that, we basically rewrote the document, taking into account a lot of that information. And that is what is currently out for Public Comment now. So we did not adjudicate every single comment that came in because, really, we feel like we addressed a lot of the comments by just completely rewriting the document. But we did send out an Adjudication Document.
But really, what we tried to do was, first, frame the issue with the importance of accreditation – that we, as the Commission, feel that accreditation is important, but kind of recognized some of the things that were brought out with some of the comments. It became very apparent that the digital evidence community didn't really have a good understanding of how accreditation would fit in their operation and what the benefits would be and what the difficulties would be and understanding the pros and cons and how that would happen.
And we thought that it was important that we asked, in our recommendations to the Attorney General, to be a leader for some of those things with selecting the right kind of accreditation standard. There's been a lot of talk from the digital evidence folks about how the ISO Standard 17025, which is for testing laboratories, may not be the best standard to use – although it certainly can be used, and has been used, by certain laboratories already, including mine and Patricia's. But there may be another standard that would be more applicable, and we think that should be looked into -- especially for some of the folks that are doing digital evidence in their organization, and they don't have any other forensic science disciplines. So they don't have any experience with the kind of quality system that is required to be put together for one of the ISO Standards.
Anyway, we changed our Recommendation. So our first recommendation is that the digital multimedia forensic science service providers in DOJ that are already accredited, they should maintain their accreditation. And secondly, the Attorney General should direct other DOJ digital multimedia forensic science service providers to implement the critical steps to accreditation as best practices until accreditation can be achieved. And because we were trying to preemptively follow the new SPO rule of not just tagging another document in the Recommendation -- Jonathan helped us write the sentence

that just basically, very briefly, encapsulated what those critical steps are. But they are gone through more specifically in that Critical Steps document.

And that the Attorney General should require that Federal prosecutors, where practical, in cases where they are in a position to request forensic testing, contract with accredited digital and multimedia evidence FSSPs – and, obviously, this would not apply to analyses that were conducted prior to the involvement of a Federal prosecutor.

This particular bullet, in the Public Comment that is open now, we've already received 10 comments; and that's one of the areas that has received a fair number of those comments – partially because it seems that there are a lot of task groups and multi-jurisdictional-type taskforces that work where state and locals and federal folks work together on different things. And so that could cause a little bit of confusion with who was doing what.

And then the Attorney General should appointment a group to determine the best standards and supplemental requirements for accreditation, especially for those that are not affiliated with a provider location with existing accredited services. And that the Attorney General should provide education to the community on accreditation, the applicability, the requirements, and the benefits for the digital evidence discipline. And part of that is also looking across the areas and really determining what in there should be subject to accreditation and what should not.

The tools that are given to an officer on the street to be able to take evidence and submit it into the laboratory – they're using a tool that's been provided, and it's probably been evaluated by someone. That person is probably not necessarily part of the accredited part versus the people who are doing the more complex evaluations not on the street.

And that the Attorney General should encourage, by all means possible, the path to accreditation for all digital and multimedia FFSPs, using any available mechanisms. So that's just an added bullet of encouragement.

So that's kind of the summary, and then we'll take the rest of our four minutes for discussion.

Troy?

TROY LAWRENCE: This is out of my field. One of the things that I was concerned about was the first bullet there – scroll down just a little bit. It says that the Feds should be accredited with 17025, yet our fourth bullet says that we need to have the Attorney General get a group together to find out what is the best standard to accredit to. Shouldn't those be reversed?

LINDA JACKSON: It actually does say 17025 or 17020, and those are two different standards that you could choose from.

TROY LAWRENCE: Correct, but if No. 4 says let's get a group together that can determine what is the best standard, shouldn't we do that first before we mandate you use one of these two standards?

PATRICIA MANZOLILLO: Right, so that's following upon whether to maintain the accreditation that has already been achieved under 17025.

LINDA JACKSON: Or prepared for.

PATRICIA MANZOLILLO: Or prepared for – so there's already been a precedent that says 17025 has been achieved by DOJ labs and they should maintain that. And it was under 170.

Now, we've already talked about that there are other entities and that we recognize they have different challenges. So there's no reason to say all of those that are currently under 17025 should give it up if they've demonstrated that it does work and it can work for them. But that doesn't mean we shouldn't explore what's coming out or what may come out in the future.

TROY LAWRENCE: The other question I had about bullet No. 4 is when we're saying that the Attorney General should get a group together, shouldn't that be organizations like SWGDE or the OSAC who already have those people place? Why don't we just recommend that she use those?
JULIA LEIGHTON: Well, I think that OSAC is not looking at accreditation standards. I mean, she could do whatever she wants to task it; that might be one recommendation of how to do it. But we're not dictating that; we're just simply saying, you pick.
TROY LAWRENCE: Well, but it's our recommendation; so why don't we recommend that they use Scientific Working Group on Digital Evidence, who also have multiple members on OSAC?
LINDA JACKSON: Well, we'll look at that.
Matt?
MATTHEW REDLE: Troy, was this the particular document that you felt the Attorney General was being told to order non-federal employees to follow?
TROY LAWRENCE: I think the very last bullet – "The Attorney General should encourage, by all means possible, the path to accreditation utilizing *any* available mechanism," -- means we're going to withhold funding if you don't get accredited, yes.
MATTHEW REDLE: Because the first two bullet points are obviously just addressed to DOJ digital evidence people, and she can certainly do that.
The last four are all things that have to do potentially with non-DOJ employees that I would suggest she has the authority to do each of those as well. For instance, she can instruct U.S. attorney's offices to prefer accredited shops over non-accredited shops. She can ask for people within the Department to formulate a group and determine the best standards and supplemental requirements, recognizing that while DOJ may have done some things in the past, there may be better ways of accomplishing more bang for our buck in the future. She can provide from her bully pulpit recommendations to the community about accreditation and its benefits.
And that leaves the last bullet point being the funding mechanism, which certainly the Department of Justice has – and Gerry can correct me if I'm wrong – but I think the Department of Justice can kind of identify what the requirements are to apply for grant funding and other forms of Federal funding through DOJ and BJA, NIJ – all those Js.
GERALD LaPORTE: No requirements at this time.
TROY LAWRENCE: My concern was that this will make a requirement that if you want future training or you want money for your forensic unit, forensic lab – because we have a lot of taskforces, Internet crimes against children taskforces with a lot of state and locals that they wouldn't get training if it wasn't for this type of funding. They aren't going to be able to get accredited in all reality. And this just seems like a threat.
I would be perfectly happy if it said, "The Attorney General should encourage the path to accreditation for all FSSPs." But when you start throwing in "utilizing any available mechanism," and "by any and all means possible," that's where the threat comes in.
MATTHEW REDLE: Would you have any objection to it if it included, "and the exercise of good judgment"?
GERALD LaPORTE: But, Troy, you need to keep in mind though that when you do a recommendation like that, we'll be gathered here in 20 years and there will be a whole bunch of people that haven't done that. The whole point of this is to put the hammer down gently and say this is what's coming up; get yourself prepared and get ready to go.

There are a lot of carrots to this as well too. I mean, we have grant money that's available for this sort of thing. But you can't just sit around and say, you know, we really encourage it. There's no enforcement mechanism, so one way to help enforce that is to make the grant funding in the future a carrot.
TROY LAWRENCE: Okay, why don't you put that on there? We're going to withhold your grant funding. Why just say "any means possible"?
MATTHEW REDLE: What if they were to provide additional funds to you to facilitate that?
TROY LAWRENCE: Well, I think a lot of labs are going to need funding if they're going to be mandated to have accreditation, absolutely.
MATTHEW REDLE: Sure, and that's kind of been the experience in some other disciplines as well, where funds have been made available to help facilitate that. Would that be a good thing?
TROY LAWRENCE: Oh, I think funding is always a good thing for state and locals.
MATTHEW REDLE: Okay.
JOHN BUTLER: May I just interject here? You're going to meet as a subcommittee – correct? – between now and January?
PATRICIA MANZOLILLO: Yes, so this is out for Public Comment again.
JOHN BUTLER: Okay, so there are 15 more days of public comment on this document. So there will be a chance for the subcommittee to work on it further. And then they'll be discussing it in hopefully it' final form, in some format, and adjudication at the next meeting in January, right?
LINDA JACKSON: That is correct. And I know our time is up; so anybody that has any more comments, if you could please forward them to us so that we can consider those as we do that, that would be awesome.
JULIA LEIGHTON: But I do think it's important for the Commissioners to know what's been happening in the subcommittee. This generated a huge number of public comments – some thoughtful and some, frankly, just nasty. And taking a look at it gives you a tenor of what the community thinks about being communicated with about what sort of standards might be appropriate and what sort of quality management systems might be appropriate.
And this document, I think, was yeoman's work principally by our Co-Chairs. It's a real step back from what we said earlier about accreditation, and I think it sort of faced up to political reality – that this is a community that's going to have to be brought along.
But I think Gerry makes a good point; and, yes, part of the point is, all right, calm down, everyone, but this is coming. Quality management matters. And so I think it's important as Commissioners to recognize that we stepped back from that earlier document not because we collectively – I think some of us individually – but not because we collectively think that there's some big hurdle to getting these folks to be accredited but because of such the vociferous response and trying to find a way to bring this conversation forward. And I just think that's important for the Commissioners to appreciate when we ultimately get to what this final document looks like and voting on it. Thank you.
JOHN BUTLER: Thanks.
So you'll have 15 more days for public comment on that; and then the subcommittee will meet and address those, and we'll discuss it next meeting.
Scientific Inquiry and Research?
SUZANNE BELL: Thank you.
Good afternoon. We received two comments on this document, one from Ted and one that really wasn't a comment on the document so we didn't address it. And if you want to look at it, you may; but we just felt it wasn't a comment on the document.

I think a lot of the debate on this really happened when we were talking about the Views Document, which has already been passed. So this was to specify recommendations and to answer the – this is on page 95 of your binder and then the adjudication of public comments.

And essentially, well, we made no changes; but we tried to make it clear why we didn't make changes. So philosophically, we wanted to make the point to NIST that we really, as a body, want to have the underlying science validated or examined or tested or evaluated; but we could easily go down the road where we spent all our time trying to define "test method," "method," and so forth. And those terms, I think, vary from discipline to discipline. And that was generally our consensus because a "test method" to chemist might be different than a "test method" to somebody doing trace evidence.

So we tried to construct the document such that the intent was clear. We would like NIST to evaluate, to look at, to examine this – and we didn't want to put artificial constraints on them. So that's why we stuck with the definitions and the explanations that we had for these. And we also, I think as we saw at noon, I think our trust was well placed because these folks have been doing this for a very long time and have developed what we think – I mean, it looks like a very reasonable approach and what we had in mind.

And we also recognize that there are two mechanisms by which this can be addressed. One would be a NIST review of the core science as they see it; and they can define that. And then the other avenue is the OSAC and the technical merit review. And the technical merit review, again, we discussed this one quite a bit because there were a number of suggestions about how to beef up the technical merit review, make it the primary method of doing this or not. And we came to the consensus that, A, the OSAC process is still evolving. We heard this afternoon that technical merit changing and evolving; and clearly, there has been a response to that. So we're comfortable with having both those avenues available and both of those be under the purview of NIST and the group in charge of that.

And then finally, Ted had made one comment about our charter doesn't really let us talk to NIST. Well, that's true; but we're going to do it anyway. And, clearly, the sense of this document has been translated. So we made no changes to the document that was put out, but we did list the adjudication in some detail if you wish to read it. But there's not a redlined document here because we left it as it was. So it stands; it's ready for a vote after discussion. And I think this was probably the most interesting and involved debate that we had as a subcommittee; and I think most of us share the feeling that this is probably the most important thing we have, as a subcommittee, done. And we understand that it's different than the forensic community has done in the past; but I think the feeling is, very strongly, that this needs to be done. And we feel like the avenue that's been laid out and the people that we've entrusted to do it are capable of doing it.

With that, if there are questions or anything that we can clarify for you?

Yes, Ted?

TED HUNT: I wanted to follow up on my question earlier to Dr. Cavanagh. He seemed to indicate that what NIST is intending to do is more of a foundational disciplinary review. When I look at this document, what it seems to me to be asking for is a document-by-document assessment of the OSAC candidate standards that are coming out.

For example, Recommendation No. 3 requests that the Standards Board should commit to placing consensus documentary standards on the OSAC Registry of Approved Standards for only those forensic science test methods and practices where technical merit has been established by NIST. When you go back to Footnote Nos. 3 and 4, these are clearly specific individual documents. You're defining a test method and a practice, as defined by ASTM: "A test method is a definitive procedure that produces a

test result," and "a practice is a definite set of instructions performing one or more specific operations that does produce a test result."
So these are discreet documents; and it seems to be – correct me if I'm wrong – this recommendation seems to be at odds with what Dr. Cavanagh said NIST is going to do.
SUZANNE BELL: Well, we respectfully disagree on that because the test methods, for example – I mean, there's a difference between the underlying science and a test method in our mind in that if you look at DNA, you're talking about capillary electrophoresis, you're talking about PCR. If you talk about how it's applied, that's a Standards document; and that's where technical merit will be established, either by NIST or by the technical merit review document that's prepared. So really – and correct me, Subcommittee, if you disagree. But our sense was that, for example, there are some things that the underlying science and foundations of – like analytical chemistry – are in a different state than, say, for pattern evidence. And certainly the three that were listed seem to make perfect sense to me.
But we envisioned and in our opinion the document is clear that NIST is going to do two things. They're going to do what Dr. Cavanagh described this morning, in general. And then also, within the OSACs, beef up the technical merit where they're doing literature reviews and things that we have talked about as a subcommittee before. So it's not an either/or; it's a partnership, but we're speaking very clearly to NIST and the OSAC structure here.
And the documents are there for reference; they're to help it out. But we just did not want to get trapped – and I used that word on purpose – in trying to define every term to the point that NIST has no flexibility in using scientific judgment.
TED HUNT: I just wanted to make sure that this is specifically requesting that each candidate documentary standard produced by NIST that's a test method, as that term is described in ASTM -- and actually, OSAC has its own definition of test method – you're requesting that NIST evaluate each one of those documents before the Board commits to putting them on the Registry. Is that the request?
SUZANNE BELL: No, that's not the request. The request is that NIST evaluate the foundational science, where required, and that the technical must be more rigorous than it has been in the past.
TED HUNT: Okay, well, that's not what No. 3 says from my perspective because when you're footnoting in Nos. 3 and 4 the definitions of test method and practice, those are documents. And you're saying, in No. 3, these documents should be assessed by NIST for better or for worse. I don't even address that. The point is it seems to me clear that in Recommendation No. 1 – and this is also somewhat based on my involvement in OSAC and the LRC – there are certain members who believe strongly that each discreet candidate test method produced for potential enrollment in the Registry go to NIST and be evaluated before it's put on that Registry. And you're telling me that's not what you're asking NIST to do.
SUZANNE BELL: No, and from the OSAC, I'm on a subcommittee; and I would never have interpreted it that way either.
TED HUNT: Then why are Nos. 3 and 4 footnoted? Because those are documents; those aren't the underlying foundation of the discipline. Those are documents.
SUZANNE BELL: Well, partially in response to earlier comments that things were not footnoted to give a reference to. I mean, it's there as an example; this is what it is. But how you define those definitions is going to vary from discipline to discipline.
If I'm in an OSAC, where I'm promulgating a new method for doing drug detection by GCMS, I don't have to go back to the 1800s to tell you about chromatography. So that's going to be different discipline to discipline. And I just didn't see – and the Subcommittee, correct me if I'm wrong – a way to do that; so we decided to make it general enough and let NIST do what NIST does.

TED HUNT: That's the consensus of the subcommittee about what that means – that document? It's not meant to say that each OSAC candidate standard test method has to go to an independent body or NIST to be assessed or to be tested to see if it produces accurate results. That's not –
SUZANNE BELL: That's not the intent. The intent is for technical merit to evaluate that.
TED HUNT: And that's going to be done how?
SUZANNE BELL: Through the technical merit review process that is in place and evolving at OSAC, as what Jeremy was talking about because there has been back and forth on trying to improve that process.
TED HUNT: And that doesn't envision a wet lab type evaluation of that method? In other words, let's take this recipe for how to conduct this test and go through it and see if it produces a valid and reliable result?
SUZANNE BELL: Well, no, because certainly if a method gets to the point where it's going to be proposed as a standard, it has to be validated in the literature; it has to be peer reviewed. So we're not asking another entity to, say, make sure. The scientific back and forth should have done it or Technical Merits would say, nope, you're not ready to go.
JEFF SALYARDS: Ted, in fairness, I think it does, at some level, require wet chemistry. It just should have already been done.
TED HUNT: That's my point, yes.
JEFF SALYARDS: So one of your comments, a very good one, what's the difference between a study or a research document -- so I think we used the term "study" to get at somebody, somewhere, better show that this works. If you say you can detect molecule *X* with FTIR, somebody somewhere better show that that technique actually works for molecule action.
TED HUNT: I agree with that; it's just that the different terms seem to be confusing as to who's supposed to be producing these. Are these supposed to be produced by NIST? Are these supposed to already be in existence?
And that's why I was very concerned about how vague – and maybe it was on purpose – the document was written to sort of be available to conform to different interpretations as things develop. But being asked to vote on this – it's very difficult to know what you're voting on.
JEFF SALYARDS: Right, so I think it's not meant to be vague but meant to be flexible. That if NIST ponies up, maybe with these first three disciplines, and says, hey, those instruments that you used will actually do some of that chemistry, great. But I think they've also said, "We're not the people that do the wet chemistry on all of this."
There are lots of invested parties who will probably do these studies. And in the absence of NIST to evaluate this, maybe there's an ad hoc Technical Merit Committee we wanted to the OSACs the freedom to say we don't want to stop progress; so we tried to add in as much flexibility as possible but still, maybe to Gerry's comment, keep a little bit of the teeth that we shouldn't be publishing standards with the implication that they're valid if there are no studies and nobody has even given some review of does this make sense, is this the right thing to do. So we're trying to keep those teeth and give it as much flexibility as possible.
SUZANNE BELL: Marilyn?
MARILYN HEUSTIS: I was previously very concerned about the progress stopping. And I appreciate greatly the subcommittee's effort – and I'm on that subcommittee – to come up with an alternative so that progress doesn't stop.
And so with Ted's talking here, I really do sort of think the technical review by NIST is going to be maybe very much broader in scope and depth; but that the Technical Merit Review Committee that can

independently be set up by OSAC will be looking at every standard that comes out. And so they won't be looking maybe at the whole field; they're going to look at each standard, and they give a way for the progress to move forward when if it had just been NIST, it would be years and years that these standards couldn't get out.

So I do think that the committee has done a good job of providing a way to go forward, and I think it will allow OSAC to do its work. Thank you.

SUZANNE BELL: Fred?

FREDERICK BIEBER: Who could argue with Technical Merit evaluation? My question to all the members of the committee is have you thought about a timeline – following up on the last comment? And, again, I have to come back and comment on my legal inexperience. But does this in some way give too much control and power to NIST and obviate Daubert and Kumho Tire and take away the Court's ability to look at the body of evidence presented to them in a voir dire or admissibility hearing and make its own decisions?

So I need to hear from attorneys in the room, who are on this subcommittee, who may have reflected on this. And is this creating an administrative nightmare that will delay some of these areas of forensics getting on this imaginary list for a decade or more? That would be a question in my mind – not necessarily a concern but a practical question.

SUZANNE BELL: Peter?

PETER NEUFELD: I didn't even have my card up.

SUZANNE BELL: No, but I need help.

PETER NEUFELD: I'm on the committee, so I'll – I guess I'm the only non-scientist on the committee.

There are several judges here who could answer the question more directly than I can, Fred. But having been in the (inaudible) enough and seen enough judges, I think they will view this the same way many view the National Academy Report or other reports. It's another arrow in their quiver. Judges are certainly free to find something more persuasive or less persuasive; but ultimately, judges are the gatekeepers. And this doesn't in any way deprive them of that role; it just gives them the opportunity to make better informed decisions. And isn't that a good thing?

SUZANNE BELL: Gerry?

GERALD LaPORTE: I just want to say, I think Ted is bringing up a really good point because as I read this, we're saying that the required studies should be independently evaluated and accepted prior to the creation of any documentary standards involving test methods and practices.

We go on to define what a test method is, which is "a procedure that produces a test result." To me this says – I'm listening to what Ted says, and I agree with him; to me, I'm reading this as any test method. So if I'm doing drug analysis, and I do TLC, GC/MS, FTIR and HPLC, it sounds like TLC, in and of itself, for cocaine is one method. TLC for heroin is another method. TLC for methamphetamine is a third method. I mean, that's what this sounds like to me the way we've worded it here. And I admit – I mean, I voted to push this through; but Ted's kind of –he's messing with my mind right now because as I read this, I'm getting more confused.

JEFF SALYARDS: Gerry, I think though a "method" in this way, it's as declared by your laboratory, right? So if you say, "At our laboratory, we think we're going to use TLC and Raman to look at methamphetamine."

Then I think it's fair for me to say, "And you're sensitivity when you do that is what, and your specificity when you do that is what?"

And if you go, "I don't know, but TLC and Raman work on other molecules," then I go, "Yeah, we're not putting that on the OSAC Registry. You've got to show that that is at least capable of detecting this molecule. You've got to understand when you can't detect that molecule." So I think what you're declaring the method might be a host of these four instruments together is how I identified this molecule.

GERALD LaPORTE: I don't know, Jeff. I mean, I was a drug chemist for many years; and to me, TLC for cocaine is one method. And then when I have the option of using other types of methods or instruments –

JEFF SALYARDS: Gerry, I think though that if you declare that it is – I think if you say, "At my laboratory, I'm going to use TLC to identify cocaine," then that's your method; and then you buy the error rates, you buy the sensitivity and specificity that go with TLC. If you say, "At my lab, I use TLC *and* FTIR," then that's your method; and you've got a more accurate rate.

GERALD LaPORTE: No, I agree with you, Jeff.

What I'm saying is you use a color test, TLC and GC/MS; that's how you end up calling cocaine cocaine – by doing all three of those. What I'm saying is when you do one of those, that's just one method; you combine three methods typically to make an identification of a substance. So that's what I'm saying here; I'm not disagreeing with you.

SUZANNE BELL: Well, then, you see exactly why we didn't want to go down that rabbit hole. Because what's the method for DNA? Is it PCR? Is it capillary electrophoresis with fluorescent labeling? I mean, it's self-defined.

Arturo, yes, please.

ARTURO CASADEVALL: I think we're getting here too much into the weeds and missing the big picture. I think HPLC has been – the science has worked out since the '50s. The method for cocaine, the method for heroin – those are different methods. But I don't think the issue of HPLC as a science is up for debate.

I think we're talking about, for example, let's say that somebody decides that they're going to use a microbial signature. We're all sitting in this room; we're all living microbial signatures from this table. Let's say that we want to establish that we were here based on it; to me that is something that will require a lot more science before you take this and you being to associate me with sitting on this table. And I think the way that it is written, it's quite flexible; and I would make the argument to leave it alone. The people that are going to be reading this are not stupid. They're going to read it, and they're going to basically make value judgments depending on what it is. We cannot come up with a wording that will take care of all circumstances.

But the intent here, the big picture, is for having an additional review of the science. And I don't think anyone really here would be opposed to that, especially if you think of a microbial forensic study on that. I don't think we're talking HPLC. We're talking about things that will come in the future and things that are already on the radar screen.

SUZANNE BELL: Thank you.

Greg?

GREG CZARNOPYS: Yeah, I think, Jeff, the thing that we're getting confused, a lot of people think a method is one type of analysis, where a scheme of analyses may include multiple methods in that. And I think that's what's caused us some confusion in this.

SUZANNE BELL: Cecelia?

CECILIA CROUSE: I rarely have heartburn, but I did on this subcommittee. I had a lot of heartburn with Recommendation No. 3. And we talked long and hard about it because I felt the way that's been described here, that a method that gives a result is included in here.

However, I also did not feel that NIST necessarily could shoulder the burden of providing technical merit for every standard that comes out and that there needed to be a conduit. And the most appropriate conduit would be the OSACs, and the OSACs *clearly* have stepped up to that plate. They *clearly* want to have an Advisory Board and Commission to help with this. And I think what's even more clear is that they're not going to push forward a standard now knowing that technical merit is going to be the foundation of their standard, and that's what I think this says.

And I'm really bad at multiple choice tests because you can convince me of all the answers; I'm one of those kind of test takers. And I want this to be right, and I think it is. I think in June when there was an agreement to change Recommendation No. 3 so that the OSACs *clearly* didn't have a bottleneck going on for a lot of these methods that are *clearly* foundational and have technical merit, didn't have to go up to NIST, I think that wasn't just a compromise; it was essential.

SUZANNE BELL: Marilyn?

MARILYN HEUSTIS: I think Recommendation No. 3 is *absolutely* clear. It's very specific about for those forensic science test methods and practices where technical merit is established by NIST or, in the interim, an independent scientific body. I mean, I think No. 3 is really clear; every guideline that is going to be proposed to go forward is going to have to meet this technical body. So I actually think No. 3 is really clear now.

I understand in Nos. 1 and 2, it gets a little muddier because now we say "test methods" and "practices." And we know that NIST is going to be addressing really the foundational; and even standards that get passed through in No. 3 by the Technical Merit of OSAC, eventually we hope that NIST will get to do the review of every discipline. And changes may have to occur based on that.

So I don't know – I've asked my good friend next to me, "Can we come up with just some wording that makes it a little clearer?" Because No. 3 is – but is there something about the wording of "test methods" and "practices" that maybe doesn't cover exactly – because there's no way NIST can look at every single method. I mean, there's not one method for doing GC/MS of any drug. Every lab that establishes – it's just like the FDA now is saying anything that's established in any lab is going to have FDA review. There is *no way* they have the capacity to do that.

So is there something that would make people more comfortable by a simple word change in Nos. 1 or 2 that would better describe what NIST is going to do? Because they're *not* going to review every test method.

JOHN BUTLER: We don't have Jules here right now to try to fix –

SUZANNE BELL: Well, I think – it seems like No. 2 was already taken into consideration at the presentation at lunch. I mean, that was pretty much point by point. How about in No. 1 we just say, "methods or practices"?

MARILYN HEUSTIS: I agree too. To me, No. 2 looks okay, too.

SUZANNE BELL: Again, here's what the subcommittee wanted to avoid. We don't want to box NIST in by making this too specific.

MARILYN HEUSTIS: It's not specific at all

SUZANNE BELL: Well, No. 2 is not; but No. 1 is. So we could say something like "the technical merit of methods and/or practices," which I know is a terrible combination.

JEFF SALYARDS: Greg, to your point, what if we changed it to the "technical merit of analytical schemes used in forensic science disciplines"? That would capture that sort of constellation of several methods.

TED HUNT: One of the problems is footnotes Nos. 3 and 4 lock you into what you're talking about when you say "test method" and "practice" throughout the document. That defines what you're talking about. And what that's talking about are ASTM test methods and practices, which are *documents* that someone produces about a step-by-step process, how to produce a test result. So that's what that means because you have it defined in Nos. 3 and 4. And it gives meaning to every time you use that word throughout the document, you go back to footnotes No. 3 and 4. So what you're saying is *every single document,* because of footnotes Nos. 3 and 4, has to be evaluated by NIST, and that's the problem.

SUZANNE BELL: I guess I just didn't read it that way because if you look at a series of specific steps, okay, that's TLC; that's color test; that's crystal test. And again, if there are some suggestions for wording that we can make in No. 1 that are simple or straightforward?

MARILYN HEUSTIS: Could we replace "tests" with just "analytical" – so analytical methods and practices instead of "tests"?

UNIDENTIFIED FEMALE: Or methodologies?

GERALD LaPORTE: I was just going to say, take out "test" and just make it "methods and practices.

JULIA LEIGHTON: Or "analytical" I think.

TED HUNT: If you want it to stay vague, just take out footnotes No. 3 and 4. Then you can make it mean whatever you want it to mean, if that's the way you want to go. But again, it's remaining very vague as to what you mean by "methods." And anybody can read that narrowly or very broadly, depending on how they want to interpret.

SUZANNE BELL: Subcommittee members?

ARTURO CASADEVALL: I don't have any problem taking out – we added those references ONLY as a compromise in it. But if it's clear that the references are the problem, take them out.

JEFF SALYARDS: I think we take a friendly amendment just to kill footnotes No. 3 and 4.

SUZANNE BELL: And change that to "methodology"?

JOHN BUTLER: Do you want to remove "tests" that I have highlighted?

JEFF SALYARDS: I think we should leave the verbiage exactly how it is and then just take out footnotes No. 3 and 4.

TED HUNT: Take out the references.

JOHN BUTLER: Remove "tests"?

SUZANNE BELL: No, leave that verbiage; take out the footnotes.

JEFF SALYARDS: Delete footnote Nos. 3 and 4.

SUZANNE BELL: Okay.

ARTURO CASADEVALL: I think it's okay. This is an evolving – this is what a deliberative system is. At some point, we had to put the references in in order to get past the discussion. Now we are at a different place, and we don't need them; it's all right.

SUZANNE BELL: Do we have any other – Cecilia, is that still up from last time? Cecilia, is your tent up?

CECILIA CROUSE: No.

SUZANNE BELL: Anybody else? Okay, shall we move for a vote?

UNIDENTIFIED FEMALE: So moved.

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SUZANNE BELL: Okay, so now I have just a procedural question. Since we have folks that already submitted folks before that was made, what do we do? Because that seemed to be a sticking point for some people. Well, maybe we should see how the vote goes, but –
JOHN BUTLER: This is the National Commission on Forensic Science channeling Phil Pulaski, Vince Di Miao and John Fudenberg. If you are watching in real time, like a few of you are, they can send me e-mails. They can decide to change their vote. Otherwise --
?? I think we're stuck with the votes that were submitted. Do you want to give them another 30 seconds?
JOHN BUTLER: Well, we'll put it to vote; I mean, we'll start the polling.
?? Sounds good.
[Pause for voting]
JOHN BUTLER: Okay, we have one more if we can get it. One broken clicker?
Okay, we have 77% Yes, 19% No, 3% Abstain; so it passes.
Okay, we have Public Comments; and then I have a few things to say about the reception.
UNIDENTIFIED MALE: Do we have any public comments? There were two individuals who signed up on online registration who wish to submit public comments. I believe Lindsay has the microphone to my right. If you could raise your hand if you're in the room and continue to want to submit a comment.
[Pause for responses]
All right, seeing no hands, did anybody else from the audience, the public, would like to submit a public comment? We will have an oral Public Comment session at the end of tomorrow's meeting as well.
JOHN BUTLER: All right, seeing none – and I just wanted to remind everyone there's a 6:45 p.m. shuttle to the hotel. I think it may be picking up where it dropped off, but we'll confirm. You can stop by and ask to confirm.
Okay, so just a few comments then about the reception. Going from now until 6:30 p.m., and then people will be able to get to the bus and shuttle. We had seven tours that people had an opportunity to go on; everybody just had a chance to go on one, those who did go on tours. So those are listed here. And there are additional ones; the ones in black were not part of the original tour. So there's extra stuff out here that you'll be able to see as well in the reception area and the cafeteria.
Also, the courtyard is open; so you can go out into the courtyard. And then you can go down to the NIST Museum and to the Wilmer Souder Exhibit, which is right down the hallway. You can go out the doors here and go down to the hallway.
I encourage you to spend some time talking to NIST colleagues here and get to learn a little bit more about NIST. Of course, you can talk to each other; that's good too. But just use this time well to be able to get to learn more about NIST.
Thank you all for coming and participating today, and we'll see you back tomorrow morning at eight o'clock. The reason we're starting earlier tomorrow is because there's another big meeting going on here at NIST on cloud computing, and so we're trying to get in here before they get started so we won't be interfered with as much and get out of here before they leave. Thank you.

NCFS DAY #2, TUESDAY, SEPTEMBER 13, 2016

PART IV

UNIDENTIFIED MALE SPEAKER: Good morning. Welcome to Day 2 of the National Commission on Forensic Science Meeting No. 11. I'm going to open the meeting and turn it over to John Butler.

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JOHN BUTLER: Okay, thank you for coming back (laughter). I know yesterday it got a little warm in here. Hopefully, it won't get quite as warm. This room is fairly new, and so we haven't had as many people in here for as long as a period of time, which is part of the reason we got overheated. I won't say anything about any hot air being blown in here or whatever.

But one of the things maybe the public – if it gets warm later, maybe we have an overflow room and invite the public to go to the overflow room. That might cool things down a little bit, just by reducing the number of people that are in here.

This morning we're going to start with the Statistical Statement of Relevance Panel. We have four statisticians up here that will be speaking to us – well, three, and one who is almost a statistician. David Kaye is an honorary statistician, I guess, as a law professor that studies statistics. And then we'll go through the various subcommittees, as I have outlined here – ethics issues for our working lunch. And then we'll finish up after the MDI with a forensic science discipline review from the Office of Legal Policy. And then in the wrap-up, Nelson and I will go through and we'll talk about what our plans are for the next couple of meetings and get input from the Commissioners on that.

I just wanted to point out too as kind of a technical merit review on the clickers, there was not a set clicker from a specific person. What was happening was different people were not voting, for whatever reason. Either they had stepped away from the table right then when that happened, or they didn't press the clicker hard enough. I can call them out; maybe I'll do that later (laughter). We'll review that when we get to the time of voting.

Let's start with the panel itself. Our first speaker is Karen Kafadar, and she actually has an outline on her first slide here of the full panel. We have eight minutes for each of the panelists, and then there will be time for discussion afterwards for everybody. So that's kind of the plans here.

So now we'll have Karen Kafadar from the University of Virginia first; then Hari Iyer here from NIST; then Alicia Carriquiry from Iowa State, who heads the CSAFE effort; and then David Kaye from Penn State Law School.

Go ahead, Karen, please.

KAREN KAFADAR: Thank you.

[Adjustments to microphone]

Okay, I'm going to start out with a simple example about weight of evidence. There is a marble in this bag. The judge has certified there is a marble in the bag. I will tell you that it's either red or white – this isn't working. There we are – it's either red or white. No other information, so you've got two hypotheses; the marble is either red or white. The question is what's the probability that the marble is red? You have no data so far. There is no reason for you to prefer one over the other, and so you can probably say the chances are 50/50.

And then I'm going to take another marble, I'm going to put it in the bag, shake the bag, pull out a marble; and it's red. Now you ask the question: What's the probability the initial marble was red?

I'm going to do it again and again; I'm going to do it five times. At the end, I'm going to ask you again the question: What's the probability the initial marble were red?

Well, if the initial marble were red, the outcome was completely expected; of course we're going to get five red draws. But if the marble were white, the outcome could happen – it *could* happen, 50/50 chance on each of the five draws, 1 over 32 probability. Less likely, however, than if the marble were red. So on each trial, each feature, the data that I collected had a 50/50 chance of happening under the other hypothesis.

But imagine if that feature that I'm talking about had a smaller probability of happening, like one-tenth. Then that overall probability would have been 1 over 100,000; so again, it could happen but a whole lot less likely.
So there are a couple of ways to characterize the weight of this evidence. We could compare those two probabilities. How likely is the outcome if the target marble were red?
It's very likely; the probability is 1.
How likely is it the target marble were white?
Much less likely – about 1 over 32.
So the ratio is 32; so the data outcome is 32 times more likely to have occurred under "A" than under "B." This does not mean that "A" is 30 times more likely than "B." You would also just report both probabilities – 1 in 1 over 32; or you could use some methods to quantify how far the evidence is from the hypothesis, and Hari Iyer will talk about some of those. But whichever method you use, all assumed statistical models from which probabilities can be calculated.
So the weight of pattern of evidence requires data. What kinds of data – measurement sum? How likely are these features to correspond in true prints – say if you're looking at latent prints – if they come from the same source or if they come from different sources? So how likely are they to correspond if they come from the same source?
That's a very sensitive feature.
How likely are they to *not* correspond?
If you have different sources, that's how specific the features are. We want both; we want both high-sensitive and specificity. And if you have that, then your 1 hypothesis is likely to be more sensitive or specific – more plausible than the others.
Let me just say, by the way, these slides are going to be available online because I know I'm racing through them because I have eight minutes. So how do we get from sensitivity to specificity?
Well, it turns out that if we look at what's the probability the features match if they came from the same source; what's the probability they match if they come from different sources – 1 up there is much larger than 2 – then we're inclined to believe the first hypothesis over the second hypothesis. But that does not mean the same color of the marble or same print – same source – is more probable than the other. Sensitivity and specificity only characterize how common or rare the features are in the population, not that one is more likely than the other.
So what are the challenges that we have for pattern evidence?
Well, unlike with DNA, the features are not pre-identified. Before even seeing the evidence, the examiner doesn't even know which features he or she will identify, much less if they're independent of each other the way the trials work or whether they're sensitive or specific.
So Brad Ulery and colleagues made this point in an article a couple of years ago, where he reminded people that the lack of rigorous definitions in systematic approaches contributes to the lack of reproducibility and repeatability. So how are we going to go forward?
Well, think about latent prints or shoeprints. What are the possible features? How sensitive or specific are those features? What are the special arrangements? You have that aspect to it. And what about image quality and resolution?
So there has been recent research with it that has attempted to quantify rarity of features and take into account their spatial arrangements. For example, we don't know at this point whether crossovers are always close or bifurcations, or whether islands are always far from each other, or deltas and islands tend to be close to each other; but those are things that we would want to know.
What about glass and other trace evidence?

Well, one of the questions is: Which elemental concentrations -- are they independent? Alicia is going to be showing some data later to suggest that, at least in the measurements she has, they may not be.
Consistency of the manufacturing process – obviously, the most popular manufacturers are the ones who are making very, very consistent pieces of glass, say for example, or other trace evidence. We know people like consistency; that's the success of McDonald's restaurants – not necessarily that it's good, but by god, you know what you're going to get.
What sources contribute to variability in the measurements? How representative or how large was the dataset from which these variations were estimated? And as a hint, by the way, estimating variability takes a lot more measurements than you might suspect.
What are the risks of ignoring those considerations? Think about bullet lead 10-12 years ago.
For all evidence, we have to think about measurement uncertainty. What if the evidence were measured some other time by different examiners; different parts of the same source; just estimating sensitivity and specificity to features themselves? And we always like precise, repeatable, reproducible measurement; however, quoting Dave Byar, "Better an approximate measure of something important than a precise measure of something unimportant."
So this ratio has been identified as being consistent with the evidence and possibly inconsistent with the evidence. There's no agreed-upon interpretation for the degree of support for such a ratio; that kind of ratio remember does depend on models, relevant populations and databases. And the ratio is informative, but it's not what we really want to know.
So some final comments:
The ratio is rarely as easy to calculate as it was from my marble example. What we really want to know is not what we can expect if the truth were known because the truth is never known; only the recording angel knows that.
In real life, what we really want to know is given the evidence at hand, what's the probability the samples came from the same source or that they came from different sources? Those probably depend not only on sensitivity and specificity, but how probable are same and different in the relevant population.
Pattern evidence will also be only one piece of information. We don't ever expect pattern evidence features to be as sensitive and as specific as DNA features. But just having some idea of their sensitivity and specificity is a big step forward. It would probably depend on models and assumptions.
All data use to develop them should be stated; you'll hear more about that.
All models are wrong but some are useful, quoting George Box.
And finally, admitting our areas of uncertainty is better than pretending that they don't exist. And so Judge Edwards did make the point that more research will enable us to do a better job.
How did I do, Judge?
JUDGE JED RAKOFF: Perfect.
KAREN KAFADAR: Thank you.
JOHN BUTLER: We went from marvels to McDonalds; that's pretty good coverage there.
HARI IYER: Good morning, everybody.
My colleague, Steve Lund, and I have been thinking about probabilistic statements regarding weight of evidence for some time now, and I would like to share our current perspectives with you today.
The usual disclaimer: The views expressed are not of NIST or Department of Commerce. And also, nothing I am going to say here is claimed to be anything original.

To set the background here, a crime has been committed; and the question sample, "Q" is retrieved from the crime scene. The reference sample labeled "R" is obtained from a person of interest. And a forensic examiner compares "Q" and "R" and reports their findings, along with other useful information.
Two statements are of interest:
H1 – "Q" and "R" come from the same source.
H2 – "Q" and "R" come from different sources.
Triers of fact are generally insufficiently equipped to decide how much influence the presented information should have on the degrees of belief regarding H1 or H2. So they look to the expert to provide a "fit for purpose" summary that can help them make a fair assessment of the evidence provided.
Two approaches will be addressed here. One is a likelihood ratio as weight of evidence, and another approach of I would just call it based on classification methods -- it's a more empirically-based approach.
First, a likelihood ratio – it has a strong motivation from Bayesian Decision Theory. Here an expert summarizes weight of evidence in the form of an underlying personal likelihood ratio (LR). Values of LR greater than 1 support one hypothesis or one statement, and values smaller than 1 support the other statement.
The likelihood ratio has an intrinsic meaning as to the ratio of two probabilities for the person who computed the likelihood ratio, not necessarily for everyone. Each trier of fact is expected to use this likelihood ratio to convert his or her prior believes in H1 to arrive at their posterior beliefs in H1 based on the evidence.
The classification methods:
A score is computed by summarizing the correspondences and discrepancies between features when comparing "Q" and "R."
Higher values of the score support one hypothesis and lower values the other.
The score itself has no intrinsic meaning without providing an appropriate background, and I'll talk about that soon.
Good classification methods can effectively discriminate between mated and non-mated pairs.
Performance of competing methods can be evaluated empirically and reported in the form of error rates.
And techniques named "receiver operating characteristics" (ROC) curves can facilitate such comparisons.
So what are the strengths and weaknesses of the two methods I mentioned?
A likelihood ratio has weight of evidence derived – or at least one way to justify it is from the form of Bayes Rule listed here.
Posterior odds of the trier of fact is the prior odds of the trier of fact multiplied by the likelihood ratio of the trier of fact. It's a personal assessment of weight of evidence. But the way it is proposed to use in criminal proceedings is that the likelihood ratio computed by an expert is used in place of the likelihood ratio of the trier of fact. So the question arises: Can LR values calculated by one party be used by another party; is it transferrable?
Bayesian Decision Theory is wonderful for individual decision-making; but is it suited for use in criminal proceedings, where experts are not the decision-makers but triers of fact are? And also, is there any uncertainty associated with likelihood ratio when it is provided as weight of evidence?
Some people think no; leading proponents of likelihood ratio claim there is no uncertainty associated with the likelihood ratio, as evidenced by this publication entitled "Dismissal of the illusion of uncertainty in the assessment of a likelihood ratio" by very well-known people. Their claim is valid when the likelihood ratio is used by the person who computed it to help with their own decisions. But a trier

of fact should wonder which likelihood ratio value is to be believed if different experts arrive at very different likelihood ratio values, each of which is correct for the person who computed it, but then the trier of fact is left to decide which one is the right one for them.
How transferable is the likelihood ratio value computed by one expert?
The reason different experts might arrive at different LR values, some of the factors are listed here:
Choice of a relevant population
Choice of prior probabilities on members of relevant population
Choice of models/statistical methods
How you treat measurement errors
Sampling variability/sample bias
Choice of reference databases
All of these can contribute to any one particular choice for a likelihood ratio of a report.
So a single likelihood ratio value from one expert is not sufficient. A good faith assessment should be made of the range of other plausible LR values and shared with the triers of fact so they can make a fair judgment. Assumption Lattice and Uncertainty Pyramid are some methods to help people do this.
Assumptions Lattice is a way to organize different sets of assumptions in a way and show the different relationships among them. And Uncertainty Pyramid is a way to graphically display ranges of plausible LR values that result from different plausible sets of assumptions. So the horizontal lines show you the ranges of LR values, all of which are considered plausible or may be considered plausible, under the different models.
Classification methods use reference databases with known ground truth to facilitate empirical comparison of competing methods.
The databases need to be sufficiently rich to enable calculation of situation relevant error rates, so the adequacy of reference databases needs to be carefully addressed.
Statements regarding error rates must include characterization of specific circumstances for which those error rates apply.
Some of the ongoing efforts: South Dakota State University, Defense Forensic Science Center, CSAFE, SAMSI, NIST and others.
In summary, for likelihood ratios, probabilistic assessments generally involve subjective elements, have unknown degrees of transferability unless they are accompanied by a sufficiently comprehensive uncertainty statement to help the triers of fact properly evaluate the value of LR given.
Classification scores:
Performance can be empirically evaluated; findings are demonstrable, falsifiable, available for the public to see.
With sufficiently rich databases, situation relevant empirical error rates can be computed.
And suitably determined ROC curves can assist triers of fact assess the probative value of a classification score. Thank you.
ALICIA CARRIQUIRY: All right, this is like speed dating (laughter). I was thinking of a good analogy. After Karen's and Hari's, my talk is going to kind of go back to the use document that I believe the Commission is going to be discussing. And so I will make use of some of their basic ideas to talk about what an expert ought to be expected to testify to when presenting forensic evidence. And I will also talk about the critically important role of databases.
Just to bring the discussion to some focus, you can think of evidence in terms of two major types of evidence from a statistical point of view. The type of evidence that involves comparisons – and that would be DNA, toolmarks, fingerprints, firearms, and so on and so forth – and then those that do not

involve a comparison but involve what we might call inverse analysis. So you know what the effect was; and you want to know what the cause of that effect might have been.
For example, you observe some blood spatter; and you want to know whether this was created by a gunshot or a knife wound or what have you, where was the victim standing relative to the perpetrator, and so on.
So from a statistical point of view, those involve very different approaches. So the Views Document focuses on the first type, on the type of evidence that involves a comparison. And I have roughly classified those into trace, spatter – trace I put last – and fibers and hairs and pattern, fingerprints, and shoeprints and so on. Then then, of course, there's always DNA.
So what would be an ideal situation? Well, the ideal situation would be for the expert to provide testimony that is supported by the following four facts:
That the expert has a rich, good database that includes the features of the object, the images, other information;
The expert has either a statistical model that is plausible, validated, accepted or a set of classification scores that are supported by that rich set of data.
The expert also has information about the variability and the errors in measurement, what you might call the observation error. I call them analysis errors, the errors that arise from the analysis part of the work.
And of course a statement regarding the weight of the evidence, loosely using the term to mean how rare might an observed set of common features be. So if you find that two samples share a lot of common features and you say these are common features among the two samples, of course you also need to say, "And this is very meaningful because an association of this type is very rare in the population."
So of course the state of the art is nowhere close to that. Some forensic practices are solidly grounded on scientific thinking, and the example of course is always single donor DNA and simple mixtures. And other practices have made some progress in that direction but are not quite there. If you think of glass, for example, the measurements are excellent; so there's very little analytical error when you look at elemental concentration of glass. But that's about as far as we go. There are some plausible models; there's a way to compute similarities of course. But there's very limited data, and I will explain what I mean by that. There are very questionable error rates that have been computed. And it's very difficult, if not impossible, at this moment to compute the weight of the evidence.
Fingerprints – We have general agreement of what needs to be measured, and there is some demonstrated reliability and repeatability among examiners; but, again, we have a dearth of data. There's no database, for example, that's available to the scientific community that allows you to look at actual images. The only thing we get is scores that are computed in some obscure way.
In terms of firearms as practiced, firearms has absolutely no scientific validity. But there is promise, because there are new 3D-topographic surface (inaudible) methods are allowing us to provide very, very good measurements – very precise measurements of striae. And so there's hope there. There are statistical approaches that are in the process of being developed that are pretty good. But there's very limited data, and there's no estimates of probability of a coincidental match, for example.
There are other practices that are nowhere ready to being ready for prime time. One of those is, for example, shoeprints. We don't even know what to measure in shoeprints, what are the discriminating features.
So what should an expert report?

Given there's a very uneven state of the sciences, it's important that the experts writing a report or maybe even providing testimony include the information that's available. So all of those bullets need to be included in a testimony or in the report; and whenever the information is not available, the expert should be expected to say, "I do not know." But the expert should be expected to talk about all of these points and present the information that he or she has about all of those points.

I think it's particularly important that an expert should not be allowed to state that two samples share a lot of features and say, you know, these and this are indistinguishable or they're very, very similar without also saying *and* this match or this degree of similarity is very rare in the population, or stating, "I have no idea how rare this degree of association might be in the population."

Sometimes people talk about training and experience as a substitute for scientific studies. Training and experience are no substitute for scientific studies, mostly because an expert – and thus challenged – doesn't really know what ground truth is. And so one expert really cannot know how many times he or she is wrong.

I'll talk briefly about the importance of databases. Forensic scientists use databases in many different ways: to develop new methods, to validate methods, and in casework. And the data that are appropriate for those different types of jobs, if you will, do not necessarily have to share the same types of attributes. I just gave a half-hour talk on this topic, and so I'm going to be very brief here.

So I'll talk about research databases. And research databases, at the very minimum, require that the data allow estimation of model parameters or similarities of course. I'll use glass as an example because glass is typically spoken of as the gem of trace evidence, where the most information is available – until recently I should say. None of the glass databases were available to the scientific community until Peter Weiss from the German police, nicely, in a spirit of glasnost, shared some data with us. Soon after that, Florida International University database was also made available for scientists to work on.

So what am I showing you here?

I'm showing you some funny numbers, right? Elemental composition of glass typically includes the concentrations of 18 elements. Scientists measure many elements, 18 of them; and I picked 7 at random, the first 7 in the data column. And what I want you to look at is those are correlations. So the diagonal, as you can see, is one. And the other numbers, the other diagonals in the matrix, are the degree of correlation between the concentrations of those elements.

So if I look at the points of (inaudible), which is the second element in the first row, it tells me that the correlation between sodium and lithium concentration is 0.74. Some of those numbers are pretty high; calcium, for example, and magnesium have a concentration of – what – 0.96. And so what does it mean? It means that when I observe a high concentration of calcium, I also tend to observe a high concentration of magnesium. These are extraordinarily high correlations. Yet the state of the art approach of the way that glass is analyzed these days assumes that the correlations are all zero. And that is *the* state of the art at this moment. And so that clearly is not a correct assumption, which throws into question the matching scores that have been published and many of the other things.

And one of the problems in the glass community is that there is simply *no* database out there that permits estimating the model parameters. So if you have 10 elements that you want to work with and you want to estimate the correlation among 10 elements, you need at least 11 measurements on each sample of glass. Right now, the maximum that is obtained is about six measurements. The FBI is in the process of spending several hundred thousand dollars at this moment collecting yet another dataset that will not allow estimation of these parameters again. They're planning on collecting two measurements per sample.

And so I just want to finalize by saying databases are really, really important. There's a dearth of appropriate databases available to the scientific community. And it's something that we need to pay attention to. So just to finalize, a reminder, CSAFE is an umbrella organization. It's a consortium of four universities: Iowa State University, Carnegie Mellon, Virginia and University of California, Irvine. And it, at this moment, includes two large centers. One of course is a Center of Excellence in Forensic Sciences. But we also now include the Midwest Forensics Research Center that somebody mentioned yesterday. And at the moment, I don't know if anybody has ever used MFRC; but if you have, I'd like to talk with you. Thank you.

DAVID KAYE: The Co-Chairs of the Reporting and Testimony Committee gave me an assignment of talking about how certain criteria articulated in Daubert, the Merrell Dow Pharmaceuticals, and indeed the Views Document itself, the draft, might apply in various situations. I even received very specific Daubert questions; and I'll try to apply them, time permitting, to one or two areas.

But I want to start with the big picture, and we've heard all the elements of it already. But it seems to me that we start with data, and that data can take the form of purely non-evaluative testimony about features of objects examined. An expert can describe the features of hair and, in rare cases, stop at that point and just say, "Here they are; you jurors figure it out."

Typically, at least a little more goes on in these comparisons where there are statements of similarity largely based on intuitive criteria, not the statistical ones that Alicia might be referring to for indistinguishability with glass fragments.

The Views Document really, I understand from our discussion in the morning, may be revised somewhat to make it clearer that the idea in this kind of situation is really that, as Alicia was saying, the expert needs to be clear about the fact that the expert is not making statements regarding evaluations of the evidence, statements of evidentiary weight.

And I'm going to talk about two versions of evaluations. There's the traditional version of giving conclusions. For example, pieces of glass came from the same object because they fit together well. They must have come from the same object. Now, you'll notice, the Draft Views Document suggests that experts should not be opining on the truth or falsity of those statements; and this is an example where it's not clear that the expert has anything to say about the inferential step that a juror doesn't.

Handwriting analysts have various scales to express what is effectively a subjective probability, a degree of belief, based on a scale of training, experience, whatever the stock set of phrases are, with sometimes as many as nine gradations. It's going to be a question of whether those measurements are well-calibrated.

But I want to talk about one other area where one sees quantitative statements of probability; and that's in the area, for example, of kinship. Here's a case from Georgia in which the expert proposed to testify to a probability of paternity -- in terms of Hari's Bayes Theorem, that's a posterior probability -- based on a prior that the expert picked of 50/50. Either the accused man was indeed the father of the fetus of the woman who was killed, who was his girlfriend, giving him a motive to have shot her; or he wasn't -- equally likely.

The trial court excluded all that testimony because the expert said this didn't rise a reasonable degree of scientific certainty because DNA scientists require a 99.99%, not a mere 96.3%. And the poor District Judge said, well, this evidence must be irrelevant under Rule 401.

There are more extreme examples of this kind of testimony as well. It's not uncommon to see many decimal places for that probability. What's the alternative to those statements, if they're disfavored in the draft approach?

Those would be statements about evidentiary value. To repeat in a different way what Hari presented in the simplest possible case of Bayes Rule, we have the prior belief; we update it by a Bayes factor to form a posterior; in my paternity case, the prior belief was 50/50. And the expert made that up. That's the problem, right? It should be, you could argue, the jury's assessment based on the other evidence in the case. What the expert can do is provide information which hopefully, as Hari said, is transferrable to help the jury form a suitable adjustment factor to reach a subsequent conclusion.

If we applied that to the kinship case, we'd throw out Bayes Theorem; we'd throw out the posterior probability; we'd throw out statements of reasonable degrees of scientific certainty about conclusions; and we would be left with a likelihood ratio of 26 as opposed to Karen's 32. And the jury would hear that, well, the evidence is somewhat rare under even the probability that this guy is the father; it was highly degraded DNA. But it's even rarer under hypothesis that a randomly selected individual was the father.

Now, we can ask, does that methodology have known or generally accepted error mates? What are false positive rates and so on?

Let me back up.

It's important to note here that there's a distinction between the likelihood ratio that Karen gave us for the classification tasks and the likelihood ratios here because the expert is not making a classification; he's not making a judgment of who the father is. He's just saying it's more likely to see the data if this man is the father than if he isn't, and how much more likely based on his modeling. But the modeling is pretty well-accepted. It's standard genetics knowledge. There are databases of Allele frequencies. Although that likelihood ratio didn't quantify the sampling variability, you could give a range; and I don't know that you need several experts.

We can apply the same idea to latent prints; we've already heard talk about that. And I suspect I should simply, well, say that there is movement to use weight of evidence-type statements; but without data to support conclusions -- like this is strong evidence, the degree of matching in the prints -- it would not satisfy Alicia's standards clearly for scientific evidence. If asked what methodology might be used, we'd probably hear the expert say, I've got a great flowchart of the process of determining similarity – true; it's still somewhat subjective at many points.

Is there a known error rate when I say there's a high degree of certainty?

Well, you can't really figure that out with the false positives and false negatives that we were hearing about for classifications. There would be a related figure that one might use, which would be the chance of seeing misleading likelihood ratios, even though they're not yes/no. If in fact, based on simulations and based on data with known, let's say mated prints and non-mated prints, one could calculate how often the likelihood ratios succeed given the values and get a kind of understanding then of how the system is operating. So there's a way, I think, to blend a likelihood ratio approach and try to give an assessment and try to validate the judgments that are being made.

And that means I want to skip all the extra stuff I had that won't fit into eight minutes and say there's a lot you can read about this, a small cross-section. And that's all for now.

[Applause]

JOHN BUTLER: Great, Judge Rakoff or Matt or Steve, do you want to lead the discussion with this; or how do you want to proceed with having a discussion for the next half an hour or so on this?

JUDGE JED RAKOFF: Well, I think maybe we should hear very briefly from Steve in response both to some of the points that were referenced here today in the panel and also from comments that Ted had offered in the public response and discussions from the subcommittee yesterday. The report that you presently have from our subcommittee is going to be revised, and we discussed yesterday the basic

parameters of how it would be revised. And then it will be presented to the full Commission again, and for public comment again, before it's put to a final vote.
So, Stephen, maybe as a prelude to any comments and any discussion anyone wants to have, you could give us a little background on the changes that we contemplate.
STEPHEN FIENBERG: Okay, it's actually great to have several statisticians sitting at the table. I have felt quite lonely at a number of Commission meetings. It's sort of like Dr. Seuss' "The Lorax." Some of you may remember the Lorax; he speaks for the trees.
It's actually appropriate that we're at NIST for doing this because statistics at NIST actually is intertwined in an interesting way with forensics. If you haven't been to the museum, just outside there's an exhibit; and it's focused on the work of Wilmer Souder, who worked at the Bureau for decades, and who, in 1929, published a brief report in the *MBS Technical Bulletin* explaining why forensic science and identification is intertwined with statistics. Now, in 1929, all of those things that you've just been hearing about, while they sort of existed, I don't think Souder would have recognized anything in the presentations, but nonetheless.
And there is a very strong statistical tradition at NIST with very well-known statisticians, like Churchill Eisenhart, who was here for a long period of time, and Joan Rosenblatt and Mary Natrella, very important figure in terms of how to carry out scientific experiments in a measurement-like world, relevant for our discussion.
Our Views Document has been kicking around in various forums for several years at this point. We began with a small working group, and it's expanded somewhat; so the current working group includes Alicia and David, Peter Neufeld, Charlotte Word, Paula Wulff, and myself. And the iterations have been there largely because I and others felt that the document, as it was evolving, in some sense was too technical.
I looked around the room as my friends were presenting, and I saw lots of eyes glaze over. I had trouble following the formulas. And so I assume they were a total loss for many people in the room. And if that's the case, a Views Document can't be focused at that level. That's the struggle that we were, in fact, really having. And you will have seen in the one that we circulated that there were no formulas, and that was a very conscious choice; we went back and forth on how to do this. We may not have been as successful as we should have been, but the goal was a non-formula-based, semi-technical document but one that was faithful to the technical details and the science as we understood it.
So that document that went out for review, we did receive one public comment.
I could have guessed where it was coming from, Ted.
And I'll come back to it. It's a beautiful document actually, so I will come back to it. And there was a lot of discussion within the working group. And we went through already one revision and then the discussion yesterday, and I want to talk about that a little bit.
CECILIA CROUSE: Stephen, I commented on that as well – quite extensively. It's definitely on the website.
STEPHEN FIENBERG: Can you just send it to me, and I'll take advantage of it.
CECILIA CROUSE: Yeah, I've got a copy – thanks.
STEPHEN FIENBERG: And this goes to, in part, the issue that David was raising – what's the purpose of this document? And I think this was a large part of our discussion. And it was really to lay out the ingredients that would allow a forensic expert to report or testify using statistical or probabilistic language and probabilistic statements at the end.
And as Alicia captured in her presentation, there are four key elements there. There's the existence of an appropriate and substantial database. There's a statistical model or something that substitutes for it

empirically in some form. There is the systematic study of measurement issues associated with the quantities being examined and being analyzed and reported. And then finally, there's a statistical statement with associated statements about error or qualifications about that statement.
What's interesting is that I think that although the language we use here is somewhat different, this is completely consistent with the approach in the PCAST Report that we will see shortly. And I anticipate that when it's released, we'll be able to refer to the relevant sections in that report about these components. The language used is somewhat different, but I don't think that matters a lot.
We set this in the context largely of trace evidence and pattern evidence for a variety of reasons. And then the key thing is that there is a common focus on matching or identification that is not always there in some of the other elements. But the same four points, even if you're not focused on matching, can be applied to a number of other forms of forensic evidence. And while we don't want to elaborate in a lot of detail -- we'll try to explain that in a succinct form in the next revision -- there are some things that are far more complicated.
An example of that is blood spatter and the science or non-science behind blood spatter. Blood spatter is what statisticians would characterize as an inverse problem. You're going from what you observe on some surface – a bunch of drops or a pattern of blood spatter – backwards to infer something about what, in fact, caused that spatter. Is it a gun, is it a knife, is it at a particular distance from the body, and so on and so forth. That invokes a somewhat more complex discussion of something that I have characterized in my own work as "causes of effects." We observe the effects, and we're trying to ask what caused them in this setting; but there are a number of other such inverse problems around. Time of death is another example of that. And we'll mention these, but we don't think it's appropriate to go into any detail for these beyond some elucidation of them.
So what do you do if some of the elements are missing?
This is where we had a lot of discussion yesterday. What if you don't have a big database? What if you've done it on a sample of 25 objects because they were costly and that's all you had?
You have to be able to report what you've done and the appropriateness of drawing conclusions from it. So the important thing is if you can't report about the database, then you have to say, I don't know what the database is. If the database is controlled by some organization called NIBIN and it's a black box, and we don't even know how many units are in there or what the similarities are that are being used to compare the sample bullet cartridge, the catalog that NIBIN now has in its structure, then you can't say very much about it; and you must say that you don't know what it's about.
And I think this is arguing quite strongly, although this is not the role of the Views Document, both for transparency between the parties at trial but also the importance of forensic experts explaining what their conclusions and their statistical statements, if they're going to make them -- on what those are based.
So if an element is missing, the forensic experts must say that. And if they're sort of all missing, especially the database and the statistical model, there's no basis at all for a statistical statement. The measurement error and what we know about them is a way to qualify that and to caution about its interpretation. And I think Hari wanted to do that much more formally with a range of likelihood ratios and the technical tools, but I think that it's similar in spirit to what I've just said.
I want to reiterate David's point; training and experience are not a substitute for data and science. And this document is trying to make that explicit.
A number of people have expressed concern that this will wreak havoc for the admissibility of forensic evidence. I would like to say that I don't think that's true. What this will do is make clear what is the basis of the evidence, and the trier of fact has many ways to admit the evidence either as science or as

forensic expertise. And I don't think that it's our job to tell the trier of fact how to do that; they're very wise and understand how to do this. They've been doing this for a long period of time. This will just make much more explicit when one should be using statistical language for conclusions.
Ted's comments – very thoughtful, thank you. I'm sure Cecilia's will be too.
CECILIA CROUSE: I don't understand what happened because I've clearly got a number here from the NID website that says it was accepted.
STEPHEN FIENBERG: Well, we'll deal with it; it's not a big issue.
Some dealt with language that isn't there anymore; so I'm sorry I can't respond directly, but I will point by point. Some actually was very helpful, and it is leading us to think about how to cast it. I would characterize a number of the points raised by Ted as really asking for much more detail and technical detail. And as I explained, that is something that we have been resisting. This is not going to be a treatise on probability and statistics. There are many of those, and we'll refer to some.
We do need to be careful about terminology; and Ted did point, I think, to a number of places where that's an issue. And in fact you've now heard, I think three different words – well, two sets of words used for something where we used a third word in the document. So we talked about "probative value" in the document. Alicia talked about "weight of evidence," that actually has some technical meaning within statistics but, I think, captures a similar spirit. And David referred to "evidentiary evidence" in, I think, a similar kind of way. And we're still struggling with exactly what language to use – again, because in different contexts the law may use words in a somewhat way than statisticians do and different, yet again, from forensic experts.
Our goal in revision is to keep the focus, to polish language, add relevant definitions, but still as non-technical as we can. And I would like to keep the length under control so that we have the two key components, the four [deserada] with polished wording, and what we expect an expert to report on and how. And those are intertwined.
JUDGE JED RAKOFF: I guess we're open for discussion.
Jim?
JIM GATES: Thank you, Judge Rakoff.
And I also want to extend my thanks to the panel for an excellent brief on this whole set of very complicated issues. A couple of questions occurred to me as I was listening, and I'd like to get some expert responses.
First of all, the inverse problem which Stephen spoke about is something we in science all have to grapple with all the time. When physicists say that the universe was created by the Big Bang 13.8 billion years ago, we've actually made inferences, which is the inverse problem and is the kind of thing that spatter patters and what have you do. So we do it on a grand scale; this is what my science is all about. So I'm very sensitive when I hear these sorts of discussions in other arenas as they go forward, and how it's accomplished and what are the standards – what are the figures of merit, tolerances, and what have you.
I thought this was just an excellent – in fact, I think it's the best presentation I've heard in my two years about the details about how this works out in courtroom presentations.
JUDGE JED RAKOFF: Jim, can you speak into the mic a little bit?
JIM GATES: I'm so sorry; I can certainly move closer to the mic.
So my question is about – well, a couple of things. First of all, since I teach students all the time and since I interact with the public all the time speaking about science, I know that fractions are a problem in our society. You may laugh about this; but if you walk out on the typical corner in the street and you

start talking about fractions to the general public, that will simply – you talk about eyes glazing over. That's one of the fastest ways I know to cause that to happen of any action that I can take as a person. So it occurred to me that in talking about expert testimony, I sure hope that – and folks who have been courtroom, I need your guidance here. What is done when you get to the level where the actual technical details of testimony are so mathematical that it is unlikely to be transparent to the triers of fact? Because this, I think, is a very critical question; and it raised in my mind something that we haven't dealt with but certainly comes out of my thinking about this presentation. Have there been studies on model juries and their response in this kind of technical – thank you.

So I would hope that that would inform the work that this Commission has done as it starts to wrestle this problem because I found that just an incredible thing.

I want to commend the work of the subcommittee. I think this document is certainly moving towards a great state. And I keep hearing references to our 168-page PCAST document. It is, in fact, let's say consistent with the kinds of discussions that have been going on. So as a member of both groups, I'm quite happy with the way those two things are evolving to be positively reinforcing. Again, I want to commend everyone involved. I think this is great work, and this is something I think the Commission can be extraordinarily proud of.

JUDGE JED RAKOFF: Marilyn?

ALICIA CARRIQUIRY: The issue of how juries or lay people understand mathematical concepts like likelihood ratios and so on has been the subject of a lot of study. Karen just mentioned Brandon Garrett at the University of Virginia that does a lot of work in that area, Bill Johnson and his colleagues at University of California, Irvine. And it's not an easy problem. In fact, there are some really fascinating results. I wish Bill could at some point present some of his data.

You know, a word like "match" is totally loaded, the way people understand match; they understand it as stronger evidence than one in a bazillion, for example.

STEPHEN FIENBERG: There's also an interesting issue, which we're not trying to address in our document – and, indeed, we can't – about exactly the point that you ask about. What an expert does who has the capacity to work with statistics is to carry out the analyses as most appropriate with all the tools and all of the technical details. And if they end up involving fractions or ratios, that's got to be there; but that doesn't mean that there isn't a translation that's available to help hit home the technical points that are there in detail.

The example I always like to cite because I was involved with was in the polygraph report from the Academy, a committee I chaired, where all the details were really about probabilities of sensitivity and specificity basically and the trade-offs. But in the Executive Summary, we did it in terms of counts of people in a hypothetical population, and that's always what the Senators cited when we went to the hearing. The details were not what they cared about. But that was consistent with all the conclusions in the details.

JUDGE JED RAKOFF: Marilyn?

MARILYN HEUSTIS: If, Hari, you could pull back up that slide where you showed the whole description of the different linear – yes. So is this supposed to be the variability within one measurement, or is this supposed to show us how different those variabilities can be?

HARI IYER: This has to do with converting data to probabilities. As my colleague Steve Lund would say, "Data don't give probabilities. Data plus assumptions lead to some probabilities." So this is a summary of a whole class of different sets of assumptions that are considered plausible with the data at hand.

MARILYN HEUSTIS: So they're from the same set of data?

HARI IYER: None of those assumptions can be ruled out based on the data available.
MARILYN HEUSTIS: So if I saw that, what could I possibly say?
HARI IYER: Whatever it tells you; this is what the data tell us. And now anything beyond that that we claim is using in addition some personal judgments about which models maybe I should use and which I should not.
MARILYN HEUSTIS: But you're saying if I was testifying off of the data and I had all these different assumptions that gave me these different probabilities, I'd really like to hear you say what you could say about that.
HARI IYER: I would say that I wouldn't use this at all. So this picture is really an argument that I want to use to avoid giving results or statements based on models – like *one* models – when many models are considered plausible. So what I would say, I would move to the classification-based scores; and then I would explain the meaning of the score empirically relative to a database that I have, a reference database, of known matches and known non-matches, and say, "This level of similarity or greater was observed 9,999 times out of 10,000 in my reference database, and I never found this level of similarity when I computed the score for non-mated pairs in my reference database. That's the only information that I have."
In addition, I would have to explain the weaknesses the database itself might have -- whether it is representative, in what ways it may not be representative. So basically what Steve and I want to say is say what you did; show what you got; what is demonstrable and what is falsifiable. So if somebody can check what I'm saying, there are no assumptions needed; and you make your decision.
MARILYN HEUSTIS: So you would not use this, period?
HARI IYER: No.
JUDGE JED RAKOFF: Marilyn, I don't know if this will help, but an analogy to what – so something that happens in court all the time, very frequently, is economic experts. And the way it happens is the guy who is the plaintiff's expert will say, "I arrived, and the damages in this case are $1 billion. I used this model, and I know there are other models available. You're going to be hearing from the defense expert later on; he used a different model, and he came up with a very different – he thinks it's only $200 million instead of $1 billion. But I don't think his model is the appropriate one for this kind of situation because…." And then the jury will hear from the other expert, and he'll explain why he thinks his model is the better one.
That's still a very difficult thing for the jury to deal with; but at least they have heard in advance that these are assumptions built into the calculation, and they're based on models. And I think the same thing could happen, if I understand Hari's situation. The person could say, "I used a non-parametric approach because that seemed to me to fit this particular kind of data best. I know there are other types of approaches, by that's in my view the appropriate one." And if there were a defense expert, they could say, "Oh no, we think a different approach is better."
MARILYN HEUSTIS: So I'm taking from that we need to very clearly say in which manner we did the data, what we based the data on, and the limitations of the data.
HARI IYER: Well, I would add to that. If I'm a neutral expert witness, it's my responsibility to say what other answers are possible and explain why I picked one. And really, there is not going to be a very good reason for picking one, at least in my opinion, because if you rely on the data to support your model, all I'm saying is these are all models that can be supported by data.
JUDGE JED RAKOFF: Julius? Oh, I'm sorry.
GERALD LA PORTE: Thank you, Judge.

First of all, thank you to the panel. Two things though -- I wish you guys would have done this earlier in the Commission meeting and, two, I wish they would have given you a little more time so you didn't have to – more than seven minutes would have been great.

So now I'm the practical guy here, so now let's talk about what happens in real life. I'm going to give you an example. Sort of my question directed at the panel is about how do you take into consideration subpopulations? I'll give you a real-life example.

When I was at Secret Service, I had a case that involved a suspect that was potentially printing off child pornography at work. It was in a Government facility, so there was a lot of concern about him printing this material off at work. There was no digital information on this. So I get the suspect printer, and it happened to be a Brother printer. And then I get the child pornography that was being printed off, and it was being dispersed and found in different places.

I was asked to compare the ink from the printer to the ink that was used for the child pornography images. It all – I'll use the term "matched." It was Brother Ink, no problem at all. So there was no issue with the chemical analysis. I actually got the paper in the printer as well. The paper was consistent with the paper that was used to print off the child pornography images as well.

So no I know for sure that Hewlett-Packard, Lexmark, Epson and Canon make up about 97% of the U.S. market for ink jet printers. Brother is only about 3% of the total printers. That roughly correlated with the information that we had in our database with case information. So if I rely on a database, that tells me that that printer probably it's not that common in the population. So through further information, I come to find out that 25 of the other people that this person works with use Brother Printers because that Government installation ordered all Brother Printers; and they all had the same paper. So now I've got a really difficult situation in terms of a subpopulation. So that's a real-life example.

I'll kind of throw out some other things. Let's talk about a shoe impression with a flip-flop in the snow in Alaska. And now I get a suspect and he's got flip-flops. Now I'm in Florida and I find a flip-flop impression. So how do we account for these subpopulation differences? I'm assuming once again that a flip-flop in Florida is a lot more common than a flip-flop in Alaska.

Another example, I got a size 14 shoeprint at a crime scene. It seems like that would be a very small part of the population. It just happens now that the crime happens in a basketball locker room, where a lot of people are a size 14 shoes.

So we talk about the importance of statistics and data in databases, but how do we take into consideration what I call "real-life factors"?

And then one more – I don't want to take too much time, but one more. How do we also consider – and I'll use Alicia's example of glass analysis -- how do we take into consideration the investigative part?

So now I have a suspect that we arrest, or somebody arrests; and that person has a glass fragment in their clothing in the cuff of their pants. Not everybody is walking around on the earth with a piece of glass that's in their clothing. So how is that factor taken into consideration as well?

ALICIA CARRIQUIRY: Let me just say something about the printer example, for example. In that case, the relevant population is the printers in that particular Government office. And so whether there's 3% nationally doesn't matter; if there's 90% in that particular office, that's the relevant population frequency you have to compare it to.

So, yes, you raise a good point – the DNA people have been grappling with this, for example, with databases knowing, for example, that Allele frequencies are different in different populations; so that's an issue that one has to keep in mind. And so defining the relevance of populations is a really important topic.

In terms of the glass example, not everybody is walking around with glass in their clothing, I imagine, unless you walk by a broken window or happen to be – I don't know. And so the only thing that the expert is testifying to is not how likely is it for somebody to walk around with a glass piece in their clothing; it's if I get the sample from a suspect and I get a broken window, and they share common characteristics, can I expect many other windows to also share a common characteristic? So that's a question of interest.

Now, other evidence might be introduced in court saying, yeah, this person happens to live in that building where there's a broken glass too. Well, that doesn't -- that's a different piece of information is what I'm trying to say. And so in order for you to be able to say this fragment and the broken window at the crime scene share common characteristics, and that association is very rare, you have to be able to know a whole lot – not only about the variability of the elements of concentration within the same pane of glass, but also across different panes of glass of the same type if you're talking about automotive or construction windows or bottles or what have you.

Does that answer?

GERALD LAPORTE: Yeah, and we can talk offline too, Alicia. But the idea of when you create this magical database – let's say we do one for glass or shoes or whatever that is – how do you take into consideration the subpopulation data?

ALICIA CARRIQUIRY: Well, as you say, by doing models and windows and automotive and mirrors and the obvious pieces. And occasionally, you're going to find yourself with no data -- for a very specific subpopulation, for example.

STEPHEN FIENBERG: So the key here is the language reference database, which has a multiplicity of uses and would be used by many to carry out empirical studies or the like, and then that part of the database or the way in which that database then is transformed into something relevant for the case at hand. And those go together, but they're not the same thing. And for different cases, it would be potentially very different relevant to both.

KAREN KAFADAR: If I can just add to what Alicia and Steve just said is this issue of database because sometimes the expert will say, "We have data, and this is what we found." And I think as Alicia's example and correlation showed that with the glass example, for example, really don't have the data that we need to make the kinds of assessments that they want to make.

JUDGE JED RAKOFF: Bill?

WILLIAM THOMPSON: I like this document quite a bit, and I think that it's an important step forward on a really crucial issue, which is the question of how forensic scientists should characterize their findings and reports in testimony. And that's a wide open issue; I know it's been subject to lots of debate, and I think it's an issue on which it's important that the Commission comment.

Because questions were raised about how lay people respond to these kinds of statements, which is something I study, I wanted to say a couple of things. One is, if people are interested in that line of work, e-mail me; I'll be happy to send you copies of publications and so on. I have been studying this for some time. I don't feel like I have *the* answer to this; I think it's a complicated question.

But I also want to say that I think the analysis of how forensic scientists should characterize their findings in reports and testimony is really a two-part analysis. The first step, I think, is asking what kinds of statements are logically justified by the kind of data that the forensic scientists have gathered. That question has to be answered first. And then having answered that, among the possible statements that are justified epistemologically and logically, then I think we can look to psychological studies and ask which of the possible logical statements would best communicate the intended meaning to jurors.

But the first step – and part of the reason I like this document is that I think the document does a good job of addressing some of the complexities in the first step of the analysis; that is, what statements are logically justified. And Hari made the statement that's come up; probability requires data plus assumptions. And I think that's very true, and the document does a good job or recognizing that. But even some statements that don't involve numbers are implicitly probabilistic and have assumptions. And one of the problems in forensic science is that some of the statements that forensic scientists have traditionally made – and David gave some examples – require forensic scientists to make assumptions or make assessments about matters that are beyond their expertise, that involve things like the prior probability that this suspect is true, and other issues that involve what the Commission in the Human Factors document called "task irrelevant information."

What I like about the document, I think, is that it does a good job of recognizing those issues. It focuses forensic science statements on types of statements that I think can be logically justified based upon a scientific analysis of the physical evidence itself, using only what the Commission has defined as task-relevant information. And I just wanted to recognize that. I think it's a major step forward that the document does that.

Yond that, I think the document does a good job of recognizing the uncertainty that we now face about the question of what's the best way to talk and present these things. I think there's a lot that we have yet to learn about these issues, and I think the document does a good job of saying what it is we know now without locking us into any particular approaches or conclusions that are not yet justified by science or research.

So I think it's a good job and exactly what's needed.

JUDGE JED RAKOFF: Dean?

JULIA LEIGHTON: So a couple of points – first of all, I'd really like to second the notion of let's get to accuracy and what's justified before we start worrying about impact. While I think impact is important, this is just the first step of the conversation.

The fact that we need them for longer and we should spend more time with them is just reflective of how much the Commission has done and how much it still needs to do, and that we're getting to some very heart of problems. And to stop now is a mistake because we haven't started to answer the really hard problems.

I could see the look at that Uncertainty Pyramid – and like, oh my god, how does anybody testify to this? And that's something we have to resist. What it is, is a careful look at the data. The quality of the data we have and the possible assumptions that are out there say that in that circumstance, there's not much we can say. And we need to get away from the mindset that says we have to have an answer for the jury; we don't. We have to tell them the truth. We have to tell them what can be logically justified by the data we have, and we have to be willing to explore what more we need to know.

And so one of the things that I thought is very important in what we heard said there is that it's terribly important for an expert to say two things. What other answers are possible – you haven't given a complete answer if you can't also articulate, not on cross, but just part of the answer is to say what other answers are possible.

And the simple example I'll give is the expert that testifies to a thousand reasons why the defendant's fingerprints might not be on the gun and doesn't also say, "And it might be because he didn't touch it." That's also possible, and that answer should be part of any complete answer.

And I think this need to include the things we don't know is also part of the complete answer. I don't know the frequency of this feature in the relevant population, so I can't tell you how common or rare it is. That is part of the answer. And it tells us where we need to go, the work we need to do. It doesn't

mean that the features aren't the same; it means we have a hard time articulating because we don't know the variability within the relevant population – the meaning of it.

One thing that we struggled with in the subcommittee, and I think it's important for us to tease out, is this notion of probative value, weight of the evidence. We can't conflate probabilities. There is the value of the match between the glass found in the cuff and the sample glass we're looking at. There's also a different what's the probability that somebody is walking around with glass in their cuff – and don't conflate those. Don't conflate those; those are different things in terms of the meaning. And all of the pieces of evidence are ultimately going to be for a jury, the trier of fact, to put together and decide how they're going to weight. And some of them are common sense: How many people do I see walking around like this, given everything I know about this person -- like, do they live in a building full of broken glass or something else? That's for the jury to work out, and that's part of the pieces of evidence.

And then the last point I want to make is that when we talk about thinking about translation, once we've gotten to accuracy and what's justified by the data, when we talk about translation, we need to be careful about who is doing the translating. Beware of the prosecutor's fallacy, right? When you leave it to the lawyers to do the translation, we may have gotten it all right and then argue it wrong. So when we've reached the point of what's justifiable and what's defendable, and we turn to Bill and look at how it impacts jurors, we're going to have to think about who is going to work on the language of how we do the translation and what's permitted to say when we talk about the translation. Thank you.

JUDGE JED RAKOFF: I think we need to keep in mind since there's been so much focus in this discussion on juries that that's not really where most forensic science issues arise because very, very, very few cases go to juries, only about 3%.

To me, the importance of a lot of this is that when a prosecutor is making the decision whether to bring a prosecution, he or she in the first instance will often have a report from a forensic expert. And if they don't know the statistical probabilities involved, they may give it more weight or less weight than it really deserves.

The second stage is once the indictment – if the charge is brought, the defense counsel gets involved. And if the defense counsel is not given the statistical information that they can go to a prosecutor and say, you know, I think you really made a mistake in this case; this report is really not very strong. And there are a substantial number of cases – 8% of all criminal cases in the United States are cases that are dismissed by the prosecutor after the charge is brought because the prosecutor is informed by defense counsel of weaknesses in the evidence. And this is an area where defense counsel need the ammunition that a properly full report would give them and that they don't necessarily get now.

And the third player in this is the judge. If the case goes far enough, to a Daubert hearing or to some sort of challenge to the admissibility of the evidence, then the judge needs that information. Those are the much more common situations than the jury situation. We can't ignore the jury situation; but really, it's these other players who are more important in the determination. And, frankly, they're more sophisticated; once they're given the information, they are better able than many jurors to deal with the information.

JOHN BUTLER: I see there are seven tents up. I have 21 minutes until 10:00 a.m. and one document we want to vote on. So you have to decide on how much you want to take in terms of the discussion for the vote.

JUDGE JED RAKOFF: All right, maybe just five more minutes for the discussion then.

Dean, I think you were next.

DEAN GIALAMAS: Thank you, I'll try to be brief in deference to other colleagues that want to speak as well.

First of all, thank you to the panel very much. As a forensic scientist, I can admit there's probably a lot in forensic science that we can learn about the application of statistical models to what we do. It's not been a core function of forensic science and a core study, and I think what you bring is valuable.
But what I'd like to address a little bit is – and we've heard this theme a little bit – is kind of the practicality of bringing what you're delivering to this Commission into how do we use this in forensic science; and I think that's going to be the ultimate challenge. Marilyn's question about looking at model and then – quite frankly, I was a little taken at saying – you said, Hari, that you wouldn't use it. I didn't quite understand what the application is.
So my comment back to the subcommittee is in thinking about how you produce this document and whatever changes you make, how can you make it more than just a statement? How can you make it a practical use, a practical change, for forensic science? Because I'm not sure that I see that just yet.
And one of the reasons why I bring this up is in hearing, for example, a number of the things that statistically we might need to consider for a population or for doing an analysis is almost counter directive to the issues we've had about bias in forensic science; in other words, contextual issues. We should have certain things that stay out of context; and yet, there is sometimes information we need to know in order to be able to provide value. I mean, Jerry talked a little bit about that.
And I don't necessarily need a response because I want to give other people an opportunity to talk, but I think that is something that really needs to be thought about in producing this document. Because ultimately, when the rubber meets the road, you've got to deliver something that is comprehensible and understandable by forensic scientists. Because if the forensic scientists don't understand it, it will never be delivered into the courtroom; so I want to make sure that happens.
The other comment I wanted to make -- and I'm sorry, I don't know much about the PCAST environment in terms of membership. But it appears that there are some Commission members who are also on PCAST. It's just one? Okay, I was just curious how many others had been participating in the process because I was just unaware.
STEPHEN FIENBERG: There is a panel of senior advisors; and three of us at the table, I believe, are on that, may more – Karen, the Judge and myself. And then a number of other people were asked to comment on pieces of the document. And I am not talking about any details because I can't.
DEAN GIALAMAS: No, I'm not asking for details.
JIM GATES: I'm the sole member on the Commission who is also a PCAST member. But PCAST reports are not done by a debating society. They reach out broadly to a community, and this pattern has been followed in this. As Stephen mentioned, some of the people that were reached out to are on the Commission.
DEAN GIALAMAS: Thank you.
ALICIA CARRIQUIRY: I just wanted to make a very short comment, and it is that we completely agree that something that's not transferrable to the forensics community is completely useless. And at CSAFE, we have a very, very strong mandate to do research that is transferrable. So one of the things we're really trying to do is reach out to the forensic science community so that we can start not only thinking about how our research can move to the lab, but also how the lab can tell us what research needs to be carried out so that they can do their work better.
Oh, yes, and we'd be happy to have your help.
JUDGE JED RAKOFF: Cecilia, I think you were next chronologically.
CECILIA CROUSE: First of all, I'm really disappointed we couldn't concentrate on the panel more. I didn't realize you were going to discuss this particular document at this time. And I actually had several comments, but I'll keep them brief because I know that now they're supposed to be.

But I do want to mention that we did have CSAFE come to Florida, and they put on their first eight-hour presentation on what is statistics and the basics on it that was extremely well-attended. And we are eternally grateful for you in planting the seed, so they are working on both ends of this.
I had a question about imaging, which I can talk to you later about. When you image a fingerprint or you use 3D, you don't always get the same points that show up. It depends on who is doing them. So I'm really curious about what happens to a likelihood ratio then, but we can talk about that later.
I'll give you my comments later, but I do not disagree with the document in concept at all; but I think that there are maybe some deficiencies, but it sounds to me like you're looking at a lot of those.
And I just want to say that I believe there was an NIJ Grant that a summary just came out, and it had to do with jurors and it had to do with what they listen to. I think it was out of Arizona; (inaudible) was on it. And the bottom line -- if you read that last paragraph, it almost sounds angry. It essentially says the jurors don't care. It says that the judges are the gatekeepers and that they need to be. So I really think that this is important here -- that we set that standard for statistical statements and everything else that we've been doing. But I have several questions that I can talk to you about later. Thank you.
MATTHEW REDLE: And, Cecilia, we have your written comments from before.
JUDGE JED RAKOFF: The good thing is that we're going to have another full opportunity to discuss this because, as I've mentioned, we've made a number of changes in the report. So at our next meeting, we will have a full discussion; it won't be a vote. The vote will only occur at the final meeting, so we'll have plenty of time. So I apologize to all the people who want to be heard now, but I think we need to move to--
MATTHEW REDLE: Let's go ahead and ask them, though, to send their comments.
JUDGE JED RAKOFF: Oh, yes, but if there are comments that you have that would bear on the new draft of the report, it would be terrific if you would send those by e-mail to us. I'm going to state upon the record that Stephen has committed to having the new draft to our subcommittee by the end of this month. So now that I've got him locked in, the sooner you can send the comments the better.
We have one matter that is ready for a vote, which is our Recommendation Report on Documentation, Case Record and Report Contents.
And, Julia, you're in charge of that.
JULIA LEIGHTON: So we've seen this many times now. It started off as a Views Document, and then there was the discussion about how the Department of Justice was going to treat views documents. And so we moved our Views Document towards a recommendation. And I think the result was a good one because we also got some additional comments beyond those that were submitted when it was a Views Document that have made some small changes, but I think meaningful changes. And I appreciate the comments that we received to do that.
To take you through briefly, what you see in green was just the formatting changes that DOJ asked for. The overview now shows up at the end as background. And the wording changes – Ted, thank you for your comments – we changed Recommendation No. 1 to talk about contemporaneous rather than during because some physically can't happen exactly at the same time and expanded that we weren't expecting the documentation in any single case to encompass all that's also included in the Quality Management documents.
Some just smoothing out of the language in Nos. 2 and 3 -- and with respect to the specific public comments that we received, we received two organizational comments and four individual comments. We received comments from ASCLD and from the Association of State Criminal Investigative Agencies, both supporting the document. They also made some comments that were really directed towards the

Views Document that has the very detailed Appendix A. We're still working on that in the subcommittee and are addressing those comments there.
One individual was concerned that Recommendation No. 1 would be too narrowly interpreted and that people would still write very – in other words, the concern was that they would simply write a document that said the items were compared, period. And, yes, people can be cynical; and that is always possible. But we think the statement is clear, what we're asking for, and that people that aren't behaving in a cynical manner will understand what the document is asking for. And to the extent that we are concerned about cynical approaches, that's the point of the next Views Document where we will lay things out in more detail.
Another person seemed concerned that we were, by not including in Recommendation No. 4, repeating the language that by a person or a scientist with sufficient training and experience, we were suggesting that anyone that wanted to could – the data had to be there so that anyone could evaluate it. I think we made clear in Recommendation No. 1 that when we talk about the kind of document, we're talking about the kind of documentation that a person with sufficient skill or training allows them to evaluate it and that we aren't making an opinion here one way or another about who such a person is.
There was one comment, which I'm generously trying to suggest was that we didn't need No. 4 because all the information would be in the report described as No. 3. Frankly, I really couldn't quite make sense of what the comment was. But our best effort to understand it was that as we explained in Recommendation No. 2, we don't expect everything that we've described in No. 1 to be in the reports at this juncture. There may be technological advances that happen that allow for an easy transfer of information somewhere down the future, but we do recognize that not all the SOPs, not the Sampling Plan, those things can't be in the report.
And beyond that, the one change we did not make is there was a comment that we should strike the language that we require that possible sources of error be identified, and that we should replace "estimated uncertainty and variability" with "measurement error." And I think as the conversation this morning articulated, these are different things. And we recognize that some of it, just as we've discussed here, that there are things that the answer may not be known. We may not know what the rate of false positive or false negative results are, even when the process is followed. We may not know what the error rate is, but that you have to report then that you don't know what the error rate is – that these may be things for which there is no answer other than that we do not know, but that they still must be reported.
JUDGE JED RAKOFF: Discussion? If there's no discussion, then someone – oh, sorry about that – did you have something to say?
HARI IYER: I just wanted to clarify regarding the Uncertainty Pyramid. When I said I wouldn't use it, what I meant was I would use the alternative empirical approach. If I did use the likelihood ratio, I would want to specify all other plausible values that will go along with it.
JUDGE JED RAKOFF: Okay, thank you.
So I want to call for a vote – oh, I'm sorry; forgive me, Marc, sorry.
MARC LE BEAU: I have no problem with the document. In No. 4, it seems to be worded a little odd to me. I'm wondering if that shouldn't be broken into two sentences to get the full intent. As I read it, I keep stumbling over it.
JULIA LEIGHTON: Can you tell me where you'd put the period? The effort with No. 4 was, one, to make it really short because there were laboratories that were concerned about just their space in the LIMS System. But if there's an easy period and a word we can get rid of.
JULES EPSTEIN: I think you can put a period after "work performed" and start a new sentence.

JUDGE JED RAKOFF: I think it's a comment after "conclusions."
JULES EPSTEIN: Or a comma.
UNIDENTIFIED MALE SPEAKER: I think maybe you're right; after conclusions would be the place to put it.
JUDGE JED RAKOFF: Can we add the comma without taking a vote or is that material? (Laughter)
UNIDENTIFIED MALE SPEAKER: The semicolon right there.
UNIDENTIFIED MALE SPEAKER: I think you need a comma after conclusions.
UNIDENTIFIED FEMALE SPEAKER: If you put the semicolon, then you don't need (inaudible); then you could start with "to understand."
DEAN GIALAMAS: And this was what we all agreed to yesterday that the SPO can handle, so we don't need to take Commission time to enter commas in, right? I mean if the spirit is that it can be two clauses, we just deal with that afterwards.
JULIA LEIGHTON: I'm thrilled.
JUDGE JED RAKOFF: Okay, anything else?
JULIA LEIGHTON: For the record, Stephen left me his clicker and said if he wasn't back, I was to push – I guess I can advertise, I was supposed to push "1," so I'm going to do that.
JOHN BUTLER: In doing this, we again establish the quorum again for today. So we have – Sunita Sah is not here today, so her proxy is Bill Thompson. Phil Pulaski has provided his vote, Vince Di Maio has provided his vote, and John Fudenberg is here today. So we'll have to have the full 22 votes to get two-thirds; so, again, we have everybody who should be here. So we're up for the vote now; it should be open.
Just a second – software issues here, too many things open.
Okay, sorry, now we're ready to open for a vote here. Okay, you should be able to click.
Just a comment on the people who didn't click last time. So it wasn't a single clicker. You should get 32; they should be all working. So last time we had Peter, Cecilia, Nelson and Paul all on separate votes that did not record. So I can talk to them individually if you want to get that 32nd vote.
We've got 32 here, so that's good. We had 97% Yes, 3% No, and 0% Abstain; so this passes. Thank you. Anything else before we go to a break?
MARC LE BEAU: Can I just clarify something on the record. The FBI is not paying hundreds of thousands of dollars for a glass database. I'm sorry; I don't know where that information came from. But I've confirmed that fact at the Lab, and we are not doing that.
JOHN BUTLER: Okay, thank you.
Anything else before we take a break? Okay, thank you. So we'll take a break for 15 minutes; come back at 10:15 a.m. Thank you.

PART V

UNIDENTIFIED MALE: Okay, let's take our seats.
STEPHEN FIENBERG: Could everyone sit down, please?
UNIDENTIFIED MALE: That was Jules, not Nelson, so he might get some reaction. (Inaudible), sir. I'll start calling people out.
All right. We're going to get started with Human Factors. We're going to have another break in about 45 minutes, so you can pause your conversations until then.

The following transcript is provided for informational purposes only and may not provide exact quotations from the meeting proceedings. For an full account of this NCFS meeting, please visit the following link for the recorded webcast: https://www.nist.gov/topics/forensic-science/ncfs-meeting-11-webcast

All right, we're just going to get started. And usually when someone else talks, you guys sit down, so – I'm going to turn it over to Jules and Bridget on Human Factors.
UNIDENTIFIED SPEAKER: Shh.
UNIDENTIFIED MALE: There you go. All right. Thank you. So we're going to do Human Factors Subcommittee report, Bridget and Jules. Thank you.
BRIDGET MCCORMACK: Thank you very much.
We have two items to talk about. One that is up for a final vote and one that's a Views document that's here for the first time for discussion. And I'm going to let both of the primary authors who are present lead those discussions. And so I think we will start with the Views on Facilitating Research on Laboratory Performance, which Bill Thompson has been our lead author on, and he is sitting at the table today so that makes it easy. Bill.
WILLIAM THOMPSON: All right. This is a Views document that is designed to facilitate a kind of research that we on the Human Factors Subcommittee regard as extremely valuable, and that is blind testing of the performance of forensic science examiners that occurs in the normal flow of casework, that is circumstances where people who are performing routine analytic tasks in the laboratory are tested using samples from a known source without their knowledge that they are being tested.
This kind of research has a number of advantages that the document points out over research in which examiners know that they're being tested.
Research of this type has been difficult in the past because in most labs examiners are not blind to the source of the sample so it's hard to sort of fool them into thinking that they're doing a real case when they're doing a test. But interestingly it's becoming a lot easier to do this kind of research as a result of laboratories beginning to adopt context management procedures of the kind that we've discussed at the Commission and that the Commission has, in fact, recommended.
So a number of labs – still a minority, but a number of labs – have started to adopt context management procedures designed to blind analysts, at least temporarily, to what we call task irrelevant information so that the analyst knows something about the nature of the samples but doesn't know the background of the case before doing comparison or analysis.
So it turns out one of the second – those management procedures were introduced mainly to reduce the potential for cognitive bias, but a secondary benefit that labs have discovered when they adopt management procedures is that it becomes a lot easier to do blinded testing of examiners in the normal flow of casework. And a number of labs we've looked at around the world have started to do that and have found that this kind of research is very valuable for quality assurance purposes. So, for example, samples from a known source are introduced into the flow of casework, either by a section manager or in the policy property room, for example, and so the analysts don't know that they're doing – the analysts think they're doing a regular case until after they've done it. They then can be given feedback on their performance and the lab can determine whether performance is good or suboptimal and what can be done to improve.
And so once labs develop the capability of doing research studies of this type with blinded samples, it becomes possible for the lab to accommodate research that addresses a variety of different and important issues. One can design research studies that can be done in a blinded way by preparing test sets of known source samples that are very systematically and experimentally in order to address different issues. So, for example, if you're interested in validating a particular kind of technique on a particular kind of sample, if you're interested, for example, on how much distortion can you introduce in latent prints before latent print examiners – before their performance degrades, you could introduce in the flow of casework latent prints with varying levels of distortion to find that out.

If you're interested in estimating error rates, you could give samples that reflect typical casework samples and do that. If you're interested in training analysts on particular kinds of tasks, you can introduce samples of that type. So there are a variety of different research purposes that can be explored using this methodology.

The purpose of the Views document is to recognize that this kind of research is possible and to encourage and facilitate it by making it easier for labs that choose to engage in this kind of research to do it. So the goal of the Views document is to encourage such efforts. We're not calling for mandatory testing of any sort. It's simply calling for certain steps to be taken that we've heard from, particularly from lab directors who are trying to do this research, there are certain things that they could use to help them do it better.

One thing the document recommends is funding of pilot programs of this type so that there could be some government funding to help labs set up these programs.

Another thing that it recommends is government funding and facilitation of the creation of test sets that could be used by labs to explore various research questions, such as the distortion in latent prints. If it were DNA samples there could be mixed samples sent through. I mean, you can imagine a variety of different important issues relating to the limitations of a particular technology that could be explored through this kind of research. And the document recommends that there be governmental support, through NIST or other central organizations, in creation of the data sets that could be used for these purposes.

A third recommendation in the document is that there be some clarification of rules and memorandum of understanding regarding the appropriateness of accessing databases, such as latent print databases and DNA databases for research purposes. There's some uncertainty about, for example, about the appropriateness if a latent print or a DNA sample were introduced into the flow of casework for research purposes, whether it would be appropriate to search that against a database. And we think that that kind of research would be helpful, we say why, and we urge that there be clarification of the rules on that.

And then finally we urge that courts be cautious about how the results of such research studies are introduced and used in evidence at trial, so we're mindful of concerns that research of this type, particularly if the research is done to establish the limitations of a technology, that is how far can you push a technique before analysts start making mistakes, inevitably the research will reveal that mistakes occurred. And so we include in the document some advice to judges on how to be judicious about using that information so that it won't be misused.

Okay, so that's the document. It's been substantially revised from the previous version to emphasize the research functions as was suggested.

There is an adjudication of comments. We received extensive comments from the ASCLD Board and from Cecelia Crouse, who, as usual, made helpful comments.

The ASCLD raised objections to the proposal, but we think their objections were mainly based on a misconception that we were calling for some sort of mandatory research program. And they were concerned that research of this type, if mandated, would interfere with other laboratory functions, might not be worth the effort in a particular lab, and so on. I think that's all true, but I think what we're – we're suggesting facilitation of these kinds of programs that would be adopted on a voluntary basis by labs that choose to do it. And so presumably those labs would not choose to engage in this research unless they decided that it was valuable to them as some labs already have. And so I think a lot of the ASCLD concerns were just based on a misconception.

The other major theme of the ASCLD Board was that they worry that information from this research, particularly if the research shows errors or limitations of a technique, that that information will be misused in the courtroom. Be used to unfairly impugn analysts or labs or a technique, and I think the thrust of their comments is there's certain things that maybe we'd be better off not knowing. We had a dialogue over some of these issues. It kind of reminded me of the scene from the movie A Few Good Men where Tom Cruise is saying, you know, I want the truth, and Jack Nicholson says, You can't handle the truth. And so I – I don't mean to demean people raising these questions, but I do think that the argument really is an argument that maybe the legal system cannot handle the truth and that bad thing will result if we do studies on these issues.

We talked about this a lot at the Human Factors Committing meeting. We don't regard it as a strong scientific argument, and I think generally, after discussion we're a lot more optimistic than those who are raising concerns about the ability of the legal system to handle this information. I think it's – our feeling is that information about studies in which analysts make errors probably would be discoverable. But even if it is discoverable, it's not necessarily clear that it would be admissible. You know, it's not at all clear that a study of errors that occur in a study that's designed to see how far you can push a system until errors occur, that that would be at all relevant to the performance of an examiner in a routine case. The document advises courts of that, and so I think it would be – ultimately it's a decision by the judge whether this information is admissible, but I think often it would not be admissible. Even if it is admissible, I think we're probably more trusting of the ability of jurors to use common sense and realize that an error that occurred in research that was designed to see where errors occur is probably not all that relevant to the performance of an analyst in another case. In fact, from my point of view, it may be that labs that engage in this kind of research will be perceived as more credible by jurors than labs that decline to engage in such research because they are afraid that the results will be misused.

So that was our feeling on that.

Cecelia made a number of interesting points, which we responded to a number of her points. Let me go through the adjudication of Cecelia's quickly. One question is whether this should be a recommendation rather than a Views document. You're okay on that.

CECELIA CROUSE: It wasn't – you know there's – George Bernard Shaw said that the single biggest issue with communication is the illusion that it occurred. So as I'm reading the adjudication, that's actually not what I said.

WILLIAM THOMPSON: Okay.

CECELIA CROUSE: What I said was that your title said "Views" and the very last paragraph said "recommendations", and I just wanted you to make a decision. I was not recommending the document –

WILLIAM THOMPSON: Yeah. Okay. But it turns out a lot of Views documents make recommendations. This does not make any recommendations to the Attorney General, but it is making recommendations to other governmental entities.

CECELIA CROUSE: No. I just wanted to make sure –

WILLIAM THOMPSON: Consistent with what other Views do. So that was our adjudication there.

Another question was on this point that some of the studies could be used for estimation of error rates. I think Cecelia asked some technical questions about how those estimates would be made. And our feeling is that's an issue for statisticians. We urge in the document that labs that carry out this research do so in conjunction with statisticians and the issue of how you derive error rates from the data in the study I think is probably a technical issue beyond the scope of this document.

We should, uh, Cecelia, you made a number of comments on terminology, most of which we adopted.

One question you raised is – because we said that for answering certain research questions it might be helpful to create especially difficult samples. In other words, and which you say – you ask why – isn't that like spiking for errors. If we introduce particularly difficult samples into the flow of case work, wouldn't that be making it more likely that errors would occur. And the answer is yes, but there are a lot of reasons that a researcher would want to challenge a system. By introducing difficult samples, you learn more about the system.

So in a particular research study, yes, somebody might want to introduce difficult samples. We don't see that as a problem, we see that as a virtue of this kind of research.

CECELIA CROUSE: Well, please keep in mind that my comments were based on the original document. It's changed considerably.

WILLAIM THOMPSON: Yeah.

CECELIA CROUSE: And you are actually addressing the fact that we needed to make sure that there was failure. That's what the comment said – I mean, that's what part of the document was. And it had to do with proficiency tests. There was this going back and forth between proficiency tests and research. So the first document was very difficult. So that's not exactly what I did say.

WILLIAM THOMPSON: Yeah. No, and I think – no, and I think your comments helped us eliminate a lot of that confusion.

Now I think the new document makes it very clear that what we're talking about here is research studies. Those are different than proficiency tests. I mean, you know, presumably if an examiner performs terribly in research studies, that might reflect on their proficiency, but the goal of this research is not to test individuals' competence. It's to test the system and to examine systemic variables and factors that might influence performance. And so that's a kind of research that we feel is greatly needed in forensic science. We think carrying out that research in a blinded way in those labs that are willing to do this kind of research, would be very beneficial for forensic science in general. And all the document is asking is that certain steps be taken to facilitate that kind of research by labs that are willing to do it. And so that's our goal, and I think that covers what I wanted to say about it.

UNIDENTIFIED MALE: Stephen has a question.

STEPHEN FIENBERG: Just an observation and an embellishment in a sense.

I think this is a great document, and I'm very supportive. We actually have a pilot project under way whose goal is to understand how to do proper statistical design of these studies for maximal benefit of various sorts. And we are looking to partner with – this is (inaudible) and looking to partner with a number of different labs to try these out. And the kinds of materials and support that are being addressed in this document are exactly what would be able to turn the concept and structure that we've been thinking about into real tests, in real labs, and real scientific results.

WILLIAM THOMPSON: Yeah. And the labs that have undertaken this kind of research, mainly for quality assurance, have found it very helpful. And are supportive. They would like more support for the government to do this kind of research because it's difficult. I mean, it takes money. Particularly getting the test sets of samples to be introduced into casework is something that often can exceed the resources – the requirement exceeds the resources of many forensic labs. There can be opportunities for labs cooperating and so on, but because many of the samples could be introduced in digital form as images and so on, it simply makes sense to make this a more centralized function by a governmental entity. If NIST were to come up with test sets of latent print images and so on, those same test sets could be used in multiple labs for different purposes and it would save money. Make it all more efficient. Our hope is that this will sort of – from a very modest beginning will grow and spread and become a more important part of the underlying validation of forensic science.

UNIDENTIFIED MALE: We're just going to go around the room, so Barbara, and then we'll go around the table, anyone whose tent is up.
UNIDENTIFIED MALE: Yes. Once you're done speaking, turn off your mic.
Barbara.
BARBARA HERVEY: I'm just curious. How many times do you submit these samples? I mean, is it just one time to one lab, or do you have a regular program for doing this?
WILLIAM THOMPSON: Yeah, it would depend on the design of the particular study. What the – the labs that are doing it so far try to introduce test samples, you know, in a small percentage of the cases. Maybe one case in 20 that passes through would be a test sample. Or one in 30, something like that. The number of samples that would need to be passed through would depend upon the nature of the study. So if you were trying to do error rate estimation, you would presumably need a large number of samples representative of casework. If you were looking at the capability of the lab to process samples of a particular type, maybe you wouldn't need so many. So it would vary depending on what study you decided to run. And presumably those decisions about sample size would be made in consul-, you know, we would hope would be made in consultation with statisticians so that any conclusions drawn from this research would be statistically sound.
UNIDENTIFIED MALE: Jim.
S. JAMES GATES, JR.: Thank you. First of all I want to commend the work. I think I was – several meeting ago, maybe years ago, brought up this idea of proficiency versus performance because they're two different things in my mind. And the system is very used to thinking about proficiency. But performance, or performance testing, or evaluation, or research, or whatever you would call it, I don't care what words you attach to it, this idea that you're going to test the system to try to get – to try to pull out of that data how the system performs, I think that's an extraordinarily important task to do. And it also complements, while you're trying to validate the basic science, you can at least find out where the system is in performance and have some metrics.
Over the weekend I actually got a chance to see a movie called "Sully." Maybe some of the others of you saw that also. And you know, there's a beautiful scene in that where Captain Sullenberger is being challenged on how he managed that incident. And he said, I felt the engine go. He didn't say, I thought about it. I felt the engine go. And for me that crystallizes something about expertise because I have a very high regard for expertise. And I have no doubts that within the forensic science community there are extraordinary people doing extraordinary work, but if you ask them to explain it via science, they will probably tell you something like I felt. Now this felt is not just some random occurrence. It's based on a data set that they have built up over years of practice. And I think we need to find a way to honor that. And to make sure that when it's challenged by external groups like crazy scientists that do string theory, that performance evaluation is an answer to the show me question. So I think that this – I commend the group's work. I'm glad that this was taken up. I hope that the community as a whole understands the opportunity that it has to actually use this as a way of answering the question, how good are you.
WILLIAM THOMPSON: Yeah. Let me just comment. One of the scientists who has been doing this kind of research, Bryan Found from the Victoria lab in Melbourne who is running blind testing of document examiners. And he presented data from these studies last summer at the NIST – or summer before last – at the NIST (inaudible) conference. And one of the things he found that was really interesting once he started doing the studies is that he found different examiners had different expertise. So one examiner might be particularly good on some kinds of comparisons but not so good on others, whereas the other might be the opposite. And once he started getting feedback on examiners' actually performance, that led to helpful information for training purposes, suddenly you could ask, well why is Joe doing so much

better than Bob on this one, and so on. So it's enormously helpful for training. It also gives the examiners themselves feedback on known source samples, particularly on these difficult cases where they might – in routine casework they don't get a lot of feedback with certainty about whether they were right or wrong. Giving them that feedback can help them improve their own performance. And so this is a way to help people develop the kind of expertise you've talked about, to verify who has it, and learn from it.

STEPHEN FIENBERG: I'm just going to jump in and point out that on our schedule we have 20 minutes remaining. So I want to get everybody's comment but ask for concise. Bonner , I think you're up.

BONNER DENTON: I strongly support this document. Not only will it provide insight into quality assurance for the individual laboratory and give them a better idea of how well they're performing, but it will support a variety of different research into wide areas of important operational parameters. And so I think we really need to do this document and also consider continuation and some more support documentation for fathering this whole concept.

Thank you.

STEPHEN FIENBERG: All right. Cecelia, are you up again?

CECELIA CROUSE: Well the first time didn't count.

STEPHEN FIENBERG: What a silly question. Sorry.

CECELIA CROUSE: With regards to language, I still have an issue with using words like "circumstances" and "boundary conditions." In science they are limitations of the method. They're not boundaries, they're not circumstances. I don't even know what that means. And that I just want to make clear. I still feel that that one should have been changed.

And, you know, I'm not going to go through this again as far as adjudication because there are just some things in here that I just didn't say. Or didn't mean. But with regards to comment 26, I think that's very inappropriate to have in this document. This was the – and it starts off by saying, In comments on an earlier draft of this document, and then it goes on to explain exactly what you just did, Bill, with regards to ASCLD's questions. And I'm not speaking for ASCLD, but I think that you answered the question by, first of all, making it non-mandatory, second of all totally revising the document, and it's actually, especially that very last sentence that says, It would be obviously a travesty of valuable research on the performance of forensic laboratories is not undertaken because forensic scientists fear the consequences should the results of that research become known.

In the first place, I don't know a black box, white box, yellow box, pink box study that's ever been done, and we've participated in a lot, where our names were directly associated with the question samples. Because it's research. And I get the research. I like the document now. Ninety-two percent better – I don't know where that number came from, but I like it a lot better than the original one. But that – to take someone's comments that were just legitimately asking, you know, for you to comment on, and you did, and then to put those comments in here just sounds so negative to me unless I'm missing something.

STEPHEN FIENBERG: So that's a comment on the adjudication document part?

CECELIA CROUSE: No, that's in your document.

STEPHEN FIENBERG: I couldn't tell what you were referring to.

CECELIA CROUSE: It's footnote number 26.

STEPHEN FIENBERG: Got it.

CECELIA CROUSE: Is it 26?

UNKNOWN: All right. Now I see it.

UNIDENTIFIED SPEAKER 2: You almost had it there, John. It's on the next page.

CECELIA CROUSE: Well thank you for not putting mine as a footnote.
WILLIAM THOMPSON: I don't think that footnote is necessary. If that footnote is offensive, we – I would support just dropping it, as a friendly amendment.
UNIDENTIFIED FEMALE SPEAKER: Second.
STEPHEN FIENBERG: All right.
CECELIA CROUSE: Thank you.
STEPHEN FIENBERG: Great point. Sorry.
Tom.
THOMAS A.: I just want to voice my support for this proposal and for this document. This is a natural experiment of enormous value. It simply involves measuring behavioral performance of forensic service providers as a function of the properties of the stimuluses, a function of the properties of the observers themselves. And I think it's important to stress the value associated with this which is that if you want to be able to fix the system, you have to understand how it works and the points where it breaks. And these are experiments that will give us that knowledge.
And also, I think Bill made the point very clear, this is not about individual performance, this is about performance of the system, as a whole, under what conditions, what are the ideal types of stimuli for people to evaluate, what are the ideal conditions of the observer that lead to the best performance.
STEPHEN FIENBERG: Continue right along.
UNIDENTIFIED MALE 3: I want to support this, too -
STEPHEN FIENBERG: You're not up, (Inaudible).
UNIDENTIFIED MALE 2: Oops. Oh, man! Very dangerous (inaudible).
DEIRDRE DALY: I just have one question. Because this is focused on research and not individual competence of examiners, was there thought given to having it done anonymously to avoid confusion when the examiner testifies and could be cross examined regarding the results. Which I understand is done in other industries.
WILLIAM THOMPSON: Yes, we talked about that. I mean, I think it would be up to the lab and the researchers whether to do that. But certainly in most university studies it's routine to make the participants anonymous. I think it's done in proficiency testing. So I think that would be perfectly appropriate.
DEIRDRE DALY: So there's no objection to that?
WILLIAM THOMPSON: Oh, no, absolutely not. No.
STEPHEN FIENBERG: Now over to (Inaudible).
UNIDENTIFIED MALE 3: Just a very quick thing that a lot of this is pretty much accepted in medicine and this is done in diagnostic labs.
STEPHEN FIENBERG: Thank you. Terry.
TERRY: I'm good.
STEPHEN FIENBERG: All right. Oh, Marilyn, you've ruined the symmetry.
MARILYN HUESTIS: Well, I know, I know. Okay, So I support the document, but I totally support it being anonymous when the results are presented. It is research. It really makes a difference to the individual that they don't get up on the stand and they say you missed whatever. I think that the specific results go back to the lab so they can use it for all the good reasons that you said, so they can improve training and whatever, but it should not be published what lab had what score.
STEPHEN FIENBERG: All right. John – Nelson, I think we can go to a vote.
UNIDENTIFIED FEMALE: Somebody has to move.

STEPHEN FIENBERG: All right. I'm going to move that we approve this on its final vote. (Inaudible), we're ready.
S. JAMES GATES, JR.: I'm sorry. Before we call this, I have a question. And I'm sorry. And I know the train has almost left the station.
STEPHEN FIENBERG: That's all right.
S. JAMES GATES, JR.: But this, I think, is an important question. So as I said, several meetings ago I tried to bring this point up, and I think Bill and his group have executed brilliantly on this matter. But I want to make sure that in all of our minds and in all our documents, proficiency, performance are separate things that do not interact with each other. I just want to make sure that that's clearly understood. I want it on record that that's what this is about. So I just want to put that there.
STEPHEN FIENBERG: Thank you, James.
May we vote?
UNIDENTIFIED MALE: Yes.
UNIDENTIFIED FEMALE: They're voting.
UNIDENTIFIED MALE: We've already had three people vote.
UNIDENTIFIED MALE: Peter is not here, so is there anybody else missing?
UNIDENTIFIED MALE: Anybody else missing? You've voted for Peter now.
UNIDENTIFIED MALE: The ethics talk is later.
UNIDENTIFIED MALE: Yes. Okay, we'll go with the 30 that we have, and then we'll figure out who the other people are and ask them if you want to get that.
Okay, 100% of the 30 that voted, so excellent. Thank you.
STEPHEN FIENBERG: Yes. Right. Do you want John to come up and take my seat?
BRIDGET MCCORMACK: We'll let John Hollway take Jules's seat because –
STEPHEN FIENBERG: Because I offered it.
UNIDENTIFIED MALE: Oh!
BRIDGET MCCORMACK: Oh yeah, then Jules –
UNIDENTIFIED MALE: (Inaudible) like Jules's voice will still be heard.
BRIDGET MCCORMACK: Yeah, that's true.
JOHN HOLLWAY: So I'm going to both talk about this and take care of Jules's emails.
So the Human Factors Subcommittee has been having an ongoing conversation about the topic of checklists. And checklists, short, structured, precise orders of tasks to complete a more complex team-oriented task have been used successfully, though not universally successfully, in a variety of other industries that are similar to forensic science and forensic science labs including clinical hospital settings, aviation, a little bit farther afield but has some of the same characteristics of multidisciplinary teams working on time-intensive tasks with dynamic information towards a common end.
And the question that we have been trying to resolve amongst ourselves was how do we get at the topic, so sort of a meta question of how do we actually get at the topic.
A group of us, my colleagues Jerry Kassirer, Deborah Leben, Laura Sudkamp , and Barry Sheck (sp), looked at the literature on checklists and put together this Views document, the summary of which is there is reason to believe that checklists will be useful in certain situations, though, as in other industries, selecting the precise environment in which to deploy a checklist and making sure that it is deployed in a specific way that makes it implementable and useful for the team doing it, we believe has merit. There are enough studies showing substantial improvements in quality and safety in other industries to make it worth reviewing. The group has not had the time to really apply, discuss or make recommendations for the situations in forensic science where that might be useful, and what we believe

is the next step would be for a group to take that on. Evaluate various places where checklists could be used and then test their utility in that situation. There are some examples from forensic science labs that have used checklists. Cecelia had made some comments including asking us to cite to that statement which is in this document. That can certainly be done, though I would suggest that I think we're unlikely to be exhaustive with that cite. But I do think we can provide some instances and that might provide a good starting point for any group that were tasked with it.

But it's here in draft. We had comments from Cecelia, and I think that those were the only public comments we got. So, you know, in essence the view is we should look at this further and in a scientific way.

And with regard to the comments, I think, I'm speaking now personally and not for my colleagues, but my personal response would be all of them are agreeable and fine. The one place where I might respond is that you indicated excluding a sentence that other non-laboratory procedures might benefit from checklist use. And I though perhaps a little bit more explanation of what we were thinking was checklists such as the transfer of information from a forensic crime lab to other agencies. Some of the conversations we had on the root cause analysis where non-laboratory personnel might be doing tasks that involve scientific personnel but still would benefit from a checklist to make sure that all tasks are followed was the sort of thing we were intending. So our preference would be to retain that, but wanted to make sure that we weren't missing something in your question.

CECELIA CROUSE: No, it just seemed very vague, and it could be almost anything. You know, where to put your scrubs, or how to do – I mean, it just seemed very, very vague. But if you clarify it, that's great.

JOHN HOLLWAY: Okay.

BRIDGET MCCORMACK: Is there other discussion or feedback for John or our subcommittee?

BRIDGET MCCORMACK: Steve Fienberg.

STEPHEN FIENBERG: So, Bridget has heard this comment before, I believe. I am on the Subcommittee, but I'm also on others, and when we meet simultaneously I somehow have shirked my duty to yours.

I'm a skeptic about this enterprise. I don't think there would be any damage from such a Views document because it says, well, this may be of value and should be explored. But if you look carefully at the examples that have been cited and how they're cited, and how checklists are used in practice, not just in the kind that have been elucidated in medicine and the airline industry as well, they have a tendency to ossify an existing protocol in various ways. And in some senses they may inhibit good science in laboratory settings rather than enhance them.

And I worry about that, and therefore I worry that any research that goes on about their value I think needs to somehow come to grips with this.

I like to tell an anecdote from 53 years ago when I was employed through the summer by a life insurance company in Toronto. And they set me to work in a group of clerical people setting health insurance rates. And we were doing these with the old-style electronic calculators that had 12 or 16 register elements. And along the way in the calculation was a three-digit number. And so when I was carrying these out I stopped copying down all 16 digits for every one of the protocol calculations. And I passed this particular assessment on to the worker beside me, and she looked it over and sent it back and said, you're wrong, you have to do it again. And I said, what answer did you get? And she said, well, it was the same one you did. And I said, so what was wrong? So we took this up to the actuary, who took me out of the division and gave me a cubicle in the corner and a research task where I couldn't talk to any of the clerical people. I think we really need to worry about that because there were far more efficient ways to carry out that task, and just because everybody had become very good at it over time wasn't a measure of how to check performance.

BRIDGET MCCORMACK: Yeah, so I don't know if John wants to respond to that at all or – keep going? All right.
Dean.
DEAN GIALAMAS: I just wanted to add an editorial comment about the language in the recommendation. And specifically in the first sentence it talks about that it's the Commission's view that the checklists are needed to generate accurate forensic science data. And my real concern there is that it's really a misappropriation of, I think, a term. I'm not sure if it was put in by accident or by deliberate choice, but I think the issue is really error reduction, and you used that terminology later, and I'm totally fine with error reduction, but I have some real strong opposition to "generate accurate forensic data." I think it's misappropriated in that statement.
JOHN HOLLWAY: So let me make sure I'm understanding what you're proposing, Dean?
DEAN GIALAMAS: Well, I think what I'm proposing is changing the language. I mean, I think the perspective it brings is that checklists are somehow going to bring more accuracy to forensic science. So if the idea is that it is geared to help reduce errors in forensic science, I'm fine with that language or something of the like. I haven't really come up with a proposal because I don't know what you meant by that and maybe I'm presuming something about what your intent was that may be incorrect.
Let me ask, what did you mean by "generate accurate forensic data?"
JOHN HOLLWAY: So I guess the advantage of the comment period is that I feel like I'm looking at this for the first time.
DEAN GIALAMAS: Well I certainly was.
JOHN HOLLWAY: So I think there's a supposition in there that we want the forensic data generated to be accurate. I guess I'll start there. And so with that as a base position that ensuring the precise performance of repetitive activities and avoiding bias in activities helps to do that. And I think that's really all the sentence was intended to say, and it wasn't intended, actually, to point to checklists as being necessary for doing that but that checklists could help with something that is necessary to ensure the accuracy of forensic data.
DEAN GIALAMAS: Well, I would still have some concern about the term "generating accurate forensic data," but what I'll do instead of taking time – let me come up with some language to suggest to you and then see if that works for the Subcommittee.
JOHN HOLLWAY: Yeah, I'm sure we can find appropriate language there.
BRIDGET MCCORMACK: Uh, Jim.
S. JAMES GATES, JR.: My question sort of echoes Stephen's in some way. As I understand checklists, and certainly the examples that you've cited, they have shown efficacy in dealing with complex situations where often time is an issue. So, for example, when you're preparing a plane to fly you have this very complex set of rechecks that you do. The pilot and copilot go back and forth, and then they make sure the plane is ready to take off, especially with modern, multi-hundreds of people flying with them and we really want this kind of reliability.
And then, of course, in emergency medical situations, again, checklists have been found to be a way to increase the efficiency and the efficacy of treating people in a timely manner.
I guess I'm having a little bit of a problem understanding the mapping of that sort of requirement to the context here. It may be because I'm so far removed from ground truth in how forensic science is practiced. But I'm a bit skeptical, quite frankly.
JOHN HOLLWAY: Well, I guess I would say two things. The first thing that I would say is that skepticism around the utility of checklists in various situations is something that's shared by the Subcommittee, and that's precisely why we have this view that there should be further assessment. Because it may very well

be that there are areas where they work, areas where they don't. One possibility is that there are no areas where they are useful, but we think that's worthy of further study given the utility in other places. The other thing that I would say is that while I would agree with you that checklists have been shown to be useful in time-sensitive situations, that is not the limitation of where they have shown to be useful. So, for example, one of the sort of very first wow moments with checklists was a study by Peter Pronovost at Johns Hopkins where what he showed was a substantial – I'm going to have to get – I don't want to say the percentage – but a large double digit percentage drop in central catheter bloodstream infections caused by following a protocol and a checklist that had no time pressure but needed to be done in the same order and then checked regularly in the same order to ensure it was being followed. And I think that might be – without any – it may be that there are utilization rules that go on in a forensic lab that require people to hustle through tasks, and maybe that's an analogy. Not sure. But I think that it's broader than that where their application may be in areas where time limitations are less of an issue. And so, again, our thought would be that that's worth reviewing.
BRIDGET MCCORMACK: Pam.
PAM KING: Just as a quick suggestion on what Dean said, I think if you take out that entire clause and it just says it is the view of the National Commission on Forensic Sciences that it is critical to ensure the precise performance of repetitive activities, and finish the sentence from there, that might be one way to solve the problem because I think it's that middle portion that adds a little bit too much (inaudible) to the sentence itself and the statement you're making.
DEAN GIALAMAS: And just to add real quick, you could remove the whole first sentence because it is really not – I mean, the second sentence and third are really what your recommendation is. The first sentence is really more descriptive and is already covered in the body of your address.
BRIDGET MCCORMACK: I see him crossing it out as you speak.
JOHN HOLLWAY: I actually crossed out everything down to the last word in the paragraph.
BRIDGET MCCORMACK: Jeff – sorry, Sam.
No, we've got to – we're just talking about it, we're not voting.
SUZANNE BELL: Yeah, I just – one question here is how would you differentiate a checklist from an SOP? Because if you look at how laboratories work, I mean essentially an SOP is a checklist. And it's – so my question is how – it might help to have an example here because SOPs – I don't work in a lab any more, but quite often there is literally a checklist on the case folder, and check lists for that. So I guess I'm struggling with what's the difference between an SOP and a checklist?
JOHN HOLLWAY: Yeah, I mean I certainly think that an SOP can act as a checklist, and I'm not sure that it was our – I don't know that we went to the issue in the depth of them labeling how it fits into a group of SOPs except that you wouldn't want to have a checklist and an SOP that conflict.
SUZANNE BELL: Well, I guess that's just my concern is that – I'm not sure what the value added is, I guess is my question. And it seems like just philosophically, you want to give scientists room to be scientists in that sense, and I worry about when you get down to the checklist, we're even making it less capable. But that's – it would help me to understand what's the value added as opposed to what's already in place in accredited laboratories that have procedures and SOPs.
JOHN HOLLWAY: Yeah, so I think actually that goes to answering the question that we're recommending somebody else evaluate.
UNIDENTIFIED SPEAKER: The research agenda.
JOHN HOLLWAY: Right.
BRIDGET MCCORMACK:
Jeff.

JEFF SALYARDS: So I'm not quite as skeptical. In fact I just read the checklist manifesto and passed out copies within my lab. And I think there is a place sometimes where my forensic examiners are a little too creative, where I want to routinize.
That being said, I think Dean brings up some great points. I like that strike.
And then the other thing I'd ask you to consider is that we become more careful with the use of the word "error." And so to the statisticians, what we heard this morning, the way I prefer to use it is it's a Type One and a Type Two error, it's not the result of a mistake. In fact, in order to measure an error rate, it presumes that no mistakes were made. So I think checklists stop mistakes, or some other word. In a dictionary, error is a fine word, but it's not fine in our lexicon, so I think you probably want to use a different word.
JOHN HOLLWAY: So that's an interesting comment. It's not immediately clear to me that errors are completely separate from mistakes in a (inaudible) diagram, but I'd like to think about that and discuss that with my colleagues. Certainly it's something we'll consider.
BRIDGET MCCORMACK: Greg.
JOHN HOLLWAY: Yeah, happy to discuss it.
GREG _____: I think checklists have a lot of value in certain areas, and I think using it appropriately, for instance, we use our checklists for the peer review process so that they can go through the checklist and make sure everything was followed up through the protocol to make sure the work was done, and then appropriately. So I think there is value for it.
BRIDGET MCCORMACK: Judge Hervey.
BARBARA HERVEY: This is where I see the intersection cross with science and the law because I'd like to see checklists used by lawyers with regard to forensic science.
BRIDGET MCCORMACK: Pam, do you need to go again or can I skip you?
BRIDGET MCCORMACK: Arturo.
ARTURO C.: So I have seen a tremendous reduction in errors in medicine through the use of checklists from the time in which I trained to the way things are done now. But I want – I mean I agree with Steve about the problem of ossifying, that is once you put a checklist, you force a system. But I think we – it's more in preventing blunders that are not necessarily the kind of thing that goes into a research protocol. For example, I'm a journal editor and many journals are now moving to using checklists. Now what kind of thing is in a checklist? Is there a statistical analysis? If you put in a figure, is there a magnification? And it turns out that that does reduce the number of "blunders" or things that are missing when the paper is submitted. So they have a great value in that, and this is from people who are obviously very interested in doing the best work they can. When they are submitting a paper, they often forget to put in stuff.
BRIDGET MCCORMACK: Jerry, Julia, then Marilyn, then I think we're getting there. Jerry.
GERLAD LAPORTE: I just want to say I mean I'm in favor of the idea of a checklist. I think it's a great idea. I've used them. I think there is caution, though, in how you use a checklist. So I've always said if you have a checklist with a bunch of boxes where you just check it, terrible idea. Okay. When you force people to write things in their checklist, whether it's a result from their test, or they did something and to articulate that a little bit more in sort of a – in a very brief manner, much better to do because you will sort of get, you know, it gets habitual when you're just checking a box. Did you do that? Did you – you know, and a lot of people don't actually read them after a while.
The one thing I would – I think I – well, I'll say I just slightly disagree with Jeff in terms of I see this as being an error mitigation strategy, using error in the terms of mistakes. So I understand, you know, we

kind of throw those terms around a little bit. But I think if you frame it in terms of error mitigation, that might work okay in this context without it being interpreted as the scientific error.
BRIDGET MCCORMACK: Julia.
JULIA LEIGHTON: I actually really disagree. I think you have to use mistake. Because I think we've really – we're talking about error rates, and those presume process – that the process is done correctly. A checklist isn't to generate accurate forensic data. It could be a checklist for a system that's terrible, but we still did the system. So it is – I think this really is about mistakes, and when you look at it in the aviation context and the medicine context, it is about mistakes. And so part of the research it seems to me that we're calling for here is to try and get a sense of where are mistakes made, evidence mishandling, contamination, where are mistakes made and what sorts of checklists would prevent – would reduce the rate at which we make mistakes. And I think that's the purpose of this and where the research is going, but I wouldn't want this (inaudible) in any way with establishing error rates or this idea that we can improve error rates. The system has an error rate. We need to know what it is. Then maybe there are things we can do to change the system, but that's not about checklists.
BRIDGET MCCORMACK: Marilyn.
MARILYN HUESTIS: I want to reiterate what Jerry said. If you just have a checklist with boxes, people just go through and mark it down. If you say, did you check the vial position, and they have to write the vial number down or the position or whatever, you will get much more value out of the checklist. So I want to second that.
BRIDGET MCCORMACK: Good.
BRIDGET MCCORMACK: Thanks for the input. It'll go back to the drawing board.
I know we're over our time, John and Nelson, but do you want me to just finish out our report briefly? Okay.
The last item that we spent some time on yesterday in our subcommittee meeting, which we've been spending a lot of time on over the last few months with a couple of added subcommittee members from the medical-legal death community was this idea of – how did we refer to it before – sort of the idea that we could introduce some of the biasing task relevance information into forensic pathology – field of forensic pathology. And we're very grateful to the added members to our subcommittee from the forensic pathology community because they have been very helpful to us. So helpful that we're probably not going forward with a Views document on this topic because they've been, frankly, convincing that it's a little bit premature.
We're not giving up on it. It's an idea that we're still interested in. It's just we probably were biting off more than it was appropriate to chew on for now, especially in light of the fact that the OSAC Human Factors Committee is working with the Medical-Legal Death community on this topic and is coming to some decisions about perhaps limiting the kinds of cases in which this kind of document would be useful. And those, from what I understand, are specifically maybe children's deaths, deaths in custody, police shootings, and so we're going to wait and see what happens in the OSAC community before we move forward with any Views document.
Our discussion, however, did generate a whole bunch of other good ideas that may or may not turn into projects for our subcommittee, or maybe more appropriately our subcommittee in conjunction with one or two other subcommittees, like Reporting and Testimony or Medical-Legal Death. And I can talk about them if people are interested or we can come back when we think they're actually going to be on the agenda for the larger group here. At this point they were just ideas that we – that came out of this good work that I think our subcommittee did.

UNIDENTIFIED MALE: Talk about them in terms of planning for the next meeting and stuff, would that be – or is it appropriate to talk about them now?
BARBARA MCCORMACK: Yeah, sure, we can talk about them at that point because other things have come up since then, too. I have a long list for that – no, I'm just kidding. Not that long, Nelson, don't worry.
UNIDENTIFIED MALE: And then we're done.
BARBARA MCCORMACK: And I think that's it for our report.
UNIDENTIFIED MALE: Okay, let's take a quick break. We've got a working lunch at 11:30 with Ethics Issues.
UNIDENTIFIED MALE: The food is out there.
UNIDENTIFIED MALE: Is the food ready?
UNIDENTIFIED MALE: The food is where it was, so you can grab your meal and come back and we'll hear about ethics.

PART VI

NELSON SANTOS: All right, let's get started. We've got a couple of items we want to take care of before we turn it over to MDI. Thank you, Jules. We missed you yesterday. Okay, I think the plan going forward, we're just going to go right through. We have a couple topics we want to cover, then we'll go right through to MDI. I think we'll skip the afternoon break and just go right into the FSDR, because unless somebody -- so if you need a break, then take it on your own.

Okay, a couple comments were made to me and I just want to give the floor to Bill Thompson.

LINDA JACKSON: Thank you. So just something when I was thinking about our discussions from this morning. When we were talking about the statistical statements, I believe the statement was that training and experience are not a substitute for scientific study. I think we all agree with that. They're two very different things. And I would hope that we could also say that scientific studies are not a substitute for training and experience.

But then we talked about and we had overwhelming support and really great moving on the document on performance testing. And I would suggest, or I'll go out on a limb and say there's more interest in performance testing on our experience-based disciplines than there are in some of the others. So I just want to be aware of how we might be setting up or sort of presenting either conflict for the forensic science community with these two different statements. They're very different things. They were on very different topics. It's meant to be that way.

But perhaps as a commission going forward, we should be aware of that and maybe we can try to reconcile that or try to talk about the two different things that we 'talking about here. Training and experience in terms of statistical statement, that was a difference then, and our performance testing still has validity for those experienced-based disciplines. So just a point I wanted to bring to everyone's attention.

JOHN BUTLER: So Lisa asked me to read just a statement that she made earlier about the FBI doing a study on glass analysis, I believe it was. She said, "I mistakenly said that the FBI was embarking on a new

glass data collection effort. I am wrong about that. The databases already exist. The effort is a continuing one. More measurements are added as they become available. This does not negate the fact that the data structure of existing data and ongoing collection efforts is inadequate to support the needed research. The samples are measured only a few times and those plans are not changing." So she wanted me to read that, and she wanted to follow up with that, so.

NELSON SANTOS: Okay. I don't know if our screens are coming. Okay. Great. All right, we'll turn it over to John at MDI.

JOHN FUDENBERG: Okay. Thank you, Nelson. Before we get started. I want to just specifically thank Lindsay, Jonathan, and Danielle for all the help they've given our subcommittee, and also, Dr. Vince DeMaio, as you know, I wasn't here yesterday, I believe that it was announced yesterday that he has resigned. I just want to publicly thank him for the work that he's done the subcommittee.

And in discussing his replacement, I'd just like to say that I've talked to -- most of you aren't intimately familiar with the medicolegal profession, and I think it's important to lay that out a little bit. There's kind of two factions; right? There's the coroner community and there's the forensic pathologist/medical examiner community, and I represent typically -- although I'm a member of both of those, I typically represent the coroner community. And I think it's very important to have this commission populated also with the medical examiner/forensic pathologists.

And I talked to the name board of directors because the name meeting is going on right now. And they sent in a letter, I believe to Jonathan McGrath, recommending Dr. Randy Hanzlick to replace Vince, and I just want to say for the record, I support that 200%, and, again, I think it's important to have both of those professions represented on this commission. Randy has served on the Medicolegal Subcommittee since the inception and has been a big part of that. He's also worked with the Human Factor Subcommittee. So I don't know what the process will be in replacing him, but I'd just like to tell you that will that I can tell you that we support and everybody supports that, and I think it's important to have that representation.

JONATHAN MCGRATH: Yeah, so as far as replacing members, I think we've got the process outlined in the bylaws. But we, as a faculty, we've got an official membership balance plan, so we will be publishing a notice in the federal Register notice that's listed application to fill this position.

JOHN FUDENBERG: Thank you. So I'll make sure he knows that he has to apply.

So we have four documents to go over today that were generated and all of which passed with a majority vote. Actually, they had had a hundred percent vote out of the Medicolegal Subcommittee. I'll go right into the first recommendation that is the final draft ready to be voted on today, and that's the recommendation to the attorney general on the formation of a national office for medicolegal death investigation. We've received not too many public comments, but I'd like to just bring attention to those public comments and the adjudication process for those.

I believe Ted -- Ted, thank you. I believe they all came from you. Thank you, because he always makes our documents better. A lot of the changes were grammatical, and some sentence structure. We

adopted all of the changes that Ted recommended. And if anybody would like to go through them, I certainly can, but I don't know that that's necessary.

The last comment that Ted had, it was asking for clarification on some of the cost estimates and the basis, and we'd added some references to the document that should clarify that. They're documents that have been published in the past that have specific funding formulas that we reference to create this recommendation. So, Ted, if you have any questions about that, I can go through that right now. Or if anybody does, about where the costs or what the basis for the funding formulas were.

So with that being said, I'll just read the -- there's two major recommendations contained within this document, and the first one is that the attorney general should work with the White House Office of Science and Technology Policy Medicolegal Death investigation Working Group and other federal agencies and professional organizations to develop a permanent office of the national -- a permanent national office of medicolegal death investigation, which would coordinate and support the medicolegal profession, and it goes into some background and details about that.

It's just -- the bottom line, I mean, we've talked about this in previous meetings. The bottom line is there is no support or no single entity to coordinate the medicolegal activities in the country because there's no federal medicolegal office other than in the DOD. I believe that's where they fall. We just feel that that's very important to help straighten out the inconsistencies that are currently a major issue within the coroner and medical examiner and many other types of systems across the country. So that's the first recommendation.

And the second recommendation within that same document is that through this national office, the attorney general should recommend ongoing funding and support to improve the recruitment and retention of forensic pathologists, modernization of facilities, and the creation of facilities in underserved areas and promote the accreditation of offices and certification of their personnel. So it really takes what we have discussed in the past and wraps it up in one recommendation. So those are the two specific recommendations contained within this document. And I'm certainly happy to answer any questions that anybody has about this recommendation. Yes, Marilyn.

MARILYN HUESTIS: So I just would like you to summarize, because when we put forth previous things to the attorney -- the deputy attorney general, she came back and said that they thought that there was another place within the government that these things should go. So if you can just quickly explain how you don't expect this to get the same answer or --

JOHN FUDENBERG: Sure. That's a very good point and specifically the first two recommendations that we passed here at the commission, the certification recommendation and the accreditation recommendation, the attorney general referred those two to the White House, and the White House has since formed a working group that's been chartered for 180 days. Pardon me if I may be misquoting some that, if somebody could fill in the blanks if I got that charter or the name of this group incorrect. But they're currently reviewing those two recommendations, and I would imagine they're going to come up with recommendations of their own.

The difference here is that the attorney general does have the ability to form a national office under perhaps the NIJ, which is what we recommended in this document, where with the certification and accreditation of medicolegal jurisdictions and personnel it's a little different because she does not have any medicolegal authority or offices under her authority, so we view this as being much different than a recommendation that she has in the past, deferred or referred to the OSTP. Anyone else?

Okay. I guess we'll need a motion. Jules made a motion, and her Honor seconded. Any discussion?

JOHN BUTLER: Should we go forward and vote?

NELSON SANTOS: Is this yours?

JOHN BUTLER: You can vote for yourself.

NELSON SANTOS: Thank you. I feel like I should abstain after that last presentation.

JOHN BUTLER: Is everybody here? Judge Rakoff had to leave, but he's an ex officio, so. All right, let's see who's missing. A hundred percent, yes, so that passes.

NELSON SANTOS: Okay. Thank you. So the next document is a views document, a views of the commission, and it's titled "Communication with Next of Kin and Other Family Members." We did get -- we received two public comments. You'll see that on the adjudication document on Page 150. It's listed as 149, but depending on what system you use it may read as Page 150. And we didn't really understand the first recommendation. Ted, I don't if these were both yours or not. I don't have who submitted them. It seemed to be maybe the sentence structure was unclear, but the subcommittee wasn't clear on that recommendation, so we just wrote. We didn't take any action.

The second comment was just a grammatical or typo, and we changed that. Those were the other two comments that we received. And, again, I know we went through this in previous meetings, but I'll just basically go over the fact that, believe it or not, there's many medicolegal jurisdictions in the country that don't communicate appropriately with the next of kin of decedents, and this documents just makes it a view of the commission that we do so. It's that basic.

So it goes into some detail about not only notifying them in a sensitive manner but communicating with them throughout the investigation, and ultimately communicating the disposition to the family, which doesn't happen in my jurisdictions. There's a lot of coroners and medical examiners offices that notify the family of the cause and manner of death through getting a death certificate in the mail from a funeral home, which is just a tragic situation if you put yourself in that situation you can imagine how difficult that is.

So it just outlines how to appropriately handle that and communicate with the next of kin. And we talked early on this may be considered well outside the realm of science, and certainly is, but it's what we deal with every day and we think it's very important, and, ultimately, the reason that we do what we do.

So that's the background of it. I could go into it in more detail, but I think we've done that in the past, so I'm happy to answer any questions about this document. Yes. Ted.

TED HUNT: To clarify, I think my comment in terms of manner and content, is consistent with what you just said. It's not necessarily written in here, but the narrative says "Notification of death," and I was just recommending there might be a piece about the manner in which you communicate that and the content of that communication and what might be appropriate in providing that information. Because currently it just says "Notification of death." Well in what manner should that occur and what should be the content of that communication, in addition to just might be a valuable piece in addition to just the notification. So that was what I was try toing get at.

JOHN FUDENBERG: Okay. Thank you. And I agree. You know, we may have overlooked that and just assumed that they would do it in an appropriate manner. I think somewhere I'd have to, like, John said, Paragraph 2. Right here; right? Matt, which one are you referring to?

JOHN FUDENBERG: All right. I think the whole theme of the paper addresses that it should be done in a sensitive appropriate manner, and there's training available within the medicolegal community about how to make notifications and what is and what is not appropriate. So that may be why we didn't go into the detail of how they should make the notification, but I don't know for sure. I mean, we can certainly add something. I don't know that now's the time to do, but we could if you thought that was --

TED HUNT: I'm sure it's implicit in there. It's just, I think there are lot of different ways that victim advocates notify victims. Some work very well. Some work not so well. So I would assume, without knowing, having been involved in a death notification personally, but the way that that's executed is very important, I believe.

JOHN FUDENBERG: Absolutely.

TED HUNT: And we talked about doing in an appropriate manner, a sensitive manner. And I think part of that qualitatively is the content of that communication needs to be appropriate to that particular point in time. Now if there's other details that can and should follow after that that may not be appropriate at the death notification point. And, really, that's kind of what I was getting at. And I'm not advocating a massive expansion here, but just maybe that would be one of the elements in the laundry list in that sentence to think about putting. But I understand it's implicit in the document itself.

JOHN FUDENBERG: Okay. So do we want to try to add a few?

JOHN BUTLER: If you want.

JOHN FUDENBERG: Ted, do you want to recommend some verbiage for that?

TED HUNT: I just think the verbiage I recommended was probably what was confusing. I just suggested that the manner and the content of the communication be something that is predetermined, at least as a default approach. It's going to differ depend on the circumstances. But I think there are probably some best practices about victim notification that are out there that could be applied in this context.

MATTHEW REDLE: If you look at the references, it starts off with an article in which Laura Crandall was one of the primary authors, and Laura was probably the primary author of this particular document. You also see SWIG MDI's guidelines for communication with next of kin during medicolegal death investigations. It's listed there, and that goes into a lot of these same issues. There's a second version that Laura also coauthored again with respect to different forms of death notification.

The National Transportation Safety Board is listed. There's a number of different document that is out there, all of which address this topic.

TED HUNT: So if you're asking for a suggestion, simply put after notification of death comma, the manner and content of the communication, comma. I understand the reference to support that.

MALE SPEAKER: I'm not sure we know exactly where you are.

TED: It's right under via the national commission, second paragraph including but not shall include but not limited to notification of death comma.

JOHN BUTLER: There's already a comma there.

TED HUNT: Right. And then my suggestion would be manner in content of the notification.

NELSON SANTOS: Does that do the trick, Ted? Okay. All right. Dean, do you have a question about this one?

DEAN GIALAMAS: Not so much a question. And I hate to do this, but I'm going to turn bureaucratic on you. As a member of the SPO, one of the things that we have been striving for is format issues. And although not to be debated now, I just need to let you know I think we're going to have to deal with some format things. Because typically our views documents have been a view with a statement, and this is multiple paragraphs within the view, and the paragraphs have both general content and "should" statements, like what someone should be doing.

And I think just for the commission member purposes, we're voting on this content but the form and appearance is going to have to be different to fit in with what we have. So we can work with you offline. It's nothing we're going to do here. But I just wanted to make that statement that I think it should be a little bit clearer in what those recommendations are. Typically, in this case, I'd recommend like we've done in the past, maybe some bullets that indicate multiple points of direction that you want folks to take with respect to what the view is of the commission.

JOHN FUDENBERG: Okay. Not a problem.

JOHN FUDENBERG: Oh, I'm sorry, Judge.

BARBARA HERVERY: I just wanted to ask a question. You talk about the use of mental health professionals. I know how understaffed all of you are, and underfunded. Do you all have those people available?

JOHN FUDENBERG: You know, I think most communities, at, least in the urban areas, do have those people available. I can tell you the development of volunteer chaplain programs is becoming more popular in medicolegal offices, where in the past you see them often in law enforcement agencies. But that's one resource. There's quite a few volunteer organizations. There's a group called TIP -- the Trauma Intervention Program -- that specifically responds to traumatic death incidences and helps the families with resources. So they have quite a few charters across the United States. So I think access to them is their but you might have to do a little research and do a little work to development the relationships with those organizations. Now, Jules has a motion, I believe.

JOHN FUDENBERG: What is your motion?

JULES EPSTEIN: We have to vote on it.

JOHN BUTLER: On the comments here, should we put something, "Subject to SPO formatting" or something like that?

JOHN FUDENBERG: Well aren't they all subject to SPO formatting?

JULES EPSTEIN: That needs to be made clear.

JOHN FUDENBERG: Right. Yeah. Absolutely.

JOHN BUTLER: Okay. All right. It's up for a vote. Let's see, it's just taking a second to load. No. Sorry. Something's going on here.

JOHN FUDENBERG: Thank you for your support.

JOHN BUTLER: When I alter the slide it causes a problem there, so. Okay. All right. Go ahead. I think just about everybody. We'll go with the 30 we have there. Hundred percent, so it passes.

JOHN FUDENBERG: Right. Right. Everybody knows this will be my last meeting so they're supporting it. So the next document is just for an introduction of the initial draft. We have talked about the concept, but it's the views of the commission recognizing the autonomy and neutrality of forensic pathologists. And it goes into -- there, again, Dean, it just based on what you said, I think SPO is going to have to help us with the formatting here. But it basically goes into outlining the importance of forensic pathologists being an independent individual and being available to the prosecution and the defense.

Originally we wrote -- we specifically addressed that they should be independent from law enforcement, and that has changed in this draft. And the reason that did is there are some folks on the committee thought if we were going to specifically call out law enforcement, the fact that they should be independent from law enforcement, we should also talk about every other body they should be

independent from, so we basically removed that specific reference and just wrote that they should be independent. So we did receive -- do I, during the initial introduction, I don't talk about public comments?

JOHN BUTLER: You can.

JOHN FUDENBERG: I don't have them available on my -- but we received one, and it was from a retired medical examiner that didn't think they should be available to consult with defense because of staffing issues within the organization that they're employed. So we will address that during the adjudication process. But I have not done that as of yet. So are there any questions about this? Yes, Jules.

JULES EPSTEIN: So I'm going to apologize if this sounds terribly nitpicking. But I'm really troubled by the words "operate as autonomous" and "neutral scientists." I think that's aspirational, as opposed to descriptive. And so plain English, the problem I'm looking at is this is in one context. So in other words, it's trying to say we're independent of other groups, but operating as a neutral scientists also incorporates concerns about bias and biasing information and that kind of stuff, which I realize wasn't meant to be addressed here. But it's like we're putting an imprimatur, a seal of approval on all medical examiners are, per se, neutral, and that's not true. That's what they're trying to do.

So I'm asking that the words -- maybe it's just supposed to be "are supposed to operate as," right, or something. But I'm uncomfortable voting for a document which seems to say that I acknowledge a particular discipline as being neutral when it doesn't have necessarily the management -- information management systems and protocols that guarantee neutrality not in the overt political sense but in the how my scientific judgment sense is being applied. And so that reflects back on the discussions in our subgroup -- subcommittee. And so I get the spirit. I like this. But I'm really troubled by that language and wanted to highlight it.

JOHN FUDENBERG: So, Jules, I appreciate that, and I would -- so us just restating that, that they should be, would be more appropriate than saying they are. Does that take care of that?

JULES EPSTEIN: It does for me.

JOHN FUDENBERG: We'll make that change. That's not a problem.

JULES EPSTEIN: Yes. Thank you.

JOHN FUDENBERG: That was the intent, but, yeah, we'll clarify that, absolutely. Gerry.

GERALD LAPORTE: So, John, I actually want to make a comment about that statement as well, too. So I appreciate that a forensic pathologist wants to act autonomously, but, in fact, they don't. I mean they work with -- when they're trying to make a determination on a manner of death, say, homicide versus suicide, or they're working with the law enforcement agency to gather information, other information, non-medical information, to use that in their decision to make a manner of death call. So I'm out of my sort or -- I'm out of my comfort zone in making a specific comment about this because I'm not a medical examiner, but I just wanted to throw that out just for consideration.

JOHN FUDENBERG: Okay. Thank you. I will make that point to the subcommittee and have the forensic pathologists on the group address that.

JOHN FUEDENBERG: Dean, did you have another comment. Oh, I'm sorry, Paul, I didn't see you tent up.

PAUL GIANNELLI: A couple years ago when I drafted some material for the committee, I don't know if they -- it was the word "neutral." I think people wanted to change it to independent." In the two cases that I can think of that I know personally, or at least I am aware of, there was a pretty famous case, an infamous case out of Minnesota, where the prosecutor in one jurisdiction was able to stop a forensic pathologist from testifying for the defense in another jurisdiction, and it went up to the Supreme Court of Minnesota, and they slapped it down. And it was a unique thing. They found a due process violation. So that's one area. And the other area --

JOHN FUDENBERG: Paul, can I interrupt you for a moment on that area. So am I hearing that -- I mean from what I heard you say, this document supports that decision.

PAUL GIANNELLI: Right. Correct.

J OHN FUDENBERG: Am I correct?

PAUL GIANNELLI: Right.

JOHN FUDENBERG: Okay.

PAUL GIANNELLI: I'm just giving you a case that is pretty prominent on the subject. And the other issue was in the police shootings, which is very controversial in having an independent medical examiner or coroner decision. So that's another critical area where I've seen this -- the importance or significance of this document, which I fully support.

JOHN FUDENBERG: Thank you. Dean.

DEAN GIALAMAS: This is just to piggyback on what Jules talked about and some of the formatting issues. I think one of the things, too, that you'll have to look at, John, is the title of this document, because it does use the word "recognizing" in it. And I think one of the issues is that in just a holistic view, if we're going to single out one entity within the body of forensic practitioners then we really need to be looking at everyone, not just forensic pathologists. So I guess my view would be is if you're trying to address something specific to the medical examiner community, I'm fine doing it. But if it's a generalized statement about whether it we call it neutrality or some other term, I think the commission should just take a broader view and just say that it's expected of any forensic science practitioner, period, regardless of whether they're in the medical commune community. So I just throw that out for consideration, because I kind of feel like maybe not as far as Jules is saying, but that we've kind of singling out the medical examiner community, saying they need to be doing something different than what's expected I think of the entire forensic practitioner community. So that's just something to consider.

JOHN FUDENBERG: Yeah, I agree. And I understand I think there some different scenarios that apply to forensic pathologists, which is why we felt it important to be pulled out of the rest of the forensic science practitioners.

Yes. Well, Stephen, why don't we wait.

STEPHEN FIENBERG: This is directly on that. It seems to me that you have a document which is the code of conduct for all to draw upon and refer to that and say, and then there are special things, if they go above and beyond, for forensic pathologists, and that would then not single out forensic pathologists in general but build on everything else the commission has done, and it doesn't conflict with anything in the document.

JOHN FUDENBERG: Cecilia.

CECILIA CROUSE: You know, I was going to mention the title right away, because that kind of caught me off guard, but that discussion has already taken place. What I guess I was a little surprised that this is such a ubiquitous issue and it has such a detrimental effect on the judicial system and victims and their families. But what I was going to say was that when I sign a contract to work for Palm Beach County Sheriff's Office, I clearly states what I can and cannot do. And it doesn't prohibit me, actually, from participating in something out of the jurisdiction. I've never done it but that's -- well, actually, I have done it.

But regardless, we have an Ethics Commission, and if there's any questions whatsoever, it goes to the Ethics Commission, and they tell you right away can you do it or can't you do it. It's not set in stone. And then I was going to say what Dean was going to say, that this might be all-encompassing for anyone, but I wasn't so sure on how to really address this document formally because I don't -- I guess I don't understand the magnitude of the problem because I'm in a different situation, or if I wanted to, I could put it in front of an Ethics Commission and I'd get an answer back.

JOHN FUDENBERG: Right. I think one of the big issues that this document addresses for forensic pathologies -- and, again, I am not a forensic pathologists -- and Victor, I don't know if you want to speak to this at all as a forensic pathologist. In your current position, it may not be possible.

But one of the major issues that offices have policies that their forensic pathologists cannot testify for the defense in other jurisdictions. And if I'm not mistaken, the intent -- one of the intents of this document is to allow for that and have a document at -- or a views of the commission that says they should be able to, to encourage offices to change their practice. Because what's happening is so many of the forensic pathologists in the country are employed by government agencies, state and local agencies that the defense does not have a pool of them to call upon.

I mean there may be -- you see the same two or three names in the paper every time that they're opposing a view of the prosecution, and that's one of the tool -- we believe that this is one of the tools that would allow forensic pathologists to do that. I don't know if that makes sense, but you may face the same issue in the crime labs.

CECILIA CROUSE: Well we just had one from the medical examiner's office that made the paper, and the Ethics Commission said that he violated, and they had a lot of documentation. It's all public information. But he did, indeed, violate the clause. It was a simple one. He was doing it during work hours. So there's an electronic footprint there, or fingerprint, whatever. So I guess I'm in a different world as far as handling it.

JOHN FUDENBERG: Pam.

PAM KING: I'm not a medical examiner in case anybody's unclear about that. But I do live in the state where it is this particular issue, as Paul has already mentioned, was highlighted in spectacular form, and there is -- the case he's referencing is a called State V Beecroft if anyone wants to look it up.

I was also a defense attorney, and being a defense attorney who is trying to find good quality knowledgeable experts to help in many fields -- so, Dean, I agree with you, I think that it would be great if this was a policy that was somehow implemented as an expectation for all forensic scientists who have these particular expertise to be so independent that we don't have to worry about things like ethics rules in the federal government that say that people working in federal laboratories can't, if they believe it's appropriate, assist or maybe even it should be appropriate to assist the defense in these cases as well, because I do think that availability of talent to those that are defending those that are accused of a crime is something that's super important.

And particularly in the medical examiner field, I know some of these medical examiners personally. I know how much of a struggle it is for them in making choices that they believe are the right thing to do to review a case, to be a new set of eyes on a decision that was made by another examiner, and to practice good medicine or good forensic science in this particular field is something that should not be met with threats to not have them supported for that position in the future by the other people in other parts of criminal justice. And so I think that this is something that forensic pathologists want and need. And I hope that this group will support it, because I think it really furthers exactly what we've been talking about here, which is that forensic science is supposed to be about the science, and it doesn't matter who it is testifying for. It's are you providing complete quality information about things that you have specialized knowledge on. So I support this document and thank you to the committee for bringing it forward.

JOHN FUDENBERG: Okay. Thank you, Pam. Julia.

JULIA LEIGHTON: I have a question as to how this works out in practice. We actually have a clause in our authorizing statute at the Public Defender Service that prohibits us from engaging in the private practice of law. And the reason that was put in there was to that it would be a full-time job; that we defend that those that can't afford counsel full time and don't use it as, ultimately, a part-time job and don't take on more lucrative practices after hours. And so I'm sensitive to that tension which exists in the public defender world that unfortunately many, many places don't have that, and so it becomes very much the short time -- people give very short shrift to their public defender clients and focus on their paying clients.

So I wouldn't want to undermine the quality of the work that's being provided, while at the same time I'm also concerned, and I think one of the unfinished pieces of business of this commission is to address the access by those that can't afford counsel to access to experts, and I think that that's something that we still need to address. But I don't want to undermine the quality of the work that's being done if people are choosing between a full -- what's supposed to be a full-time job and after-hours work. And I think that's what I hear a little bit in what Cecilia was saying, is that what happens is people start doing the outside work during their regular work hours and somebody's getting shorted.

JOHN FUDENBERG: That's a good point, and it's certainly one of the cons of this recommendation, and I believe it was addressed in the sole public comment that we received. So we have addressed that. We'll continue to address it. I don't know that there's a right and wrong answer there. But I certainly agree with what your view is on that. Yes, Jules.

JULES EPSTEIN: So I start out with a very narrow focus, and now I'm actually going to ask that we consider withdrawing this entirely, for a couple of reasons. We've heard some very important policy arguments, both sides, but also, why are we talking about one slice of the world of forensic disciplines? It may be that there is a convincing case that this is so much more a problem in field A that we say let's pass a motion now about field A and investigate the other and get to it. I'm not convinced one way or the other, so my suggestion, the more I'm hearing, is this is not yet ready for prime time because of the many concerns we've had, both about the tension that Julia just referenced, and what about the other disciplines that I think I heard from Cecilia and Dean.

So my personal view is I can't vote for this or see it going forward at this time because it has too many other implications. And I'm sorry. I support a lot. But that's a concern I want to express.

JOHN FUDENBERG: No, I accept your apology, Jules. And I'm not offended. I understand what you're saying. I think we did view the practice of forensic pathology as a practice of medicine, and we did, as a subcommittee, view it being different from other forensic science fields. That's why we carved it out. Certainly the commission can decide otherwise, but that was the intent.

JULES EPSTEIN: And John, just by different, I'm not talking about the practice is different, but whether the problem you have identified is peculiar to the medical examiner forensic pathology field, as opposed to multiple forensic disciplines. I'll tell you, it's awfully hard to find a latent print expert in many areas or a firearms and tool marks expert in some areas. So that's what I meant then. This could be a problem that replicates elsewhere.

JOHN FUDENBERG: Okay. Judge.

BARBARA HERVERY: Don't worry about it, Jules. He's going to nicely notify your next of kin.

JOHN FUDENBERG: In a very sensitive manner. Thank you for that, Your Honor. I'm going to stay out of that dispute. Okay, yes, Paul.

PAUL GIANNELLI: On this issue of how broad this should be, yes, it should be broad. It should apply to every discipline. And we try to take care of that a little bit in the code of professional responsibility. But

the part that was in there that would have advanced that objective was cut by the Department of Justice when we got it back yesterday. And it's still not clear to me why it was cut. It was cut in a sense that in a lab -- and I've heard this from Cleveland Crime Lab, if you asked them would you testify for the defense. And it's, you know, I do what my boss tells me. My boss is the chief of police. And so that's the practice in the lab.

And so I think that I'm going to vote for this because I think that you can justify this, especially in light of our failure to make any progress on the other. And the other thing that a lot of the medical examiners do is they willingly talk to the defense and sit down and go through the slides and the defense experts and so forth. So I have seen a tremendous difference and openness. This may be peculiar to the medical examiner office that I'm associated or know about, I teach my class every year, or the year I spent at the armed forces institute of pathology when I was in the service. So I think that's it important to go ahead.

I would love to come back to the other issue, and I think we should on access to experts. There's another instance where an out-of-town expert who was correct in his judgments, out-of-state expert testified for the defense again a notoriously bad forensic scientist, and he was going to bring ethical charges against her. But her boss called his boss, and that was the end of his outside consultation.

So I'm afraid that at least here we can get something that's manageable. I think the other problem, especially given what happened on the code of ethics, code of professional responsibility, I'm not sure how far we're going to get there. So I would rather go with this. And I'd love to come back to that other topic.

JOHN FUDENBERG: So we have seven more minutes, and we have another document to address. This recommendation or views document is not going to go to vote today. So what I would recommend we do is make some of the changes that you all recommended and bring it back to at the next commission meeting and vote on it then. Does that sound reasonable? Julia, do you want to make one last comment?

JULIA LEIGHTON: Paul's convinced me, I had not thought through the problem with the code of ethics. And while I do think this is a bigger problem, I think we have to keep sending the message that that change in the code of ethics actually wasn't acceptable and we're going to keep pushing this with whichever fields will listen to it.

JOHN FUDENBERG: Okay. Thank you. So did you have something, John?

JOHN BUTLER: No.

JOHN FUDENBERG: So the next document is a recommendation to the attorney general, and it's titled "Model Legislation for Medicolegal Death Investigation System." And, again, this is not up for vote today, but it basically outlines and asks the attorney general to make a recommendation to the Uniform Law Commission that they develop model medical examiner and/or coroner legislation.

The last legislation that has been introduced was in 1954, and to give you a little background, the medicolegal profession and the systems in the country are in desperate need of some restructuring and

some consistent types of missions. And we feel like if the Uniform Law Commission developed a model law -- and for you lawyers and judges in the room, correct me if I'm wrong, it is the Uniform Law Commission, and they do develop model law. Is that correct verbiage there? I'm seeing some heads nodding.

STEPHEN FIENBERG: I think the title is "The Commission on Uniform State Laws." I don't know if the "national" is in there, but it's the "Uniform Commission." Anyway, you should check it.

JOHN FUDENBER: The document refers to it and I believe it this is accurate as the Uniform Law Commission, so. And if it's not, when we bring the document back, you can correct that. But that's what I believe our research indicated. So you can -- if you bring your attention to Page 154, I think that is where our subcommittee spent a lot of time focusing on the critical elements of this uniform law. And I want to make it clear, if there's medical examiners or coroners listening or reading the minutes of this meeting the intent is not to propose a uniform law that converts coroners' systems into medical examiner systems. That debate is not what we're trying to accomplish here.

The intent is to describe what a competent medicolegal death investigative system is comprised of, and these elements are what we believe accomplishes that. Whether you're a coroner system or a medical examiner system, we still believe you should be accredited and your personnel should be certified and you should use science, and the doctors should be determining the cause of death, not a non-physician coroner or a non-physician JP, or a few other titles that are being used in the country.

So I think as you review this if you have not already, I think it's important for you to comment on the bullet points that we've listed there. I think it's a very comprehensive list of aspects a competent medicolegal system should address, and I would invite you to expand on that if you have any interest. So Marilyn, did you have a comment?

MARILYN HUESTIS: So my question is the same as before. So do you feel that this is going to fall into the attorney general's purview or that the other OSPC is the right place for this to go?

JOHN F UDENBERG: Right. We feel, and we are certainly not fixated on our opinion in that we feel that the attorney general should be the one recommending that, recommending that the Uniform Law Commission develop uniform law or model legislation addressing medicolegal jurisdiction. So if we're wrong, I hear some -- or I'm sensing some opinions otherwise.

MARILYN HUESTIS: So what I thought the problem was is that there weren't medicolegal death investigation as part of purview or something; that they didn't have medical examiners or coroners. So I just want to make sure that it's going to the right place and we're not spending time when it could be moving to the other body and addressed better. That's my only question.

JOHN FUDENBERG: Sure. And that is a good point, because she doesn't have medical legal jurisdictions under her authority she may refer this to the OSTP. But I think our goal is because it's a bold model law statement that it's appropriate for the attorney general to make that statement. And if she doesn't feel that is appropriate then perhaps she can refer that to the OSTP group for action. But that's where we thought it would appropriate. So, you know, any other thoughts on that?

I don't know if, John, somebody from the Department should weigh in on whether or not this is appropriate to go to the attorney general or become a views document. And, again, we can table that. This is not going to vote today, and maybe we can get some clarifications on whether or not she feels it's appropriate to recommend it to her versus make it a views document or refer it. I don't know that we can refer something to the OSTP. I believe she has to do that. So that was our thought, and that's why we made a recommendation of the attorney general. Jules.

JULES EPSTEIN: I have problem separate from Marilyn concern, which is important. We want to move on and spend time on things we can do. At Page 155, under "Other," it proposes actual substantive principles in this law, in particular good faith immunity clauses. I don't know enough about this subject to say whether I support or don't support a good faith immunity clause. I have no problem saying that should be investigated as to whether it should be in legislation. I for one, will not vote for something that says "I recommend legislation that has a good faith immunity clause" until I know what it covers. And I hate to say it, I suspect virtually none of us does. And that's a problem in this.

If the wording were changed that legislation should look into such an issue, that's one thing. But hidden in this -- and I don't mean that anyone hid it deliberately; right. But reading the fine print, this has us endorsing certain types of immunities for certain types of actions where we have no idea what that covers. So I'm just noting that as a problem in a particular. The rest of it is very, if you will, administrative or process, and that's fine. We should be very careful about something with that language.

JOHN FUDENBERG: Thank you, Jules, and we certainly didn't intend to hide this in the bottom of the document. And I'll bring that back to the subcommittee. And I can tell you, I don't think anybody's going to feel too strongly about removing that if that would make you feel more comfortable about it, or rephrase it in a way that, as you described, should be investigated or should be considered, something to that manner. So I don't think that that's going to be a problem, and I'd certainly hate to have something that insignificant or significant stop the progress of this document. Pam, do you have your tent up over there?

PAM KING: Yes. So, in looking at this document one thing -- maybe this isn't the place for it, John. I'm not sure. But if I look at the operations area, and this talks about some of the things we talked about this in group before, like mass fatality planning and identification missing persons, I'm just wondering if there's been any thought to also adding something about sort of -- I don't know what the right words are within this discipline, but interoperability, so the ability of medical examiners and coroners' systems to be able to be part of one system of communication that can speak to each other as part of the model legislation. I think that's something that is lacking and certainly falls into a number of those categories we've talked about as far as public health and all those kinds of things.

JOHN FUDENBERG: Right. Let me speak to that. That's a very important point. It is the intent of -- under administration the fourth bullet where it says "Office Information Management System," that was the intent there. It's a very high-level bullet point. But I can also tell you that at the last OSAC Medicolegal Subcommittee, the most recent standard that was proposed is to have a standardized case management system for medicolegal jurisdictions, because of that issue. They're so disjointed at the federal

government, the 15 or 16 agencies that rely on data from medicolegal jurisdictions have a very difficult time getting that data.

And I believe I was told, as I walked in this morning that the OSTP -- the first group that was convened at the OSTP, their report is going to be made public today or was made public today. It was made public today. And their focus, their primary focus was the data that was collected by medicolegal -- I'm sorry -- by the various federal agencies that medicolegal jurisdictions hold. So that's a very important issue, and we're work on that in different areas. But that was the intent of that one bullet that says "Office Information Management Systems. You're welcome. Okay. So that's all we have. Thank you. Thank you.

NELSON SANTOS: Okay. We're going to go right into the next presentation from OLP. I'll let them introduce themselves. Technical issue. You need some time.

KIRA ANTELL: No one go anywhere. Don't go anywhere.

NELSON SANTOS: Thank you. Kira. It's tough to get them back. Matt.

MATTHEW REDLE: Piggybacking on the last conversation, there is something that I would bring to people's attention and maybe see if we could at least have a consensus view on this, or some kind of approval. You know, we had some discussion about defense access to crime laboratory services. And Lindsay can correct me if I'm wrong, but I believe in meeting eight, reporting and testimony submitted an abstract that was designed to deal with that particular topic. That was something that our committee ran out of time to actually put forth the effort to get something prepared and completed.

And so what I would suggest is that we authorize that to be added to the list of unfinished business of the commission for inclusion into the Pam King opus. And then we can also, if there are other things along the lines of doing something similar with forensic pathology, we could also include that if we run out of time there as well.

NELSON SANTOS: After this presentation, that's the goal, is to actually have the wrap-up session just primarily focus on the unfinished business, talk a little bit about the document. So we'll have an opportunity to add, delete, and modify that, so.

JONATHAN WROBLEWSKI: Good afternoon everybody. Okay. Good afternoon everybody. My name is Jonathan Wroblewski. It's nice to see all of you again. I've been here now, I think this is my third meeting of the National Commission on Forensic Science, and it's a pleasure to be here. And with me is Kira Antell, who I know you all have met before, who is senior counsel in the Office of Legal Policy in the Justice Department.

As I said, I'm principal deputy assistant attorney general in the Justice Department. That's a lot of words. It means that I'm the temporary head of this office. I've been leading this office since the end of last year, and I will be leading the office, I anticipate, until somewhere around January 20th. I'm not sure exactly the moment, but somewhere around there.

Also with us is Kevin Scott, who is the director of our very, very small Policy Analysis Unit. And then also somewhere back at the Justice Department who is watching this is Professor Jon Gould, who is a professor at American University, who joined out team a few months ago and who has been participated in everything.

We have been very busy at the Justice Department and particularly at the Office of Legal Policy, and what we want to do today is report to you on some of the projects that we've been working on and get input from you, answer any questions that you may have about some of these projects, and then just let you know how we're going to be proceeding forward. So here's the outline of the presentation. I'm going to give you just a little introduction and review mostly for the people on the internet, but also for you, very, very briefly the department's work on forensic science which as someone who has worked for the Justice Department for most of the last 28 years, to me is extraordinary and really unprecedented.

Then Kevin will talk a little bit about our forensic science discipline review, that's the FSDR. And you'll recall we've been before you to explain that process. The deputy attorney general announced that we would be undertaking this review. It's a review of testimony of our forensic experts who have testified in court, and we presented it to you first an outline and then a draft methodology the last time we were here. We put that draft methodology out for public comment we received much public comment, including from members of the commission, and we appreciate that. And we want to tell you how we have done about considering those comments.

In addition, a number of members of the commission recommended to us very, very strongly that we consult, in particular, with statisticians as we come up with the FSDR methodology. And we took that to heart, and I think it was in July we held a roundtable, where we brought in statisticians and other scientists from across the country, including professor Feinberg, who is a member of this commission.

And I think it's fair to say we had a very robust discussion and a really, really helpful discussion. I learned a lot. I think we really tried to wrestle with the intersection between the science, the statistics, the legal framework that all this is being thrown into. And I think it was a very, very helpful discussion. And what Kevin is going to do is go through some of the issue that is were raised, both in the roundtable, as well as in the comments, and tell you how we are tentatively planning to proceed on ward.

And then Kira is going to talk about our project, called the Uniform Language for Testimony and Reports, which I know we've talked about before. Again, we published for public comment in two different -- I hate to use this word but it's the Washington word -- trenches, in two different trenches, various uniform language for use by department experts testifying about various forensic disciplines. We got many, many comments, and I think that it's going to continue to be a tough project for us, but we want to report to you on those comments and how we plan to proceed forward with that, make some concluding remarks, and then at that point we'll ask for you questions and your comments and try to address those.

So, first, the Department's forensic work sort of at large. I think it is fair to say that this Department of Justice has undertaken unprecedented efforts in the area of forensic science, with the goal, both to examine and to strengthen forensic science and its use in the courtroom. The deputy attorney general, the attorney general, and the whole department is really committed to improving the science for two

purposes, and one is, of course, so that evidence collected at a crime scene can be compared to a particular subject item with increasing sensitivity and precise means and then, of course, to ensure that the use of forensic science in the courtroom is supported by the available research, data, and science. And we've taken, as I say, many, many steps to do that. And I'll just very, very briefly go over some of this.

We continue to support a tremendous amount of research through our funding mechanism and other things, in hopes of expanding the research on forensic science. We are working with the White House to develop a comprehensive research agenda, and we are continuing to devote substantial funding to improve forensic science and also ask through the budget process. And if any of you have been in the federal government, you know it's a long process, but we're working through it to ensure that there is increased funding for research consistent with the recommendations of this commission.

In addition, of course we are supporting the work of this commission. We are part of the creation of this commission. We have and are continuing to review all of the recommendations that this commission puts forward, not to say that we are accepting every single piece of it and not to say there isn't some controversy around that. But we are reviewing them very, very carefully. We are presenting our analyses to the attorney general, and she has accepted the vast majority of the recommendations to date.

On the ULTR and the FSDR, the ULTRs, again, I believe are unprecedented. We are working to develop them in a very transparent and public way to get input from not only members of this commission but the public at large so that department experts testify consistent with the available science, research, and data. We want to make sure and do everything we can to see that our experts do not exaggerate statements of relationships. And as I say, I think this project, the ULTR project, embodies the first government-wide federal-government-wide effort ever to establish these kinds of standards, and I think we're doing it in a transparent way so that we get it right.

The FSDR also, I think, is unprecedented. It's being undertaken to ensure that the past testimony, again, stays in supportable research. We're putting this project together in a very transparent way. Every step we have come to this commission, we have published in the Federal Register. We have put together the draft methodology. We're here to tell you where that methodology stands. So with that, I'll turn it over to Kevin, and we can get a little flavor of the comments that we've received and the input from the round table.

KEVIN SCOTT: Good. You've seen this slide. We presented this slide at the beginning of the methodology presentation in June, but I think it's useful just to kind of talk about where we've been and where we're going. In March we presented a framework for the FSDR methodology. We then posted that framework for comment and received comments and worked through those comments, as well as doing some outreach. And then on June 20th, at the last commission meeting we presented an FSDR draft methodology. We did the same thing we posted that methodology publicly, as John than indicated.

And in addition to that, we added statistician roundtable in July. You have received a summary of that roundtable to get an idea of kind of the comments and the exchange that we had. And we found it, obviously, very useful and helped shape where we are today. So that puts us at the second to the last bullet point today, which is we're here to -- we have revised methodology. We're going to review that

with you. And following this meeting and the finalization of the methodology, we plan to implement the FSDR.

As a reminder, the research question that drives the FSDR is to ask, how closely do FBI examiner statements of relationship from 2008 to 2012 and select disciplines conform to the FSDR adopted testimonial standards? There were several topics that the roundtable and that the public comments kind of situated around, and we tried to classify those comments. And so what we're going to do now is say what we said in June, say what the issue was that was raised with those comments and identify what our resolution is for those particular issues.

And I also want to also say that there's a lot of words in the PowerPoint. The Power Point will be available publicly. We will also prepare a memorandum for the commission summarizing what's going to go by on the PowerPoints. I don't want to fly through this too fast but it's, you know, Tuesday afternoon.

KIRA ANTELL: He has a new baby.

KEVIN SCOTT: I have a new baby. I have no idea where I am. If this puts you to sleep, that's great, because I can take it home and I have another use for it. The proposal for the FSDR, as indicated in June was to advance the use of forensic science in the courtroom by understanding its use in recent cases and to facilitate any necessary steps to ensure that expert forensic testimony is consistent with scientific principles and just outcomes.

Particularly out of the roundtable it became clear to us that we want to kind of parse this just a little bit by using the first phrase, the primary purpose of the FSDR is to advance the use of forensic science in the courtroom by understanding its use in recent cases. The FSDR is retrospective, and we want to use what we learned in the FSDR to inform future practice so that forensic testimony is consistent with scientific principles and just outcomes. The issue that was raised, both at the roundtable and in the comments is simply that we want to be careful about if we draw conclusions based on the FSDR; that we're not then saying something about the future based on data from the past. And so the outcome here is relatively straight forward. We'll be careful that we are clearly stating the purpose of the FSDR and its methodology, and we want to ensure that we avoid drawing any unwarranted conclusions from the data and the accompanying analysis.

A second issue that was raised is the structure of the FSDR, how it will be organized. The proposed methodology basically proposes a validated protocol for viewing transcripts, training raters to use that protocol, and then identifying and categorizing statements and relationships in each transcript. That's not necessarily problematic, I don't think. What was not clear is kind of the bigger infrastructure that would exist around the FSDR. And so based on the comments that we received and again from the discussion about the roundtable, we want to stress that, first, the FSDR will be housed institutionally in the Department of Justice, and it will be overseen by a non-political employee of the Department.

The actual research will be conducted by an independent research firm, likely through a contract, but we're looking -- the idea would be to find as much firm that has expertise in social science research. In addition, and this was one of the things that came very clearly out of our statistician roundtable, is that there exists a number of models both inside and outside of the government to tap outside expertise

that, you know, there's expertise that's needed on statistics, on forensic practice, and what occurs in testimony, what occurs in the courtroom by defense attorneys, by prosecutors. We want to be able to take advantage of that expertise, but we want to be able to do that in a manageable group. And we had, I think, 11 people at a statistician roundtable.

That was a great group of people, and it really kind of emphasized the point for the department that having kind of people that we can consult on technical matters that the department may not have full expertise on is particularly useful to the department. So we want to stress that we plan now to include non-department experts as kind of a data committee -- and there are a variety of forms that that can take -- that will consult with the director in the first board.

The timeframe that we identified, and we identified in the research question again today, is between 2008 and 2012. The stress, again, is that we're looking at the use in recent cases, so we want a period that's recent enough. That, in theory, maybe the science has shifted that much but is also far enough back that the cases are going to be closed and we're not worried about kind of walking into open cases. And we were uncomfortable with that time period as kind of the core timeframe.

But there are a couple of events occurring. One of them is a NASA report of 2009 that may have an effect on that timeframe. And so we propose that in addition to the 2008 to 2012 timeframe that we will sample back, doing a stratified sample by year and by forensic discipline to make sure that we simply draw more cases from disciplines with more testimony. So we'll work backwards. In addition we're basically saying we're taking the population over 2008 to 2012 timeframe, we'll take a sample moving backwards as permitted.

We mentioned kind of, I don't want to say briefly, but we mentioned a pilot study we thought would make some sense. The comments agreed that that would make some sense, and the roundtable stressed that it's very useful to kind of do some piloting. And I think we just want to clarify that we continue to think that a pilot is a good idea.

Right now we envision that a pilot actually kind of takes two phases. The first phase would be to read transcripts. And to read transcripts to identify what data can be collected, what variables can be identified inside those transcripts, then take an initial attempt to try to develop this protocol, the coding protocol that we would use. But then have another kind of more formal pilot where we use those cases to try to validate the protocol so that we're not trying to validate the protocol on cases that are inside the actual FSDR study.

Another issue that has been raised and that we sought comment on is how and whom we notify the results of these FSDRs. There's a possible kind of range of notification options. We could just tell everybody whose cases are involved that we're doing this notification and we could move all the way to kind of a very narrow outcome where we notify only those parties of cases, where the defendant was convicted, where the defendant is still in prison, and where some materiality decision has been made.

We propose to notify the prosecutors, the defense attorneys, and the defendants of nonconformities in cases where there was a conviction, and this is, as a reminder, we intend to look at cases -- we're not just looking at cases where there is a conviction. We're looking at cases where the defendant was found

not guilty or whether it was a hung jury as well. In those cases where there was a conviction, the notification becomes important, and so we propose to notify the relevant parties.

We want to stress that we don't feel that it's within kind of the orbit of the FSDR to make a materiality definition, for several reasons, one of which is we're not going to have the entire case file. We anticipate just having the transcript, so determining materiality becomes impossible in that kind of context. And so we intend to send a notification, but that notification won't say anything about it being dispositive to the legal outcome. That's for the actors in the judicial process to determine. And we're not making a determination about -- we're not a professional review board for forensic examiners, and so we also think it's important to note that any notification that we provide is not a notification about conformity with any kind of accreditation standards.

We talked a little bit at the June meeting and in the roundtable about how to analyze the data and what kind of a unit of analysis. And we talked at that point, particularly at the commission meeting, about using what we call "threads of testimony," where a relationship in most cases whose evidence origin is unknown and some piece of evidence whose origin is known, and a comparison between those two represents kind of throughout an entire testimony a thread.

And one of the things that we want to stress, and this was, again, emphasized at the roundtable that we found to be useful, a thread is not a particularly -- it's analytically perhaps helpful, but it's not a particularly useful unit of analysis, particularly for reporting. And so we want to stress that when we do reporting -- and this actually pre-stages my next slide -- reporting occurs at the level of testimony, and so determination needs to be made about the level of -- what happens at the level of the testimony.

One of the things that that raises just briefly is there were several comments about the utility of the approach of threading and the idea behind threading is that it kind of takes in the idea of language, limiting language and bolstering language that's offered within the testimony and tries to offer some kind of context. And there was discussion earlier about juries perceive these things. And without kind of us trying to determine how juries have perceived testimony, the evidence appears to kind of point in conflicting directions.

And so we think that one possibility coming out of our data is it may be possible, at the very least, to identify under what circumstances limiting or bolstering language emerges. So if those kind of languages emerge, particularly under direct or under cross or under redirect, if they occur under a particular set of situations, our idea is to collect the data to kind of permit that understanding so that as a science of how juries understand testimony evolves the data that we have can used to kind of further develop training materials within the department.

We also mentioned, kind of as an issue, reporting and, really, the comments didn't say anything specific, so there there's not an issue on this particular side. But we want to stress that the FSDR will publicly report whether testimony conforms to the standards. So the notification that we'll send tout the parties will also report that information publicly.

JONATHAN WROBLEWSKI: So I'm going to jump in here and talk a little bit about the standard of review, which is the standard for review, the standard that we are going to use or what we're thinking about in

terms to use when comparing the testimony that we find in these transcripts. And, frankly, it was one of the most difficult issues that we have to deal with. And you'll see it's difficult for a number of reasons.

If you recall what we talked about when we were here before and what was in the draft methodology is that we would use some modified version of the ULTR that reflects the fact that this is a retrospective review and reflects fact that the science, at least in some of the disciplines, have changed, and certainly the community standards have changed. And I think it's fair to say we received lots and lots of comment on this particular issue, and we want to tell you how we tentatively plan to deal with this.

So the ULTRs, which Kira is going to talk about some more and are controversial, I guess, is the right term in their own right, that there's certainly no immediate consensus about them, that the ULTRs may reflect the consensus of the examiner community but there is disagreement with other stakeholder communities. I think that's the polite diplomatic way of saying it. So there's just some differences of opinion about what the standards should be for experts to testify.

Another issue is the question of whether we should be testing these transcripts to see whether the examiner's testimony is consistent with community standards. If we can figure out what those were in 2008, '09, and '10, which we have, I think in a simplified way, labeled as compliance. So have the forensic experts testified consistently with what was the standard community standards at the time? But also, the question is, was the testimony consistent with the current state of the science and the current standard, whatever that is? And, again, we're struggling with that and that's why these words were not precise. And, again, for shorthand, we're calling that correctness or at least correct as of today. And so what has been raised to us is, really, those are different issues, compliance versus correctness. Was the testimony consistent with the standards at the time? Is it consistent with the standards of today?

A third issue is -- and this was raised by everybody at the roundtable -- was that failure to review the corresponding forensic reports, the reports that were created, and making some comparison with the testimony would be a serious flaw. And then finally, we received comments and the department was strongly discouraged from beginning to review these cases until at least some of these standards, these ULTRs had been revised or adopted. So let me just tell you again what we're thinking.

As I mentioned, there is significant disagreement over not just what is the correct standard in the past but what is the correct standard today; okay? Our ULTRs, we received over 175 comments. There are many people who argue that no statement of relationship is appropriately made in some disciplines, because there is no known error rate and there has been insufficient research. Some argue that, okay, you can make a statement of relationship, but it must be accompanied by an error rate.

Now we're going through this. And as I say, in just a couple of minutes, Kira is going to describe a little more about how we're working through these standards, these ULTRs, and where we intend to go. But I think it's fair to say that at the moment there is significant uncertainty around the ULTRs and precisely what those standards should be at this moment. And if we are going to move forward now, and we want to move forward now with the review of the transcripts, that using that standard is not a particularly attractive starting point for a retrospective analysis. And so, you know, it's not clear to us that we're going to get a significant benefit from comparing past testimony to a current scientific correctness

metric where there's still a tremendous amount of debate around that metric. It's just not clear what the value is of that.

And so here's where we tentatively are on what that standard of review is. We think that the FSDR should evaluate the testimony to determine whether it is consistent with the underlying report. Again, this was suggested very strong by our forensic -- our statisticians roundtable for a couple of reasons. One, there's an internal consistency issue. Was the testimony internally consistent with the report? And in addition, the reports are reviewed by multiple supervisors within the lab, and so reflect the community standards at the time, not today but at the time. And so we think that that's the right standard to look to at this moment while the ULTR process proceeds forward and as we try to figure out what is today's standard, and we try to develop some consensus as to what is today's standard.

Now, at the same time, we're going to collect a lot of information on a variety of variables, and if, in fact, we can come to some consensus on those ULTRs, it may be appropriate to, at that point, expand the analysis and actually look at whether the testimony was consistent with the ULTRs.

So let me tell you what our next steps are. After Kira talks about the ULTR process, we'll take your questions and comments and have some discussion here. We are hoping to proceed forward in the next several month, get this process going. We've had lots of discussion of methodology and adjudicating comments and received, as I say, much, much comment about it, but we're ready to get going. And what that means is hiring an executive director who will oversee this process, and then developing a contract proposal so that we can have this independent outside body who will be doing the actual research and comparison, finalize the methodology and get this going. And we're hoping we can do all that over the next couple months by the end of the year, and certainly by the end of the administration. So that's where we are on the FSDR.

I'll turn it over to Kira to talk about the ULTR process, and then we'll take your questions and your comments.

KIRA ANTELL: So Lindsay's going to start handing something out. First, I want to take everyone through the ULTR development process. You know, I think Jonathan previewed this a little bit. We published our first round of ULTRs this summer. We published seven of them. We put them out for public comment. Those seven we published initially were fiber, footwear or tire treads, general chemistry, glass, latent prints, serology and toxicology. We received 127 comments. I carried them around with me everywhere I go.

Before we had an opportunity to really, really dig through those, we put out on second round, and part of that was because we really wanted to keep that process going. But many of you who did comment noted -- and I think appropriately so -- that the second round wasn't really informed by the comments we received on the first round. And I'm calling them rounds, but actually Jonathan thinks of them as trenches. I think of them as batches because I'm a baker; right, so I'm thinking of them in batches, ULTRs. We put out the second round. We put out nine in July. Comments closed. We received 46 comments.

We have a department working group. We all review them. We sort of think through them, and we are trying to develop a path forward that takes in the kinds of comments we received, tries to think through them, and we've sort of come up with a ULTR 2.0. That's what we're going to talk about here today. This is just something for discussion. This is to have a discussion with you and to engage you in a conversation and see what you think. After we've had that conversation, we'll take those comments back. We will think through those, and we will come up with a ULTR 2.0 that we're going to publish for comment.

So, before I get to that, before I get to the documents you have in front of you, I want to talk through some of the comments we received. I think Julia referred yesterday to some of the comments that they received as downright nasty. I won't say that about the comment we got. The comments we got were really, really thoughtful, really thoughtful, but they were really different. There were a lot of different viewpoints, and they didn't all agree, which means there are decisions to be made, which means we have to think through and decide what makes sense to us, because we definitely can't make everyone happy. Maybe no one. Maybe no one can be made happy.

There are four broad categories of comments, and, again, we received comments that had lot more than four categories in them. Some of them only really focused on one. I just sort of want to talk to you a little bit about that. The four broad categories that I think of are sort the nature of the uniform language project as a whole. These are comments that really think through, you know, the scope of the project, what are you actually trying to do, or they point out how we should have done it, who we should have engaged. Jules, for example pointed out that he thought the process should have proceeded differently and engaged different people from the beginning.

The underlying science -- I think this sort of goes a little bit to sort what was Jonathan was talking about -- is not necessarily consistent. Some people really thought these represented the best science. Other people thought that the uniform language that we published really have issues the underlying science or question the scientific validity.

Statistical validity, which is kind of a sub-category of the underlying science, these tended to identify statistical or probability-type language that they thought was inherent in the uniform language that we put out and language sort of generally. These actually tended to be more specific and point to some of the language that we had in there that suggested that we should use different kinds of words.

I'm going to go on to the uniform language but first I just want to give you a favor of some of the kinds of commented that we received. First, I'll note that they were all public. They're on regulations.gov. You should go have at it. Read them. If you want me to send them to you, I can send them to you in PDF. They are big documents, but I'd be happy to do that if anybody wants to wade through them with me. We can sit up, we can eat popcorn, watch bachelor in paradise, and just flip through it, right? I guess that's jus me. Okay.

So some people thought that the documents should be more consistent. Well many people actually thought the documents should be more consistent from discipline to discipline. The European Network of Forensic Science Institute said that different guidelines reinforce the problem that forensic science works in silos. So that was sort of one kind of comment. That call for consistency was echoed by many;

SAMSI, Innocence Project. Others thought that the document should really be more prescriptive and mandatory and have less discretion for the examiner in terms of language. But, you know the friction ridge OSAC thought that the department should really reserve flexibility and make it clear that this is living document. So, again, there's a bit of a disconnect between some of the things that he were hearing.

Lots of people weighed in how to results. Some people had specific language in mind. Steve Lund and Hari Ire [ph] -- I guess Hari has left -- they really wanted us, consistent with Hari's presentation this morning, wanted us to point to relative frequencies from databases and really move away from likelihood ratios. Other people really thought likelihood ratios were the right way to go. I won't go through all of them, but I would just note, you know, as to physical language, some people thought that we shouldn't include any physical language. Some people thought we should be limited to reporting similarities and differences. So, again, I would just note that there was a lot of variety.

So the one thing that I think that is real exciting about the comments that we received, because we did receive so many, it was a really, really broad cross section, and it was people outside this room. I think it's really important to engage with this room, as Julia encouraged yesterday, and that's what we're here to do. But the benefit of publication means that we can get comments all over the country and all over the world, and not just people that we pick to sit here. So I'm excited to have the conversation.

So what do you have in front of you? I'm not sure. No, what do you have in front of you? You have two ULTR 2.0 drafts. Again, these are discussions drafts. You have one for fiber and one for latent prints, and I thought maybe I would just talk you through them a little bit and then open it up to a conversation; okay?

Let's look at fiber. And the first thing I want to note, you see that we've removed some the caveats. That's just for readability in this room. We will continue to have our caveats with the Department of Justice. We're a whole lot of lawyers, we're always going to have legal limitation. I've also omitted purpose and scope. But let's talk through some of the broader things.

The first thing you'll see is that we've included some descriptive statements. That's actually, I think, consistent with some of the stuff that David Kay was talking about today, which is where an examiner talks about the evidence in front of them but doesn't necessarily come to a conclusion about it. So we wanted to break that out. Now we've broken down conclusions and we've just included a little bit of language about the kinds of conclusions that are available for fiber. We've identified two possible conclusions, inclusions and exclusions. And then the old one was sort of should and then a whole lot of language, and then should not and then a whole lot of language, and we've tried to make it an easier format so we have a text box in the center that breaks down what the examiner should say, what the examiner should not say, and then specific language with respect to each of the different conclusions.

Again, I don't think that the words in the boxes are perfect at this point, but I think that they represent some advances. I certainly think that the format for examiners represented advances, and I think for prosecutors and defense attorneys. So I'm going to open this up for conversation and, oh, oh, people are flipping their tables. It's very exciting. So Peter and then Julia.

PETER NEUFELD: Some cursory reading of this document on fibers, it completely contradicts and omits requirement that Alicia gave this morning when she spoke on the Statistics Panel because what she said explicitly was that if a forensic scientist is going to give a statement which says that the defendant is included, if you will, or is consistent with being the source of a particular fiber, that in order to say that it must be accompanied by some statement expressing the commonness or rareness of that association. And not only do you not say that that linkage should happen, but you explicitly say it should not. And I just wanted to know, number one, are you aware that it completely is the opposite of what you said this morning; and, two, why did you take that course?

KIRA ANTELL: So, first, I'll note that Alicia has one perspective. I don't think she represents every perspective. But I think that's a great question. So what kind of language would you want to have in what the examiner's say? Would you want to parrot what Alicia suggests?

PETER NEUFELD: No. The problem fundamentally for anybody who's actually a lawyer in the trenches, and sees experts testifying on a routine basis, that if an expert says that something is consistent with or positive association or matches, or whatever words you want to use, and does not express what that actually means in terms of commonness or rareness is that jurors will think it has extraordinary powerful weight. That's what the studies show. That's what we all know anecdotally if we've ever litigated a case. There is no dispute about that; okay?

And so the danger of misleading a factfinder without having some statement about the rareness or commonness, is extraordinary. And I'm not saying what that language should, but to allow someone to say the former without put any kind of parameters on it is inviting misleading testimony as a matter of routine.

JONATHAN WROBLEWSKI: So can I jump in, because this highlights the precise discussion that we had at the Forensics -- at Statisticians roundtable. It's what do you do with a forensic discipline where there may be insufficient research to have a known error rate, a quantitative known error rate, but at the same time there is relevant evidence that is going to be admitted into court? So, for example, on shoe prints and tire trends, for example, that's a discipline where there seems to be where there is insufficient research, and so we don't have that error rate. And we had this debate. And maybe you can jump in, Stephen, and talk about it. I think there was some other people who were there. Yeah. And we had this discussion.

And the scientists, I think it's fair to say, were very uncomfortable saying more than from a scientific basis that it is consistent with or inclusion -- and let me just finish because I'm with you. I'm not fighting what you're saying. I'm just explaining the sort of discussion that we had. You know, inclusion, meaning it could be this person, or, you know, those two things could be -- this piece of evidence could have come from that piece of evidence, or it couldn't have come. And if you don't have an error rate then there's nothing more that you can say.

And we pointed out -- and this is, again, where we're bringing it to the courtroom, which is that the jurors want to know what is the probative value of that testimony. And so we have to find a way of what you can -- how far you can go in explaining the probative value of the evidence collected. But at the

same time, not overstate and go beyond the challenge. And this is the challenge that we're trying to -- we're trying to meet.

PETER NEUFELD: Just a small fundamental thing; okay? The problem is something may be technically scientifically correct but as Judge Hervey pointed out, for instance, yesterday, you're only providing a partial picture, not the whole picture. And by not providing the whole picture, the danger, the risk of misleading the fact finder is enormous. And we've all seen that, those of us who have tried cases or presided over trials.

Just as a point of information, when you say "error rate," people at this table have given the term error rate different meanings, and I assume you mean it in the broadest sense, which would also include simply false positives because the criteria that it being used to declare a match are so general that you're going to sweep in many other people other than the true perpetrator or the true source, okay? And I assume you're using it that way. And all I can tell you is that for you not to take into consideration how something is given it's entirety and how that will definitely unquestionably mislead people, I think is a huge mistake on the part lot of your office.

JONATHAN WROBLEWSKI: I just want to give you -- I hear what you're saying and we're listening and we're struggling. I just want to explain the struggle; okay, so you can help us get to an answer. The first version of the ULTRs in some of the disciplines had the kind of probabilistic statements, lots of different words to explain various levels of probability, even if there was not a sufficient quantitative error rate, even using the term as you've described them. Those were as criticized as your criticisms are to this, that this particular one excludes those kinds of probabilistic statements, and they were criticized, and specifically at the statisticians roundtable, because if you can't put a number to it then you shouldn't be putting the particular words or differentiating different levels of probability.

And so we're trying -- and, again, this is where the law, the court room, the realities of the courtroom and the jury making a decision -- the jury is going to make a conclusion on a relation ship. Did this person make this shoe print at this crime scene?

PETER NEUFELD: I will defer to my last comment, which is I think it's a faulty premise to think that you're in an either or world. There are other options available, and that's what you need to contemplate.

JONATHAN WROBLEWSKI: We're looking for those, not necessarily here right this minute, but as we publish the second version we're looking for it. And as I said, we see this as a process that is going to develop over some period of time. So we have draft number one, draft number two. We'll see where it goes, but we're very much look for those.

KIRA ANTELL: Great. So we'll go to Julia then Jules and then sort of down the line; okay? But we'll start with Julia, though.

JULIA LEIGHTON: Okay. I want to step back a little bit for a moment, because you've got a lot of -- we could do pages of individual comments on them, and so I'd like to step back. And somewhere in there I want to say thank you. You guys are the messengers. Get ready to get beaten up. But this dialogue is terribly important, and I was a little dismayed to see that the first effort to engage was through

regulations.gov. I don't think this is something that should be crowd sourced, I don't think you should seek to please everyone, and I don't think all opinions are equal. And I would discount the opinions, first and foremost of lawyers. And then pretty quickly after that, I would say I would give the most credit and most to statisticians, and I'll leave out the middle, because I'm not one of them, and they can be critics of their own selves.

I think that that points to a little bit of a failure how this all started, and it's part of why we're now where we are, which is that the process itself failed to bring in independent statisticians. It failed to meaningfully engage with independent critics and statisticians from the beginning. It didn't necessarily -- it doesn't reflect that the disciplines were learning from each other. An example of that is, you know, some of the things that show up in the hair ULTR that didn't show up some others that seems pretty common across them, which is not to say I think the hair ULTR is perfect, but it clearly was learning some from its experience. And it's the failure to identify limitations and to say that the limitations had to be explicit as part of the presentation.

I think if you had engaged with statisticians and done something like statisticians roundtable, which I commend you for doing on the other, if that had been done as part of the ULTR process, you might not be where you are now. And I think that that is really where I would suggest you have to go to really move forward, which is that as best I can tell throughout these documents you are making statements of relationship and you are struggling with the fact that you haven't got numbers. But statements of relationship in whatever form are some level of probability and you have to deal with that honestly. And so that means you can't make a statement of relationship without talking about the methods error rate, the false positive, false negatives, not mistakes.

You can't talk about it without dealing with uncertainty in measurements at all different stages of the process, and that you can't talk about it without talking about the variability within the relevant population. And that may mean not simply to say that you can't say that the error rate is zero. It is that you have to say that we don't know don't the error rate is, but it is more than zero.

And beyond that, as far as specific language goes, I can only stress the need to go to the experts. And I appreciate the interest in collecting comments from across the board, but you need to exercise judgment about which ones are the ones you most have to address. And, again, I suggest that that is the world of statisticians and independent scientists.

KIRA ANTELL: Thanks. I'll note that we did. One of our panel statistician roundtables did spend some time talking about the uniform language project and parsing through some of these issues. But I take your point that we need to do more of that.

JULIA LEIGHTON: And it's going to be hard; right? You made it a little harder by putting them out before doing that. And walking things back and getting people to reconsider their positions once you've committed to a position makes it harder. But I think that it's this ULTR 2.0 really needs to engage that community. And part of it is I don't think you can say, oh, if you've got an opinion, go to regulations.gov and put it out there. You know, maybe Dr. Gates is willing to do that. Maybe he's not. But he strikes me as the kind of person you should go and ask, that you shouldn't just depend on the good will on

academics that are seeking grants, that have lives and businesses to run. You've got to go to the people and get them to engage with you.

KIRA ANTELL: So we'll just start down here at Jules and go down, and then we'll go over. Before we make the turn we'll go to Bonner and then come back.

JULES EPSTEIN: No, I go. I go. Caught you off guard there.

KIRA ANTELL: No, I was letting you know that after the end.

JULES EPSTEIN: I can follow that. Going real quick. So I'm looking at the latent print one, and --

KIRA ANTELL: It's like that joke; right, ladies, is there anything you like?

JULES ANTELL: I didn't know that joke, but, okay. This is so generational. Okay. My concern with this is when I read the definition of identification and the protestation that someone should not use, you know, exclusion of all others and zero error rate. This document endorses the position that identifications to a particular source are currently doable -- my bad word -- as the state of the art in latent prints. I don't understand that to be the case.

In addition, when you have language that says, "The examiner may indicate" -- da-dot-da-dot -- that it's from the same source," that means from this person and nobody else. Because there is, and it should be there are, sufficient quality and quality of corresponding information such as the examiner would not expect. I'm not a scientist. I'm certainly not a statistician. I think there's a difference between is or isn't versus wouldn't expect. I don't know what wouldn't expect means in the world of science, because now it's taken an absolute and put it in what I'll call a probability framework that has no metric except for the individual examiner.

My last comment, I'm assuming we're limiting this now to the ULTRs and we'll come back to the FSDRs? Did I get that right? I'm struggling, because as an evidence professor there's a bandwidth of relevance in the middle; okay? It doesn't have to be exclusive to Jules to be relevant if it could have come from Jules. And I think that's getting lost here in the middle. And this goes, Jonathan, to what I think you were dialoguing with Peter about. I'm going to say this real quick, because I don't want to monopolize.

Assuming an examiner can say, look, I looked at this latent, and at level two details there are four or five that stand out, and damn it, when I look at Jules, those four or five are present. We have to trust a little here that they are, indeed, relatively discriminating details. We are not using yet a database with statistics that show 1 in 800 people have this, and they're independent of one another. But assuming that it could be a comfort zone to say that even an experienced-based statement could say, I look at lots of fingerprints, we see all sorts of variations, don't see these a lot, and it's interesting. Then we at least get to the utility versus the concern Peter talked about there's still the risk of the jury over-utilizing that. But that's a discussion worth having, separate from this is endorsing identification to a source. And that's what this does, where -- and I'll be repeating myself -- I'm not sure the science can be said to be there today.

JONATHAN WROBLEWSKI: It's just that line that we're trying to walk. And I'm not suggesting that 2.0 or 1.0 were precisely the right space. But we're looking for your help, again, not this moment, but in figuring out what those words are. Because if we say, as the statisticians wanted us to say, all you can say is it could be or it can't be. But if we say, okay, if we stop the testimony as it could be, Peter is very upset, because the jury is going to hear that as it is.

PETER NEUFELD: That wasn't me telling it, that was the statistician.

JONATHAN WROBLEWSKI: No, I understand. I'm just telling you the different comments, and we're trying to walk that line between this is the science and -- but at the same time in the courtroom, you want, as you say, there are goal posts with the admissible relevant evidence that is going to help identify whether it's -- whether there's -- how probative that relationship is, and I'm just telling you what we're struggling with, and if we don't have it right, then help us find the right way.

JULES EPSTEIN: Then let's do this very quickly. And, you know, we tell jurors the shooter was left-handed. The defendant is left-handed. Under the standard of relevance, that's considered admissible. It's not a homerun. It's the one brick in the pyramid. It's whatever you want to call it. Then we get to the issue of a 403 analysis when they hear it from analysis and they don't know -- everybody has a rough idea left-handed versus right-handed. They don't have the rough idea of X level to detail and how significant that is. If we can't provide that, that it's own problem.

But I'm less afraid of properly cabined testimony; that there are a enough of features common to both, and then as an examiner I can't tell you how many other people do or don't have them, but it's not like your car and my car have doors, these are more distinctive features. But we could talk about and then Bill Thompson could help us with how would a juror understand and use or maybe misuse those. But we've gone all the way to the end line saying somebody can say identification. That is a particular concern to me. Thank you.

KIRA ANTELL: Linda. And I'll note we're going to continue this conversation just after maybe like 3:03 and then we'll turn back to FSDR for ten-or-so minutes of conversation on FSDR.

LINDA JACKSON: I just wanted to make two comments. One, I like the more consistent format. I agree with [indiscernible] that when you looked at the original versions that were released it looked like that, you know, they had been written by a bunch of different people, and it made it seem like they didn't all take into account the same things, even if they covered the same types of things. So I like the new format.

The other thing is on the example that we were talking about with the fiber of the examiner should not state a statistical weight for probability. We had a long discussion about this in the subcommittee when we met yesterday about the fact that even the way the document was written right now there was a lot of you should not say this. And what was really missing is, well, if the statement is incomplete without that type of statement and you know that you can't say anything about that statement, what should you say, because obviously you should say something. And so that was one of the things that the subcommittee has taken back to work on now, is to try and come up with some wording about those types of things that you should say. And so what might need to be added is whatever that looks like is,

you know, whatever the examiner should state that a statistical weight or probability is not known at this time, or whatever the wording is, instead of just saying you shouldn't use words like "remote," you know, to say what it is. And so hopefully that will be forthcoming with the work we're doing, as well as the work you're probably doing as well.

KIRA ANTELL: Tanks. Stephen.

STEPHEN FIENBERG: So let me begin for the commission by noting how terrific I thought that Kira and Kevin and the staff were at the roundtable. I went to Washington quite apprehensive; that we would be talking to a stone wall, and I did not feel that way. I thought it was a terrific dialogue.

I don't think, however, that your statement Jonathan, captures fully, at least my perspective, and I think also not the perspective of several other people. A couple of people said, yes, it should be yes/no, that's all you can say. That was not my statement. And I think it's very important for you and the staff -- and Kira was here this morning. Were you here this morning? And Kevin too. This commission is moving in the direction of having a document that would provide explicit guidelines for how these statements should be worded, and they incorporate the kinds of things that Peter was referring to. The kinds of things that Julia was referring to.

That document, while not in final form, is sufficiently explicit to guide what would go in these boxes, I think. And it would be quite restrictive for lots of evidence. And the point here is exactly the reason why everybody dumped on the first set of guidelines. Because not only did they have a patina of science but they had pseudo statistical language throughout. And we have been very explicit at this table, and we are very explicit in that working document that that is not appropriate; okay?

There are elements that are appropriate, and that's what the working document is trying to deal with. And I think that as you move forward, if you could make these ultra consistent with the approach and language there and I think we can help a little, you would get at least less flak. You will get flak from all sorts of courts, but it will be con sis at no time with what will be a views statement from this commission. And so it's not just the statisticians speaking, it is going to be, in the end, the commission taking a fairly strong position about what could and should be said by experts in those kinds of settings.

KIRA ANTELL: Thank you. I'll note, you know, we have looked at the view, which was only sort of distributed just a couple weeks ago. I have copies of the presentations from this morning. I think there was actually a lot of really good information in that. I hope I have some statistician friends now who, you know, we can go back to. Let me go to Bill, and then did you put your tent down? Okay. Bill and then Bonner.

WILLIAM THOMPSON: Okay. I have to say I'm beginning to feel really sorry for you.

KIRA ANTELL: I have it good. I have great job. I work with all of you people. It's fantastic.

WILLIAM THOMPSON: Yeah. Except the problem is you've been given a task that is impossible to perform; right? So you've been asked to review a body of testimony and make an assessment as to whether the experts were testifying appropriately, and that is impossible to do under circumstances

where there's no consensus about what is appropriate. There's a lack of consensus on two different levels. There's fundamental disagreement about the probative value of forensic scientists' conclusions. In each of the areas that you're examining that's subject to dispute as to how much value to the conclusions they reach actually deserve. You know, if you had to assign a likelihood ratio, what would it be? You know, there's no agreement on that.

Secondly, there's fundamental disagreement about the way that forensic scientists should talk about whatever conclusions they reach, whatever value it has, what the forensic scientist says about it, the words are actually put in the report and expressed to the jury are contested. Fundamentally different views are taken by European scientists who like likelihood ratios and American forensic scientists who like categorical schemes. We've got, you know, all kinds of different approaches that are being proposed and, you know, I think Steve was suggesting you get on board with the views document the commission is putting out. But you could also view that has a contributing to your problems; right, because the views document that the commission discussed this morning is fundamentally inconsistent with these documents that you distributed. In particular with regard to reaching conclusions of identification and opining on the probability of the propositions being considered.

So I have to wonder whether in being asked to come up with ULTRs, whether it be ULTR one or ULTR two, I mean, consider the possibility you've been sent on a fool's errand here; right? That until there is more agreement in the community, maybe five year from now, but until there is more agreement in the community, you might not be able to find anything that has consensus.

KIRA ANTELL: So I think you may be right. And what I want to say is this takes into account the fact that we have examiners testifying in court every day of the week, or almost every day of the week, and this is an effort for them, for our prosecutors and for the examiners to give them the best information we can to tell them how to do their jobs. I recognize that this is not going to make everyone happy. But we need to serve the people -- the employees of the Department of Justice the best that we can. And this is a document that will continue to change as new science is, you know, made available to us, we're going to continue to review them. But I do think it's important to continue on this, as difficult as cleaning out the Aegean stables is, you know, we need to move forward on it.

WILLIAM THOMPSON: Good job. Just a couple thoughts on where you should go and what I think you can do. I do think that the review of the testimony could be extremely useful. I don't think that you have to have a consensus on what the appropriate way is to testify before you give us a characterization of how people are testifying. What I think you need probably is a taxonomy of different types of statements. And if you need -- I've been make up some. I could send you, you know, the taxonomy's that I see. But you need a taxonomy to classify the kinds of statements that are made with regard to the character of the statement and the strength of the statement. I think it would be helpful if you go to the work of gathering all these transcript and so on. These all reflect testimony in public trials, so I think once you compile them, I do think that you should make them public so that the academic community in general can take a look at it. I know there are a number of academics who, if they had access to these materials could add their own commentary on it. And I think that would be helpful.

I mean, I take your point that somebody needs to come up with a standard that can be used for guidance of the experts employed by the department. That brings me back to Steve's point. Should that

be you or should that commission; all right? So maybe if you really feel the need to set standards, are you the best people to do that, or should you be relying on a commission? Those are my thoughts.

JONATHAN WROBLEWSKI: Just so you know, going back to the FSDR, I think we're in the same place you are, which is we're trying to collect data that could be used as the ULTR process, as the standard development process struggles forward and changes; right. But then also the deputy attorney general wants to know, and I think many people want to know, are our experts testifying consistently with some standard? And I think that's where we've come out, as I indicated before, is have they at least testified consistently with what their supervisors think was the right thing to do, or did they exaggerate that when they got into court?

WILLIAM THOMPSON: Fair enough.

JONATHAN WROBLEWSKI: And so that's what we've designed in terms of, okay, we're going to collect a lot of data along the lines you're suggesting, but at least in terms of answering the fundamental research question, are they exaggerating, we're comparing it to the report, which has been reviewed internally.

WILLIAM THOMPSON: Yeah, that strikes me as very useful.

JULIA LEIGHTON: So it's truly a compliance study, not a corrective study. That's my point, I think it's going to be very important to say that publicly. That this is really not changed from what might have been original thought.

NATHAN WROBLEWSKI: Yeah.

KIRA ANTELL: So we'll go Bonner then Gerry then Arturo, then I saw that Judge Hervey just raised her card, but we're also starting raising if you want to start talking about FSDR as well, I'll recognize you. And we got an extra five minutes from John.

BONNER DENTON: If you're going to use fiber analysis, particularly when it includes synthetic fibers, without having the realization that if one doesn't employ either infrared or raman spectroscopy and/or both, which give you chain length, polymer density, polymer cross linkage, of course the identity of the polymer, you're missing a very important aspect of fiber analysis. How are you going to handle that?

KIRA ANTELL: Well, without stating specifically I guess I would say that I would see that, and the examiner should in the second point, that the examiner should describe the methods used in conducting comparison. While we didn't specifically opine on that, we tried to leave it flexible. But it sounds as though you think it needs to be specifically included in this kind of language.

BONNER DENTON: Very definitely, because what it seems like, you're directing your interest only in optical microscopic evaluation of the fiber. And particularly with synthetic fibers that's not where our modern science is today.

KIRA ANTELL: That's a great point. Thanks.

GERALD LAPORTE: Yeah, I just want to make a comment on the latent print one. So it seems like we've got a fair amount of research that's happening now and has occurred and is pretty much telling that we print examiners are okay. They're pretty accurate. I can cite; right, the Black Box Study; and a number of other studies; right, and can use that science if anybody's arguing with me.

So, anyway, I guess what we're trying to say here is we have the other side that we haven't talked about, which is we know from the Black Box Study that there are some false exclusions. There's a little bit of a higher error rate. I forget the exact number, 7% or so. Does that mean, though, that when a latent print examiner excludes a fingerprint in the report they should include that dialogue, say I could be wrong that I excluded that fingerprint, and, you know, I just want to make sure that as a scientist we're addressing both sides of the equation here. So I know that can create a little bit of chaos. You know, if you've got a whirl versus an arch and it's two completely different fingerprints. But the fact is, I guess, that this can create a lot of confusion when the latent print examiner says one's a whirl, one's an arch, they're not from the same source, but I just want to let you know that I still could be wrong, though. So that can create a little bit of confusion.

With respect to the fibers, so I've always advised using the word the "same." Whenever I see same it scares me as a chemist. So in bullet two the examiner should state that the compared fibers exhibit the same microscopic characteristics and optical characteristics. I'd be careful with the word the "same." So we used to use terms like we conducted a physical, optical, and chemical examination and could not differentiate or show that there were differences. But we didn't say the same.

The other thing is in the fiber examination, and I know this is going to be a contentious point, but you're really not allowing the examiner to opine on sometimes the commonality of things. So if an examiner -- if we're talking about two cotton fibers; right, and the examiner puts no context to that and goes to court and says it's cotton -- the questioned fiber is cotton and the known fiber is cotton, end of testimony, I mean, that you have seriously, seriously just misled a jury, because cotton is so common. So this becomes, I know, a little bit of a sticking point because we're just going to talk about experience now. Now if it's a trilobal fiber, and I'm going to cite, actually Dean Gialamas. I'll say Gialamas 2016. We just had this conversation earlier. But then you have a trilobal fiber, which is not as common, and you're not allowing the examiner to express this. You know, I think these are things that need to be discussed and balanced out a little bit.

I know these are contentious points, because some people hate the fact that forensic scientists rely on their experience. I can tell you firsthand in here, and I feel very confident that I know more than everybody in this room about what the most common ink formulation is in the world because I looked at inks for ten years, and I know that Bic makes a formulation that's the most common ever. I know that. Nobody else here knows that, but that was based on my experience. I know that there's a very uncommon formulation that Zebra makes that I would only see -- I don't know -- only see three or four times in my whole career.

So I know, once again, we've got to figure out how to do this, but experience is something that does need to be taken into consideration. I know it gets blinded or it gets faded when you're talking about things that are not looking tat ends of the spectrum I'll say. So there's commonness, total, uncommonness, and then there's things in between, and then that's where it gets a little blurry.

KIRA ANTELL: I think Arturo, please.

ARTURO CASADEVALL: So in this tsunami of pushback and comments and all that, I want to say that I think what you're doing is great. I'm speaking as a scientist, not as a lawyer, not somebody who goes to court, I think the idea to get data, the idea to take an introspective look at this, and I think it is a bold approach by the Department of Justice and I greatly commend you on it. And I think as soon as you get into the weeds you're going to get pushback. But the bigger picture here is to try to identify patterns, to try to identify ways of doing things better, and I would say keep going. This is bold. This is courageous. And I don't know, I mean, how much support you have around this table, but you certainly have my support. Thank you.

KIRA ANTELL: Judge Hervey.

BARBARA HERVEY: I think I'm confused or stupid or both. But I could have sworn that you were saying that you were looking at transcripts, and what you were doing was assessing the testimony as against policy that existed at the time of the case. Is that correct? Okay. So everybody's suggestions about what should be in there now isn't relevant to that study. That is just as Julia pointed out, it's a compliance with that particular program. So I just wanted to make sure I understood that. Now I think you can learn a lot from that, because as the scientists move forward, you can see perhaps where the testimony needs to move to. But they're two different things.

Also, when people are looking at the transcripts, are they looking in at the case in context, because the transcript isn't everything? You've got jury instructions. You've got arguments. You've got all kinds of other things that need to be taken into consideration, not just a transcript. So I was just curious about that.

JONATHAN WROBLEWSKI: So we're not testing out the conviction. We're not going back, and our research question is not was this conviction a good conviction. The research question is whether the testimony stayed within the goal posts.

BARBARA HERVEY: But don't you ultimately want to know if that testimony has some kind of impact on the case? So in other words, the person testifying, scientist or not, could say something that's wrong or slightly wrong and it could make absolutely no difference to the case.

JONATHAN WROBLEWSKI: Right. So what we've decided tentatively, which we spelled out in the notification, the question about notification, is if the testimony is not within the goal posts we're going to tell the defendant, the prosecutor, and the defense lawyer. They're going to fight that out, whether it was material to the -- whether that testimony and that testimony outside the goal post was material to the conviction, whether there was so much cumulative evidence that it wouldn't have mattered anyway. That's what we're trying to get at. We're trying to just see was the testimony within the goal post.

BARBARA HERVEY: And I hate to do this, because it sounds obnoxious, I'm sorry, but have you all -- I assume you all have talked to the head of our commission in Texas as to how we doing that? Okay. Because they're doing a pretty good job.

KIRA ANTELL: They're doing a great job. And we have spoken to them several times, and I think we've been invited to come sit in, and we hope to take them up on that. So we don't have much time left, but I want to recognize the people who still have their tents up. So we're going to have Dean, Peter, Jim Gates, Jules, and Paul and then that's done. So, Dean.

DEAN GIALAMAS. I'll try to be quick. First of all, thank you very much. This is not an easy task to do. It's not a fun task to do, and I want to compliment you for even taking on the challenge. It's huge. It's monumental, and I kind of echo what Arturo said in the ideals of what you're trying to go after.

I'd like to give you two very narrow specific recommendations. One is regarding the ULTR. I think one of the confusions that might exist, especially with what examiners should or shouldn't do might be a bit of a -- I'll call it a temporal issue. And I might suggest that you might consider a current state, like what can we do now, and an ideal state, what do we need to work towards in the future. Because if you don't bifurcate what is currently known now and what could be dealt with in the courts and in the community, you create an ideal state that can never be reached. So I think, really, if you look at it from a perspective of -- and I don't want to use aversion, you know, 1.0, 2.0, so that's why I'm using this current state versus ideal state. I think it will shake out some of the things we need to work toward.

And by Peter's example to start the discussion about statistical weight and probability, we can't do that now. We don't have the data in many different areas. But it doesn't mean that the analysis that has been done in a course of the case cannot add value to a case. It has to be evaluated at trial itself. So that's why I think the current versus ideal could be beneficial.

The second, with questions about probability statements, I think I know what you meant in this document by it, and I think it was really the lack of maybe some qualifying language, and if you just said, examiner should not state a statistical weight of probability, I completely agree with Peter. But I think the caveat is when not established or known, because that's been in the problem; right, in forensic science. When there hasn't been a known or established review of data and someone opines something therein lies the problem.

So I think, again, it may be just specific language that has to be put in, but I think there's some small things. I other suggestions I could talk to you offline. But I wanted to address those because those were key components to me that I saw based on the discussion today.

KIRA ANTELL: Thank you. I will say this concept of the struggle between the current and the ideal is something that goes on, that we are talking about and moving towards, so I really appreciate you sort of touch on that. Peter, and then Jim.

PETER NEUFELD: I'm sorry to -- now that we're not talking about the ULTRs and we're talking about the FSDR.

KIRA ANTELL: It's really a free for all. You talk about what you want.

PETER NEUFELD: So to disappoint you a bit, okay, I actually concur with what Arturo said, and I think that your effort is to sort of get a handle on the FSDRs and deal with the public comments and deal with the statistical roundtable has been exemplary. And I think you really are embarking on a very, very noble endeavor, and I'm glad you're doing it and not me. So it's great, and you should all be complimented for it. And I saw so many thoughtful conclusions that you reached on how you intend to move forward.

I had a concern with one, just one. And that had to do with the standard of review. And you, I think, didn't frame the question completely. You said on the one hand there's compliance with community standards and then on the other hand there's whether it's consistent with current science. And what I'm about to say is there is, in fact, a third, and the third is not whether at the time it was compliant with community standards, which it may very well have been. But the community standards at the time were not even consistent with the science that was known at the time. Okay?

For instance, in the hair review, all right, with the help of input from both Stephen Fienberg and Karen Kathedar [ph], it was brought to the attention of the Department of Justice that even if you look at the science that was known back in the 1970s and 1980, and the people who were in the phrenic laboratories who were making these estimates about the probative value of a hair match were violating and acting beyond the scope of what the science was, even in the '70s and '80s. And although some people recently have tried to distort that reality; that, in fact, was the reality that was brought to the attention of the Department of Justice and the Bureau, and that's what led to the kind of review that ensued.

And so instead of simply looking, as you said you intend to do, using compliance standard, okay, when you do the FSDRs to see whether it comported with community standards at the time, you're going to have to bring in outsiders, perhaps statisticians or others, the determine whether or not the community standards at the time even comported with the science at the time, not current science but science at the time. You're going to have to add that little additional layer to the review. And if you do, you may get varying results.

I mean, just as a comment, what happened with the hair review, which I think is very illustrative, is that it was determined that if you didn't have the kind of data that Dean was talking about, then all you could say is, is that the defendant who was a match or consistent or could have come from him, all that meant is was the defendant was member of a pool of other people who also it would be consistent with, but we don't know the size of that pool.

What's fascinating is, is the pool language was consciously omitted from the ULTR on hair; okay? So it's as if the FBI and the Department was walking back from that which is scientific acknowledged four years ago in 2012 when it came up with an ULTR for the hair in 2016. And the reason is even, though the statement about the pool is consistent with what the science was, and it's consistent with what Dean and others have said here today, they didn't like the fact that if you put that pool language in then the jury will give it much, much less weight than they would otherwise, even though it's a correct statement. So they were worried about the psychological impact of the pool language. So think about those things when you try and deliberate as to what was the appropriate science at the time.

KIRA ANTELL: Jim Gates.

JIM GATES: Thank you. First of all, I want to associate myself most strongly with my colleagues who have complimented you all with this incredibly difficult task. You know, there are all kinds of aphorisms you can use, and current state versus ideal state is certainly one. I tend to think of this as the ones in terms of repairing a plane that that's in flight or improving the characteristic of a plane that's already up in the air, because that's really what you're doing from my perspective. So I have some appreciate of the difficulty.

I mean, as I said, I associate myself with the comments that started with Arturo, and then you've heard various ones of us give you praise for what you're doing. So I'm going to go deep into the weeds at some point now, because the thing that I'm worried about or concerned about, and perhaps you folk also talk to us offline about this, is the technological foundation on which this thing rests, because machine learning, intelligent IT systems can build on these foundations. And so while you're doing this task, I worry about what you're building for the future, because this process that has started with this discussion is something that is going to have to evolve in time, and so you, in some sense, have to anticipate what the opportunities of technology, the computer technology will offer at the very base level to move forward. So that's the only comment that I had that I hadn't heard discussed here today, and I worry about it.

KIRA ANTELL: I guess our last comment -- okay, it sounds like Paul and then Marilyn, and then we will turn it back over to our chairs.

PAUL GIANNELLI: I was on the bullet-led -- Bonner was on it, bullet-led committee. And so there was only two lawyers, which was good. We had more statisticians and scientists. But I went back and I tried find cases, and I had a very small universe. All right, I think they did over 2,000 exams and they testified, or something, 500 times, and I could find in reported cases about 30 cases, which indicated what they were saying. Some the cases did not. But how they phrased the language. And we did get a bunch of transcripts that were sent to me by people who were critics of the process.

One of the things that you could look at that I looked at, and it's what a lawyer would do, is it was not only what the scientists said and testified, and some of that was wrong, but you could look very quickly for the closing argument and see what the prosecutor said. So sometimes the statements were fine. It was the prosecutor in closing argument. And in some of the hair cases they do that. It's a match. That means he was in the room. I mean, there's a case like that. And once you go into the process, I don't think that would be that more difficult, if you get the entire transcript, you know the closing arguments.

So, but this is what I found. The testimony that we could find did not match the protocol or the lab reports. So it meant that nobody was monitoring the performance. So the people, the scientists at the lab, had one view of what this technique would do, but the experts were saying more. And the thing that they would say in their report was that it's -- the seven elements I think it was, it was chemically indistinguishable. And that's sort of consistent with my view. It doesn't tell you what it means. The significance is just completely lost. It's like a match.

And then when I looked at the cases, I came up with seven different ways to state or eight, it's in the report. And they were saying it was in boxes. The boxes are only 50 cartridges, and so you can say it

came out of the same box, and the defendant had that box. That is powerful evidence. But we concluded you couldn't say that. In fact, with some there was millions of cartridges. So I think that the process is important if you could do that; that in itself would be helpful, because you could learn some things. Maybe learn something different than the bullet lead, which is so small universe, and the hair sample. But I did want to mention that you definitely could do it very easily to look at see how the attorneys characterize the evidence, and that would be helpful to know.

KIRA ANTELL: So thank you for that. I will note that's actually consistent with some of the stuff we heard at the statistician round able. Stephen Fienberg, as an example, suggested that we collect closing arguments as well. I don't see it necessarily as part of this review, but that doesn't mean we can't start to collect them. We were really encouraged to get as much data as we can so that we can go back to it later. So I appreciate you echoing that. So Marilyn is going to be the last comment.

MARILYN HUESTIS: Okay. So a couple things. Also, kudos, it needs to be done. It's important. But I would urge you not to rush. I think you're hearing some much around this table, and it seems impossible at this point, but I think with time and effort you will get there. Two other things. So you talked about making sure that when you got to the end of this that you could use it for training and other things, which I think is fantastic to have it be a resource for all people to train their employees. But I would also really request that you publish it so that every forensic science service provider has access and can be food for thought. I think that's really critical.

And then this is a really worrisome one that I'm going to bring up, but Bonner and I have been talking and listening to Peter. You know, as a scientist, I really agree that you need to look at not only what was the state in forensic science at the time, but what was the state in science at the time. But where I am very nervous about that is that forensic scientists and laboratories have been historically underfunded, and with equipment, with personnel, with training, continuing education, all those things.

So, you know, right now I would love to have an Orbitrap to do every single analysis I do. But that's not realistic that they have the funds. So I'm very conflicted on that. They should at least know what the state of science is and that there were other technologies available. But their having access to those other technologies was extremely limited. That doesn't forgive them for making over statements about the data they have. But I think you've got to be very careful about saying what the state of science was and that they should have had access to that. That can't be.

MALE SPEAKER: It's worth noting that infrared spectroscopy's been around since the 1940s.

JOHN BUTLER: Thank you all for you comments, your patience. You're going to hear from us again in a few months, and we'll see you soon. Good luck with the rest of your work.

NELSON SANTOS: All right. We're going to power through, as we said. If anybody needs to take a quick break, go ahead. This last discussion I think it's something, as we're talking about potential topics, this is obviously one that I'm sure the department would like to get more feedback for. So we can make this something over the next two meetings that we engage in more extensively and formally. So I think it's a good idea. I didn't hear Arturo comments. I had to go to restroom.

You know the one thing I want to say, having worked for the Department for 29 years, is this is not go toing be a perfect thing. But the fact that we're engaging in this review, I think, says something, whether you want to call it compliance correctness, it's a step in a direction that I haven't been associated with. And I think that even if it's a compliance review of what it is currently done, I think that's huge, and I want to say personally that I'm proud to be part of the department and for the FBI taking this on, because this is pretty big. It's not perfect, but it's a step in the right direction.

All right. So we're going to move, John; right. Yeah, pull up the slide. We're going to kind of follow up on our discussion that we had earlier yesterday about kind of the path forward and what we were thinking. And I think what would be helpful is to identify panels that we'd like to have inform us a little more about specific topic and then the unfinished business and talk about what that could look like.

There was some discussion, and I think the SPO had decided to put a paper together, and I think part of that summary paper should include areas that this term of the commission did not get a chance to address. Again, this is not an indication that there's not going to be a third term or what's going to happen. So regardless of what the outcome of this term is, I think it would be helpful to inform whatever body decides to move forward on what this commission thought needed to be done. So, John, if you want to just kind of go over some of the panels.

JOHN BUTLER: So we have listed here just the topic of difference panels that could be covered. Obviously the PCAST report has been discussed, you know, the draft some people have seen. But there will be a final report sometime in the near future, and most likely before the next meeting. And so the opportunity would be, then, is that something we'd like to do as a group here, to be able to discuss that and have some kind of response that, and further deliberations on that.

The second one listed there is scientific research. This has been brought up a number of times in the past. This is something that would be worthwhile covering. There could be a lot of things that could be discussed from that. Is that something that we want to do? We talked several meetings ago about victims, rights issues, and some of the victim advocacy issues that are effaced. Peter suggested that we hear from post-conviction testing or wrongful conviction perspective, that that's something that the commission wants to hear. So basically this is just ideas that haven be listed. We sent this out. And then we had other ones that could be covered for the April meeting in terms of prosecution issues, defense issues, forensic science access, statistical issues, for things from the OSAC, and then digital issues. So these are just topics that were thrown out here, and things we'd like to discuss.

We collected information from just kind of unfinished business topics that people suggested. Those were provided to everybody just in terms of commissioner one, two, three that provided those. So that's what we sent out with the packet that went out, and so at this time, we wanted to just kind of see, what do you want to do for the next meeting, just a few ideas on that. And then, or course, Pam, if you have any other ideas or things you want to collect in terms of final report perspective from the second term, wrap up, and the benefit of doing that so that we have the ability to do something with all this information.

With the documents we passed, it's important to point out that we passed nine documents. I mean, this is the most we've ever done. And I think that's impressive, as we're really rolling in terms of some of

these things here. We passed four recommendations and five views documents. That bring us to an 18 total of recommendations and 21 views documents, a total of 39 documents that this group has passed in the two terms we've had so far. So I think that's impressive as we step back and look at those things. We have five documents out for public comment, and those will be discussed at the next meeting and voted on. So I just wanted do bring as a point of where are we right now. So thoughts about where we should go?

STEPHEN FIENBERG: Under scientific research you've listed government agencies, but there are also non-government activities under foot, including a set of initiatives from the Arnold Foundation, and in particular, the one being AAAS, which by the time of the next meeting may have yielded the first couple of reports. They've been in final stages for a while. So I think we want to keep that broader. That was all. Dean I think -- oh, go ahead Jim.

JIM GATES: This will resemble the last set of comments I made. It's sort of scientific research, but I, like my colleague, think this is a little bit too narrow, this being described up there. Because I'm thinking of computer science, information processing. There are all kinds of opportunities I think out there that we haven't discussed, and I think if we could get the right panel to talk about the opportunities this might be of enormous value. As I said, it's similar to the last comments. What's going on with information process? What's going on with machine learning? How can these be brought to bear on the business that this community pursued? So I'd like to see it broadened just a bit, as Stephen just said.

STEPHEN FIENBERG: I make a distinction between tools and technologies and actual assessments of forensic domain, and the Arnold effort and the triple AS efforts are targeted at forensic disciplines and I endorse the other, but it's a different activity.

JOHN BUTLER: Susan, yeah.

SUSAN HOWLEY: I'd just like to articulate the plea for a victims panel, because I think that there are so many issues that have not been touched on in this first iteration of the panel, and I think it would be nice to flesh those out to think about additional reasons to continue this panel, and some of those include issues of evidence retention, you know, you do get case where let's say a defendant was exonerated on reasons other that retesting of evidence.

Let's say that there was an informant whose testimony that's thrown out, and then there's no evidence to retest in the case and the victim has no access to justice. Or evidence testing, you know, when could a victim pay for private testing if the state was not making evidence testing a priority. And how might that be done in a way that did not interfere with the state's ability to use whatever the results were? When might advances in evidence testing trigger new testing in a cold case? I don't think that has come up at all.

We've talked a lot about when advances in testing should trigger a reconsideration of previously tested but not of untested evidence, which is where a victim may have a real interest. There's also a lot going on right now in the area of legal rights to victim notification that really have not been informed by anything other than victims interests, and it would be good for this body to think about that, things like

what rights should victims have regarding when evidence is tested and what the results of that testing were, and when evidence is slated to be destroyed and all those things. So I'd love to help put together a panel on that.

PETER NEUFELD: And if you go back to the other slide, the one on post-conviction testing. I only offered that first part of it, which was that we actually hear from an exoneree whose initial conviction was deeply affected by the misapplication of forensic science and then was exonerated by other forensic science. Because I also think it's important for this body not to simply look at this stuff on an abstract level but to actually see in living the flesh and bones of people who are affected by the decisions we make. I also wouldn't limit it to these innocence groups, if you will, certainly not just the Innocence Project, but there's an actual network of more than four dozen projects.

I also would include two other efforts. One is there are collaborations funded by the federal government, by the Department of Justice, where different projects around the country are working with law enforcement to review cases, as well as district attorney's offices that have their own post-conviction/conviction integrity units, which are responsible for a lot of exonerations. That way this commission could get a broader perspective on the role of various post-conviction efforts that are looking at, in particular, cases that involve forensic science and then trying to see whether or not that person was guilty or not guilty. It would be a broader under taking, but it would be including prosecution efforts and law enforcement efforts as well.

JOHN BUTLER: Okay. Gerry.
GERALD LAPORTE: Yeah, I think it would also be helpful for the commission to hear about a complex case where forensic science was involved and actually did good things. We heard a really good story at a sexual assault conference last week about how sort of how the investigation ensued and the different types of evidence that suddenly became available and helped the investigators sort of steer in the right direction and ended up finding a serial rape. In the end, DNA was used. Digital forensics was used. Trace evidence was used. Impression and pattern evidence was used. So all of that came together. So it would be kind of good to hear that part of it too.
JOHN BUTLER: Yeah. Paul, take down your tent. Dean, I guess. The SPO is going to meet next Monday, and we'll be talking to how do we formulate these into actual agenda. But go ahead, Dean.
DEAN GIALAMAS: Providing a recommendation based on a phone call I received from Carol Henderson. And we had some work done on this commission about training on science and the law, and I didn't realize Carol Henderson, through the National Clearing Center on Science Technology and the law has done extensive training with lawyers and judges in forensic science. And I thought maybe it's kind of a nice close to something we never really accomplished, it would be nice for some of the commission members to hear that there is an effort already underway and perhaps maybe the work that was initiated by the commission, one, hasn't been lost, but, two, all right has an effort well underway. It wouldn't be a long presentation, but it would be something to consider, just an ability for us to let everyone know that that's out there on a national level.
JOHN BUTLER: You're next.
JULIA LEIGHTON: Boy, how are you going to prioritize all these things? Because as I was listening to Susan talk and then Peter talk, and Gerry talk, I thought all of those things were important, and that would seem weird that I would -- I could actually see putting all three of those together, because what they actually inform is -- Jim used the analogy of trying to fix a plane while you're flying it. But if you're

the victim, if you're the wrongly accused, if you're the investigator trying to figure it out and you're the people in that plane, and you would tell people to land it. It's sort of odd that we can envision a world where we think that it's appropriate to fix a plane while we're flying it. I think if we were actually in that plane, we would just land it.

JOHN BUTLER: If you were flying over the ocean, I don't think you'd go that way. So the analogy comes in there again.

JULIA LEIGHTON: But that said, you know, I can see putting those three together, and I think that it might be interesting to try and think about how they go together, but that they're not actually at odds but that they all go together. And that might also allow us to do it in one panel, because I'm also concerned about time.

The other ideas I would put out there that came out of, really, this morning's meeting is panels on so that we're, really, in a position to start developing guidance about what it is that makes a robust database. What are the elements of a robust database? How do you describe the limits of you database? How do you look to build a database?

Because what, Gerry, I think you were describing earlier, you called it experience. It's a database in your head. And the question is how accurate is the database in your head. And my suspicion is it would be a lot more accurate if you wrote it down. And then you could actually put some numbers on it. So it is possible to build databases, and you can even build a database by just counting what you do on a daily basis. You'll then have to accurately describe it that way. But if that's what -- you know, so this notion of what is a robust database I think is something we should engage with the statisticians on and talk about, and talk about what are relevant populations, how you build a database and be aware which answers it can give.

The next area on a similar sort of topic is the issue of opening databases for access by academics. So not only looking at the research that's being done but let's think about what could be done with what's out there and the problem is the people that hold the proprietary interest in it or the resources perhaps, or the expertise to use it for -- or the will. Or the will, but we need to have a conversation about that. The other piece -- I think these two are probably more unfinished business than panels. But it seems to me we ought to be taking a look at how are the recommendations being implemented that they said they were -- where the attorney general said I'm going to implement it. Well, so how's that going? Is it producing the results we were hoping for? Are there issues?

And then I think we have, really to sort of look at our existing views documents and take a look at whether how many of those are actually unfinished because there are proposed recommendations that each one of them begs for, to actually put them into action, even if only on the federal level.

PETER NEUFELD: John, just one correction. It's not combined case, victim, and defendant issues, it would be case, victim, and the wrongly convicted issues. Wrongfully convicted are different than defense issues.

JOHN BUTLER: Thanks.

JULES EPSTEIN: Topic and then a question. We've talked for many meetings about how consumers hear or mishear evidence and testimony. And we certainly got some information on that today, and that there's research out there. And that seems to inform so much of what we do. So rather than our seat of the pants or anecdotal, it would be nice to have a presentation on how jurors or others hear or mishear evidence.

And then I have a question, which I hope is right for this time in the meeting. So tell me when you're ready, and it's off topic, tell me. It's clear that some people -- I'm not saying everyone shares this -- feel some disappointment over the way the ethics code that we voted on was addressed by the attorney

general. We don't have an interim solutions committee anymore, so I don't know who among us has the task/authority/interest in talking about ethics. To me ethics remains a critical issue. The attorney general made a policy decision for DOJ, but I thought we were proposing things well beyond DOJ. So the issue of ethics and whether -- I don't know if it's called revisit or continue to visit, whether it's appropriate for new views document. And maybe that has to go to the SPO to figure out. But I am asking that that be figured out as to whether it can be addressed again. I certainly believe it ought to.
JOHN BUTLER: Marilyn, and then Linda.
NELSON SANTO: Let me try to answer your question. The document, the recommendation stands as it is from this commission; right? So the fact that it would be -- it still holds the same, as far as I am concerned, the same authority that a views document would hold. The attorney general decided not to adopt it verbatim, so that's for the Department Guidance. But it still resides in its current format as voted on by this commission as a recommendation. Now if we want to change the word to a views, that's easy enough to do. I think we did that with a couple of the MDI things if you think that's worthy of just changing the wording around. But the recommendation still resides as here's what we recommended as a commission to the attorney general.
JULES EPSTEIN: And that's great. Maybe we can -- because of time, I don't want to discuss that now, whether that how it's perceived in the world to message. That needs to go out. I asking maybe that can be on an agenda.
NELSON SANTOS: No, we can definitely discuss with SPO, because I think there's subtleties in most of the recommendations that have come out and how the AG has implemented them. So that would apply to every one of them.
NELSON SANTOS: Right. Okay.
MARILYN HUESTIS: So if you can scroll back to see those topics. So I think it's really critical, since we only have two meetings that we're sure of at this point, I would say that the PCAST and the victim's panel and the post-conviction issues that Peter talked about and what Gerry brought up as an example of how a case played out would be really important. First we have to finish our business with any votes and things like that. But I think that's much more important to address those that might really reflect what we put in our summary report. I'm a research scientist and I love the idea of research. And by the way, you left NIH off, a federal research facility. So if you'd add that back in.
But, you know, I think the research, if we do it, it certainly would give us the idea of what's coming and what efforts are being made, and maybe we could make recommendations on additional funding, et cetera. But I think that might be much better for our last meeting when we can't really do much at that point, and maybe be a good starting point for the future. And I also think that we should discuss at the SPO meeting -- I know several people have brought up the code of professional responsibility. So at least we should include that.
JOHN BUTLER: You will be part of that discussion since you're part of the SPO; okay?
LINDA JACKSON: It just triggered my memory when somebody mentioned looking back at recommendations that we've already made and what effects they are having, or what impact, that I at least don't remember ever being told what was happening with the Bureau of Justice Statistics survey that we talked about as recommendation number one. And I know that the paperwork that you have to go through to do a survey is monumental, but it does seem that three years is a bit crazy.
MARILYN HUESTIS: I can tell you that I requested and requested and requested and requested and got nothing back. I did ask Jonathan to look into it. But they basically wrote us off.

JONATHAN MCGRATH: All right. I don't have any specific comments, but I think -- I mean just as you alluded to, the survey question becomes a very complicated issue in trying to get through the process. But I think some of it may have come down to funding too. But that's --
MARILYN HUESTIS: But we got no response. We had a big meeting. We made great progress. We talked about questions. We talked about timeline. And in August -- August/September, we were supposed to receive the draft survey, and they never responded after that time point, period.
JONATHAN MCGRATH: Yeah. No, that's the same.
MALE SPEAKER: So I'll handle this. John, as your boss, can you look into this for us and then figure out what's going on.
JONATHAN MCGRATH: And Marilyn will allot it to the SPO agenda as well. How about that? All right.
NELSON SANTOS: Anybody else? And, again, at the SPO we'll try to summarize some of these things that are most important. I think the thing we should focus on those that will inform unfinished business so we get a good idea of what we need to do. And we'll certainly have to talk with Pam to begin formatting and thinking about an outline for the summary report, which I think is a nice document to put everything in perspective rather than just have 39 documents and no context in terms of what we're trying to do. So John has a few closing points.
JOHN BUTLER: So our next meeting will be held at NIJ, gratefully. I'm very happy that you get to worry about a projector and room temperature and other things.
MALE SPEAKER: I can guarantee the lights will not go out and the AC is going to work perfectly.
JOHN BUTLER: All right. To a reasonable degree of scientific certainty, I hope.
MALE SPEAKER: January 9th storm, I can see it coming right now, Gerry.
JOHN BUTLER: January storm, you won't be able to leave; right?
MALE SPEAKER: That's a compliment to my position under you, Gerry.
JOHN BUTLER: so that will be the 9th and 10th of January. So look forward to seeing you after the holidays. That just, again thanking the subcommittee. There's lots of great work that's going on outside of this meeting, and so as we bring it to this meeting, you can see that by the adjudication of the comments and the public feedback we're getting and putting changes in that. I mean we have great staff that are helping in so many ways to make these things happen. I just want to thank -- there's so many people here at NIST -- I'm not going to list all of them -- but that did a lot to make this meeting happened.
I did find out what happened. Pepco, the power company that actually had something happen outside the NIST camp that blacked out NIST for a brief time today. That's what happened today. So I didn't have any control over the lights for that issue. But I think there was very good tours that people enjoyed yesterday. The displays and the reception yesterday. I appreciate all the people that did so much to bring all that to pass. And, again, Phil's not here so I don't want to tease him about the clickers. I have his click. But leave your clickers, and I appreciate all the things that have gone on to making this meeting possible. So thank you.
NELSON SANTOS: Good job. Before we turn it over to the public comment period, there's just a couple of comments I want to make. And, you know, I know there's concern about what's going to happen to the commission after April. But I'd like to think of myself as a realist, and when an administration changes, a lot of things change. And that April meeting, we really should be considering as our own kind of summary ourselves of what we want to do, because I don't know what that's going to look like. And in all reality, even the next meeting there's going to be some flux that's going to be difficult.
John and I will continue to push forward as best we can. We ask for your cooperation, because it's going to be a very hard sell, which is the reason why I thought it was important to stop the document creation

until we had a better feel for what was going on. So we'll finish up the ones that are in process and then we'll work on kind of winding down, and maybe we'll get some information that we're not going to be winding down.

So, anyhow, I want to thank everybody. I think this was a good meeting, besides the fact that it was extremely hot the last two days, everything else worked out great. John's been extremely busy just doing the logistics of this. He even told me I have to clean up the cafeteria afterwards. I didn't know somebody at your level did that. But I want to thank John, because he did a lot of heavy lifting himself just to have the happen. So thank you, John. And obviously the staff. But good work, folks.

You know, I think, I said this about a year ago, and now as I talk to you, it seems like we're actually jelling even more in terms of coming around the issues that really matter in science. It took us a while but I think we're ending, if we do, on a very positive note, and I think the path forward is going to look bright. So thank you all. I'll turn it over to Mr. McGrath.

JONATHAN MCGRATH: All right. Thank you everyone. Do we have any public comments? Okay. We've got one hand. All right. Jeremy Triplett. And we do post in the federal register notice. You've got three minute max. So I've got my NIST atomic clock that I'm borrowing from John. I'd like to keep it if there's more comments and maybe bring it home.

JEREMY TRIPLETT: I'm good for less than three minutes. I know I'm one of the few things standing between you and going home, so I'll hurry. As many of you know, my is Jeremy Triplett. I'm the president of the American Society of Crime Lab Directors. Quickly, I want to apologize, I wasn't here this morning. I was wearing one of those different hats. One of those different hats that I mentioned yesterday. I was trying to catch up on day job and stuff. But I am aware that there was discussion about ASCLD's comments on a particular document.

Beginning, I want to thank you, Bill, if your clarification this afternoon. I really appreciate that. But I just want to take a moment and make it crystal clear for the record that ASCLD is sincerely attempting to engage with you and your work here for the purposes of advancing forensic sciences. We've had ASCLD here for every single meeting. We are trying to comment on every document you make or you create, and we've tried to have our people engage and be a participant on the different subcommittees.

Based on some of the discussions today, ASCLD would respectfully ask you to consider four quick things; that the NCSF comments and adjudication only be applied to the version of the document for which the comments were submitted; that the NCSF continue to work towards a uniform approach to adjudicating those public comments in different subcommittees; that the NCSF recognize the critical nature of involving forensic scientists in a constructive matter in research initiatives; and, finally, that the NCSF consider maybe in Pam's opus, a final views recommendation that evaluates the financial and operational impact of implementing the NCSF recommendations and addresses how the federal government can financially support their implementation.

I just want to say that when ASCLD submits public comments we're sincerely, honestly, and in good faith attempting to provide helpful feedback to you on the operational and the financial challenges that may exist to implementing your recommendations, even broader than the federal has. And we're attempting to help you understand the day-to-day operational climate in our labs and illuminate any challenges that exist to the implementation of your valuable recommendations. We're not trying to be obstructionist.

For the Bayesians in the room -- I've learned a lot about that with my OSAC work -- whatever your prior is about ASCLD, for whatever reason, we're trying to provide you additional information to change your perceptions in a positive way. Let me be clear just for the record, and I want you to hear sincerely from me, ASCLD supports the furtherance of forensic science. Thank you, and I appreciate the opportunity.

The following transcript is provided for informational purposes only and may not provide exact quotations from the meeting proceedings. For an full account of this NCFS meeting, please visit the following link for the recorded webcast: https://www.nist.gov/topics/forensic-science/ncfs-meeting-11-webcast

JONATHAN MCGRATH: All right. Thank you. Are there any additional public comments? We've got one more. All right.

MATTHEW GAMETTE: Good afternoon and thank you for the opportunity to address the commission. My name is Matthew Gamette. I'm a lab assistant. Thank you. I apologize for the technology malfunction. My name is Matthew Gamette. I'm a laboratory assistance director for the Idaho State Police Forensic Services Labs, and I'm also currently the chair of the Consortium of the Forensic Science Organizations, which represents over 21,000 forensic practitioners and medical examiners in the country.

I wanted to mention that we appreciate the comments that Jonathan made a few minutes ago in support of the DOJ budget being increased for forensic science research. We support that action wholeheartedly. In addition, we encourage DOJ to support the Justice for All Act Reauthorization that has passed the senate and is held up in the House due to CUTGO rule considerations. Coverdale and the other grant programs that are authorized in that bill are critical for forensic science practitioners, and we encourage the attorney general to throw her full support behind this bill and to put these programs into the annual budget request the department forward to the White House. This funding is essential for the advancement of forensic science in the United States. Funding covered appropriately will go a long way towards implementing all the recommendations that the attorney general has coming from this commission.

I also wanted to mention that the National Association of Medical Examiners is a member of CFSO and we want to express thanks for the fast track group working on the strengthening of medicolegal death investigation system. We encourage DOJ and OSTP, and other federal agencies to take action on the recommendations in that report to support the medical examiners in this country. We sincerely hope that this leads to better coordination, discussion, and especially funding for these initiatives. Thank you.

JONATHAN MCGRATH: All right. Thank you. Are there any additional comments? All right. Seeing none, before I adjourn, I believe there are two shuttles set up, one to go to D.C. Airport and one to go back to the hotel for those needing to stay this evening. If you have any questions, please seek out Lindsay and myself. And thank you again for all the hard work and efforts for these commission activities, and we'll see everybody in January. Thank you. Meeting adjourned.