National Commission on Forensic Science

Meeting #13

April 10-11, 2017

Department of Justice, Office of Justice Programs Building
810 Seventh Street, NW,
Washington, DC

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

NATIONAL COMMISSION ON FORENSIC SCIENCE

Meeting #13
April 10–11, 2017
Department of Justice, Office of Justice Programs Building
810 Seventh Street, NW, Washington, DC 20531

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1. Introduction

The thirteenth meeting of the National Commission on Forensic Science (NCFS) was held on April 10–11, 2017, in Washington, DC, at the Office of Justice Programs (OJP) building. The meeting commenced with opening remarks from Andrew D. Goldsmith, Associate Deputy Attorney General and National Criminal Discovery Coordinator, U.S. Department of Justice (DOJ), and Dr. Kent Rochford, Acting Director of the National Institute of Standards and Technology (NIST). Following the opening remarks, the Honorable Pam King, a member of the Subcommittee on Procedures and Operations (SPO), presented the SPO update, which focused on the NCFS Summary Report, *Reflecting Back—Looking Toward the Future*. Elham Tabassi (Electronics Engineer, NIST) presented on the development of an International Organization for Standardization (ISO) standard on method validation. Following Ms. Tabassi's discussion were two panel sessions, which concluded the day. The first panel discussed wrongful convictions and included talks from Keith Harward (DNA Exoneree), David Angel (Assistant District Attorney, Santa Clara), Priya Sarathy-Jones (Policy Advisor, Bureau of Justice Assistance [BJA]), Gerald LaPorte (Director, Office of Investigative and Forensic Sciences, National Institute of Justice [NIJ]), and Madeline deLone (Executive Director, Innocence Project). The second panel presented on notification and education regarding forensic science and victims. The presenters on this panel included Natasha Alexenko (Founder/Survivor, Natasha's Justice Project), Gina Scaramella (Executive Director, Boston Area Rape Crisis Center), and Dr. Rebecca Campbell (Professor of Psychology, Michigan State University).

Day 2, April 11, of NCFS Meeting #13 opened with a discussion on forensic laboratory financial management and return on investment by Dr. Paul Speaker (Professor, West Virginia University). Two panels composed of representatives from professional organizations provided feedback on the impact of NCFS. The first panel spoke from the forensic science legal perspective and included speakers William J. Fitzpatrick (Chairman of the Board, National District Attorneys Association), Hon. David Waxse (former Chair of the Judicial Division, American Bar

Association), and Vanessa Antoun (Senior Research Counsel, National Association of Criminal Defense Lawyers). The second professional organizations panel provided the forensic science practitioner perspective and included speakers Jeremy Triplett (President, American Society of Crime Laboratory Directors), C. Ken Williams (Board of Director Criminalistics Section Representative, American Academy of Forensic Sciences), H.W. "Rus" Ruslander (President, International Association for Identification), Dr. Randy Hanzlick (Past-President, National Association of Medical Examiners), Frank DePaolo (President, International Association of Coroners and Medical Examiners), Dr. Timothy P. Scanlan (National Sheriffs' Association), and John Grassel (Co-Chair, Forensic Science Committee, International Association of Chiefs of Police). A panel also presented on training and continuing education in forensic science. The speakers on this panel included NCFS Commissioner Hon. Barbara Hervey (Judge, Texas Court of Criminal Appeals), Carol Henderson (Director, National Clearinghouse for Science, Technology and the Law at Stetson University College of Law), Angela Williamson, Ph.D. (Senior Program Analyst, BJA), Hon. Ron Reinstein (Judicial Consultant, Arizona Supreme Court), Kevin Lothridge (Chief Executive Officer, National Forensic Science Technology Center). The meeting concluded with closing remarks from the vice co-chairs.

A subcommittee report from the Reporting and Testimony subcommittee was provided on Day 1 (April 10). The 2 final draft work products presented by the subcommittee did not achieve the two-thirds affirmative majority vote that is required for approval and therefore were not adopted by the Commission. The Subcommittee on Procedures and Operations (SPO) presented the NCFS Summary Report, *Reflecting Back—Looking Toward the Future*, for vote as a Commission Business document on Day 1 as well. This report achieved the simple majority affirmative vote that is required for Commission Business documents and was approved by the Commission. The summary of the voting results can be found in Section 4: Voting Results.

No public comments were made during the open oral public comment period on Monday, April 10. On Tuesday, April 11, there was 1 oral public comment.

Meeting materials, including PDF files for presentations, final draft work products, public comment adjudication summaries, and the NCFS summary report, may be found on the NCFS website at https://www.justice.gov/ncfs/meeting-materials-term-2#mtg13. Archived videos from the webcast of the entire meeting are available for viewing at https://www.nist.gov/topics/forensic-science/ncfs-meeting-13-webcast.

2. NCFS Meeting #13 Agenda

NATIONAL COMMISSION ON FORENSIC SCIENCE

April 10–11, 2017
Department of Justice, Office of Justice Programs Building
810 Seventh Street, NW, Washington, DC 20531, Main Conference Room, #3101

AGENDA—MONDAY, APRIL 10, 2017

9:00 a.m. – 9:30 a.m.	**Call to Order/Opening Remarks** *Andrew D. Goldsmith, Associate Deputy Attorney General and National Criminal Discovery Coordinator, U.S. Department of Justice* *Kent B. Rochford, Ph.D., Acting Director, National Institute of Standards and Technology*
9:30 a.m. – 10:00 a.m.	**Subcommittee on Procedures and Operations (SPO)** *Hon. Pam King, NCFS Commissioner, SPO Member*
10:00 a.m. – 11:30 a.m.	**Reporting and Testing Subcommittee Report** *Judge Jed Rakoff and Matt Redle, Co-Chairs* Final Work Products for Vote: Views on Statistical Statements in Forensic Testimony; Views on Report and Case Record Contents
11:30 a.m. – 12:00 p.m.	**BREAK (lunch distributed)**
12:00 p.m. – 12:30 p.m.	**WORKING LUNCH: Development of ISO Standard on Method Validation** *Elham Tabassi, Electronics Engineer, Information Access Division, Information Technology Laboratory, National Institute of Standards and Technology*
12:30 p.m. – 2:15 p.m.	**Wrongful Convictions Panel** *Keith Harward, DNA Exoneree* *David Angel, Assistant District Attorney Santa Clara* *Priya Sarathy-Jones, Policy Advisor, Bureau of Justice Assistance* *Gerald LaPorte, Director, National Institute of Justice's Office of Investigative and Forensic Sciences* *Gregory Dutton, Ph.D., Physical Scientist, National Institute of Justice's Office of Investigative and Forensic Sciences* *Madeline deLone, Executive Director, Innocence Project*
2:15 p.m. – 2:30 p.m.	**BREAK**

2:30 p.m. – 4:00 p.m.	**Forensic Science and Victims: Notification and Education Panel** *Natasha Alexenko, Founder/Survivor, Natasha's Justice Project* *Gina Scaramella, M.S.W., LICSW, Executive Director, Boston Area Rape Crisis Center* *Rebecca Campbell, Ph.D., Professor of Psychology, Michigan State University*
4:00 p.m. – 4:45 p.m.	**Wrap-Up**
4:45 p.m. – 5:00 p.m.	**Public Comment Period**
5:00 p.m.	**Commission Meeting Adjournment**

AGENDA—TUESDAY, APRIL 11, 2017

9:00 a.m.	**Call to Order**
9:00 a.m. – 10:00 a.m.	**Forensic Laboratory Financial Management/Return on Investment** *Paul Speaker, Ph.D., Professor, West Virginia University*
10:00 a.m. – 11:00 a.m.	**Feedback from Professional Organizations: Forensic Science Legal Perspectives Panel** *William J. Fitzpatrick, District Attorney, Onondaga County DA's Office, and Chairman of the Board, National District Attorneys Association* *Hon. David Waxse, United States Magistrate Judge for the United States District Court for the District of Kansas, and former Chair of the Judicial Division, American Bar Association* *Vanessa Antoun, Senior Research Counsel, National Association of Criminal Defense Lawyers*
11:00 a.m. – 11:30 a.m.	**BREAK (lunch distributed)**
11:30 a.m. – 1:15 p.m.	**WORKING LUNCH: Training and Continuing Education Panel** *Hon. Barbara Hervey, Judge, Texas Court of Criminal Appeals* *Carol Henderson, Director, National Clearinghouse for Science, Technology and the Law at Stetson University College of Law* *Angela Williamson, Ph.D., Program Analyst, Bureau of Justice Assistance* *Hon. Ron Reinstein, Judicial Consultant, Arizona Supreme Court & Retired Judge, Superior Court of Arizona* *Kevin Lothridge, Chief Executive Officer, National Forensic Science Technology Center*
1:15 p.m. – 1:30 p.m.	**BREAK**
1:30 p.m. – 3:30 p.m.	**Feedback from Professional Organizations: Forensic Science Practitioner Perspectives Panel** *Jeremy Triplett, President, American Society of Crime Lab Directors* *C. Ken Williams, Board of Director Criminalistics Section Representative, American Academy of Forensic Sciences* *H.W. "Rus" Ruslander, President, International Association for Identification*

Randy Hanzlick, M.D., Past-President, National Association of Medical Examiners
Frank DePaolo, President, International Association of Coroners and Medical Examiners
Deputy Chief Timothy P. Scanlan, Ph.D., National Sheriffs' Association
John Grassel, Co-Chair, Forensic Science Committee, International Association of Chiefs of Police

3:30 p.m. – 3:45 p.m.	**BREAK**
3:45 p.m. – 4:00 p.m.	**Public Comment Period**
4:00 p.m. – 4:30 p.m.	**Wrap-Up and Closing Remarks**
4:30 p.m.	**Commission Meeting Adjournment**

3. Meeting Summary

Monday, April 10, 2017: The meeting opened at 9:00 a.m. and adjourned at 5:00 p.m.

Opening Remarks

Associate Deputy Attorney General Andrew D. Goldsmith provided the opening remarks on behalf of the Acting Deputy Attorney General. Mr. Goldsmith announced that the Department will not be renewing the NCFS Charter. He outlined the next steps that the Department is taking to advance the purposes of the Commission. These include the establishment of a Forensic Science Subcommittee under the Attorney General's Task Force on Crime Reduction and Public Safety that will establish a strategic plan on forensic science, the forthcoming appointment of a Senior Forensic Advisor to interface with forensic science stakeholders and advise Department leadership, the announcement that DOJ will conduct a needs assessment of forensic science laboratories, and the opening of a public comment period to seek broad stakeholder input on how DOJ should move forward to strengthen the foundations of forensic science and improve the operations and capacity of forensic laboratories. Further information regarding these next steps can be found at: https://www.justice.gov/opa/pr/attorney-general-jeff-sessions-announces-new-initiatives-advance-forensic-science-and-help. Mr. Goldsmith also acknowledged that the Department is in the process of reviewing the remaining recommendations of the Commission and will issue a public response regarding DOJ's decisions when available. The Department is also considering the projects of *Forensic Science Discipline Review* and the *Uniform Language for Testimony and Reports* and plans to announce how they will continue to meet those goals in the coming months. The Department will continue to support the work of the Organization of Scientific Area Committees (OSACs) and is coordinating with NIST to evaluate whether a memorandum of understanding (MOU) needs to be re-executed.

Acting Director of NIST Dr. Kent Rochford addressed the future of the OSACs, reaffirmed NIST's dedication to forensic science research, and thanked the Commissioners for their commitment to strengthening forensic science.

Subcommittee on Procedures and Operations (SPO) Status Report

The SPO update, provided by Hon. Pam King, focused on the final draft of the NCFS Term 1 & 2 Summary Report, *Reflecting Back—Looking Toward the Future*. Ms. King discussed the edits made as a result of Commissioner input during NCFS Meeting #12, as well as discussions among the SPO. The report was presented for vote by the Commission and received the required simple-majority affirmative vote for approval as a Commission Business document.

Reporting and Testimony Subcommittee Report

The Reporting and Testimony subcommittee introduced two final draft work products for Commission vote: *Views on Report and Case Record Contents* and *Views on Statistical Statements in Forensic Testimony*. Both work products were posted for an interim public comment period following the January 2017 NCFS meeting. The comments were then adjudicated, and the final drafts were presented to the Commission. The work products were reviewed by and discussed and deliberated among the Commissioners, with friendly amendments being proposed, but ultimately neither work product achieved the required two-thirds affirmative majority vote for adoption as a Commission work product.

Development of ISO Standard on Method Validation

NIST's Ms. Elham Tabassi presented on the newly established ISO standard on methodology and tools for the validation of biometric methods for forensic evaluation. She addressed the relationship between forensics and biometrics; NIST's involvement and technical approach for standard development; and finally NIST's involvement in the development of this particular ISO standard, ISO/IEC AWI 19795-8. Commissioners discussed the practical use of iris scans.

Wrongful Convictions Panel

The Wrongful Convictions panel provided perspectives on wrongful convictions, exonerations, and lessons learned, particularly on the subsets where advancements in forensic science offer new information. Mr. Keith Harward, a DNA exoneree, opened this discussion by describing his wrongful conviction experience and the role of bite-mark evidence in his case. Assistant District Attorney (D.A.) David Angel followed with a discussion of the function and purpose of conviction integrity units (CIUs) and lessons learned that he has identified through his experience with CIUs, including an understanding of the system of things that may go wrong and result in a wrongful conviction, as well as what is required when developing a risk management model. Ms. Priya Sarathy-Jones and Mr. Gerald LaPorte discussed the key points of programs that provide resources related to wrongful convictions and post-conviction DNA testing of biological evidence retained from the original criminal investigation. And finally, the Innocence Project Director, Ms. Madeline deLone, highlighted the number of exonerations in the U.S. since 1998 and discussed contributing factors that lead to wrongful convictions. Ms. deLone noted what the Innocence Project has seen as advances in forensic science over the last 3 years of the Commission and offered suggestions of ways to mitigate future risk of wrongful convictions.

Forensic Science and Victims: Notification and Education Panel

The Forensic Science and Victims panel focused on the importance of victim notification and education. Ms. Natasha Alexenko, a survivor of sexual assault, opened the discussion with an account of her experience and the unique circumstances that untested sexual assault kits present for victims. Ms. Gina Scaramella discussed the importance of providing basic information about forensic science to sexual assault victims, including the processes used to collect and test evidence. She emphasized the needs of victims to understand the criminal justice system processes and become educated on aspects related to forensic science. Lastly, Dr. Rebecca Campbell discussed the importance of establishing protocols to notify victims about developments in cold cases, and the varying needs and interests of victims and the different roles performed by officials and advocates. Commissioners discussed notification mechanisms and evidence preservation.

No public comments were made during the open public comment period on Monday, April 10.

Tuesday, April 11, 2017: The meeting opened at 9:00 a.m. and adjourned at 4:30 p.m.

At the opening of the second day of the NCFS meeting, Commissioners agreed to update the NCFS Term 1 & 2 Summary Report, *Reflecting Back—Looking Toward the Future* to include a reference to the status of the two Views work products that were not adopted on April 10. The underlined text was added following the section that reads: "During the proceedings of Meeting #12, the Reporting and Testimony Subcommittee indicated that they will continue development (prior to Meeting #13) of the two remaining NCFS draft work products under consideration: a

Views document on Report and Case Record Contents (Operational), and a Views document on Statistical Statements in Forensic Testimony (Relational). At the 13th meeting, neither draft received the required two-thirds majority vote; however, the issues each report addresses have been of concern to the Commission since its inception and remain crucial to the forensic science community."

Forensic Laboratory Financial Management/Return on Investment

Dr. Paul Speaker provided an overview of Project FORESIGHT, initially funded by NIJ at West Virginia University, which is a business-guided self-evaluation of forensic science laboratories (local, regional, state, and federal) across North America. He shared the results from this project and discussed how labs can improve efficiencies, maximize impact of resources, and improve customer service without sacrificing quality. Dr. Speaker identified figures of merit and strategies to measure and assess the impact related to changes in laboratory policies and practices. Commissioners discussed laboratory backlogs, the effect on critical thinking in a production line approach, causal relationships between reduction in turnaround time and increased demand, and performance evaluation versus proficiency evaluation.

Feedback from Professional Organizations: Forensic Science Legal Perspectives Panel

Professional organizations were invited to give feedback on the impact of NCFS work products, current activities, and initiatives related to NCFS recommendations, and to identify challenges that remain to be addressed. The first panel of professional organizations offered feedback from the legal perspective. The first speaker on this panel, D.A. Fitzpatrick, represented the National District Attorneys Association (NDAA). D.A. Fitzpatrick noted that NDAA believes the NCFS should be composed of practicing forensic scientists. He noted aspects of five areas that support reliable information for the fact-finder, including laboratory accreditation, comparative identification disciplines, a proposed Office of Forensic Science, conviction integrity units, and state-run forensic science commissions. Hon. David Waxse followed with the perspective of the American Bar Association (ABA). He highlighted the need to provide training and education to judges and lawyers on forensic science, which is one of ABA's goals. Vanessa Antoun, a representative from the National Association of Criminal Defense Lawyers (NACDL), discussed NACDL's support of NCFS and commended it for its transparent process and ability to obtain consensus. She noted impacts of specific work products on the community and discussed the value of a group similar to NCFS where scientists bring that independent, nonadversarial perspective to forensic science matters. Commissioners then discussed whether the organizations plan to adopt the NCFS recommendations, what important issues the organizations identify as still needing to be addressed, and how scientists can work with lawyers during plea-bargain cases to make sure all parties are properly informed.

Training and Continuing Education Panel

The training and continuing education panel discussed current key training programs, partnerships, training options, and mechanisms to promote an educated, well-trained work force. Carol Henderson opened this panel with a discussion of what Stetson University's National Clearinghouse for Science, Technology, and the Law is currently offering in terms of webinars, live training, continuing education, and bibliographies of materials. She went on to discuss the importance of coordinating trainings across all groups (judges, lawyers, forensic scientists, etc.), including an ethics component, providing certifications and continuing education credits, and

housing all trainings in one location to make them universally accessible. Angela Williamson then informed the Commission about BJA's National Training and Technical Assistance Center (NTTAC). She discussed what its mission is and how it works, and presented an overview of projects of specific interest to the Commission, such as the Homicide Investigations Enhancement Training and the National Sexual Assault Kit Initiative (SAKI). Hon. Ron Reinstein presented on the Arizona Forensic Science Academy activities related to training, speaker series, webinars, and continuing education for prosecutors, defense attorneys, and judges. He discussed what the trainings offered, how they are formatted to accommodate the schedules and professional restrictions of the trainees, and what to expect in the future from this Academy. Kevin Lothridge, CEO of the National Forensic Science Technology Center (NFSTC), discussed NFSTC activities that offer forensic science training for crime laboratories, law enforcement, and the military, as well as program developments that reach the largest audience, use the latest technology, and are affordable. Mr. Lothridge also identified gaps in training, such as sustainability and the associated costs, the importance of identifying expected outcomes before training development, and standardization in the field. NCFS Commissioner Judge Barbara Hervey concluded the panel with a discussion of the developments that led to the current successes of Texas's training program, the program's impact, and why training judges about forensic science is so important. Commissioners then discussed training for jurors, definition and creation of Commissions (including State commissions), and training on statistics and scientific methodology.

Feedback from Professional Organizations: Forensic Science Practitioner Perspectives Panel

The second panel of professional organizations offered feedback from the forensic science practitioner perspective. Jeremy Triplett, representing the American Society of Crime Laboratory Directors (ASCLD), articulated ASCLD's support for the work of the Commission, and highlighted some of the Commission's work products and how ASCLD will encourage progress among the community regarding those work products. Mr. Triplett also addressed the future of the Commission's mission, noting that ASCLD would like to continue to contribute in a constructive and substantive way. C. Ken Williams, representing the American Academy of Forensic Sciences (AAFS), commended the Commission for seeking consensus and identifying the key issues to address. He also noted concerns such as lack of enforcement and implementation authority, and the limited number of forensic science practitioners appointed as Commissioners. Mr. Williams also discussed the needs of the forensic science community, the importance of funding resources to implement Commission advice, the benefits of a commission, and the path forward to advance forensic sciences. H.W. "Rus" Ruslander, representing the International Association for Identification (IAI), noted IAI's support for the Commission's mission and addressed specific work products developed by the Commission that IAI strongly endorsed. He also addressed the need for sufficient resources to carry out these recommendations, as well as IAI's support for the formation of the Office of Forensic Science. Dr. Randy Hanzlick spoke on behalf of the National Association of Medical Examiners (NAME). He described the major issues facing forensic pathologists, how Commission work products have addressed those issues and impacted forensic pathologists to date, and proposed future priorities. Dr. Hanzlick noted that the Commission has produced work products that touched on virtually every major issue that faces forensic pathologists and death investigators. Frank DePaolo, President of the International Association of Coroners and Medical Examiners (IACME), highlighted IACME's perspectives on accreditation, the shortage of forensic pathologists, and the

issue of coroners versus medical examiners addressed in the National Academy of Sciences report. He commended the Commission on their work over the past 3 years and acknowledged that there is still a lot to be done. Dr. Timothy Scanlan, representing the National Sheriffs' Association (NSA), discussed the importance of keeping the states and local agencies in mind throughout the Commission's proceedings, and highlighted work products NSA specifically supports. Dr. Scanlan identified what is needed moving forward, to include training, the availability of resources, support for OSAC, and university partnerships. John Grassel, representing the International Association of Chiefs of Police (IACP) and Major City Chiefs Association (MCCA), and the Association of State Criminal Investigative Agencies (ASCIA), thanked the Commission for their work and acknowledged some of the specific areas tackled by the Commission that are supported by the organizations he represented. Mr. Grassel also addressed the needs identified by those represented organizations, including increased grant opportunities; infrastructure and equipment; a comprehensive national research strategy; and partnerships with academia, the private sector, and government forensic scientists. He noted that these organizations advocated that crime laboratories remain within law enforcement parent agencies.

Commissioners discussed membership balance on a commission, organizational support of Commission recommendations, and collaboration between forensic science practitioners and scientists in other disciplines.

On Tuesday, April 11, there was 1 oral public comment from Mr. Billy Leiserson.

4. Voting Results

Vote	Document	NCFS Business (*ex-officio* voted)	% Yes	% No	% Abstain	Total Votes	# Yes	# No	# Abstain	Comments
April 10, 2017										
1	Acceptance of the NCFS Summary Report	Yes	92	8	0	38	35	3	0	**No**: Frank DePaolo (proxy for John Fudenberg), Greg Czarnopys, Greg Motta (proxy for David Honey)
2	Views on Report and Case Record Contents	—	60	37	3	30	18	11	1	**No**: Cecelia Crouse, Fred Bieber, Frank DePaolo (proxy for John Fudenberg), Nelson Santos, Greg Champagne, Ted Hunt, Marc LeBeau, Phil Pulaski, Michael Ambrosino (proxy for Deirdre Daly), Greg Czarnopys, Troy Lawrence; **Abstain**: Randy Hanzlick
3	Views on Statistical Statements in Forensic Testimony	—	47	50	3	30	14	15	1	**No:** Cecelia Crouse, Fred Bieber, Frank DePaolo (proxy for John Fudenberg), Randy Hanzlick, Greg Champagne, Ted Hunt, Susan Howley, Barbara Hervey, Marc LeBeau, Phil Pulaski, Dean Gialamas, Michael Ambrosino (proxy for Deirdre Daly), Greg Czarnopys, Linda Jackson, Troy Lawrence; **Abstain**: Nelson Santos

5. Attendee List

13th Meeting of the National Commission on Forensic Science, April 10–11, 2017			
Full Name	**Title**	**Company/Organization**	**Attendee Type**
Albright, Thomas	Professor	The Salk Institute	Commissioner
Alexenko, Natasha	Founder	Natasha's Justice Project	Panelist
Ambrosino, Michael	Special Counsel for DNA and Forensics	U.S. Attorney's Office, Washington, D.C.	Proxy Commissioner
Angel, David	Assistant District Attorney	Santa Clara County District Attorney	Panelist
Antell, Kira	Senior Counsel	U.S. Department of Justice, Office of Legal Policy	Speaker
Antoun, Vanessa	Senior Resource Counsel	National Association of Criminal Defense Lawyers	Panelist
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
Campbell, Rebecca	Professor	Michigan State University	Panelist
Casadevall, Arturo	Professor & Chair	Johns Hopkins University	Commissioner
Champagne, Gregory	Sheriff	St. Charles Parish Sheriff's Office	Commissioner
Crouse, Cecelia	Crime Laboratory Director	Palm Beach County Sheriff's Office	Commissioner
Czarnopys, Gregory	Deputy Assistant Director, Forensic Services	Bureau of Alcohol, Tobacco, Firearms and Explosives	Commissioner
deLone, Maddy	Executive Director	The Innocence Project	Panelist
Denton, M. Bonner	Professor	University of Arizona	Commissioner
DePalma, Lindsay	Contractor	National Institute of Justice	Commission staff
DePaolo, Frank	Deputy Commissioner	New York City Office of Chief Medical Examiner	Proxy Commissioner and Panelist
Dutton, Gregory	Physical Scientist/Program Manager	National Institute of Justice	Panelist
Epstein, Jules	Professor	Temple Beasley School of Law	Commissioner
Ferrell, Rebecca	Program Director	National Science Foundation	Commissioner
Fitzpatrick, William	District Attorney	Onondaga County District Attorney's Office	Panelist
Gates, Jr., S. James	Professor	University of Maryland	Commissioner
Gialamas, Dean	Chief	Los Angeles County Sheriff	Commissioner
Giannelli, Paul	Distinguished University Professor	Case Western Reserve University	Commissioner
Goldsmith, Andrew	Associate Deputy Attorney General	U.S. Department of Justice	Speaker
Hanzlick, Randy	Forensic Pathologist	Retired	Commissioner and Panelist
Harward, Keith	DNA Exoneree		Panelist
Henderson, Carol	Director, National Clearinghouse for Science, Technology and the Law; Professor of Law	Stetson University College of Law	Panelist
Hervey, Barbara	Judge	Texas Court of Criminal Appeals	Commissioner
Hollway, John	Executive Director, Quattrone Center for the Fair Administration of Justice	University of Pennsylvania Law School	Proxy Commissioner
Howley, Susan	Public Policy Director	National Center for Victims of Crime	Commissioner
Huestis, Marilyn	Professor	University of Maryland School of Medicine	Commissioner

13th Meeting of the National Commission on Forensic Science, April 10–11, 2017			
Full Name	**Title**	**Company/Organization**	**Attendee Type**
Hunt, Ted	Chief Trial Attorney	Jackson County (Kansas City) Prosecutor	Commissioner
Jackson, Linda	Director	Virginia Department of Forensic Science	Commissioner
King, Pam	Judge	Minnesota 3rd Judicial District	Commissioner
LaPorte, Gerald	Office Director	National Institute of Justice	Commissioner
Lawrence, Troy	Sergeant	Fort Worth Police Department	Commissioner
LeBeau, Marc	Senior Scientist	Federal Bureau of Investigation	Commissioner
Leighton, Julia	General Counsel (retired)	Public Defender Service for the District of Columbia	Commissioner
Leiserson, William	Consultant	BL Insights, LLC	Public commenter
Lothridge, Kevin	CEO	National Forensic Science Technology Center	Panelist
Manzolillo, Patricia	Laboratory Director	U.S. Postal Inspection Service	Commissioner
McGrath, Jonathan	Senior Policy Analyst	National Institute of Justice	Commission staff
Motta, Gregory	Senior Science & Technology Policy Advisor	Office of the Director of National Intelligence	Proxy Commissioner
Neufeld, Peter	Co-Director	Innocence Project	Commissioner
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, Matt	County and Prosecuting Attorney	Sheridan County and Prosecuting Attorney's Office	Commissioner
Reinstein, Ron	Judge (Retired)/Judicial Consultant	Arizona Supreme Court	Panelist
Rochford, Kent	Acting Director	National Institute of Standards and Technology	Speaker
Ruslander, Harold	President	International Association for Identification	Panelist
Sah, Sunita	Assistant Professor of Management and Organizations	Cornell University, Johnson Graduate School of Management	Commissioner
Santos, Nelson	Deputy Assistant Administrator; Vice-Chair, National Commission on Forensic Science	Drug Enforcement Administration	Commissioner
Sarathy-Jones, Priya	Policy Advisor	Bureau of Justice Assistance	Panelist
Scanlan, Timothy	Deputy Chief	Jefferson Parish Sheriff's Office	Panelist
Scaramella, Gina	Executive Director	Boston Area Rape Crisis Center	Panelist
Schrotter, Frances	Sr. Vice President & COO	American National Standards Institute	Commissioner
Speaker, Paul	Professor	West Virginia University	Panelist
Tabassi, Elham	Scientist	National Institute of Standards and Technology	Panelist
Triplett, Jeremy	Forensic Laboratory Supervisor	Kentucky State Police	Panelist
Turman, Kathryn	Assistant Director	Federal Bureau of Investigation	Commissioner
Waxse, Dave	Magistrate Judge	U.S. Courts	Panelist
Weiss, Danielle	Contractor	National Institute of Justice	Commissioner staff
Williams, Ken	Assistant Laboratory Director	New Jersey State Police Office of Forensic Sciences	Panelist
Williamson, Angela	Senior Forensic Policy Advisor	Bureau of Justice Assistance	Panelist

The following transcript is provided for informational purposes only and may not provide exact quotations from the meeting proceedings. For a full account of this NCFS meeting, please visit the following link for the recorded webcast: https://www.nist.gov/topics/forensic-science/ncfs-meeting-13-webcast

6. Transcript

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NCFS DAY #1, MONDAY, APRIL 10, 2017

Part I

JONATHAN McGRATH: Good morning. Welcome to the 13th meeting of the National Commission on Forensic Science. It's good to see everybody again. I'm Jonathan McGrath, the Designated Federal Officer; and I call this meeting to order.

I just want to run through a couple of housekeeping items. First of all, I want to thank the Commission Staff and the OJP Staff for hosting this meeting again at the DOJ Office of Justice Programs Building. In particular, I'd like to thank the Commissioners who helped develop some of the panels for this current agenda as well. I know Peter Neufeld and Susan Howley and Kathryn Turman helped to facilitate the panels today and Judge Hervey for the training panel tomorrow. So thank you for the inputs.

Just a quick housekeeping item in terms of emergency evacuation procedures. There should be a slide up on the screen with the same information; but in the unlikely event of a situation requiring emergency evacuation of this building, the following procedures should be followed.

- If you hear an alarm from anywhere in the building, you should begin evacuation.
- Stay calm and gather any personal belongings, such as purses, briefcases, et cetera.
- Do not take any beverages or food you may have with you; please leave them behind.
- Unless otherwise directed by a stairwell monitor, exit through the back door of the room, the exit sign and back in the corner here.
- Do not exit using the door through which you entered the room, up the staircase.
- Exit in a calm, orderly manner; and you will exit the building on I Street, which is just north of the building behind me.
- Move away from the building and follow the instructions of the OJP designated employees, who will be wearing orange vests.
- Designated OJP employees will notify you when the all clear signal is given and you can return to the building.

Now I'd like to turn over the mic to Andrew Goldsmith and Kent Rochford, who will open the meeting; and then I believe John Butler will run through the introductory slides for the meeting. Thanks.

ANDREW GOLDSMITH: Good morning, everyone. First of all, let me say it's quite an honor to be here on behalf of the Acting Deputy Attorney General and be able to address this group. My name is Andrew Goldsmith; I'm an Associate Deputy Attorney General. I'm also the Department's National Criminal Discovery Coordinator. I know many of you will recognize me from having been here occasionally at meetings over the past three years. I'm familiar with many of your recommendations and views.

As some of you know, about two years ago, then Deputy Attorney General Sally Yates asked me to work with you on the Criminal Discovery Recommendation; and in that role, I had the pleasure of working with a number of you, in particular Judge Rakoff and other people that are here today. For those of you who don't know me, let me just spend a couple of minutes giving you a sense of who I am so that my comments can be taken in that context.

In 2010, I was appointed as the Justice Department's first and, at this point, *only* National Criminal Discovery Coordinator. In this role, I oversee a wide range of initiatives designed to provide Federal prosecutors and other law enforcement officials with training and resources relating to criminal discovery, including electronic discovery or e-Discovery as many people call it.

As Associate Deputy Attorney General, the other hat I have, there are a number of areas for which I am responsible, including professional responsibility; recording of custodial statements; Department wide training efforts; and environmental matters. Late last year, I earned my fourth Attorney General's Award in recognition of my efforts to ensure that Department attorneys carry out their duties in accordance with the rules of professional conduct.

I've been with the Department for over 20 years. I started out as an Assistant United States Attorney in the District of New Jersey in the mid-1990s. I also served as First Assistant Chief of the Environmental Crime Section for the Department. In 2005-2006, I successfully prosecuted the Atlantic States case; it's an eight-month trial. It's the longest environmental-related trial in U.S. history; and you'll be interested to know that that case had its fair share of forensic evidence, as you could imagine.

I started off my legal career in the high-crime era of the 1980s in the Manhattan DAs Office. Among the hundreds of cases that I handled was one where a young Barry Scheck and, dare I say, young Andrew Goldsmith, worked as collegial adversaries to resolve that case in a very favorable way for everyone.

Perhaps most importantly, I received my Bachelor of Science degree from Cornell University in 1979 in biology; so this science is not nearly as scary to me as it may be to many other attorneys.

Now, before I go any further, I'd like to talk about the Attorney General's firm commitment to forensic science. On Friday, Attorney General Sessions and I spoke in his office; and during our conversation, he made clear to me that in his view, good forensics is not only important because it enables us to convict the guilty but also to clear the innocent. He stressed to me that we need to focus on the integrity of the process, where we have prompt access to high-quality forensics technology. He found particularly troubling the backlog in forensics analysis; and, as I'll discuss in more depth later, as part of the Task Force on Crime Reduction and Public Safety, he has established a Forensic Science Subcommittee to that Task Force.

Moreover, and I plan to also address this as well later on, he has authorized me to announce here today a series of forward-leaning actions that will inform the Forensic Science Subcommittee's development of a strategic plan on forensics.

I'd now like to discuss the status of certain outstanding recommendations from September 2016 that I'm sure you're all wondering about. In December of 2015, the Department announced that whenever possible we'd respond to Commission recommendations within two meetings; and until today's meeting,

we've been able to meet that timeline and have responded to every recommendation. As people in this room know, deputy attorney general nominee Rod Rosenstein has not yet been confirmed; and because of this, we're not yet able to announce a response to those recommendations at this meeting.

I want people to rest assured that people in the Department are processing options to respond to the recommendations on proficiency testing, technical merit, contents of case reports, and National Office of Medical/Legal Death Investigation. We have every expectation that we'll be able to issue public responses soon; and when those decisions have been made, Jon McGrath or others at the National Institute of Justice will transmit that to you promptly.

The Department and NIST created the Commission out of a shared commitment to strengthening forensic science. Our justice system depends on reliable, scientifically valid evidence to solve crimes, identify wrongdoers, and ensure that innocent people are not wrongly convicted. This Department, just like every other department that has come before it, remains committed to these principles. Over the past three years, the Commission has played an important role in this effort; and we are extremely grateful for your contributions. I'd like to highlight two contributions that I'm certain will have long-lasting effects.

As you know, we announced new Department wide guidance on criminal discovery in cases with forensic evidence at the last Commission meeting. From my vantage point as the National Criminal Discovery Coordinator, the recommendation on pretrial discovery will have long-lasting and important effects.

Now, just to clarify the significance and import of the January 2017 Supplemental Guidance that was announced at the last meeting, in 2010, then Deputy Attorney General David Ogden issued a memo entitled, "*Guidance for Prosecutors Regarding Criminal Discovery*." It's often referred to as "the Ogden Memo." The Ogden Memo provides general guidance on gathering, reviewing and disclosing information to the defendants during discovery. The Ogden Memo is one of the most fundamental pieces of guidance that prosecutors review regularly, along with the United States Attorneys' Manual.

For seven years, the Department neither amended nor supplemented this guidance memo *until* earlier this year when we issued the Supplemental Guidance for Forensics. The Supplemental Guidance goes a long way to assist prosecutors to meet their discovery obligations regarding forensic evidence and experts to ensure that defendants have a fair opportunity to understand the evidence that could be used against them. Every year, I'm responsible for providing mandatory criminal discovery training to the Department's roughly 6,000 prosecutors. Importantly, in 2017 the Supplemental Guidance will be included in the mandatory training for all prosecutors.

And I don't only train prosecutors. I also provide training to other law enforcement officials, including the Department's forensic analysts and forensic examiners. Just two weeks ago, I traveled down to Quantico and trained nearly 300 FBI forensic examiners on a variety of discovery-related topics, including how prosecutors will be using the Supplement Guidance to work with laboratories in meeting the Department's discovery obligations.

Now, as a career prosecutor, obviously, criminal discovery is directly in my wheelhouse; but I should add that as part of my training efforts, including my discussions and my training of forensic examiners, I've learned that there's no single Commission recommendation that has been more important to the practice of forensic science than the recommendation regarding universal accreditation. I've been told that the Department's decision to publicly announce the policy on accreditation and to mandate that our prosecutors rely on accredited labs whenever practicable has made a real difference in that more laboratories than ever are moving to accreditation.

These two recommendations, and the Department's review and implementation, are a demonstration of the measurable impact of the work of this Commission over the past three years; and for that, as well as many other products of this Commission, the Department thanks you.

Now, to identify the obvious elephant in the room, everyone here knows that the Commission's charter is expiring this month; and it probably won't be a surprise to most people to learn that the charter will not be reviewed. As part of *any* transition, it's critical to reevaluate and realign our resources to achieve a new Administration's priorities. Attorney General Sessions has announced his commitment to reducing violent crime in America, particularly in our cities; and he has identified the troubling rise in crime as a focus of the Department when he formed the Task Force on Crime Reduction and Public Safety and established a Forensic Science Subcommittee to the task force to fight against this increase in crime.

The task force and its various subcommittees, including the subcommittees on hate crime, forensic science and violence reduction, are *internal* Department working groups with representation from relevant components, including laboratories and prosecuting entities. Now, although these are internal in nature, they're each seeking relevant external stakeholder input. The Forensic Science Subcommittee in particular has been tasked with considering how we will continue to advance the purposes of this Commission in a manner consistent with the Department's forensics priorities and its policy to reduce crime in America and to develop a strategic plan.

We plan to consider all options, closely review the Commission's Summary Report, and secure feedback from the Commissioners and other stakeholders. We'll consider all the information before we decide how to move forward.

Now, today I'm announcing three actions that will inform the Forensic Science Subcommittee's development of a strategic plan on forensics.

First, in the coming week, the Department will appointment a senior forensic advisor to interface with forensic science stakeholders, advise Department leadership, and work with the subcommittee to develop a strategic plan. The strategic plan will consider questions that are critical to increasing capacity and to ensuring access to high-quality forensic analysis. Some of the questions that will be considered include the following.

- One, what are the biggest needs in forensic science inside the Department and outside the Department?
- Two, is there more for a body, like the Commission, to accomplish; or would next steps be better undertaken by some other body?
- Three, what specific support do Department laboratories and prosecutors need; what does the broader community need?
- Four, what is required to improve practices; what are the barriers – legal, practical or otherwise – and what resources do we need to overcome those barriers?
- Five, is the OSAC structure sufficient to set standards; or is some other body needed?
- Six, what is needed to improve capacity so that every prosecutor can be assured that he or she will receive prompt results when he or she submits evidence for testing?
- Seven, what resources and relationships can the Department best draw on to get thoughtful advice; are there other ways to organize an advising body?
- Finally, what is the Department currently doing to advance this issue; are there better ways to support state and local practitioners?

The second major part of this initiative: I announce today that we're publishing an Issue for Comment in the Federal Register seeking broad stakeholder input on just these questions that I went through and what the Department should consider after the expiration of the Commission. That notice will be open until June 9th. We invite you – and I emphasize this – we invite you individually to submit comment and encourage you to share this notice broadly.

Third, the Department is conducting a needs assessment of forensic laboratories. Now, as you know, in December of 2016, Congress passed the Justice For All Reauthorization Act, which has several mandates to improve and advance forensic science. The needs assessment will examine serious issues of capacity and backlog at public crime labs and in the medical/legal death investigation community. It will consider other topics, such as research and coordination, that are necessary when developing a strategic plan to address the needs of the forensic science community.

At the same time, the Department is considering the previously-announced projects of forensic science discipline review and the uniform language for testimony and reports and identifying where they may fit in the subcommittee's work. We expect this process to develop a strategic plan to be deliberate and thorough, but it's not an endless one by any means. We have every expectation of announcing how we will continue to meet these goals in the coming months.

I note that expiration of the Commission's charter does not, repeat, does *not* impact the OSAC. The Department supports the work of OSAC and is coordinating with NIST to evaluate whether an MOU needs to be re-executed and, if so, what it would need to contain.

In conclusion I want to emphasize that at the Department we recognize our responsibility to work tirelessly to improve the work we do and to enhance the fair administration of justice. Part of that responsibility is to ensure that we're regularly coordinating with the right people on these issues and acting in a manner that demonstrates our commitment to fair play and honest dealings in every matter we handle. We'll work to understand the lessons of this Commission and continue to advance our shared goals.

Again, I want to repeat, the Department thanks you for your contributions, emphasizes that we're not finished relying on you yet. Please expect to work with us in the coming months; and please review, share and respond to any public inquiries we issue. The commitment of people in this room, the time, the thoughtful participation over the past three years was exemplary and represents what we're capable of doing when we work together towards a single unified goal. There's no question that forensic science is one of the most critical tools we all have to reduce crime, to increase public safety; and, as such, it will remain a priority in the Department.

In order to turn back rising crime, we need to rely heavily on all of you working together -- forensic scientists, legal practitioners, and state and local law enforcement – to lead the way. The Federal Government intends to use its money, research and expertise to help all of us figure out what *your* needs are and to determine the best ways to ensure that forensic science is accurate, reliable and available to law enforcement and prosecutors to fight crime; and the Department of Justice intends to do just that.

The new challenge of violent crime in our nation is real, and the task in front of us is clear. We need to resist the temptation to ignore this or downplay it. Instead, we need to tackle it head on to ensure justice and safety for all Americans. The Department's pledge to identify a strategic plan going forward reflects this abiding commitment to justice, to the rule of law, and to maintaining the public's confidence in the accurate and reliable forensic science analyses we need to clear the innocent and to convict the guilty.

On behalf of the Attorney General, the Acting Deputy Attorney General, and the men and the women of the Department of Justice, I thank you once again for your efforts.

KENT ROCHFORD: Thank you, Andrew; and thank you to my Department of Justice colleagues for the opportunity to address this distinguished group.

As you know, I'm the Acting NIST Director. The fact that I'm in a transitory position doesn't mean that we don't take our forensics work very seriously; it's something we do have a commitment to. We at NIST are grateful for the opportunity to contribute to this important effort, and I'm hopeful that our contributions to strengthening forensic science can be meaningful and impactful.

I have read the draft of the Summary Report from the first two terms of the Commission, and I'll say I'm very impressed with the accomplishments of this group. I commend you for your efforts. The report coordinated by Judge Pam King does a nice job of summarizing the work that you've done for the country, while calling out the work that remains to be done; so thank you.

Andrew has addressed the future of the Commission. I'd like to address the future of OSAC. OSAC was conceived under the original 2013 MOU between NIST and Department of Justice that also established the Commission. The Department of Justice also provides funding for the OSAC, which is an effort that NIST cannot sustain on its own.

As Andrew mentioned, the OSAC organization does not have term limits like the Commission; it does require funding to continue. From the introduction of OSAC at the first Commission meeting, NIST has stressed that the intent would be to evolve and eventually spin off OSAC. We've termed this envisioned future state OSAC 2.0. We've learned a lot from OSAC 1.0. Over the past two years of operation, the organization has continued to mature as members of the group have come to a better appreciation of the standards development process.

One example of this strengthening was seen in the interest of key researchers and scientists joining the FSSB, such as Commissioners Jim Gates and Jeff Salyards. Thank you for your assistance in supporting and strengthening the OSAC.

NIST is committed to improving OSAC, including the establishment of a clear model that will support these important goals. We're working to create a stable, sustainable operational model that provides independence from NIST. Internally, a small group led by Rich Cavanagh, who I think you all know, who runs our Special Programs Office, has been exploring model concepts for OSAC 2.0. Each of these models is distinct in purpose and operation, yet consistent with the following goals.

The new OSAC has to have a defined structure and authorities. It needs to engage key stakeholders. We need to provide free access to work products. There has to be a smooth transition from the current OSAC 1.0, and we need to create the potential for long-term sustainability.

Currently, Rich's group has been looking at three models they're exploring further. These involve creating federal and state partnerships that develop codes, standards and model laws; restructuring the OSAC so subcommittee functions are dispersed to various standard development organizations; and the roles of the FSSB and SAC levels are changed to focus on quality of science and utility, respectively; and establishing a development, testing and evaluation function in coordination with creating forensic standards.

This is a process we're just starting, and we intend and hope to engage the broader community to better understand the strengths and weaknesses of these possible approaches. So if you have any questions about the OSAC 2.0 planning, please reach out to Rich Cavanagh.

I'd like to talk about NIST research efforts in forensic science. NIST remains committed to bringing its measurements and standards expertise to challenges in forensics; in fact, we've played a role in

strengthening forensic science since at least the 1920s. You may have seen a recent National Geographic article about Wilmer Souder, a physicist from NIST who played a significant role in numerous forensic cases during the 1930s, including the famous Lindbergh baby kidnapping case.

The current six forensic research focus areas at NIST include DNA, digital and fingerprint evidence, ballistics, statistics, toxins and trace evidence. We plan to continue work in these core research areas as funding is available to do so. You'll see an example of how our core research expertise provides benefit to the forensic science community later today when Elham Tabassi, who is from our Information Technology Laboratory, talks to you about development of an ISO standard on method validation.

Let me turn now to technical merit review. The past September, the President's Council of Advisors on Science and Technology, or PCAST, recommended an expanded role for NIST in assessing the scientific foundations and maturity of various forensic disciplines. We do recognize the need for, and the value of, such studies and are exploring ways to conduct work in this area. Without additional funding recommended by PCAST, NIST cannot make any large-scale commitments to extensive technical merit review.

That said, we are planning an exploratory study to address concerns raised by PCAST regarding DNA mixtures. This will likely involve assessing the scientific literature; developing a detailed plan for evaluating scientific validity that would include probabilistic genotyping; and designing one or more interlaboratory studies to measure forensic laboratory performance with DNA interpretation. These interlaboratory studies would build upon NIST's DNA mixture studies conducted in 2003, 2005 and 2013. NIST has a history of involving external partners in its research and standards efforts, and we anticipate external and internal and international collaboration in this effort.

Finally, I do want to note our Error Management Conference; registration is now open. NIST and the FBI Laboratory are jointly organizing a second international symposium on international forensic science error management. This meeting will be held at NIST on the Gaithersburg Campus from July 24th to 28th. As you can see from this slide, there will be four tracks: crime scene/death investigation; human factors/legal factors; quality assurance/laboratory management; and criminalistics/digital evidence.

When we held this meeting two years ago, we had over 100 presentations and over 400 attendees. In order for us to develop an equally valuable program, we need your presentations and your participation. Registration is now open, and we look forward to receiving your abstracts and your participation at this meeting.

In closing, I want to personally thank you for your efforts on this Commission and your commitment to strengthening forensic science through your participation in the activities of this group. Your work has made a difference, and we are very grateful for your service to the nation. Thank you.

NELSON SANTOS: Any quick questions before we move on?

Peter?

PETER NEUFELD: First, Mr. Goldsmith.

Mr. Goldsmith, for the last year and-a-half, the Office of Legal Policy of the Justice Department has been working with this Commission to roll out a new quality assurance process at DOJ, which was the creation of the ULTRs, which you referenced, which would be standardized language that would be used in all forensic disciplines to ensure that they didn't exceed the limits of science. Two, they created this thing called the Forensic Science Discipline Review, the FSDR, which would be an ongoing quality assurance matter that would routinely look at all the transcripts to make sure each of the disciplines didn't have the

same kinds of problems that occurred in the whole hair matter, namely, that analysts had been testifying and writing reports in a way consistent with the science.

In any event, OLP had rolled it out; expressed to this Commission their commitment to moving forward with it. They had been moving forward with it. They had meetings with statisticians; they, through the Federal Registry, had comment periods; and they were moving forward and forward. They told us at the last meeting that they had institutionalized it, if you will, at DOJ; and it was going forward.

Now what I heard from you is that you're simply going to have this as one of the many matters that will be *considered* through the public comment period and other things about what to do. Are you saying that in the meantime that the OLP will not be allowed to continue along, as they had been for the last year-and-a-half, to roll out the ULTRs and to move with their FSDR review unless and until the new Administration decides that's an appropriate thing to do?

ANDREW GOLDSMITH: Good morning, Peter.

PETER NEUFELD: Good morning.

ANDREW GOLDSMITH: I'm going to turn this over to my colleague from OLP who is here, Ms. Antell, who can address this.

KIRA ANTELL: Thank you for the question.

I recognize everyone in this room is really interested to know what is the status and what will be going on with the Forensic Science Discipline Review and the Uniform Language for Testimony and Reports. These are projects I've been committed to, that people in the Department have been committed to working on, over the past 18 months as you point out.

As Andrew said, in any transition, it's appropriate to reevaluate and consider next steps and what makes sense for the priorities moving forward. These are absolutely things that are being considered, and we hope to continue working on them and to have more information for you in the coming months about the status of them.

PETER NEUFELD: But too are you saying that in the meantime, while it's being discussed and decided, that the Office of Legal Policy is not continuing to advance these ULTRs and FSDR in the interim? They're in freeze, in other words.

KIRA ANTELL: I would say we have been in sort of a period of review at the start of the Administration, and we're hopeful that we'll have something to announce in the coming weeks/months.

PETER NEUFELD: The second question I had for Kent is, Kent, when you talked about things that NIST was doing, you mentioned your current evaluation of DNA mixtures. Your predecessor had stated – in fact, in response to this Commission making a recommendation that NIST take on the task of making an evaluation of foundational validity and reliability of different forensic methods -- that they intended to do a trial. They were going to start a trial in three different areas. The other two areas in addition to the DNA were ballistics and then bite marks.

We had been told at each meeting going up to this meeting that NIST was going ahead with these trials. I noticed that you only mentioned DNA. Is it still, Kent, the position of NIST that they will go ahead with the trials on ballistics and on bite marks?

KENT ROCHFORD: So we still continue to do the work on ballistics and on bite marks. Given the resources we have, we're going to do the trials with the (inaudible) laboratory studies with the DNA mixtures first.

Right now, the PCAST Report provided a number of trials that we should take on; but it is also recommending that we be funded to do this. So given our current funding, what we intend to do is start with the DNA programs. As funding may become available, then we can ramp up some of these other areas to include additional trials. So currently, we are doing the internal work but do not right now have the bandwidth to do the ballistics trials.

NELSON SANTOS: Thank you.

KIRA ANTELL: Jules?

JULES EPSTEIN: Good morning and thank you both.

One quick comment – are the two comments that were read to us today, could we get copies of them – the two speeches that were made today?

KIRA ANTELL: Oh, I can't speak for NIST. The Department won't be releasing comments; these are really sort of Andrew's comments.

JULES EPSTEIN: Understood.

KIRA ANTELL: But there will be a press release that's going to be released this morning.

JULES EPSTEIN: Fine.

KIRA ANTELL: Also the Federal Register notice, which has gone to the Federal Register today, I think an advance copy of it will be available online later today.

JULES EPSTEIN: Great, and the other substantive question is can I just clarification on OSACs? Is it now the status that there is currently no further funding for OSACs?

KIRA ANTELL: No.

JULES EPSTEIN: Then can we understand just like what's in the pipeline or what is its projected longevity at this moment or sustainability?

KIRA ANTELL: I can't really speak – right now, we don't have a budget. We're in a continuing resolution. We just don't know what the status of it is going to be, so I really can't predict what it will look like – so apologies for that.

Julia, and I think that's going to be our last question.

JULIA LEIGHTON: I feel like we're talking to messengers, and so that makes this a little tricky; so I appreciate your roles – been there, seen it. But I think just on one piece though – the ULTRs and stopping work on this. It's inconsistent with the message I hear the Administration saying; and I think we have to understand the importance of this juncture where we're at where we're really grappling with, frankly, are we telling the truth as a matter of science to judges and jurors. And that can't be put on hold; it is inconsistent with the Department of Justice's mission to put that on hold.

I really appreciate the platitudes about the Commission, and I think they're more than platitudes; I think they're true. I think it's been exemplary work; it's been extraordinary. You've brought in independent scientists who have so much to contribute to this truth telling function. And I think the Department takes a real step backwards if it doesn't continue that process and maybe put itself at odds of the very mission you've just described.

I understand that there's always a little bit of a pause. I mean, we imposed it on ourselves to some extent. But we shouldn't be, and the Department shouldn't be. The truth telling function is never put on pause; it's got to keep pushing forward. Thank you.

KIRA ANTELL: Thank you, Julia. I really appreciate the positive things you've said about the uniform language and sort of that Peter suggested. I think it is important for people to understand, within the Department and outside the Department, how meaningful those projects are, and I appreciate it. So it's been a pleasure.

ANDREW GOLDSMITH: Right, and I just want to comment. Julia and I have known each other for close to 20 years. I don't want anybody here to come away with the notion that the Department is shirking its responsibility to pursue the truth-seeking function, and particularly when that comes to conveying accurate forensic analyses to judges and juries.

So I didn't want Julia's comment to be out there in the air with no response from the Department.

NELSON SANTOS: Okay, let's move on.

Thank you, Andrew and Kira.

John, do you want to go over the agenda real quick, and then we'll go to Pam.

JOHN BUTLER: For our agenda items for the rest of the morning, we have subcommittee reports. We'll be going over the SPO report; Pam King will review the NCFS Summary report. We'll have the potential to vote then on the document that we have prepared.

The Reporting and Testimony Subcommittee has two documents that we'll be discussing and potentially voting on them.

Then at lunch time, Elham Tabassi from NIST will talk about the development of the ISO Standard on Method Validation being worked on, some of the experiences there.

Then this afternoon, we have two panel sessions; one on wrongful convictions and forensic science, and the other on forensic science victims, notification and education. So we'll be hearing from those individuals, and we'll talk more about that this afternoon.

The next thing we'll go to then is -- tomorrow, the updates from the Office of Legal Policy is not going to happen. We're going to be going right to the Forensic Laboratory Financial Management and Return on Investment; and then we'll have three panel discussions on legal perspectives, practitioner perspectives, and then training and continuing education. So these are the documents that we have up for potential vote, and we'll go ahead with Pam, if you want to talk about the first one, Reflecting Back: Looking Towards the Future.

Then when we get to establishing a quorum, I'll bring up that for the voting.

PAM KING: Good morning to everyone.

I want to just give people an update from the last meeting as to where this document is and how it got there. As everybody here remembers, at the last meeting there were a number of really great suggestions for changes in formatting for things that could be added, things that were omitted or were not clear in the document. So we took this back, and the discussion was that we were going to hope to have a vote by e-mail or some sort of telephone conference with respect to this particular document.

The SPO, after some lengthy discussion, decided that the document really was something that we needed to continue to work on throughout the time that we had between the two meetings – reach out to Commission members, make sure everybody had an opportunity to review and comment, and that those comments could be reformulated into what was being presented at this particular meeting. So that's the approach that was taken leading up to this meeting.

There have been significant revisions, so what you are receiving does not have a redlined copy because it would be a lot of red lines and super confusing. What you have in front of you now – and I will say that, again, I want to just reiterate for everybody in this room; I may have acted as lead scrivener, but this document is the work product of every single person around this table. There have been many who have assisted in making comments, drafting, redrafting, making suggestions, providing input. So what you have in front of you is a collection of input from every single person in this room and some people who are not here.

We are on version 24, in case anybody thought we weren't working hard; 24 happens to be one of my lucky numbers, so kind of hoping this one will be the last one. As far as what we did, one of the things that you'll see different about this document is that it starts with sort of a statement about how the Commission was created and what critical function it serves; that was a recommendation with respect to some of the public comments that we'd heard. We tried to sort of shore up those pieces, give some identification as to what things we could identify had had a direct impact.

It's in some ways hard to measure what it is that this group has done because so many of those within the forensics community are still working on implementation; but I think that it gives at least a summary of some of the things that have happened, or are beginning to happen, as a result of the work of this body. Most of the remaining portions are very similar in nature, if not exactly the same; but we did work on trying to change some language in some of the recommendations going forward and the looking to the future portion of this document.

The other thing that we did is there were some comments with respect to not having good information about the interaction with the public and the public comments that were part of all of the drafting that we did on the documents we have. So some of that language you will see reflected in there. There were over 600 public comments that contributed to the work product that we did, and we wanted to make sure that got in there as well, to acknowledge that this was something that was very much a group effort.

Other than that, I think I'm going to mostly open it up for questions. I don't think there's a whole lot that I need to talk about. All of the Commissioners received this well in advance. You were all asked to review it, provide comments to myself or to either Jonathan or – well, to the group. I did receive those. Those were incorporated as well, and so this is the product that we have at this point in time. I certainly hope that this is something that if we can vote on that the Department will take into consideration when it is that they're going through the questions that Mr. Goldsmith presented as far as their internal changes and working forward into what this particular leadership wants to do.

But I certainly think that – I'm hoping it, for everyone in this room, truly reflects what this Commission has done and what we have collectively identified as things that still are left undone.

One other thing that I do want to mention is just that the document refers to the two documents which we will be discussing next, which are not yet voted on and acknowledges that they have not yet been voted on. We would like to vote on this particular document; this is a business record, so this is not something that is subject to public comment. It is simply a business document for this Commission.

With respect to that particular paragraph, I would ask that in voting on it that we be given permission to edit that one paragraph with that information which John has up on the screen now, to reflect what

happens at this particular meeting. I think that would be certainly appropriate to do, and it's only basically one paragraph in the document itself; and then the appendix would also be amended in order to reflect the same. But that would be the only thing that would change from the one that you have before you; so with that, I'll open it up to questions.

[Pause]

Seeing none –

DEAN GIALAMAS: I just want to provide a very quick comment. Pam was very humble in saying that she didn't have too much input into this; but if it wasn't for all of her hard work, we wouldn't have had this document. So I just wanted to thank Pam for all the incredible work she personally put into it to make it happen, to really kind of solidify what we did. I just wanted the group to recognize that although she's downplaying it, she was a significant role in making sure that it did get completed.

Thank you, Pam.

PAM KING: Tom?

THOMAS ALBRIGHT: Thanks, Pam.

One of the things that's mentioned in this report, and one of the important founding principles of the Commission, is that it would draw upon the expertise of independent research scientists and efforts to reform forensics – and independent here meaning not being under contract with or in any way affiliated with forensic labs or with law enforcement or prosecution at any level or branch of the government.

There are a handful of us on the Commission with these credentials; and I want to note for the record today that some of us – and this is Arturo Casadevall, Jim Gates, Suzanne Bell, Bonner Denton, Sunita Sah, and myself – have together communicated to the DOJ and to NIST in the form a letter our sincere appreciation for the opportunity to participate in this exercise. In doing so, in this letter we've also stressed the importance of inclusion of independent basic scientists in any efforts to strengthen forensic science going forward; this is absolutely critical.

I had asked Jonathan if we could circulate this letter to the Commission today, but I understand that process is too simple for the Federal Government. So in fact, the letter will be posted as a comment in the Public Comment space for this Commission. I'm happy to read the letter, if anybody wants to know its contents right now.

JONATHAN McGRATH: No, thank you for sharing in the e-mail that I received from you Friday afternoon with the letter. I think if it's appropriate to post it in the Public Comment period. I think Lindsay has got a copy that she can share, and it will be publicly available as soon as she posts it. So it will be accessible on electronic devices, but thank you for sharing.

THOMAS ALBRIGHT: I've been squelched. All right, so I'll read the first paragraph; and this is addressed to Attorney General Sessions and Acting Director Rochford:

"As Commissioners who were appointed because of our contributions to the basic sciences – biology, psychological, chemistry and physics – we would like to thank the Department of Justice and the National Institute of Standards and Technology for establishing the National Commission on Forensic Science. This landmark advisory body represents the first time the Federal Government has convened the full complement of forensic science stakeholders to work together with independent academic scientists to, and I quote, 'enhance the practice and improve the reliability of forensic science.' We're gratified that in the development of the Commission, the DOJ and NIST acknowledged the role scientists from a variety

of disciplines play in strengthening forensic science. We believe this Commission has made a positive and indelible impact on the Criminal Justice System, and we encourage you to renew the charter for the National Commission on Forensic Science. Historically, the community associated with forensic science was limited to criminal justice participants, sometimes at the expense of foundational science. Many forensic science disciplines have not fully benefitted from the resources and lessons gained by researchers in contributing fields."

So that's the first paragraph of the letter. The letter goes on for two pages; and, again, it will be posted. I regret that it can't be circulated by the most obvious means.

PAM KING: With respect to that, now I have a question; and I don't mean to derail my own vote and my own document or the document that we're talking about. But it seems to me to that there were some letters that had been provided to the then Deputy Attorney General by Commissioners commenting, a number of meetings back, about some concerns that they had, and that those were provided to all of the Commissioners upon the permission of the writer. It seems to me that this falls into the same sort of scenario. So I don't know why it is that they couldn't be at least provided to those of us that are Commissioners by e-mail, even prior to tomorrow.

But I appreciate, Jonathan, your concerns and that this just came up for you on Friday. But seems to me there's some precedent for the fact that communications, especially when it's communication by more than three Commissioners, should be available to the Commissioners.

JONATHAN McGRATH: Yeah, and I replied to Tom earlier today, I believe. So just having read the letter too, because it didn't necessarily speak directly to a Commission business document or a work product, the reason why we advocated using the Public Comment period to make it transparent to the public and discussed at the open meeting too.

So I appreciate, Tom, that you're bringing it up while we're discussing the Summary Report especially.

THOMAS ALBRIGHT: Can I respond to that quickly?

I don't want to go on arguing about this, but I think it is directly relevant to this report. We do make a position in this document; but the document itself, the appreciation of bringing these people to the table, is fundamentally important to the report. In that sense, I think there's no reason why it shouldn't be circulated to the Commission.

JONATHAN McGRATH: I'm going to look behind me to see if Lindsay has posted it yet; but I think we're on our way to doing that.

One thing that I wanted to touch upon too is if this letter does need to be discussed and it affects the language in the Summary Report, we do have a couple of wrap-up periods. As Pam mentioned too, we can make amendments; we can add language to the Summary Report today or tomorrow as well.

PAM KING: Are there other questions or things that people have to say -- Bonner?

BONNER DENTON: I strongly recommend that this letter be amended to the wrap-up report and be officially a document of the Commission.

PAM KING: Julia?

JULIA LEIGHTON: I know it's a scheduling nightmare, but I think from what I've heard of the letter so far -- and I haven't seen it and I would like to see it -- I would like to be able to respond to Bonner's suggestion that it be amended to the document.

I should start somewhere in there saying thank you, Pam. This has been group write; and that's a nightmare, and it often ends up a literary nightmare as well. The substance is really good, but I would like to see this; and I'd like to consider whether or not we would want to add it to the report. So I'm wondering if we can't flip the agenda in some way so that we can give it the time and the space that it deserves?

NELSON SANTOS: If you recall, in the last meeting there was a concern about including the language of whether the Commission should move forward or not. I think there was a vote, and it didn't pass. In other words, no language regarding the Commission's future was going to be mentioned. So by putting this addendum, what you're doing is going against that vote, saying that these six Commissioners are independent. So I think that's one of the reasons why DOJ said what it said.

JULIA LEIGHTON: All right, if we then can vote on this and then set aside a review of that. I mean, I think that the suggestion is there was a vote *not* to recommend its commission. I think there was vote not to take a position.

NELSON SANTOS: Correct.

JULIA LEIGHTON: This is new information, and I guess I'd like to see what it says.

NELSON SANTOS: All right, I would suggest that we vote on the Summary Report independent. We can have discussion about – I think it's going to complicate the matters if we now go back and include an addendum that takes a position of six Commissioners, not the majority – or whatever. So I would suggest that we vote on the Summary Report, and we can have discussions about the group's letter. I have no problem with that, but I think it will muddy the waters if we attach it to the report.

PAM KING: I agree with Nelson.

Bonner, I appreciate your suggestion; but I do think that this particular document – its original purpose and creation was really looking at summarizing what the Commission has done and what is left undone, without commenting or making specific recommendations as to what that organization looks like going forward. I think it stands alone with respect to its value.

It may very well be that the letter that we're now all aware of provides a perspective that many, or some of us, may want to sign on to; and I think it's appropriate for this body to have a discussion about that. But I would ask that if someone wants to make some sort of a motion, unless there are other questions, that we do that.

NELSON SANTOS: Arturo?

ARTURO CASADEVALL: All right, so I signed the letter; so I obviously have a vested interest in this. But I want to point out that one central issue in the letter is as this Commission sunsets and we go forward, is forensic science going to go back to being just a branch of the judiciary; or is it going to be basically moving to mainstream science? I think that comment that this is the first time in which you had people from the established scientific disciplines functioning and interacting with law enforcement, forensic scientists, and all that, in one body – this is a fundamental issue that we're talking about here. Where is the future going to go?

I think tremendous progress has been made in this discussion, and I would hope that issue makes it into the final report in some way.

NELSON SANTOS: Dean?

DEAN GIALAMAS: I just want to echo what Pam had said about the concept of the report was generated as a summary of activities and a kind of direction or path of topics that could be dealt with some other body at another time. We were very specific in the document to make sure that we didn't address the "who" and the "how" of how that would be dealt with. Although I completely agree with the concept of having science involved in the process and the discussion, I don't know that it's part of that report.

But to further Pam's point, I'll make the motion to move the document forward as it is, with the potential amendments that would come with respect to the two documents that we're going to discuss later.

PAM KING: Suzanne?

SUZANNE BELL: Yeah, I also signed the letter; and correct me if I'm wrong, but we never intended it to be part of the report. It was kind of a separate – so, yeah, I don't think that was ever an issue. The report was great. I second the motion. We should vote on it independently, and then we should share the letter. But it was never the intention for it to be merged with the report. I think the report said, in that sense, what we had hoped would be said.

THOMAS ALBRIGHT: Yeah, I agree with that. My intention was simply to have it shared with the Commission, which I wasn't able to do; but hopefully, that will get resolved.

NELSON SANTOS: All right, John, we have a motion and a second.

JOHN BUTLER: Okay, so I just want to review the quorum that we have here. Because Stephen Feinberg has not been replaced as statistician, we have 31 voting members potentially, 8 ex-officios. This is a business vote, so everybody will be able to vote on this. In terms of proxies that are here, Greg Motta is a proxy for David Honey; Frank DePaolo is a proxy for John Fudenberg; John Hollway is a proxy for Bridget McCormack; and Mike Ambrosino is a proxy for Deirdre Daly.

Right now, Jeff Salyards – I have his clicker. If he responds by e-mail, we can get something from him. Jim Gates I thought was going to be here but is not. So then we'll have – what's that?

(inaudible)

JOHN BUTLER: You have his clicker; you can take…

All right, so with 29 or 30 potential votes, we still need 20 to be able to reach at least two-thirds on regular votes. On the business votes, we would have to have at least 16 to be able to do that to pass the document. So this will bring up then the acceptance of the Summary Report. Should we add the comments about updating? I can just do that real quickly. People are already voting, so we'll add that – making the updates on the last two documents.

[Pause for voting]

Okay, it looks like we're up to 36. I do not have anything from Jeff Salyards yet; but if we do, we can add that later. So we'll see what we get here.

Okay, so we have 92% "Yes," 8%, "No," so it passes. So the Summary document is therefore approved by the Commission. In terms of additional comments, depending on what happens with the next two documents, we'll make an editorial change on those.

Pam, was there anything else you want to cover?

PAM KING: No.

JOHN BUTLER: Okay, thank you very much.

NELSON SANTOS: Thank you, Pam, great job.

[Applause]

JOHN BUTLER: Okay, Reporting and Testimony.

JULIA LEIGHTON: In case anybody didn't hear, Matt turned it over to me because I turned off his mic.

The Views Document on Case Record and Report Contents – as you'll recall, this was promised as part of our work of the recommendation on case record and case report contents. We did a very high-level Views Document, then a high-level recommendation to the Attorney General. In each instance, we got public comments saying, "What do you mean by those four or five things – what do you mean, what do you mean?"

And we kept saying, "It's coming; it's coming."

The group began working on this; the working group began in 2013. It was first introduced June 2016, along with that high-level recommendation. The high-level recommendation was approved September 2016. The more detailed Views Document was adjudicated, the public documents were adjudicated, and it was re-brought to the Commission January 2017. It was then revised again, based on the Commission discussion; and follow-up discussions, some by e-mail with Ted and with e-mail from Suzanne and Jeff – and thank you very much all three of you, and in particular Suzanne who really grappled with some drafting issues for us.

That was then taken back with our small group. We reworked it and put it to our Subcommittee and then put it out to another period of public comment. For those of you, our small group was Linda, Phil, Mike Cariola and Pam and myself.

It went out for public comment in February. We received eight public comments; three were from organizations: The Innocence Project, ASCLD Lab Board, and the Legal Aid Society of New York. We also received five individual comments; three were named, two were anonymous. We adjudicated each of these public comments – again, starting with our small group, who did it on a very tight turnaround. Real thanks to Phil, Linda, Pam and Mike for working through the weekend and through the night trying to make that a polished document. And that's what brings us here today.

What you have is the document that went out for public comment and the tracked changes we made in response to the comments we received. Before we move to that, I want to just talk a little bit about the early process.

In the early process of this document, we eliminated a lot of duplication that was pointed out to us. We spent a lot of time grappling with some issues that were raised very thoughtfully by Cecilia and others to make it clearer and tighter what we were looking for.

The next thing we did in this most recent iteration, we moved a number of items from the case report to the case record. For example, we talked about that you had to note whether other items were received or whether there we disagreements; but we did not ask for a list, and we did not ask for details. That was all moved to the case record. I think you know there were people that felt very strongly it should be in the case report, but there were also people that articulated real reasons why this would be a burden to forensic science providers.

We also eliminated some requirements, including for example, justifications for deviations from the sampling plan. Instead, all you have to do in the case record is document the deviations; but you no

longer have to justify them. In every place, I think, where it said "in detail" or "provide detail" or the word "detail" was used, the word "detail was eliminated.

Then the big thing we took on – and special thanks to Jeff and Suzanne for this – was addressing uncertainty, limitations and the like. I'm going to ask that we just go to that part of the Views Document and just remind everybody where we ended up with what was sent out for public comment -- if you scroll down to where we define "figures of merit," in the Views Document itself, in the text.

"The National Commission recognizes that definitions relating to method performance (e.g., accuracy, sensitivity, error rate, measurement uncertainty) vary among disciplines and FSSPs. Instead of imposing definitions, this document simply requires that the FSSPs define the terms used in this report. For the purposes of stating that information on method performance must be in the report, we use the term 'figures of merit' to cover the range of approaches used in method development and validation for describing a method or test's performance. The importance of including 'figures of merit' in a report is to fully inform the reader of the value and limitations of the results. As with any item listed in Appendix A, if the information is already available (for example, in an SOP posted online or separate reports), the information need not be repeated."

I read this again because one of the changes we made to the document was to tie it back to this Views where we explain what this is. One of the tensions we saw throughout the comments we received is, "Tell us exactly what we're supposed to do; but when you tell us exactly what we're supposed to do, it actually doesn't fit when we are applying it to this discipline or that discipline."

So what we came up with here was a real statement of what we were talking about that leaves room for every FSSP in every discipline to define it as they see fit. To the extent that disciplines and FSSPs want standardized guidance on this, that body is the OSAC, I hope, and the place to go. So this was our effort to deal with that tension.

With that, what I'd like to do is walk you through the changes that we made. These are the changes that we made in response to the public comments we received this last go around. They start with the Views Document. You'll see above this, there's the paragraph above this is just correcting the title of the Subcommittee.

The last paragraph was modified, largely because we failed to do it, to reflect one of the significant changes, which is that we took out any gesture at a structure for the report. That we are leaving to the FSSPs, hopefully in partnership with stakeholders and customers, to structure reports that are best suited to their needs.

Moving to the Appendix A, the first change was a recommendation by ASCLD Lab that we accepted – I'm pretty sure – which basically said let's assume that the author is the person giving the opinions, and only when somebody else is involved do you have to do the name. It's just trying to, again, limit the work that was required.

If you keep going down, the next change is that we removed – actually, if you just go up just one briefly – one of the comments we received was not to include the technical reviewer on the report but only the verifier. There was a lot of support for including the technical review; but ultimately, we decided on balance to move the technical reviewer to the case record because that person often comes so late in the game that there's a bit of a problem of getting the name back in the report. We certainly encourage the community to use technology to hopefully get over that hurdle and make that easy; but for now, we moved it over.

The next change – keep going down – this was, again, a recommendation from ASCLD Lab Board; and that was to move requests submitted to the FSSP into the case record and simply have this state the analysis performed. So the case record should include – and there are other points in here where we talk about this -- all the communications with parties, with investigators, and certainly all of the requests that are received; but those requests no longer need to be part of the report.

If you keep moving down, this change was as a result of the conversations we had at the last meeting, trying to clarify when a subsequent report needs to be generated; when data submitted through CODIS and then there are resubmissions, resubmissions; and to make clear that we're only looking for a second report in the case of a subsequent positive association. I'm going to ask that you put a little pin in this because David Kaye, after the comment period, suggested some tweaks to this that I think make it even clearer; and I'm going to put that up after we address this to see if we can turn those into friendly amendments.

The next change you'll see comes with where we talk about inserting the relevant figures of merit; and we added some language there describing method, performance and limitations to try and draw people back to the Views Document. We got a comment saying, "What do you mean by this?" And it's like, here's what we mean by this; and it's drawing them back up to that part of the document.

If you keep going on down, this was a change that was designed to address the comments that the original statement that we had actually talked about and sort of left after our last meeting: "The conclusions, opinions and interpretations that are based on training and experience of an analyst or expert should be so identified." I think that we received a very fair comment that, depending on how you read it, it could seem sweeping – that everybody thinks that something that they do in some process is based somewhat on their training and experience. It's what gives us all meaning, right? So we tried to be more precise about that item, that it is those things for which there are not empirical measures of performance and in which key procedures involve significant human judgment.

With that, those are all the changes that were made to the documents. To be fair, you all have before you the adjudications; I know you read them carefully, so I'll try and be brief about it. There were some things we did not do. We did not add a single item to the report or to the case record, despite receiving comment that we should not be taking out information but we should be putting information back in that stakeholders felt they needed.

We also did not eliminate everything except what's required under accreditation. We set a standard and a bar that was higher than that.

The other thing we did not do is there was a request that we not refer to making things electronically available or available on the Internet, and we've just really pushed back on that. The idea that a glossary can't be made available electronically or on the Internet and that you would actually have to request a copy of it seemed to us just not using technology. That to make people go to the case record to get the glossary just defeated the purpose of being able to understand and read the report, and then make an intelligent decision about whether or not to use the additional resources to see the case record.

Likewise with SOPs – you can copy them for every single person, or you can scan them once and make them available electronically. Surely we need to get away from the practice of saying the only way you can see the SOP is to come to the lab and pay your expert to come in and sit and read it.

So we pushed back on those two. The other pushback was a request that we eliminate the data underlying the results or conclusions or a description of the data underlying the results or conclusions. It was our view that if we did that, we would simply turn the report into a certification -- that we give the option to

either show the data, which you can do in some very simple cases, is the example drug report that was attached as an addendum, or you can describe the data; but you can't just certify the results.

Again, to this we did add our thoughts on if the forensic science community feels that standardization is appropriate on how to present data and observations for each discipline, we agree. To the extent that that standardization is being pushed for, I think, again, the OSAC is probably a more appropriate body than this body.

The last issue was, again, the figures of merit and where we were asked for examples because they couldn't figure out what it was. We again referred back to our description in the Views Document so that people could understand the concepts and the freedom to develop those definitions on their own.

Are there questions -- Cecilia?

CECILIA CROUSE: Julia, this is significantly better – and I shouldn't say "better," but it made some significant changes. There are still three of them that I have; for some reason, my neurons aren't connecting when I read it.

One of them has to do with this relevant figures of merit because that is new, and the definition is "to cover the range of approaches used in method development and validation for describing a method or test performance." This definition doesn't help me when it comes to putting *in* a report a brief description or table of the methods or processes relevant figures of merit. I just have a roadblock with that in my head. I'm not sure what's being envisioned in a report. I can understand this being available in a laboratory, but it seems so onerous to me.

JULIA LEIGHTON: I'm going to ask Suzanne and/or Linda to help me with this because we struggled with it, but I really deferred to the lab people and the experts. This is not lawyer language; I promise.

SUZANNE BELL: When I wrote it, I was thinking about the intimate link between method validation and figures of merit; and they're different for different things. So for example if you validate a quantitative toxicology analysis, you'll have limited detection, limited quantitation, freeze/thaw cycle; but somehow, you have a table that tells you what the method can do and what it's capable of doing. For some, that will be fairly involved; for others, it would be less involved.

When I was editing this, I didn't want to get into, well, you have to talk about accuracy and precision; those are different. Accuracy is bias and trueness; and depending on what particular discipline you're in, you may have different definitions. For example, SWGDRUG will define those terms for the world of seized drugs. I assume SWG TALKS has definitions for what they consider to be those sorts of things; whereas, like a color test for drugs that's gotten so many people in trouble would have a list of here are the common interferons and here's the limit of detection and here's what to be aware of.

So I envisioned it as a table that would be appropriate to the method. When we talk, for example, the limits to the methods for latent fingerprints are quite a different thing than a chemical assay. It would be quality of the image and other things that from the chemical world I don't know. So the thought there was to try to make it, in my mind – and the lab directors can correct me if I'm wrong – if you have a validated method, you have, in fact, a table of figures of merit that define what can it do, what can't it do. That's one of the things that we went back and forth quite a bit; you can't spell that out. You can't say "accuracy and precision" or "error rate" because that has different meanings for different disciplines.

So that was the thought process behind that, was to go back to your method validation and whatever you do for QA/QC, and you have a list of what you would consider figures of merit for the assay or for the test.

CECILIA CROUSE: But what does range of approaches used – I mean, how do you put that in a report?

SUZANNE BELL: That's a good question – I mean, that one—

JULIA LEIGHTON: I think that was a reference to an acknowledgement that there's a range of approaches that are used by FSSPs. That's not something you're reporting on; that's our acknowledgement that FSSPs and disciplines have a range of ways of doing this. So we're not specifying.

CECILIA CROUSE: We report on the results of our analysis, number one. Second of all, to me it's obvious that somewhere in the laboratory there are foundational validation studies; there is literature; there is your merit. But this is in a *report* you want us to put this, and I'm kind of confused. I appreciate your explaining it; I just, depending on the discipline, still have some issues with that.

The other thing that I had mentioned earlier, in a report, information – this is on your page 6 at the bottom – "information of specific test conditions, such as environmental conditions that may affect results or an interpretation of the results." So if we have a power surge, do we have to report that? Is that an environmental condition?

JULIA LEIGHTON: No, it doesn't affect your results. I think Linda had some good examples of things that *could* affect results – I mean, if you're doing things in 120 degrees.

LINDA JACKSON: Right, so when we were talking about this and thinking about environmental conditions that would affect results, we were discussing things such as your air handling system was down and the humidity was 100% in your lab that day; and that somehow would affect whatever exam you were doing. It might not affect anything, depending on what was happening; but that was really taken from the ISO 17025 requirement that talks about the fact that if there are environmental conditions that are relevant to the interpretation of the results that they should be reported, I believe.

CECILIA CROUSE: Okay, thank you.

JULIA LEIGHTON: The other thing that we recognize, and I'm a little tongue in cheek about scanning as opposed to copying, but I'm not about this. This is a high-level statement which is, I think, appropriate to this body. It will take time for FSSPs to implement. I think those materials are in your lab; and in some instances, you won't have to put it in a report because you'll just reference it. That was the other point here; if it's in something that's accessible, all you need to do is reference it. I suspect that's probably going to be the practice that most places do; it's going to be a process of pulling that together and creating those documents for each discipline.

CECILIA CROUSE: And I'm sorry, I did have one more question.

JULIA LEIGHTON: So I don't think anybody is saying this is happening overnight.

CECILIA CROUSE: And I was just wondering if you could clarify one more thing; let me get the page for you. It would be on, I believe, page 2 of the Appendix about the disagreement between examiners; I just want to make sure I understand this.

In the report, if a technical reviewer comes and says, "You shouldn't have called this stutter; this is not stutter," and the other person says, "Well, this is why I called it stutter," and they say, "There is no indication of more than 2 people in 21 loci; it's only 0.5% above the stutter cutoff; it should not be called stutter." And then another person says, "You know, I agree with you."

Does that have to go in a report – because it says, "…even if the disagreement is resolved."

JULIA LEIGHTON: It's just the fact of the disagreement. Your records will show that exchange. It's just the fact of the disagreement; and that is because it's up to the stakeholders, the readers, to decide if it's important in this particular case or not. But the fact that it's there is something that is – again, we took out of the report any need to categorize it, any need to do anything. It's just the fact that it happened. If it matters in your case, or you think it might matter in your case, you get no more information than that as a reader; but you at least get the red flag to make the decision of whether you should follow up and take a look at the case record.

CECILIA CROUSE: So we just had a hearing last week on this very thing -- that exact example; and all of that information about the disagreement was in the case file. It was *not* in the report. The defense attorney read it; the defense attorney had an expert look at it. They said there was a disagreement here; they resolved it. So I'm not sure in the report – I still think we're being transparent, I guess.

JULIA LEIGHTON: Only if I can read the case file in every case, and you don't want me coming to your lab in every single case; and I don't want to go to your lab in every single case because the system will collapse. What I need to know is was it there; then I make an informed decision of whether I seek to look more. I may well seek to look more and find nothing, or I may have other reasons for saying that the fact that there might be a disagreement in there is not relevant to the way I'm approaching this case. But if you don't tell me, then there's no red flag – whatever the disagreement may be – for me to go and check.

So it's the information needed so that the people reading the report can make informed decisions about whether to take subsequent steps or not; that's the tension that we struggled with answer to not have the information, not to have the red flag, not to say to the reader, "Other items were seized that weren't tested." We're not asking you to tell us what, but it's the information I need to begin to make an intelligent decision about whether or not I should investigate further for other testing.

CECILIA CROUSE: Thank you.

DEAN GIALAMAS: Thank you, Julian.

First of all, I just want to say that I support the general concepts of this document. I think the Subcommittee knows our laboratory has not only supported these, but we've instituted policies; we've shared that with your Committee. We actually have templates that we use within the laboratory.

But I do want to bring out something; a change was made in the Appendix, and it's on page 8 of the Appendix. It has to do with the conclusions, opinions and interpretations. You had mentioned that you made a friendly amendment to a recommendation from ASCLD about the issue of the experience of an analyst or examiner.

My concern is that, one, the request was to have it removed, not edited; but I think the edit actually adds a component now to laboratories that puts us in a double jeopardy situation, and that's what I'd like to try to sort out and clarify. It's specifically the language that says, "…methods for which there are currently no empirical measures of performance." I'm going to be very blunt; and what it sounds like you're saying is that labs now have to put themselves in a double jeopardy situation by self-identifying methods that they don't have empirical data for, and essentially now claiming in the report there's no science behind what we're doing. That, I think, is going to open up to a huge debate.

Now, that's how I read it when I read it for the second time. If that is not the intent, I'd like to propose a slight change and modification because the second phrase of that I have no problem with, where "procedures involve significant human judgment." Our laboratory has a statement similar to this, and we use the term "subjective kinds of things." So if we don't have objective data that we can look at, and it's

based solely on an examiner's opinion and review, then we need to identify that in the report; and that's a tough language to put out.

So I have a real heartburn over that particular statement. I'm not sure if that was the intended design of making that change. Seeing you shake your head, "No," I'd like to offer something maybe that might clarify. I'd like to see if we can remove that phrase and just simply say, "Conclusions, opinions and interpretations for methods that primarily involve human judgment should be so identified." In other words, those types of analyses – and I'll use an example like blood stain pattern interpretation – the characterization of a blood stain, for the purposes of angle or incidence of impact, is very well-documented; but what those stains mean in relation to an activity is primarily based on judgment. Really, there may not be that same level of degree of reproducible data that you'll get from a GCMS doing a controlled substances test. I think that's where this applies.

But making the statement where there are no empirical measures of performance, I think, puts the labs in a really, really bad position.

JULIA LEIGHTON: I guess I'm going to look around at my Subcommittee. I think that's fine. I think that change is fine.

JULES EPSTEIN: I think John's typing it.

DEAN GIALAMAS: Yeah, and I can repeat what I said. I don't mean to be the perfect wordsmith, but if you just delete the clause after the word "method" – so delete "for which there are currently no empirical measures of performance" and "in which key procedures." Then replace that with the words "that primarily."

JULIA LEIGHTON: Or "that involves significant human judgment."

DEAN GIALAMAS: That's fine too. I was removing the word "significant" because I don't know what significant human judgment, but it's all a matter of art; so I'm not going to go into too much wordsmithing.

JULIA LEIGHTON: Happy to have it be "that primarily involve." Does anybody have any heartburn to us accepting that as a friendly amendment?

Okay, thank you, Dean.

I believe Ted?

TED HUNT: I share the concern that Cecilia voiced, and thank you for the amendment. I also noted that phrase as well.

I want to bring up a separate issue, which has to do with the Appendix, page 4, that describes "the view of the underlying data or description of underlying data and observations that form the basis of any conclusions, opinions or interpretations reported." This, to me, is also problematic; and I am curious as to what this might look like in a report, especially when we get into feature comparison methods like latent prints or ballistics. What level of minutiae are we going to expect examiners to put in their reports and to testify to? I note that this is also in the bullet No. 1 of the Statistics Views Document; and I've questioned how that can be included in the practicality of that being included in reports and just what that might look like in testimony.

So that's the first question I had is what level of specificity are we looking for when we talk about bases of conclusions and observations – because that could be quite a lot of stuff, quite frankly, depending on the discipline. That's number one.

Number two, the question of relative figures of merit – and I understand what you're getting at there in terms of sensitivity, specificity, false positive rate, et cetera. The question though is from whose perspective? I think the PCAST Report sort of illustrated some of the tension there between PCAST – what I think is a new test applicable to forensic science and footnoted to sources that don't support that test as being one that other scientific disciplines follow exclusively, versus the other literature out there where there are tests of false positive rates, et cetera, that PCAST said, "Well, those aren't appropriately designed studies, so we're going to say that those don't meet our test of criteria."

So the second point is whose perspective or whose point of view are you talking about when you say relevant figures of merit? Because you could have very different viewpoints about what is a study that supports a particular method's validity and reliability.

Then the third thing that I'll bring up – and this came up last time – is the point in Appendix A, page 3: "The report should list which databases were used and provide results of the search." I just want to clarify what that means. Does that mean all candidate matches that are produced, or are we just talking about a positive association?

So those are my three questions about different components of the Appendix. I might add I appreciate the fact there was a mock report that was included here because I went back and I looked at that report; and I compared it to the elements in Appendix A. I noted nine different areas that were set forth in the Appendix that that report did not include. So I think it's a little bit informative that the report itself really doesn't address all of the elements in the Appendix, and I think that's instructive of the fact that these reports that would comply with this Appendix are going to be much longer than the mock report and, I think, fairly significant depending on the relative degree of specificity that is expected, especially in terms of the bases of the opinions and the data that supports those opinions.

So those are my questions.

JULIA LEIGHTON: So quickly, with respect to the report, I think I respectfully disagree; I also think it's cited to things that were online and available online that will get you to it.

TED HUNT: Okay.

JULIA LEIGHTON: But more importantly, with respect to the data and the figures of merit, we have given this back to the FSSPs. It is from the perspective of the FSSPs. The only constraint is that you have to define it; you have to say it; you have to show it. Then, yes, maybe there will be a debate over whether your figures of merit are appropriate; but what we're saying is put down what you are using. Put down what you've developed. So it is—

TED HUNT: Let me follow up with that. Is this an internal test? For example, based on your internal validation; or is this something that is a community wide study? Or is that up to the—

JULIA LEIGHTON: That's up to the FSSP; and I think what we've heard in the comments is that I think there's going to be increasing growth for a call for standardization for really grappling with this as a larger community. But we aren't prescribing that; I don't think that's appropriate to this body and not what this document is about.

TED HUNT: Okay, so level of specificity when it comes to descriptions of underlying data and observations, I think that's something that we all ought to be very concerned about. I know I am because that could be enormous, or it could be very little. The problem is if it's just a summary statement, then that could be misleading because you've got all of this other data that's in the case record – where I think it should be. By the way, let me add incidentally, I am totally for full discovery. I don't have a qualm

with any of the information here; it's the proper placement of it in the report or the case record. I come from a jurisdiction where we turn over everything, and I think that's very important.

So I'm not concerned about the content; it's the placement. I just see these reports as being onerously long. I think that *especially* that requirement, to have that data and those observations included could be either misleading because analysts and examiners are necessarily going to have to be fairly brief; they can't write long memos with all of the information that went into the basis in the report. If that's included in some way in the case record, I think that's more doable; but that's the one that really stuck out to me as being very problematic, quite frankly.

JULIA LEIGHTON: And as our response indicated in the materials, if you don't talk about the data, then it's a certification; and we think more is deserved here. We also think that labs are well-suited to defining this. I don't think this is every individual analyst trying to come up with the language in every single case; I think this is, again, the kind of – it's going to take time, but it's the kind of thoughtful articulation of what people do and what their results are that I think we've been calling for and I think the forensic science community is capable of grappling with.

TED HUNT: But the basis for a test result is not boilerplate; that's case-specific. So that's original work that you can't just plug in and send it over to a website or to put it in some pop-up that is boilerplate. This is specific; especially when you get into latent prints – this is my request for an example. Latent prints and tool marks, when you're talking about striae and minutiae of various kinds and forms, what I'm seeing here is you need to put that in your report at some level. That's going to be very, very difficult to put into a report. That should be documented at some level and put into a case record; but I just – I would love to see an example. I know the mock report has a quantitative example, but there's no qualitative example of exactly what that might look like in future comparison methods, like ballistics and latent prints.

JULIA LEIGHTON: Well, I can imagine an example where it says that the underlying data and observations are contained in the photographs that are in the file, in which nine points of comparison were reviewed -- I mean, right?

TED HUNT: But that wouldn't be the basis for the opinion because it's so much more than that.

JULIA LEIGHTON: I think we've grappled with this; and again, I think this goes back to that tension of people want specifics and yet each discipline is going to be different and, to some extent, each lab's standards for how they record data and record observations is going to be different. But if there's nothing about the data or the underlying observations, it becomes a certification; and that doesn't meet the standards that we think are appropriate or that we wanted to put forth as appropriate to what should be in a report for all of the stakeholders involved.

TED HUNT: Okay, and then lastly the database issue. We covered this last time, but I think it still asks for the results of the search. And my question is are we talking about candidate matches or not?

JULIA LEIGHTON: Whatever results you want to define – again, the FSSP defines the results. If they define the results as the 10 closest matches and they put that, it's just define the results of your search. And, again, David Kaye had a little tweaking of this that has to do with putting in data and not samples so that it's clearer.

MATT REDLE: At this time, I'd move the adoption of this document. Is there a second?

UNIDENTIFIED FEMALE: Second.

MATTHEW REDLE: It being moved and seconded, first, are there any proposed amendments to the document?

JULIA LEIGHTON: Well, I think we've already put one in; and I asked if there were any objections, and I didn't see any.

MATTHEW REDLE: Any proposed amendments?

Okay, hearing none, all those in favor of the document signify – we have to vote, excuse me, John. We'll turn it over to John.

JOHN BUTLER: Okay, it's now open for vote.

[Pause for voting]

This should just be the members, not the ex-officios. Only 29 have voted, so that's the correct number. Okay, so we had 59%, "Yes,"/41%, "No." Therefore, it doesn't reach the two-thirds; so it does not pass.

MATTHEW REDLE: Okay, we'll move to the document on Statistical Statements. With respect to this document, this document actually went through two 30-day public comment periods; and we had a narrow window of time after the second public comment period between the close of public comments and the date for circulating the final draft to the Subcommittee and then subsequently to the Commission.

There were a number of technical and minor edits from the working group that did not arrive in time to be considered and incorporated before it got sent to the body of the Subcommittee. We attempted to preserve some of them and to have them get to the Commissioners in advance of the meeting while maintaining public transparency. We basically did that because the meeting materials were subject to their own public comment period, and David Kaye then submitted those on behalf -- those aren't just David's proposed changes; they were actually proposed changes that were developed or being discussed by members of the Subcommittee or our working group.

There were two ways that we saw that we could do this. We could handle it through the public comment period; the other way that we felt we could handle this was in the course of the Commission meeting itself as friendly amendments that were suggested for this. So we're going to go about this a little bit differently than, for instance, the last document. The end result was that we have a Word document with tracked changes posted to www.regulations.gov followed by a separate explanation of an additional four wording changes to be made to actually convey the meaning that we had intended originally.

As for the content of the edits in the Word document and the two additional changes, most of the edits are really matters are form. They are deletions of extra words; and a few others are simply to ensure that somewhat technical terms, such as "statistical model" and "empirical foundations" and "statistical inferences" are used correctly. Because of the short window, we were exchanging e-mails back and forth among the members of the working group; and that was part of the reason that some of those things didn't make it in because they just missed getting in before the document was sent.

We also made a change in direction toward the end of the document that resulted in the document being shortened quite a bit. For instance, the section with respect to examples of statistical statements was eliminated.

I want to thank the members of our working group on this, who really did terrific work under the gun: Paula Wulff, Charlotte Word, Karen (inaudible), Alicia Carriquiry, Peter Neufeld, David Kaye, and acknowledge the work of the late Stephen Feinberg as a member of the group as well.

You also received an Adjudication Statement with respect to this document as part of the binder, and I want to point out a couple of things about that adjudication document. First of all, that was the first draft of the adjudication document; and that first draft occurred before we made the more major changes to this document. Then David Kaye and I and others attempted to incorporate the changes that we had discussed in our working group.

As you can see, the Adjudication Document doesn't actually reflect what we did in that subsequent document. So at the end – and I'll take full responsibility for that – at the end what I would ask that we be allowed to do is that we be allowed to then, if the document passes, we would then take the document and provide an adjudication document that actually does cover what we did to adjudicate the document. You'll see there are several places where the adjudication document talks about how we respectfully disagree, and then we went ahead and did precisely what people had recommended be done.

The other thing, as we begin to go through the document, that I would suggest we do is I want to pull everybody's attention at the start to the six views statements that are made at the end of the document. I do that because our work product development document says that the portion of the document directly labeled "Views of the Commission" – because that's what this is, it's not a Recommendations Document, it's a statement of the Views of the Commission – represent the formal views of the Commission. Information beyond that section is provided for context. So let's talk about the meat of this, and then we can go back and take a look at the Overview section.

John is already ahead of me as usual.

When we look at the statements of views, prior to the meeting beginning today, Phil Pulaski raised an issue; and I think we have. His had to do with a potential conflict between this document and the document that we just reviewed.

Phil, if you still want to make those changes to the document, we can bring those up and talk about those; or if they're good to remain as they are, that's fine too.

The first one is that, "Forensic science practitioners should describe the features of the questioned and known samples -- that is, the data – and similarities and differences in those features, as well as the process used to determine them."

Are there any comments or concerns with respect to that, Phil?

PHIL PULASKI: Just to fill everybody in, I'd sent Matt an e-mail also when this was being discussed. My issue goes to the use of the word "reports." So Matt and I were kind of wordsmithing earlier. So "reports" is used both as a verb – "I'm reporting something" – and as a noun – "Put it in your report." The same concerns that we had discussed regarding what should go in a report/what should go in a case record are there. Matt and I had talked about excising in the first paragraph, numbered 1, the phrase "both in their reports and in testimony," – this is just a discussion point, I'm not saying that this is the solution.

And in paragraph No. 2, in the third line, "as part of a report and in testimony." But I still have a question on the phrase report used as a verb. So in No. 3, it says, "The forensic science practitioner should report the limitations and uncertainty associated with measurements and inferences." So if someone is testifying, and they're not asked a specific question, they're not in a position to report something out that doesn't come out on direct examination or cross examination.

Then on No. 5—

MATTHEW REDLE: Okay, let's just take that one Views Statement at a time. So if we took out both "in their reports and "\in testimony," and then I think we had discussed "should be able to describe." So "should be able to" would be inserted after "should."

PHIL PULASKI: Both of those address my concerns. I don't know about—

MATTHEW REDLE: Okay, other concerns with No. 1 – Ted?

TED HUNT: Yeah, I have voiced concern about this in writing before. It kind of goes with the last comment I had about the level of detail. If you're asking a latent print examiner to describe the features of the question and known samples, the data, and similarities and differences in those features, as well as the process used to determine them, what are you asking for? I mean, are we talking about loops and whirls being put – this description of bifurcations, loops, swirls, et cetera, in a report and to testify to that? I guess that may not have made it.

MATTHEW REDLE: So you would support then the proposal that Phil and I were talking about, about eliminating both "in their reports and in testimony" and say, "A forensic science practitioner should be able to describe the features of the (inaudible) sample of the data and similarities and differences. We're not identifying that it's necessary to be in the report. We're not necessarily identifying that's it's necessary for them to testify to that; however, if someone with an interest were to bring that up, we should be able to—

TED HUNT: Right, as a non-practitioner, I think that's fair from my perspective. I don't know if that poses any difficulties, but that was my concern – to make them talk about things are going to right past the jury's head, very technical things in court and in reports. Again, to describe it is probably going to be under inclusive because there are so many things going on as they're making those comparisons, you can't possibly capture all of that and write that down; although they should be able to articulate that, I agree, when asked.

So that's my concern with that one. I do have other concerns if you want to continue.

MATTHEW REDLE: Okay, so does anybody have any objection to us deleting (inaudible)?

I don't see any objection to that.

NELSON SANTOS: Gerry does.

MATTHEW REDLE: Gerry?

GERALD LaPORTE: Hey, Matt, I'm sorry but I just want to sort of step back with some of the – I have an overall issue with some of the fundamental statements in this document that then lead into the views.

MATTHEW REDLE: Okay and, Gerry, we're not going to take them right now; we'll take them at the end. The reason we're going to proceed that way is because this is the heart of the document. So we'll come back and we'll talk about contextual issues, if that's okay.

GERALD LaPORTE: Okay.

MATTHEW REDLE: So nobody has objection to deleting both "in their reports and in testimony"? And then we'll insert "should be able to describe" right after that. Any objections or problems with that?

[No response]

Then let's go to the second. Phil raised the issue in the third line, the second sentence, "Thus the forensic science practitioner must be able to support," and we would eliminate "as part of a report" and "in

testimony" so that: "A forensic science practitioner must be able to support the choice used and the specific analysis conducted and the assumptions upon which it is based."

Any objection to that?

[No response]

Any concerns raised about that?

[No response]

So we'll do that as a friendly amendment. Any other suggestions or concerns with respect to No. 2?

[No response]

Okay, No. 3: "The forensic science practitioner should report the limitations and uncertainty associated with measurements and the inferences that could be drawn from them." This report might take the form of an interval for an estimated value or a separate statement regarding errors and uncertainties associated with the analysis of the evidence. If the forensic science practitioner has no information on sources of error or in measurements and inferences, the forensic science practitioner should state this fact."

PHIL PULASKI: Matt, using kind of the methodology you were using in Nos. 1 and 2, maybe if that said, "The forensic science practitioner should be able to describe…" because that's kind of what we were using in the first one; and it might fit in both instances where the word "report" shows up.

MATTHEW REDLE: Is that acceptable to everyone?

[No response]

Okay, are there any other questions with respect to that – Pam?

PAM KING: Matt, I just want to point out I don't necessarily disagree with the suggestions that have been made by Phil; I think he's trying to get at something that is important. My concern is that when I read the language as it's being described now, I read it more as to talk about the competency of a particular analyst than I read it as to be requiring that they're in a position to have some affirmative obligation to provide information.

So from that standpoint, I'm a little bit concerned that we're getting into a place where we may not be – the document may have a different -- okay, I can't come up with a sentence. But that's my concern, is that it seems to me that there be more of are we talking about the competency of the analyst, or are we talking about someone having a particular and affirmative obligation to do something.

MATTHEW REDLE: (Inaudible, no mic)

PAM KING: Maybe that's the way to try to be clear about it. Like I said, I don't disagree with what Phil is trying to get at; and I, in looking at it, am thinking through the language. But I do have that concern.

PETER NEUFELD: I think to deal with both Phil's comment and also Pam's concern, if you simply inserted the words "if asked" – "should be able, if asked." Then, obviously, it doesn't have to be included if not asked; but certainly, if asked, it's not a question of competency. It's a question of that it's significant to the content.

PAM KING: I think that sentence – yeah, it needs another word.

[Pause for revision of document]

PETER NEUFELD: As Phil said, it would be considered a friendly amendment if you included the words "if asked" in the earlier changes that Phil suggested, just to clarify that same concern that Pam had.

Is that right, Phil? Let's do that then.

[Pause for revision of document]

MATTHEW REDLE: Okay, any other comments on No. 3, on the substance of No. 3 – Mark?

MARK LE BEAU: I think it should be "to describe" as opposed to "to provide."

MATTHEW REDLE: On which…?

MARK LE BEAU: Yeah, right, there, "to describe." To me, the sentence would read best if you started with "If asked" instead of inserting it in the middle.

[Pause for revision of document]

MATTHEW REDLE: Okay, any other concerns about No. 3?

Okay, View 4, "Forensic science practitioners should not state that a specific individual or objective is the source of the forensic science evidence. They should make it clear that even in circumstances involving extremely strong statistical evidence, it is possible that other individuals or objects could possess or have left a similar set of observed features. Forensic science practitioners should confine their evaluative statements to the support that the findings provide for the conclusion of a common or different source."

What we did in that paragraph was we deleted the word "and" in the second sentence. We deleted the word "claim" because "conclusion" seemed more appropriate than "claim." And we deleted the phrase "linked to the forensic evidence" at the end of that because it served no useful purpose.

Yes, sir?

TROY LAWRENCE: I have a question with No. 4. What if you do know that it came from the client, the suspect? What if they *are* the source? Can we not state that they are? For example, in digital evidence, if they give us their phone, can we not say that it's their phone?

MATTHEW REDLE: In that instance, Troy, aren't you relying upon information from other people to the effect that they gave this to me and they handed it over to me. In that case, frankly, the way I've seen this in reports in other contexts are people saying, "This was identified to me as…." When it comes time for trial, I'll put on that foundational witness to establish that, to make that connection, so that the link has been made; and then you're going to testify to what it was that you actually did with the item or the evidence that was presented to you and what you found once you looked at it. Is that right?

TROY LAWRENCE: Well, sometimes they just bring it directly to us; and we get it from the suspect themselves. On a consent or on a warrant, we may actually seize it from the individual. So I do know that it is the phone that we took from that person. But also, what about other sciences – like if we took a fingerprint from a suspect, or if we took a blood draw at the hospital from the suspect? Can we not say that it's his blood?

MATTHEW REDLE: Okay, so that would be our known sample; and what we're doing then in other areas is we're then trying to link, or make an association between, that known sample and some question sample that was received. So the phone might be considered the known sample, and then it's a question of what information did you find inside that phone.

Other – Fred?

FREDERICK BIEBER: You're not implying that we cannot say that we took a specimen from a particular patient in the clinic or at autopsy, when we're standing right there at the autopsy table; are you?

JED RAKOFF: No, those are known samples. What we're talking about is the question, and is there a need for us to make that clearer that what we're talking about is the question?

You won't be operating as a scientist when you make that statement; that's an evidentiary statement. You're on the stand because you're making a comparison between that known and something else.

CECILIA CROUSE: I still – and I've mentioned this actually several times and, again, it might just be the way I process things – but No. 4 says: "Forensic science practitioners should not state that a specific individual or objective is the source." Then No. 5 says: "To explain the value of the data in addressing conclusions to the source…." So I still find that conflicting.

If No. 5 means to explain the value of the data in addressing as to the association, that maybe I might be able to understand. But to me, it sounds like in No. 4, don't say its source; and No. 5 says, but if you do.

MATTHEW REDLE: So if we were to make that: "To explain the value of the data in addressing the conclusions as to the association of a question sample to a known…." would that take care of it?

CECILIA CROUSE: For me it does, if that's what you meant.

MATTHEW REDLE: Mark, is that okay? I want to take advantage of your head time.

UNIDENTIFIED MALE SPEAKER: He might be falling asleep.

CECILIA CROUSE: And we're going to go over the body of the…? Okay.

TED HUNT: My question and concern is about No. 4, kind of in conjunction with No. 6. To state this as I understand it – correct me if I'm wrong – this document proposes that the view of the Commission be today. In 2017, it's the view of the Commission that, for example, a fingerprint examiner should not be able to say that I have identified this known print to this questioned print; and a firearms examiner shouldn't be allowed to say that this shell casing was fired from this gun. That's what I understand this to mean.

The problem, of course, is that in 2017 we don't yet have population databases, outside of DNA, that give us some idea of the frequency of particular minutiae or fired shell casings as they might relate to a particular gun. So the intent of this document is as we move forward, I think, that this would be a good thing if we were able to more accurately quantify the probability of a questioned sample having been derived from a known. The problem is we're not there yet, and I think everybody understands that.

My concern is that given the fact that we don't have these capabilities yet, these documents are going to be used in litigation to say, look what the National Commission said. You can't give a source attribution for a fingerprint or for a firearm, for example. Even the PCAST Report, as sort of an interim way forward, sort of allowed a punitive identification to be used; so there was fudge room there for the present until we get to the future.

I don't see this document right now as being consistent with reality in terms of current capabilities. Now, I don't think we should not move forward; absolutely, I support what NIST is doing in the areas of firearms and tool mark analysis, as well as fingerprints. And we're well on our way, I think, to someday making these disciplines part of metrology. They're not there yet. They're not there yet, but they *can* get there someday. So what do we do in the present? Is this saying, "Don't say that in court in Kansas City tomorrow?"

MATTHEW REDLE: In response to that, what we don't want to do is disincentivize the community from going in that direction. With firearms let's say, let's use firearms as an example, we currently have examiners who may take the stand and testify that the bullet retrieved from the body was fired from this particular weapon, okay? And there isn't any kind of statement made about limitations to that. It's basically a reference to training and experience. On occasion, we will see some experts who will treat many samples that would run along a spectrum of quality, as if they're all the same; and so there's no real statement about that.

What we're saying is, number one, we're not making a recommendation; this is not a recommendation document. It's our views. We're saying this is where we need to be moving toward – toward a more empirical basis so that we have greater transparency and, frankly, greater trustworthiness wherever possible.

We're also not saying that you can't use this evidence in court because that's the purpose of No. 6 in one spot, and I think we've got another reference elsewhere in the document that helps make that point too. What we're really saying is that you can still provide, and courts still recognize that these common characteristics are all things that are relevant and admissible. As you know, that bar for relevancy is relatively low; and so that information can still come before the factfinder for the factfinder to consider. As you also know, these cases tend to have a context to them that we're able to provide to the jury as well.

TED HUNT: So from that I take that the recommendation or the view of the Commission would be that a fingerprint examiner couldn't say, "I've identified a print consistent with current practice." Same with firearms and tool marks, can't say this shell casing was identified to this gun. That's the recommendation before the Commission.

MATTHEW REDLE: No, you're putting words in the Commission's mouth.

TED HUNT: Okay, well show me—

MATTHEW REDLE: What we're saying, Ted, is that here are the problems that we have currently; and this is the way to resolve the problems. We're not recommending to courts what they necessarily do with respect to that. We are recommending to the community that this is the direction we perceive that we need to go; and this is where research needs to be done because, for instance, you're not going to get any argument from me that in a good quality latent print the identification is very strong evidence. I recognize that. The idea is, okay, let's do it so that it's more transparent; and it doesn't rely so much on the ipse dixit of the examiner.

TED HUNT: I still have a problem with the tense of the document. I don't think it says that clearly enough, that we're not there yet and that these are aspirational objectives and that we should try to get there. If that destination we reach proves to be more reliable than an identification – and those trials are still ahead of us to compare which one is actually more reliable than the one we assume to be. But I can see this document being used as a wedge in court; and the defense attorney going before a judge and saying, "Look, the National Commission says this guy can't talk about a source attribution."

I realize it's just a Views Document; but it carries some weight, having come from this Commission; and I am concerned about context and tense in this report. I appreciate the fact that this is like the fourth or third iteration of this document, and you and others have worked to make this much better than it started out as. But I still really have some concerns with tense, and then we haven't even gotten to No. 6 yet. But this document is sort of an anachronism where it's speaking about a place and time we're not at right now.

MATTHEW REDLE: Well, no, we're actually speaking first about the state of things as they are today; and the state of things can well be improved upon.

TED HUNT: Absolutely.

MATTHEW REDLE: You acknowledged that before. We're saying this is where we are; we need to get better; we *can* get better; and these are the sorts of things that we need to do to get better. So if you want to say that's aspirational, then it's aspirational; and I think that's clear in the document itself.

Peter?

PETER NEUFELD: Ted, I think you're actually painting a picture of doom and gloom, which is completely over broad. In fact, there's nothing in this statement which would prevent the black box data from going in, in a fingerprinting case, for instance – nothing at all. There's nothing in these six principles that would not allow that. It is a statistical approach. It's a statistical approach that's been recognized, so that data could go in; and that data could go in to show the limitations of the testimony. So just as the NAS Report said, just as the PCAST Report said, the scientists came out in opposition to saying that this fingerprint comes from this person to the exclusion of all humanity.

That's what this document is saying today, but there's nothing in this document that would prevent the fingerprint examiner from using the fine work they have from the black box studies and putting in other numbers to suggest the power of the conclusion that there's a positive association.

So if there are other kinds of statistical data, it could be used; and I think we should also just move on, Ted. It's sort of like you need to have the last word on this all along. I'm willing to continue with it, but at least be fair to the language of the document.

TED HUNT: Well, the language of the document clearly says that source attributions should not be testified to.

PETER NEUFELD: Exactly right, and a black box study is not talking about source attribution.

TED HUNT: The black box studies you're referring to talk about specificity and false positive rates, which is different than an examiner testifying to a source attribution.

PETER NEUFELD: That's exactly right, so it's on the FBI or anybody else to use fingerprint testing, to talk about the strength of the evidence in terms of the traditional (inaudible) specificity and sensitivity without saying that this man speaks for the whole world. The difference is you're asking the FBI in this document, or anybody else, to simply rely on empirical data. A black box study is interested in one source of empirical data, different from the database.

MATTHEW REDLE: Well, and I might add that this document also recognizes that many of these disciplines are not devoid of data, that there is data. What we're calling for with respect to those is that that data be strengthened, and we're calling on the powers that be to provide the resources necessary for research to be done to effect that.

TED HUNT: Okay, so just to make clear, this document is not saying that a latent print examiner or firearms examiner can't testify to an identification tomorrow in court?

MATTHEW REDLE: That's going to be up to a court; it's not going to be up to—

TED HUNT: Well, I understand it's going to be up to a court. But is it this Commission's or this proposed document's position that that not happen tomorrow?

MATTHEW REDLE: Go ahead, Judge.

JED RAKOFF: So how does this really come up in real world right now? I can only speak for the Federal court; but I am required, it's not an option, I am required in every Delbert hearing to ask, "What's the known error rate," because the Supreme Court says I have to ask that. The answers I get are usually very unsatisfactory because the expert has not focused on the kind of things that this Views Document says they should focus on. So I get either things that are ridiculous – like in one case, oh it's -- in a tool mark case – 100% accuracy.

I said, "Why?"

They said, "Well, because in every case I've testified, the guy's been convicted."

Or I get much more often, from better experts than that, a kind of, "Gee, I haven't really come prepared to discuss that. I need to go back and look more into it," and so forth.

"But, sir, the trial is tomorrow."

So I think a major positive aspect of this views report is to alert the community as to what a judge would like to hear when he or she is trying to assess admissibility; and it's going to vary tremendously from discipline to discipline, and it's only one of the factors we take account of.

The other person, or persons, that it's helpful to are the jury. I talk to the jury after every trial, and it's one of the actually tremendous learning experiences for me as a judge because I couldn't do that as a lawyer. When forensic science is involved and the defense attorney, for whatever reason, has not brought out the statistical aspect of it, the jury always asks me, "That was really important to us, but how accurate was it?" And by accurate, they're really asking the statistical question.

So we can spend a great deal of time, even though it's our last meeting, talking about the individual placements of words here. That's important too; I don't want to minimize that. But I want to really stress what I think is the *very* great importance of this Views Document, which is to focus both the practitioners and the courts and the jurors on the fact that that this *is* statistically sensitive evidence, and they need to be focused on it.

TED HUNT: I don't contest, or I don't really want to argue the merits of the points you're making. I was just asking for clarification as to what the intent was behind that statement; and I think it's pretty clear that is the intent, that source attribution statements not be provided by examiners – just for everybody's edification.

GREGORY MOTTA: Thank you, Matt. Just two quick observations and then a question.

First, I think that I would hope on our last day we don't lose our sense of courtesy and decorum. We're probably one of the few deliberative bodies in Washington that's maintained that for this length of time, so if we could try to keep that in mind.

I think I have to say the discussion says even in circumstances involving extremely strong statistical evidence. I don't know if anyone else noticed it; but it struck me when I was reviewing these documents, about two weeks ago it seemed as though *all* of the astrophysicists in the world were astonished when they announced a new mineral had been discovered in a meteorite that had come from the middle of the solar system. They said – are you ready for this – "never before observed on earth."

I thought, well, geez, that's an outrageous scientific statement based on everything I've been hearing because how do they know it's never before been observed? How do they know they've searched everywhere? How do they know it's not embedded 1,000 feet under the ground?

But nonetheless, they came together and they gave it a new name – pangonite, paconite, or something. Anyway, the point being is it was a new mineral. But this rule would suggest that a scientist who if someone, I guess, clubbed someone to death with this piece of meteorite, would be prohibited from saying, "No, it only came from this meteorite. We've never, ever seen it before anywhere in the history of time or in the world." He'd have to say, "But I could be wrong; it could be coming from other places."

So the statement, I guess, is really a statement taking a formal position about embedded in its logic, what is the certainty of certainty. It stands to the proposition you could never, ever, ever, ever, ever be certain – no matter what evidence. I guess my question is, is that really the heart of this statement as a matter of recommendation?

So that's the question. Then the other question is, where did the term "forensic science evidence" come from? It's not defined in the document. Is it relative to another document we pulled it from? It seems to be a catch phrase that creates some complications in this document. Those are the two questions.

MATTHEW REDLE: Greg, there is a suggestion on View No. 5, part C – and I want to take a look – that I think goes at least in part to your issue – and this is included in the comments that David Kaye provided that is part of the supplemental information you received. David suggested changing the original language in "C" from "present statistical model generated results to determine the possible origin of the questioned sample. The forensic science practitioner should note the uncertainties and any values,: to saying "Present quantitative statement of degree to which the evidence supports a conclusion, the forensic science practitioner should note the uncertainties in such values."

The distinction that he draws there is that he explains his rationale; but essentially, it is one where the evidence supports the same gun hypothesis more than it supports the different gun – I'm reading the end of this – the different gun hypothesis. No statistical model is generating these frequencies. Nonetheless, if the method of overall scoring similarity in impressions is reliable and valid, the expert should be able to report the frequencies, along with the expressions of the uncertainty, due to sampling error in the database."

Now, when you say that it's never before been observed, that's data. Science is saying we've never seen this before, and so that data could be presented. This has never been seen before; now we've seen it. Draw from that whatever conclusion you might make from the fact that there's a shard of whatever that new mineral is in the skull of the deceased.

Suzanne?

SUZANNE BELL: Thank you.

I certainly support the essence of this. Like, for example, when you're saying in 2017, if we can't say we identify it – well, we can't; and you can't default back on therefore it's okay, and we're going to continue to call it until such time as we're proven otherwise. So I think there is a lot of data, as Peter pointed out. There are black box studies; there's stuff in the literature. And it's never going to be – I mean, all science is probability. It's not just forensic science that's struggling with this, I guarantee you. We're all struggling with how do we define this, and we can't.

What we have to be aware of is I think it's really important that the Commission come out and say we can't just identify it with no more doubt. There is – there is some uncertainty; we can't be afraid to say it. Is it small uncertainty? Is it large? What's the context? How do you explain it?

That's part of the judge's and the jury's role; but you can't – I don't think now you can identify it. You can't say this fired with absolutely zero doubt; we can't say that. I think this compromise is perfectly reasonable; you're saying qualify your statements. What are the limitations of the method?

We'll struggle with quantitations all along; but I don't think we can stop and say, well, lacking further data, we're going to assume it's okay until somebody shows me, through black box studies, that there in fact is a finite error rate on tool marks. That would be my point, is that I think however we word it, it's valuable to get it in there; and I don't think it degrades the value of fingerprint evidence or tool mark evidence. It just makes it clear as to how it should be expressed in a scientifically defensible way.

[Pause]

PHIL PULASKI: In keeping with my earlier comments, Matt, in No. 5, the lead sentence says: "To explain the value of the data in addressing conclusions as to the source of questioned samples, forensic science practitioners *may*"—which is good, then refer, present, present. But when you get to "D", "D" no longer has the "may" qualifier. It says: "When the statistical statement is derived from an automated system for making classifications, a forensic science practitioner *should* present not only the classification." Once again, they're in that position where if they're on the stand, they don't have the option to do this. So if asked that type of thing, that might be—

(inaudible)

Well, "D" is no longer really part of No. 5.

MATTHEW REDLE: And that's 5C?

PHIL PULASKI: No, "D", David.

MATTHEW REDLE: (inaudible)

PHIL PULASKI: Yes, in other words, the language that we agreed to; but "D" needs to become, I think, separate so it's no longer modified by the word "may." I don't know if that's a solution, but it certainly mitigates one of the problems.

CECILIA CROUSE: All the comments that I've presented earlier, your Committee has addressed with regard to this one.

I'll be honest; I'm struggling with this for a lot of the reasons that have already been stated before. I originally had asked for definitions of "relevant experiments" and "relevant populations" and "relevant databases" and "relevant…." I think the information that I received back was that it was going to depend on the individual discipline; it was going to depend on what the OSACs do; it's going to depend on….

In that regard, it left it reasonably open, depending on the discipline. The words "should present" I also had a comment about the word "present" throughout this document; and I'm specifically talking about "D" here. I didn't know if that's the same as "report" or "describe" or "provide."

MATTHEW REDLE: Would we take care of that issue if any time it said "should present" we added "if asked"?

CECILIA CROUSE: I' not sure, Matt; I'd have to go back and read it. You've been really good, actually, about changing the other ones that I felt were important.

MATTHEW REDLE: We could certainly do that because we recognize that when the witness is on the stand, the witness is limited to the questions that they're asked by either counsel; and you don't get to just make ad hoc statements.

JED RAKOFF: Well, did you also want to change "present" to "describe"?

CECILIA CROUSE: I think you more frequently want to be asked to describe something than to present it.

JED RAKOFF: Yeah, so describe, okay.

MATTHEW REDLE: Other comments?

Okay, No. 6.

TED HUNT: Matt, I had one question about No. 6. I assume, in light of the last discussion on the previous document, it looks to me like the last sentence in No. 6 you might want to think about removing that. We're talking about testimony and reports again, and expressing a directive or a view of expressing empirical data, both in testimony reports.

MATTHEW REDLE: You're proposing—

TED HUNT: For consistency, I think it should be removed since we did remove--

MATTHEW REDLE: Would it be more consistent to say that "in the absence of (inaudible), empirical evidence should be abolished both in testimony and written reports (inaudible)."

TED HUNT: Well, I guess that assumes that there's no empirical data; and I think there is empirical data in a lot of these.

MATTHEW REDLE: So in those instances where there is empirical data, you would describe the empirical data. Make it an affirmative statement as opposed to a negative statement.

TED HUNT: Yeah, I just want to have a directive that this be automatically addressed, absent some kind of inquiry.

MATTHEW REDLE: Okay, any other comments?

[Pause for revising document]

We've eliminated "the absence," and we're making it an affirmative statement as opposed to the negative statement.

Gerry, you had something that – I'm going to cut everything off then and ask that we take a vote on this. Doing that though, one way that we could proceed to deal with the overview, since the overview simply provides context and it's the statements that we've just gone through that provide the views, what we could do is if people have proposals for changes to language in that area, they could perhaps send that to us; and we could incorporate those in, perhaps, through the SPO.

NELSON SANTOS: Another option is the wrap-up also. We've got 45 minutes; we might use that time for that too.

MATTHEW REDLE: Okay, perfect.

Gerry?

GERALD LaPORTE: Matt, I just have one kind of a major overarching comment. First of all, I think this document conflates way too many issues. First of all, why aren't any of these requirements for DNA testimony either? I mean, there seems to be a lot of undertone about impression, pattern and trace evidence; but we have all these recommendations about what someone should testify to and so forth. But why is DNA kind of pulled out of this? Shouldn't they sort of adhere to those same recommendations?

The other thing is there are a lot of terms in here that just aren't defined. What are impression pattern and trace evidence? I mean, we haven't even defined what those disciplines are – or those methods. We use terms like "statistical database." What is a statistical database? A database is a database, and then you do studies with that database and then gain statistics from it; so I don't know what a "statistical database" is.

We have issues here – we're conflating issues with the *need* for databases and then the need for statistical statements, but we need databases *first*, before we can do research, to make statistical statements. This whole document, though, conflates a lot of very important issues.

The other thing is if this document is about making a statement or not making statements about source attribution with 100% certainty, then maybe that should just be the recommendation clearly and simply, make a very short statement that that shouldn't be. Forensic examiners, DNA people – everybody shouldn't be making statements of absolute certainty.

So those were my overall arching comments about the entire document.

PETER NEUFELD: Just to respond briefly -- also an overarching comment, Gerry – number one, DNA is not out of this document; it's totally subject to the document. It's a form of trace evidence; no question about that. It's there and was always meant to be there. That's number one.

Number two, it doesn't require databases, as I mentioned before; the kind of data that they have from black box studies would allow somebody to testify and explain the levels of uncertainty, as we saw from the black box study.

Number three, as the overarching point, I think what you really have to consider here is at 30,000 feet, this statement is basically saying that the forensic science community wants to move forward; and instead of, as we have in the past in certain disciplines, relied almost exclusively on experiential data, we realize, as Suzanne pointed out in her remarks, that frankly all this evidence is fundamentally at its core probabilistic, and that we would like to see the community's culture and the community as a whole move in the direction of being able to express uncertainty and express those kinds of probabilistic conclusions. That's all it's doing.

We all agree that there are some things that could be better written. There are some things that we would like to be stronger, that you might like to be weaker; but it's a Views Document. The fundamental view of this document, when you take away all the commas and periods, is that we'd like the community to move toward this new era, where probabilities will be able to be expressed; where statistics will be able to be used; and it's not going to be the way it was 50 years ago. That's it, plain and simple, thank you.

NELSON SANTOS: We can do one of two things. We can defer the vote till the afternoon as well, if there's some more discussion; or we'll take a vote, and it is what it is. It's up to you.

MATTHEW REDLE: I would move the document.

NELSON SANTOS: It's been moved and seconded; so, John, it's over to you.

JOHN BUTLER: Okay, it's open for vote now. Looking for 28; I think that's correct. 60%, "Yes"; 4%, "No"; 4% "Abstain" so it does not pass, doesn't reach two-thirds.

NELSON SANTOS: Okay, let's break. Lunch will be distributed. Please try to be in your seats at around noon so that we can start with our working lunch presenter.

One additional comment too – the letter that was referenced this morning is now up and on the Public Comment website. So if you go to the Commission webpage and you click on the "General Information" link, you can see direct access to the Public Comment portal on www.regulations.gov.

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Part II

JOHN BUTLER: Invited Elham Tabassi, who is from the Information Technology Laboratory of NIST, to give a presentation about her work that she's been doing. Her background is in fingerprint analysis as you'll learn. She's done a lot of work with other biometrics and is part of a group that the ISO, International Standards Organization, is working on a document that will relate to statistical analysis of biometrics and also can be applied to forensic evaluation. So Elham is going to kind of review what's being done in this area right now and how it relates to method validation and validation of these tools to help biometrics and forensics.

Go ahead, Elham.

ELHAM TABASSI: Thank you, John.

So some of you may remember me from Commission Meeting 11 when we came to NIST and I gave a presentation on our evaluations and work we did on forensic. I am grateful for the opportunity to come here and talk about our involvement with the newly-established ISO standard on – the title is a mouthful – methodology and tools for the validation of biometric methods for forensic evaluation.

This is the outline of my talk. I have one slide say a little bit about forensic and biometrics, how they relate and how they differ. I'm coming from biometrics.

Then I start talking about standards, which is our first and middle name at NIST, and I get to talk about the why, how, and what are involvement and technical approach for standard development.

Then I start talking about this particular standard. I have to give you the wording of the method validation as many other terms in forensics means different to different people, so I tell you what we are doing at ISO.

And then I try to give you an overview of the development stage of documents in ISO and timeline with the hope and intent that you get involved and participate in this.

So biometrics versus forensics. As I told you, I am coming from biometrics. I have been doing biometric research since 1999. I get into biometric evaluations in 2001, biometric standardization in 2004, and in the past four years, actually the (inaudible) report brought me to forensic area.

They are similar because they both relate to recognizing human from biological or behavioral characteristics. You have to trace this and you have to answer the question, are they coming from the same source or not.

How they differ is basically they – the part in the middle. There are many different publications and people have talked about the relation and differences between biometric and forensic. I'm quoting from a paper by Anil Jain and Arun Ross. The main difference, to my opinion, is the quality, clarity, or signal

(inaudible) ratio of biometric sample versus forensic sample. And that's because in biometrics, the sample is acquired as a result of direct interaction of a person with a sensor device. I put my finger on a fingerprint scanner. As opposed to forensic, which is a collection of evidence, of traces, impressions left inadvertently, and being collected from the crime scene. The collection is usually manual, again as opposed to biometric that's automated, and that manual and human intervention, as we listened this morning, is an aspect of forensic sciences and forensic processes.

In biometrics, more or less everything is fully automated, and we kind of like it about that.

And then because you have a lot of manual human involvement in the forensic, the outcome of forensic investigation or determinations also are often communicated verbally as opposed to biometrics that either the whole decision or decision coming out of the algorithm is more (inaudible) oriented because you get comparison scores.

So in my talk I'm going to go between biometric and forensic. I will tell you a little bit of where I'm coming from and what we have done. To help you follow, if I'm talking about biometric or forensic, those icons on the top, biometric is that nice, clear smiley face fingerprint. The signal is clear and is happy domain for us working with computers. And forensic is that messy, monstrous-looking – that's supposed to be a latent. If I'm talking about biometric, I put the cross on forensic. If I'm talking about biometric I push it back to biometric. And if there is no cross it can be applied to both of them.

So let's talk standards. As I said, standards is our bread and butter at NIST. It's like in our, as I said, first and middle name. Standards are vital for technologies to become ubiquitous. This is not me saying it, this is Economist saying it. And what are standards? They are often specifications for interoperable and uniformly interpretable specifications for exchange of data, for performance testing. And the key emphasis is in uniformly interpretable. Two people can read it and get the same thing, and interpret it, and if its standard is developed correctly and clearly, they come up to the same thing.

What it does is give it a common basis. It makes people talk about the same thing in the same language and prevents talking past each other, which is my experience working in the forensic world.

It prevents vendor lock-in or protocol lock-in. It allows for marketplace of off-the-shelf product and allows for modular design and technology refresh. Being part of the Department of Commerce we are sensitive to that.

Standards for uniform testing and reporting and method validation also facilitate and promote repeatable and reproducible research because if we are all measuring the same thing, now we can talk about the same stuff.

And it also allows for performance improvement by preventing garbage in-garbage out. And that is, you know, you say standard, people roll their eyes. They say that it's boring, it's about syntax, it's about (inaudible), about (inaudible), it's not. Well, it's all about that. But it's more. It's a lot about technical stuff, too. You can get quality design into the standards so that compliance with the standard ensures some level of not only uniformity, but performance, too.

So let me talk about that in the context of one of the work we did. Last time I talked about fingerprint. This time I talk about our effort in iris standardization. I'm talking about this just to show you and illustrate to you our approach and how do that and how we'd like to repeat this for (inaudible) standard that's just being started in ISO for forensic method validation.

So back in 2000, iris came up as a viable – was introduced as a viable – biometrics. By 2005, the first international image (inaudible) format in iris was developed in ISO. In 2009 we were already revising the

standard, improving the technical integrity and (inaudible). And one thing became apparent. That while the community had consensus that if you get a good-quality iris, recognition error is pretty low, there wasn't a consensus of what constitutes a good image quality.

Algorithm developed for (inaudible) iris manufacturer, camera manufacturer, saying that the camera doesn't produce good images, the manufacturer blamed the developers that your algorithm doesn't know how to deal with this. The bottom line was that the failure to (inaudible) or failure to process was really high. It was something about in the thirty-something percent. So there was a lot of interest in studying a standard to define what is iris quality and how to measure this thing.

So we got lucky and NDHS was interested in that they supported us and gave us funding. And what we did, we started an evaluation-based program to answer this question, along working with community, and give quantity support the development of the standard. You might ask why evaluation, why you want to do all that work? The answer is to get the discussions founded in data so that you are not going in all different directions.

So what we did is we get the community together. The first thing we did, we came up with a long master list of anything that anybody thought had something to do with recognition performance, any image property that could constitute image quality. We gave many rounds of public comment working with the community. We came up with a list that everybody agreed that a subset of that should be altogether constitute iris image quality.

We asked community to implement that and give it to us. We ran broad-scale evaluations and we relate each of those image properties to the error rates getting out of the algorithm.

It was a lot of work. It was, you know, our joke was that our place was full of eyeballs for quite a year-and-a-half. And out of that came – and what it did, it enabled scientific progress in iris image quality. Remember we started by not even having a consensus of what is image quality, and we ended up with a standard that defined iris quality. And the standard had got all the empirical validation that it needs through the evaluations. That standard was published in 2015. We started it, I believe, in 2005, so it is quite common that standard takes three to five years in ISO development. And that standard right now is part of U.S. Government procurement. So anybody that wants to go and buy iris camera, they had to show that they are compliant their requirement in the standard.

By engaging the community from early on, not only we got the buy in from the community, but by the end of the development of the standard, the vendors had already semi-standard compliant product.

What is inside the standard establishes methods to quantify, you know, (inaudible) it says how to measure it, and it also says what is the acceptable range. An example of that, for some of the image properties, like anything else, you know you have some areas that consensus is easy, some areas that consensus is moderate to difficult, and some areas that you cannot get consensus. Example here is usable iris area. Everybody – I should have said at the beginning, iris is the colored part of our eyes.

So everybody agreed that for making iris recognition work, you have to have enough of iris visible, right? You're not doing iris recognition with closed eyes (inaudible) facial recognition with your face covered with a paper bag.

There was also consensus on how to measure the usable iris area, but there wasn't any consensus on what the threshold should be. Camera manufacturer wanted 50% of iris visible. Algorithm developer wanted something like 80-85%. And our empirical work showed that the threshold is 70%.

Example of area that we had a medium consensus is the contrast between sclera and iris. And what everybody agreed that this has a role, an effect on recognition performance, and there was semi-consensus on how to measure that. There wasn't any consensus what the threshold should be.

So what standard did, among the wish that, you know the wish list, that we started at the beginning, find out which one of them there was consensus to for definition, for computation methods so the (inaudible) what to measure, computation method, how to measure, units of measurement, what the threshold should be, and units of measure, and they become requirements. The "shall" statement in the standard.

Of course there were some statements that we couldn't get consensus, either because we didn't know how to compute it or the community cannot agree on a quantifiable, verifying, reliable, interoperable either metrics or value arranged. Example of that is looking directly to the camera. So they become recommended, not required but recommended. And standard, when it gets revised, maybe that gets tightened up.

So what we did in the process, and I just explained it to you for iris. In September I told you for the fingerprint, and this is basically our blueprint for doing standardization, it's a cycle. It can start anywhere, but, for the example that I told you, it starts with identifying a gap. There was a gap in what constitutes iris image quality, right? Then we develop a research or large-scale evaluation to bring the community together to provide quantitative data to give empirical backing, at the same time granting the discussions all in the data so we can't move forward.

We do that evaluation or research, and then we get the technical contribution, go to the standard meeting, advocate for that. All along keep the community informed. And out of this comes standard.

We hope to apply all this lesson and this approach during the development of this new standard. This is Part 8 of a already multi-part standard. The standard is Biometric Performance Testing and Reporting. The values part of that talk about performance metric for biometric recognition algorithms. False match, false non-match, specificity and sensitivity that we heard this morning.

The standard took about a year-and-a-half socialization before the new work item was passed. The multiple presentations. There was a lot of pushback because the first presentation that they came, it came from NFI. You probably know Didier (sp), Muller (sp), and Daniel Ramos. They had a publication, at that time it wasn't yet published, that talks about (inaudible) ratio methods for forensic evaluations, and they insisted on standardizing that content. And that got a little bit of pushback because we didn't just want to go with one particular method.

At any rate, the new work item was submitted. About a year ago in January the result of the ballot was discussed, and it was passed as a new Part 2, 19795. But U.S. position was that we'd like to see it as a separate project, more focused on the forensic approaches rather than being part of the biometric.

There was discussion about is it within the scope of (inaudible), that's biometric, or should it go to the different subcommittee. Out of the meeting of ISO subcommittee biometrics in January, it is established as a new part of biometric performance testing and reporting, but at the same time, the resolution asked for establishment of a new project for this. The reason for that is we see that it can be a multipart, and there was some consensus in the room that a good portion of this should be technical report rather than (inaudible) requirement.

On the right, you cannot see it, but I have the Table of Contents on the division of this. Basically what it does, I just had the discussion before lunch, you thing about methods of validation and you say that, oh, it's going to go and tell me how to validate my product, or tools, or, you know, how I do the determination.

It's actually – the way it's being structured right now, everything is on table right now thinking about the iris quality, that we start by having everything on table. It talks about approaches for forensic evaluations, but it includes both strength of evidence and strength of hypothesis. This morning there was talk about, well, you know, the penultimate document that they were talking about, I hear that you were discarding the strength of hypothesis, rightly so I think. But the standard already have a clause. The clause is empty, but it's waiting for contribution.

Let's go through all the causes and see what the standard is about.

The standard as it is right now is, as I said, empty clauses. So we have a direction that we think it's going to go, a general path forward, but like any standard it's going to be shaped by the contributions and comments it's going to get. It really depends on the people sitting around the table and how they advocate for where they want to go.

Any standard, any ISO standard, has three terms and definitions. And I put here that right now the standard has definitions for empirical probability and subject probability. And you guys know that depends on if you are Bayesian camp or non-Bayesian, one of the two doesn't exist. So it's going to be interesting discussions in the room trying to define both of them when half of the room is going to say that subjective probability has no meaning.

Another interesting thing is that it defines Bayes' Factor separate than Likelihood ratio. It's advancing Likelihood ratio just purely as the ratio of the two probabilities of the probability event under two hypotheses where the hypotheses are mutually exhaustive and exclusive, emphasis on mutual exhaustiveness of that.

Bayes' Factor wants to get that ratio multiplied by the prior to go to the posterior. And at this point the standard is separating the two.

It's worth to mention that the editorial team of that, we have people that are purely Bayesian, we have people that are purely non-Bayesian, and there are people like me who don't know what Bayesian or non-Bayesian is, where should I be. So it's going to be interesting discussions.

The conformance clauses and other standards clause in every standard.

Then we have Clause 5, which we think that is going to develop as an informative, maybe separate as a technical report, that's going to talk about approaches for forensic evaluations. And we're going to talk about strength of evidence that basically says that the evidence shows more support for hypotheses of HD versus HP. And then strength of hypothesis that, I believe, that the data or the evidence shows association for or support for same-source conclusions.

There are some texts in the section for strength of evidence. There is no text for the strength of hypothesis, but there are people coming from biometrics who are pushing for what in the field is being called as score-based likelihood ratio instead of being the ratio of the probabilities being the ratio of the cumulative distribution functions that makes them distribution of errors, so we will all see where it goes.

Then on the Methods for Forensic Evaluations, for the strength of evidence, it goes and talk about both Bayesian and non-Bayesian. Under the Bayesian, the part that I put in quotations is all that is in the standard for now. So you think that Bayesian is all there, everybody agreed to, but that's all we get for Bayesian. Posterior equals Likelihood Ratio times priors. I'm sure that's going to develop as it goes forward, but the non-Bayesian section is actually about one-and-a-half or two pages that talks about Fisher's Likelihood Ratio, which is the ratio of the probabilities and other methods.

Then we come to Section 7, Validation of Methods. That's a normative part of the document, and that is the contents in Didier's paper. What is does is basically from the beginning establishes that this section should be agnostic to the approach that you get. So your approach is Bayesian or non-Bayesian, is strength of evidence or strength of hypothesis, these validation methods should be applied. And it goes on to define what to measure, how to measure. Didier's paper talk about validation criteria or basically threshold for accepting that it's validated, but it's not in the standard yet. Instead there is just the graphical representation.

So when it talks about what to measure, it defines whether the – I hear the word figure of (inaudible) this morning. So you want to measure accuracy. You want to measure discriminative power, calibration. And there are secondary characteristics, that robustness, generalization, and monotonicity. I think your people call it coherence. The people at the room said coherence and statistical analysis has a particular meaning.

The problem with (inaudible) is that as the (inaudible) information content evidence gets larger, you want to see a larger likelihood ratio. But because the way implementation of the (inaudible) method works, it's not always like that. Sometimes you clearly have evidence with more information in it, but the value of likelihood ratio is smaller. So that's that secondary metric there.

For each of the performance characteristics or what to measure, there should be a metric that explains how to measure that. That's the purpose of the middle section of this slide. And then graphical representations. Advancing the (inaudible) and so many other (inaudible) that has been used in detection estimation, sometimes computer vision and medical disciplines for a long time, and (inaudible) them in a more formal standardized format.

So what is the timeline where we are? I stole that slide from the presentation that Gordon, Warren, and Karen gave to you in meeting number five. The slides show the progression of an ISO standard. It starts with new work item proposal, goes to working draft, then committee draft, then draft international, then final draft, and then publication. Each of the cycle, it can cycle through, it can iterate through. You can have Working Draft 1, 2, 3. Committee Draft 1, 2, 3.

At the end of each – at each of the meetings for each of the stages, there is a comment period. The comment period for the base draft of the standard is up to May 27. Anybody can – when it is in working draft, I was just checking (inaudible), you can go, you look at it, you can comment on the document. The comments all get reviewed and discussed at the next meeting. Each meeting is six months away. So you can see that going through that, even if it only stays one or two times in each of the cycles, it will give you a good three-to-five years.

I should have said that, as you can see, 19795, the standard has not even yet made it to the Working Draft stage yet. The next meeting of ISO is going to be in beginning of July.

So how to send your comment, how to get involved. This is the subcommittees for ISO/IEC. And you have heard ISO/IEC JTC1. JTC1 is the Joint Technical Committee of ISO and IEC under each of them. Under the JTC1 is different subcommittees dealing with different scope and program of work. Thirty-seven is for biometrics, but we also work with 27 and 17 that deal with the security and communications. All these subcommittees, they are on the boundary of each other. They harmonize their work. First at the time of the new work item proposal, you know they have to make a clear case that why it has to be within the scope of this subcommittee and if there is any standardization in any other subcommittees. And then later on through liaison relationship, they can get documents from each other and look at it and comment on it.

There is also the Technical Committee 272, which was established probably two years ago, I think. I have two slides on that and they can tell you. But the first one (inaudible) in the sense that it is more on the process on product whereas 37 is more on the data on performance testing and interfaces, stuff like that.

One thing that 272 did, and again as part of (inaudible) this document we're going to do is development of the vocabulary, which is tedious but very important. 272 has borrowed the first draft of the vocabulary from OSAC, but they may go and take it and do whatever they want to do with it so the result may or not be similar to what is in OSAC.

So participation in these subcommittees is through your national bodies. Each country has its own technical advisory tag, technical advisory group tag. NC is for US, BSI for UK, (inaudible) for Germany, so on, so forth. For you guys, if you have – SC37 10795 is at SC37, but it's (inaudible) liaison 272.

If you want to participate, if you have good ideas or empirical data or questions and you want to be part of this, I was just checking with Fran. I believe that up to Working Draft you can – up to Committee Draft you can submit comments as expert through your national body, but I'm not sure if you have to be part of NC or not, but I'll talk about this later.

So Issues and Challenges. So this is my pitch to you guys that why it's a fun thing to come, ignore all those non-smiley faces. You know, at the end of the five years you will have a smile on your face.

Standardization process doesn't always go as planned or intended. You start by something in your mind, and you almost always don't get what you want. And it always takes longer than what you want. But it's a consensus-building process. It means that majority wins, but majority may or may not be correct all time. That's why it's important to participate. That's why it's important to keep the discussions data driven and grounded in data so we can get standard that's as clear, as implementable, as tightly-defined as possible.

Doing empirical work and giving quantitative support to standard obviously needs data, and you want data that is right for the study that you want to do. And that is always another challenge to come. That's again why you should be involved because each of us has a little bit data but all of us together don't have a lot of data to answer all of the questions.

So I talk about a lot of these things, so, again, standards, don't roll your eyes. It's all about commas, it's all about syntax, but it's not just about them. There is a lot of good, interesting technical discussions going on. I suspect that we're going to have a lot of fun and frustration discussing the definition of probability and empirical probability versus subjective probability, Bayesian versus non-Bayesian. And while it seems quite easy to – oh, accuracy is easy, you get specificity and sensitivity. But unless you know what is the method that you are going to use, you are not going to be able to write a metric for evaluating that. So there's going to be a lot of – you know, many of the discussions that I hear this morning and discussions that we had at our May workshop last year is going to be repeated there.

To ensure interoperability, requirements shall be stated in a clear, implementable, sufficient, and testable manner. And that's were, again, all the quantitative backing of the data comes. That's why you need empirical validations. You want to make sure that two persons can get the standard, and read it, understand the same thing, and when they implement it, they come to the same result.

It has to be sufficient that the guidance in the standard can take you to the implementation that you want. And I talk about majority is not always right, and that's, again, why it is important to have many different point of view participated and come to the meeting.

So you can be part of that. You can bring all the good discussions you have here, all the studies and research you are doing in your agencies, in your laboratories to the standard development process. How to do that, so part of it is – I think I have another slide on that, or maybe I have to go back.

So part of that is by commenting on the drafts. As I said, again, the standard right now is a lot of clause with titles, heading, and no content inside each of them. And when the standard gets developed, again it takes a lot of commenting and reviewing because it's the committee that takes the document where it needs to go.

It's still at the very early stage. There's a lot of opportunity to comment. The base draft is out to comment until May 27th. For you to comment on that, I believe you can go to the ISO. I didn't put the link here because I couldn't disable the password on my laptop for that.

But I checked that, and I put it in the presentation that I put in the folder of this meeting. I believe you can go get it and then send a contribution.

You can just review and comment on that, but even better you can contribute technical content that supports it by data and show where the empirical backing and quantity backing is coming from.

And the best is be a member of the INCITS M1, which is the technical advisory group for the ISO. Then you can come and advocate for your organization and your organization and your research.

That's my presentation.

JOHN BUTLER: Thank you, Elham. Are there one or two questions before we move to our next group? Yeah, there are some questions. Yes, Greg.

GREGORY CHAMPAGNE: A lot of law enforcement agencies, and particularly those that run jails, are beginning to collect iris scans and have been for a few years, and I'm one of those. The technology was fairly cheap, and we use it – most correctional institutes that use it, it's part of the booking process. You take the fingerprints, take a mug shot, put their face in the camera, we've got the iris scan. So I've got all these iris scans and we've been collecting them, and I'm just wondering, you know, no criminal leaves an iris scan at the scene of a crime, and so I'm just wondering if it's good to be analyzing it. I'm still trying to figure out if it's not a science in search of a practical use. We use it to make sure we don't release the wrong inmate. Okay, we took your iris scan a few days ago, you're bailing out, and so we can be sure you're the same person that we booked. So are there any other practical forensic uses in criminal trials that you've heard of?

ELHAM TABASSI: No, actually that was – that was exactly that. So (inaudible) started trying to get into forensic iris. And they were talking about – it's this iris expert working group – and they were talking about it, it was something about seven months ago, and I asked the same question, that what's the forensic – because people don't go around leaving their irises in the crime scene. They are – for identifying people after death from the irises, so apparently they are doing some studies about how long irises stay viable because fingerprint post mortem has more problem, I'm told, than iris. But, right, you know, iris is part of (inaudible) of NGI, and then the question was, well, we don't have a database so what are we going to do if iris is this good, and the first application that come to their mind was for booking, and right, controlling the people going inside and outside of the (inaudible).

GREGORY CHAMPAGNE: Do you know how many vendors are collecting iris scans, or what's the volume of them being collected?

ELHAM TABASSI: Vendors?

GREGORY CHAMPAGNE: Vendors. Companies. How many. I mean, I know of one company. It's called B2 Technologies.

ELHAM TABASSI: So what is the – actually the number of iris companies is growing.

GREGORY CHAMPAGNE: Right.

ELHAM TABASSI: So when we did the first test back in 2005, we have five or seven participants. When I did this test in 2009, I had I think 12, 13 participants. Right now we are doing a evaluation of iris, and we have a lot more, I want to say close to 20 participants. The other thing that we allow, we allow each vendor to participate more than (inaudible) algorithm. But the point is back in 2005, there were only big names, like (Inaudible). Right now you see a lot of smaller companies coming.

The utility patent that was expired in 200 – I don't know – 2, by Professor (Inaudible) that allowed a flourishing of the iris market.

GREGORY CHAMPAGNE: Thank you.

JOHN BUTLER: Any other questions? Well thank you, Elham, (inaudible) for speaking.

Okay, Nelson.

NELSON SANTOS: Okay, so we're going to move into the (inaudible) panel, and I'll turn it over to Peter who is going to open with some comments and then he'll moderate the session. So Peter?

PETER NEUFELD: Okay. So, can I get a minute to assemble? All right.

So for the afternoon's panel I've been asked to moderate. You're going to be hearing first from Keith Harward, who is a DNA exonoree. We will be joined by video by David Angel from the District Attorney's Office in Santa Clara who runs a conviction integrity unit. We will have two speakers from the National Institute of Justice – of the Department of Justice, Ms. Sarathy-Jones (sp), and our own fellow Commissioner Gerry LaPorte. Gregory Dutton, who's up there, is there to help with questions if need be later on. And finally we will end with the Executive Director of the Innocence Project, Maddy deLone.

I've been asked to just give a few minutes of background for Mr. Harward's presentation on the lawyering and legal context for Mr. Harward's story, which I'll do in a few minutes.

His story begins on September 14, 1982 in Newport News, Virginia. On that night a couple lived in a house with their three tiny children a couple of blocks from the U.S. Naval base. In the middle of the night, a single white male intruder entered the house. The wife was awakened, hearing her husband call out while he was being struck repeatedly with a crowbar and killed by this intruder. After the intruder had killed the husband, he proceeded to rape the wife. He raped her several times, and during the course of that rape he also bit her on her leg repeatedly.

When the perpetrator left, she immediately called the police. She was taken to the hospital where a rape kit was prepared. She gave a full description, as best she could, which namely was a white male in a U.S. Navy sailor's uniform, clean shaven. And she said that the perpetrator had not only raped her, but after he raped her he cleaned himself off on a baby's diaper in their house and a blue towel in their house.

The attention of the detectives in Newport News focused on the USS Vinson, a huge aircraft carrier that had just come into dock a couple of days before for repairs, so there were a couple of thousand people on leave in the Newport News area.

A naval dentist, helped by a local forensic dentist, compared the photographs of the bite marks taken from the woman's leg to literally hundreds of sailors on that ship, and the two dentists were able to exclude those hundreds of sailors including Mr. Harward as having a positive association to the impressions recorded and the photographs taken by the police.

Approximately six months later, Mr. Harward was involved in an argument with his girlfriend that ascended into a physical matter, and he was charged initially with assaulting her as a misdemeanor, and she had claimed that during the course of the assault that he bit her. The charges were ultimately dismissed, but meanwhile the detective had Keith Harward brought to the courtroom for an arraignment just so he could bring the wife who had been the victim six months earlier of the rape and murder to see if she could identify Mr. Harward as the perp. She came to the court, looked at the show up, and said, no, I can't identify him.

Nevertheless, despite the non-identification, the detective took new dental molds of Mr. Harward and sent them off to one of the leading forensic dentists in America, Dr. Levine, who was one of the founders of the American Board of Forensic Odontology located in New York and working for the state police there. And Lowell Levine said that it was a match to Mr. Harward. Later on, of course, he would testify that it couldn't have come from anyone else but Mr. Harward.

The police secured a second forensic dentist's opinion locally. This raises the whole cognitive bias issue that this Commission has taken up. He agreed with Dr. Levine.

They went back to the two dentists who had said initially there was no match, namely the Naval dentist and local forensic dentist. They were told of Dr. Levine's conclusions. They then recanted their initial non-matches and said that they were now convinced that indeed it was a perfect match to Mr. Harward. The defense tried to get their own experts, other board certified forensic dentists, but they all agreed with Dr. Levine.

This was a capital case, he faced execution, he was convicted, he'll explain why he wasn't executed. The case went up on appeal. There was a minor technical error. It went back for a new trial. The two forensic dentists gave the same exact testimony they had given in the first trial that there was no probability that it came from anybody else or that there was a very, very, very, very small chance that anybody but Mr. Harward could have produced those bite marks. He was convicted, got life. Spent a total of 34 years in prison.

And he eventually wrote to the Innocence Project. We took his case. We got cooperation from the Commonwealth's attorney in Virginia to seek DNA testing, not only on the rape kit but also on that diaper and that blue towel that the victim said were handled by the perpetrator when he was cleaning up.

All the evidence without exception came back to a single male semen donor which excluded Keith Harward. It was run through CODIS. CODIS got a hit to another man. That man was also a sailor on the USS Vinson in 1982. People tried to find him, and he had been sentenced to prison quite recently in Ohio for the abduction of another woman, but he had died in prison.

The lawyers for Keith went to the Virginia Supreme Court (inaudible) what's called a Certificate of Actual Innocence. That certificate was not opposed by the prosecutors but indeed joined in, and it was granted. And after 34 years in prison, Mr. Harward, about a year and two days ago, walked out completely exonerated.

The two final points I just want to make from a legal perspective is that each scientific review that has occurred of forensic bite marks over the last several years, all of it have found it wanting. None of it have found it valid. And in fact the most recent review by Peak has said that given the data it was not only not

valid, but the likelihood that it would ever be demonstrably valid is so small that it wasn't worth the resources.

Despite the fact that every scientific review reached that conclusion, this type of evidence has been admitted in just about every state of the Union. It's never been kept out of any state. It's never been found to be invalid despite all the scientific findings. So that shows you the incongruity between what the scientists say and what the courts say.

And finally, because it's about this Commission, this Commission passed a document recommending the adoption of a code of personal responsibility which said that when errors are discovered that there be a notification to the affected parties. And in this case, despite the fact that it's now been 12 months since Mr. Harward has been proven absolutely innocent, none of the responsible forensic dentists have acknowledged any error at all, and no single individual who has been convicted on the basis of their testimony has been formally notified. And the reason there has been no formal notification, contrary to the wishes of this Commission, is that the only way those people can even be identified is with the cooperation of the forensic dental community. And so far none of the dentists who committed error in Mr. Harward's case or the other dentists are willing to provide lists of their clients so that those people who are in prison, or may have been executed, can have their families notified.

Mr. Harward.

KEITH HARWARD: (Inaudible) am the first exonoree to be at this Commission, and apparently the last. And I'm sorry to hear that because what I've witnessed so far, this is some good stuff, way beyond my intelligence level but you all seem to know what you all talk about in contrast to the two odontologists who testified against me.

A year and two days ago I stepped out of Nottoway prison in Burkeville, Virginia being unincarcerated and unconvicted. Some would say, well, you're a free man. I will never be free of this. There's no possibility. Excuse me if I get emotional. That I spent more than half my life in prison behind the opinions and the expert egos of two odontologists that at my trial one even made the statement to my lawyer when questioned about this, he says, well, sir, you're just a lay person. That's a mistake that a lay person would make. Just believe what I say.

In a court of law in the United States of America, contrary to popular belief, you are guilty until you are proven innocent. When you're in that courtroom, the jury is going to believe that you're guilty because the police, the prosecutor, and the judge is not going to have an innocent person be tried for a crime he did not commit. But ladies and gentlemen, here I am. All three of those people that were involved knew what they were doing. And they allowed this bite mark evidence to be used because they had no other evidence. None. And what evidence we found out later, thanks to the Innocence Project, my lawyers did not get.

The odontologists, Levine and Kagey, and I won't call them misters or doctors or anything else because those yahoos don't get respect from me because what they're doing, they're ruining peoples' lives. And they're still doing it I found out. There's a death penalty case in Pennsylvania that's going on now, and the judge is going to allow bite mark evidence. How many people have to be wrongly convicted before they realize that this stuff is all bogus, it's all made up?

They were willing, the two odontologists, were willing to have me murdered by the state of Virginia behind what they said, which in all actuality has no basis in truth. They were willing to have me put to death because their egos said, okay, we're experts, and what we say goes. And when you present an expert to a jury of people, or course, whatever they say is true because the judge allows it. The prosecutor presents it. It has to be true. So, of course, human nature, whatever they say is going to be true.

Even before they even start giving evidence, when they start talking about their credits, commendations, I was a past president of this, I was a chairman of that, the jury was done and so was I. And in my case, the shipyard guard, which if you read my story, was not the only person that was hypnotized at my trial. The jury was eating out of their hands just because of the things that these odontologists had been involved with. The people, and the trials, and the cases. Chasing Nazis, Ted Bundy, things like that. And that gave them credit. That gave them credibility. And it's just not right. Why is it still allowed to happen? Why is a death penalty case in Philadelphia, I think it's Philadelphia, or Pennsylvania, the state of Pennsylvania, still – they're going to allow it. Why? Why can't you err on the fact that, okay, well let's find some other evidence to convict this person. Why use bite mark evidence when just this year alone two other people besides myself have gotten out (inaudible) bite mark evidence was used in their trial. I mean, explain to me what does it take to realize this stuff is all crap.

There should be some kind of regulation, there should be some way that experts have to meet a bar. A very high bar. Because you end up ruining people's lives, and in my case, I'm not the only one that was ruined. The witness – I mean the victims, they were victimized all over again. The woman that was raped, a horrible, horrible situation, finds out 34 years later that the person that raped her originally, supposedly me, was on the streets. A woman can never get over a rape, I don't think. I don't this it's possible. They can move on. If you lock the guy up where he's not going to come back, the bogeyman is not going to come back.

Well, those odontologists and those criminals in Newport News, the judge, the prosecutor and detectives, went out of their way to convict the wrong person just because they couldn't find a way to do it any other way. They took shortcuts and railroaded me to fill that conviction. And for her to find out all these years later that a guy was still out there, and in this case he was still doing bad things, and that's true with wrongful convictions. When you use bad science to convict somebody, the perpetrator continues on to commit crimes. So what good are you doing? You're locking up the wrong person. You're allowing the person that did it to go on. And the state of Virginia, the good people in Virginia, they were sold a bill of goods. Or as they say in prison, there was a perpetration of fraud by those people in Newport News and those odontologists.

And the most important victims of this were my parents. The only time I ever saw my father cry was when he was on that stand begging for my life. And nobody should have to go through that, ever. And I was the youngest, I was the baby. And I was spared the death penalty. My parents were not. Every day they had to deal with it. And it killed them. Just because of these odontologists making up stuff and testifying just to stroke their egos and to get a conviction. The prosecutor, the police, and the judge, so they could get a conviction. So they could satisfy their needs. And it's just not right.

And to hear that you're still doing that, why can't you all stop it? Why can't you all find out a way? I mean it's just common sense. Why? Why when there's a possibility of something not being true, or a possibility that something is wrong, why speed forward and go with it just because you can? Why not stop and say, okay, let's pause for a moment and study this. Like you're doing today with the documents trying to get the proper words going. Oh, you could mow right through it, and people aren't going to be satisfied. But you all are going to take to stop and say, okay, we'll just get this right because it's important.

And to allow forensic science to give credit to where there's no credit, none whatsoever, common sense, it shouldn't be allowed. It should be stopped. There should be some kind of regulation or some way, far beyond me to figure it out. You all are the smart ones here, not me. To be able to have something set up to where people have to pass some type of validity test with their testimony.

I just saw something on the TV the other night that shocked me. I mean it just stopped me in my tracks. There is a guy that is testifying to the headlights on an automobile at night to identify the perpetrator's vehicle, and he's standing up saying, yeah, well, see the light pattern, if you look at this it goes that way and we measured and – come on. I mean, really? Use DNA. That's what got me out. And if it hadn't been for that I wouldn't be here today. I'd still have my butt sitting in prison waiting for these great people to try to get me out. But the DNA, it's, you know, it's, you know, here you go, here's the proof. And six odontologists altogether agreed, and you're wondering maybe how is that possible? Well, the reason why is it's an old boys' school. It's a club. And they all rely on each other to back each other up. If one odontologist stepped out and said, well, I'm not sure, that's career suicide. He would be done. And, you know, that would be it. And the old dog, the people that are still involved, they're still in charge. They're not willing to fess up to the fact that they made mistakes. They're not men enough to say, okay, I was wrong. Now how can I correct this? Because there's people still in prison, behind (inaudible) evidence. Regardless of any other evidence that's involved. But that stuff is so powerful that it would taint anything else that comes on. My case that's all there was. But if there was other evidence, it could be – so give those people an opportunity, again, to have a trial and take that evidence of bite marks out and use what's truly there. Get a right conviction, you know. People need to be punished for what they did. I didn't. And I spent more than half my life. I went in when I was 26. I got out a year and two days ago and I was 60. I still have six more years before I break even behind what somebody said was true and was not true and the courts allowed it.

What do judges do – what are they supposed to do? Mr. Judge – I don't see him. He was sitting down there. Aren't they supposed to stop this type thing or do something to study it a little farther instead of letting it go?

But it's just not right. And I'm sorry to hear that this Commission is coming to a halt because it sounds like you all would be on my side and moreover people that are on the inside's side. And they are the ones that need the help. I'm out now, and I'm doing everything I can to help. But I'm just one person. And I appreciate you all for what you all have done in the past. So.

DAVID ANGEL: Hello? Can you hear me? This is David Angel.

UNIDENTIFIED FEMALE SPEAKER: Yeah, we can hear you.

DAVID ANGEL: Excellent. I can hear you now. I lost you for a minute.

UNIDENTIFIED FEMALE SPEAKER: David, I think when we're not speaking it's very – you don't hear anything, the mic has to be on. So Peter, do a little momentary introduction and then David will start?

PETER NEUFELD: Okay.

DAVID ANGEL: I'm sorry, do you want me to start now because, again, I can't –

PETER NEUFELD: Yes, please.

UNIDENTIFIED FEMALE SPEAKER: Yes, David, please start.

DAVID ANGEL: Here we go. All right, folks. Well, let me see if I can get onto my PowerPoint. Here you go. So unfortunately I cannot hear you, so it's a little unnerving. I'm hoping that you can see my PowerPoint now.

My name is David Angel, an Assistant District Attorney in Santa Clara County. We have run a conviction integrity unit here since about 2004, so we were one of the first in the nation to start one. And what I

thought I'd do is just spend a little bit of time talking about what we do in some of the issues surrounding it. I think from the prior two speakers you can certainly understand why it's so important, you know, to have a conviction integrity unit.

But let me just start off, I think the first question one needs to ask, and this is the first challenge, is what is guilt? What do we mean by guilt? And at some intuitive level I think we all know what we mean by this. We mean, just like our last speaker, someone who actually didn't commit the crime. But if you begin to probe that a little deeper, you realize well do you mean actual innocence, like our last speaker, someone who just didn't do it at all. Or do we mean how do we measure that. So, for example, do we mean actual innocence in that you have DNA evidence that just dispositively proves they could not possibly have committed this crime, or do we mean that the evidence in the case has eroded somehow so that maybe they're – do you mean that they are innocent beyond a reasonable doubt?

The legal standard tends to be new evidence that's been presented that raises a reasonable probability that the jury would have come up with a different verdict. I think that in my experience, and I've personally run, I think, four or five exonerations, and when I'm in the – you know, usually at the end you are going to be with the elected DA trying to make a decision on what to do on this particular case. Usually it's a less formal standard. The DA – you ask yourself, would we have tried this case? Would we have charged this case, even, had we known everything we know now.

I do want to add, though, that there is another standard that sometimes people want to use which is has the integrity of the trial so collapsed that even though you can't really say this person is innocent, you no longer have faith in the outcome of the verdict. And these things are judgment calls. I mean, the easy case is, at least intellectually, is if you have DNA evidence that just proves that this person couldn't possibly have done it but this other person did. But in, I think, four of the five cases that I've worked on, we didn't have any DNA evidence. It was just kind of old-fashioned police work and prosecutorial work, which means at the end of the day you're just weighing a lot of different pieces of evidence and trying to figure out what they mean.

The next question that you have to consider is, well, how are we supposed to detect if someone is innocent. And in thinking about this question, or what I was going to talk about with this particular group, you know, you are forensic scientists. And so the challenge here is we have a system for figuring out whether people are innocent or guilty, and it's called our criminal justice system, our trials. So what do you do when that system fails? And I think that an analogy could be to what a lot of you do. You know, there's certain tests that if you run them, you're going to get a certain number of false negatives and false positives. Sometimes you can just re-run the test, right? You can use some degree of redundancy to reduce that likelihood of error. But there's other times that you're going to get the same bad result each time because of certain systemic blindnesses within the system.

All of those are challenges that face us when we're looking at these cases. So bear in mind, you know, for someone to be arrested, they're not supposed to be arrested unless there's probable cause, and they're not even supposed to be searched or stopped unless there's some sort of reasonable suspicion. And certainly in California, I think every state, there are – if somebody is arrested and they believe there wasn't probable cause, there's actually a court hearing that you have that determines just that question.

Then there's a preliminary hearing or a grand jury where they also are supposed to determine whether probable cause exists to believe that this person probably committed the crime that they've been accused of.

Of course then there's the trial where you have a reasonable doubt standard. And then if people don't think that was right, there is an appeal process, and then there is a habeas process. And then since you're a

federal commission, you should be aware, or you are probably aware, that you then do it all over again, right? So you did it all at the state level, and then you do it all over again federally.

And so one might wonder, you know, how is it that after you've had all those tests for innocence or guilt, how do you have anyone left over? But the fact is now we know that we do. And in many ways, thanks to the work, I think, of the Innocence Project, both in New York and across the country, any of us – I certainly believe and I became a prosecutor over 20 years ago, that the likelihood of an innocent person being convicted was like the chance of someone being struck by lightning. You know, vanishingly small. But, in fact, we now know that it does happen, and it happens with some regularity. And that's why I put CIU, Conviction Integrity Unit, last with a question mark. So what is going to be the role of a conviction integrity unit?

Well I think offices should have them. We've had it for a long time and I think they've done a lot of good. But you have to decide what your role is going to be. I think one role should be looking at new evidence. And an example of that was raised by our last speaker, and I think Peter earlier. One category of new evidence is if you have advances in forensics disciplines. And in this case the advance to some degree is pointing out how evidence that was previously deemed reliable is not viewed as reliable at all anymore. So I think that's one category.

I'm sure you are well aware of one issue that we're looking at in conjunction, or at least in collaboration, with our local Innocence Project is hair microscopy. So here is a forensic discipline in which we now realize that claims that have been made in the past are not really scientifically valid. I'm sure you all know this better than I do, but as I understand it, it's not that you can't look at two hair samples and determine whether they could not have come from the same source, or whether they could have come from the same source, but we used to believe, and we had experts testify, very specific numbers, likelihoods, probabilities, and those are not based on valid science. Which means that there is the possibility that people have been convicted based on jurors hearing evidence, again, not unlike that alluded to by the prior speaker where very specific probabilities were given and they based a guilty plea on that assumption. And we now know that to be false.

So I think you, you know, that's another role of the conviction integrity unit is to look not just at new evidence as to a particular case as it might come up, but also to look at whole categories of evidence, particularly in the forensic field.

I do think there is something to be said for special training, so whoever you have running your conviction integrity unit, it probably should be somebody who, either through training or experience, or ideally both, is aware that the role that, for example, implicit bias can play in our system. Or confirmation bias. Or tunnel vision. Or the risk factors. We now know, because there's been a statistically significant number of known wrongful convictions, and in fact it was the federal Department of Justice that really took the lead over a decade ago in trying to look at what were the common factors in these wrongful convictions. And by looking at those you could see some known risk factors.

So, for example, eyewitness identification. We now know that people can in good faith believe they are identifying the person who assaulted them, but be wrong. That even leaves aside the people who are lying, which, of course, happens, too. But we now know that eyewitness identification cases are ones where you want to pay special attention for a source of error.

Similarly, as I said, a lot of the forensic evidence cases you have new types of evidence that you need to look at. And as I said, other things like implicit bias, or actual bias, so I think the person who is looking at these cases, or the committee looking at these cases, should have some education into those particular risk factors.

The other challenge that I want to point out is if you recall that list I started with where you start with the arrest, which is supposed to be supported by probable cause, going all the way through an appeal and a habeas, look, by definition, everyone who has been convicted is going to look really guilty. Right? I mean it's unlikely that someone is going to be convicted and there was no good reason to think that they were guilty. And this is a fact that just has to be fronted and acknowledged because if you don't front and acknowledge that, what ends up happening, and I've seen this happen with other prosecutors' offices that look at it, is that if you only are going to look at those innocence cases that kind of look like a made-for-TV movie where you can just see from the beginning that this is obviously an innocent man who has been railroaded, you're probably never going to find any. Because for it to have gone through so many stages in the system, there is probably going to be at least a surface appearance, and often a very deep appearance, that the person is actually guilty.

And in fact if you go to the Innocence Project's website, which is an excellent website and has really a lot of extremely moving and heartbreaking case studies of people who have been wrongfully convicted, but one thing they have in common is usually it's multiple errors. In other words the system broke down in multiple ways. My observation is the system is pretty good at correcting itself if a single thing goes wrong. Right. So if the one thing that goes wrong is you have a bad prosecutor. Well, if you have a good defense attorney, and you have solid forensic evidence and good police work, that's probably going to be revealed. What you often find, or I have often found, and I think the data suggests this, is where you end up with wrongful convictions is where you have multiple things go wrong in the course of the trial.

But what that means is when you're starting to look at this after the fact, you have to bear in mind that you are looking for the outlier case, not the typical case. You're looking for the case where despite the person looking guilty, they are still innocent. You really have to approach this with a very open mind and willing to acknowledge that things really might not be how they appear.

And then I do want to point out another challenge is that everyone has, at least a motive to lie. You know, if you're, I don't know, you had a speaker from one of the Innocence Projects before, but I think most of them will tell you they get a lot of people asking for their services and many of them are not, in fact, innocent. In other words, if you are serving a long sentence, you don't have a real disincentive for telling people that you are innocent.

Now, similarly, I don't want to point one set of fingers. I mean witnesses can have motives to lie. Everyone can have motives to lie. So you're dealing with a problem in which everyone kind of looks guilty, there's probably multiple things that went wrong, a lot of people have motives to lie if not everybody, and you still have to somehow figure out the truth about what's going on, often about a case that's very old.

So let me very quickly give you a story of two cases to illustrate this.

The person was actually the very first case that I worked on. And the crime itself was horrible. It was the rape of a young mother. It happened in her home. She was asleep in her room. Her child was asleep next door when there was an intruder late at night. She survived, her child survived but she was sexually assaulted. And she did what she was supposed to do which was to protect herself and her child as best she could, and she was successful at that.

The perpetrator, after raping her, stole some knickknacks from a bedside table. Small objects without a lot of value but they were important to her.

Well, eventually someone is arrested and he is in possession of those small stolen items, and then he is picked out of a lineup as the perpetrator. And he claims his innocence, and we, you know, I get the case, as did the Innocence Project. And you think about it, this was a case in which the defendant, he was

convicted and sentenced to life. But it was a hard case, right? There were a lot of red flags here. First of all it was an eyewitness identification by a victim. So as I told you, that's a – that's an area in which we know historically there can be errors.

It was in a bedroom which just had light from a small bedside table, so the lighting was poor.

There's something known as weapon focus which essentially means, it makes a lot of sense when you think about it, if somebody has a weapon, you tend to focus your attention on that weapon because that's your threat. You don't focus your attention on details that might help you identify the face later because the face is not really relevant to your survival at that moment.

It was also cross-racial. Honestly it's a long time ago so I can't remember the races of the different people, but they weren't of the same race. And we know there's just a higher error rate when people are trying to make identifications across race.

Fortunately in this case, though, it's years later, and we found DNA from the perpetrator, some male semen on bed sheet. And so we were able to test it, and what we found, a decade later, that the guy was both a rapist and a liar. In other words he was making these innocence claims but the DNA proved that it was him.

Now I sometimes kind of give a rhetorical multiple-choice question as to what happened next. Do you think there was a media firestorm on how the DA's office got it right? Or there was an award for the original trial deputy? Or that I got to go on Oprah and talk about this incredible work we did in proving the right guy was guilty? And of course the answer is the last one, nothing. So, you know, that's just what happens when the system works the way it's supposed to happen.

But now, years later, I had another case, and this involved this woman here, Michelle Bullington and another guy named Kenneth Foley. And they were arrested and charged with an armed robbery. The victim in this case, he was sleeping at his office, and he heard a disturbance out back and he saw two people trying to break into his vehicle to steal the radio. And he goes out, he has a handgun, he confronts them with the gun. Then he told us this woman, Michelle Bullington, pulled out a handgun and threatened him. And they basically had a standoff. And he was able to get them to go away. They flee in their vehicle. They – I'm going to put it back there for the picture. He called the police, and then essentially he got a license plate.

They found that vehicle was stopped 24 hours later with the same license plate with a moving violation. They do a photo lineup of the driver of the vehicle with the victim. The victim picks out the driver as the same one who had robbed him. They interviewed that driver, who said he didn't know what they were talking about but he had borrowed the car from this woman here, Michelle Bullington, who was in the car as well. They then do a photo lineup with her. She's also picked out of a lineup. It goes to jury trial, and he is convicted. And she, this woman, Michelle Bullington, she gets, I think, about a five or six-year sentence, and he ends up with a life sentence. The reason it was a life sentence is it was an armed robbery and he was a three striker.

Years go by and we eventually get the case, and I got the case from a local defense attorney who essentially just said, look, you know I've tried a lot of cases, and I've got to tell you this case just sticks in my craw. I just feel like something went wrong and I think you got the wrong people. And we think it's this other person. And he gave the name of another person, a guy named Luke. And he said, and we told everyone about Luke at the time.

And so I go back, and I pull the trial transcript, and they do tell everyone about Luke at the time. In fact, in the very first interview this woman, Michelle Bullington, said hey this other guy – first of all she said

there was no gun, okay. And secondly, you've definitely got the wrong guy. It wasn't Kenneth Foley, it was this other guy, Luke, who was in the car.

Well, you know what? They did a lineup – not a lineup. They did a live show up in the courtroom with this guy Luke along with Kenneth Foley, and the victim picks out Kenneth Foley again and says it wasn't this guy Luke.

Well it turns out we think the victim just got it wrong. Well maybe not just got it wrong. We think that the victim might have just gotten it wrong, but was also, perhaps because of pride or other reasons, was pretending to a certainty he just didn't have.

There were a lot a steps in investigating this case, but the one that sticks in my mind the most is that we ultimately – we thought about it. We looked for security cam footage. We looked for DNA or fingerprints or any forensic evidence that might help us, and we came up with a blank on everything.

So then I thought to myself, well why don't we interview this guy's coworkers and friends and see what he was saying at the time of the trial. Maybe he told them something he didn't tell us. And we found the accountant, the bookkeeper for his business. And so we go to interview her. Remember, this is many years later. And we tell her we're from the DA's office. I have an investigator who is a peace officer. I come there as well. And she says, you know I always thought I would speak with you guys, and then she pulled out this huge file. And we asked her, what's this file, what do you have here? And she said, oh this is a second set of books that I always kept. These are the true books, these are the true files, not the fraudulent accounting that I always filed on behalf of this victim and his business for tax purposes.

So then we ardently told her we weren't investigating any fraud but we were talking about this case. And essentially we got a very different picture, and we essentially had her telling us that at the time of the trial that this victim, who had presented himself as very reluctantly testifying, was, in fact, very excited to be testifying. And thought that he was, you know, this was the most important thing that he had done. He was very proud about it and felt like he was breaking up a major crime operation. And told her all sorts of stories that weren't true about how he got awards, and had been, you know, kind of been made an honorary member of the police.

So we were able to discover that he had told a whole lot of things that weren't true at the time. We eventually interviewed him, and at that interview he admitted that he had been lying about seeing a gun. That he had actually told them that he had a gun because he was worried that we would arrest him or charge him for his possession of a gun if we found out that they didn't have a gun to justify his pulling it.

Well, this is that category of case where the case just collapsed. I mean really what happened is we just didn't believe him anymore. Can I prove that's absolutely true? No, there's no DNA evidence to exonerate these people or to prove they're guilty. But the bottom line is it's a one-witness case and this witness we now believe was lying.

So we wrote our own motion and tried to get these people out right away. Ms. Bullington has really done well. You know, she'd been an addict and really living a lifestyle that was, you know, she was going to end up in prison or dead probably. She has completely turned around and has had jobs with security clearance. Got her college degree.

And Mr. Foley, he was actually in isolation serving a life sentence and then learned he was going to be not just released, but exonerated and released all in one day. So I think that was, you know, obviously very important to him.

So what is the conviction integrity unit? You look at these two sorts of cases. I think essentially it's a risk management – or risk assessment model. I think it's not as helpful to look at these things as right or wrong or purely as moral issues, but to recognize we have a system. And like any other system for asserting the truth, it's subject to error. And part of what we try to do is reduce those numbers, reduce those sources of error.

So, for example, if you have forensic science that you know is questionable, you want to err on the side of not using it. If you have a forensic science that you know your testimony about it can be misleading, you want to try to make sure that you use testimony and train people so that they can testify about it accurately.

And then, of course, you want to do things like have body cameras, record subject statements, do eyewitness identification in a double-blind manner and record it so that you can do the best you can to enhance its accuracy.

And as you can see from that, there's going to be two components. You're going to have a reactive model. That's dealing with crises that come up. For example, we have a crime lab. I think they do a phenomenal job, but you're always going to have problems. And you want to have a conviction integrity unit that can figure out what to do when problems arise. That you're not just reacting in a negative or panicked way.

And similarly, you want to look at cases that come to your attention like Michelle Bullington's case.

You also want a proactive model so that you are designing policies of how you are going to pursue justice in a way that reduces the risk of wrongful conviction. And you want to train to try to implement those policies and to educate your prosecutors and your community and your forensic scientists and others on what risk factors are most likely to lead to a wrongful conviction.

The reactive element I think I just told you about, so I think I'll just go through here. Those are post-conviction assertions of innocence. Actual cases. And your crises will be things like forensic issues that I alluded to earlier, hair microscopy. If you have allegations of prosecutorial misconduct, and so on.

And your proactive element, as I alluded to before. You want to try to record your suspect statements, for example. You want to have a Brady policy, which I don't know how much you've touched on, but that's making sure that the policy and the methodology to make sure that all appropriate evidence, which should really be just about all evidence that we have, is turned over in a timely fashion to the defense.

You want a collateral consequence policy, and that's essentially so that you're making sure that your trials and your truth finding is not being irrationally distorted by consequences that have nothing to do with justice in that case.

We looked at eyewitness identification.

Prosecutorial misconduct.

Training.

So I'm just giving you an example, these are all things we've looked at.

Body cameras.

And then finally I'm just going to touch on what are some of the rough numbers. I believe right now we're up to 349 known DNA exonerations, but this, of course, is going to be a smaller number of the total exonerations. As I pointed out, in my county alone we've had five exonerations, only one of which has been a DNA exoneration.

There's Professor Gross has come up with a study finding more than this using only the official definition of exoneration. And in 2012, he came up with a larger number looking through newspaper articles and so on.

His definition of exoneration was anyone who was eventually relieved of the legal consequences of a conviction based on new evidence. That's essentially it.

Well, you can see from this that this is going to be over-inclusive and under-inclusive. There are going to be people who are actually innocent who aren't captured by this data. And on occasion you're going to meet people who are actually guilty but because there's new evidence that arises, and, you know, you can't retry the case years later, perhaps the victim has passed away, they are going to be deemed exonerated. That's why I think it's important not to get too caught up in the exact numbers but just to use these numbers to guide your decision making an policies.

There was a debate that went out a little while ago, and I'll kind of finish up with this, that was looking at these numbers, and essentially the head of the NDAA at the time, which is the National District Attorneys Association, he made an argument that I don't really agree with even though there is some real truth to it. He said, look, let's take these known number of exonerations, and assume that we've only found one out of ten. So, in other words, if there's 340 known exonerations, let's assume that means there's 4,000 total innocent people.

And then what he said is he divided the total number of exonerations from the total number of convictions over the same period of time, which is about 15 million, to get an error rate. And the error rate, if you look at it that way, is really small, right? It's this very small number, 4,000 over 15 million, so you can see whatever that comes out to, .0267%. Which means you're talking about a 0.27% error rate. Which means you've got a very, very high accuracy rate.

The problem with that theory is twofold. First of all, we do a lot of trials. So let's even assume for a moment that that's correct, and I think there's reasons to be concerned about that number. But let's even assume that that number is correct. That means you have three innocent people for every 10,000 prosecutions. Well we do close to 40,000 prosecutions in my office alone in a year. So these very, very low error rates, and I do think that ultimately the error rate is low, but no matter how low you go, when you have this number of prosecutions, you can see you're going to have a significant number of wrongful convictions. And, of course, let's remember this number is probably – the problem with that (inaudible) estimate. First of all your multiplier could be wrong. Secondly, this low estimate looks at the error rate for all prosecutions instead of your ever rate for all cases that go to trial. And you'll notice people who have been wrongfully convicted disproportionately have gone to trial which makes sense. They're not so likely to plead guilty if they're actually innocent.

Conversely, your total number of prosecutions, in, you know, upwards of 90% of them, guilt is never seriously contested by the defendant. It's really more about sentencing.

Now some innocent people plead guilty to things they didn't do. In fact one of my exonerations comes out of just that pattern. But you really can't look at your total number of wrongful convictions and look at all of your cases as opposed to looking at the cases that go to trial. And I give the example of the Pinto – remember the car? You know, when you had a car that had a disproportionate chance of blowing up when it was rear ended, you don't want to look at the total number of car acci - you know, you don't want to look at all cars and determine how likely they are to explode when rear ended, you have to look at the specific risk factors. And that would be true in this case, too.

If you look at error rate in felony trials, it's a much smaller number – or higher number. I'll just get to the end. It brings you more like one false conviction for every 200 trials. And to me that means you can

simultaneously believe that you have a very high accuracy rate in your system overall, a much lower accuracy rate for cases that actually go to trial. But in any case, you're talking about a lot of potential people who are all, as we saw from our prior speaker, human beings who essentially have been victimized by our criminal justice system. And so justice alone calls for doing something about it.

So my final suggestions are when I'm talking to prosecutors is really focus on discovery, making sure you've turned all the documents over that you have, and that would apply to post-conviction circumstances. To really do DNA when you can. To try to get to the merits of your cases. In other words not to try to pass these cases off by some sort of procedural bar but to really try to reach the merits of your case. And to collaborate whenever you can. And looking at a risk management model. Knowing that you're never going to know for sure what happened but you can take steps to try to reduce the risk of these happening.

So, okay, like I said, a little unnerving. Because of technical reasons I can neither see anyone nor hear anything, so I recognize there's a chance I've been talking to myself in my office for the last 20 minutes. But I'll close this off. I will leave my email and my phone number, so I encourage anyone, I'm always interested in talking about these issues. Feel free to contact me, either online or later. And I am hopeful that after I stop talking I can hear again, so I can listen to the other speakers and then be part of the discussion afterwards. But thank you very much.

UNIDENTIFIED FEMALE SPEAKER: Thanks, David. We could hear you.

DAVID ANGEL: I'm glad to hear that.

PETER NEUFELD: So what I'm asking everyone to do who is remaining is to do a little self-censorship and try and abbreviate your remarks if you can.

Next up is Ms. Sarathy-Jones from the National Institute of Justice, the Bureau of Justice Assistance, so maybe that's (inaudible) OLP instead – not OLP but programs.

UNIDENTIFIED SPEAKER: (Inaudible).

PETER NEUFELD: Thank you. Thank you, Gerry. Acronyms go early.

PRIVA SARATHY-JONES: Hi, everyone. My name is Priva Sarathy-Jones, and hopefully – I'm pretty sure I'll be brief.

So I'm here today to talk about BJA, the Bureau of Justice Assistance's wrongful conviction review program. This is a program we've had since 2009 with the primary focuses of, one, providing high-quality and efficient representation for defendants in post-conviction claims of innocence, and then secondly, whenever possible to actually get – to identify the actual perpetrator of a crime.

And so as I say this is a program that we have had since 2009, and we've made awards directly to organizations such various Innocence Projects or law schools with clinics that do post-conviction relief claims as well as public defenders' offices that may have post-conviction relief units as well within the organizations. We've made those awards directly to those organizations as well as had separate awards for training and technical assistance in this area to provide support to the field as a whole on issues of post-conviction relief.

So within the program itself, the type of things that we've funded in the past have been, you know, staff salaries, intake coordinators, investigators, a lot of resources that the organizations that do post-conviction relief are really lacking and need this type of assistance with.

We do evaluation and litigation claims of innocence and cases of potentially flawed witness identification. They can look into cases that that may be the claim of innocence.

We allow them to look at cases that they are looking at as a result of forensic evidence as well.

Help in defraying costs.

Case management systems as well. A lot of times, as David sort of spoke to you, the issue is identifying the right cases to pursue, and that I just recently went to the Innocence Network convention and really sort of realized that that task in and of itself is a very daunting task when you're getting these pleas and you're really trying to sort out both innocence claims but also ones that you could actually try to adjudicate through the post-conviction process.

And also recently, and most recent here, we've added a provision for counseling and mental health services for individuals that have been exonerated as a result of the awards that we have put out.

So that sort of covers what the program itself does and what we've looked at in the past. In 2010 we awarded the National Criminal Defense Lawyers Association, NACDL, to do an assessment of our wrongful conviction review program. And they have actually been funded in recent years, about two years ago, to do a new assessment. So this last assessment they did was 2010 so it was quite a while ago, but now they're looking at sort of wrongful conviction review grantees since 2010 and seeing what the results of these awards that we've been making, what does it actually serve or result in a tangible way when it comes to wrongful conviction.

So in the 2010 assessment, which we have information on, as a result of the funding from – I believe they looked at solely the 2010 and possibly the 2009 awardees as well – there were 26 exonerations that resulted directly from that funding, or directly or indirectly as a result of that funding, and there were over 20 actually perpetrators identified as a result of that funding as well.

Almost 13,000 new cases were reviewed by grantees as a result of that funding, so they were able to really look into some of the cases that they were getting.

The other thing that I want to mention is that we, through the training and technical assistance award that we have with NACDL, one of the biggest things in addition to the assessments that they've done and they are planning to do in the future is they do a lot of trainings and make a lot of resources available to the field for various organizations or individuals or private offices who take on these cases and need sort of training in how you actually adjudicate post-conviction cases and knowing that each case is going to be based on a different reason for why you may be pursuing these claims.

So just to go over really quickly, we have some trainings available that can be accessed online on bite marks, examining the microscopic hair comparison reviews, the challenges of flawed forensics, things that we've spoken to earlier, and so how defense counsel can really be trained. This is another aspect of that. We've talked about judges, we've talked about prosecutors, but there's also a piece of this that are the defenders themselves being trained and have the proper resources and tools to actually properly adjudicate and defend their clients as well.

There's a long list of past topics as well that I won't go through, but that is something that we're making available online. We actually have not had a wrongful conviction review website, but we are now building one out, so all these resources will be available directly through the DJA website hopefully in the next few weeks so that we can direct people to – and defense attorneys and stakeholders in the field to some of these trainings and resources and publications that have been put out through these grant awards.

And the other thing that I will mention now is that we are also now looking at wrongful conviction review and where it's heading in the years ahead in terms of what we may be focusing on, the roles of conviction integrity units in the wrongful review process. I think David spoke really well to this, but, you know, there are multiple players all which have significance in this process and we all play different roles in this process. And while some of the clinics and public defenders' offices and NIST and organizers (inaudible) have been great in pursuing this work, there's another piece of this which is the prosecutors are doing to look at this work to identify cases as they come to them to be opened, as David has said, to either identifying themselves or could the same scenarios he gave with a different prosecutor involved turned into someone saying we're not going to look at that case, we're not going to review this just because your witness seems a little sketchy now. And if a defense counsel was the one who presented that, it may not have been as strong an argument as when the prosecution themselves identifies that as the issue.

So those are sort of the areas that we're looking to moving forward and seeing what the role of those prosecutors and defense attorneys are and looking at collaborations between prosecutors, defense attorneys, and law enforcement as we look at both adjudicating wrongful convictions after they happen but also preventing them from ever happening in the first place. And as Mr. Harward has said, this is a wrong that can't really be undone, so part of the objective here is to not have them happen in the first place.

So, thanks.

PETER NEUFELD: Ms. Sarathy-Jones, thank you. That was great.

Our next speaker needs no introduction, is our own Commissioner from the National (inaudible) of Justice, Gerry LaPorte.

GERALD LAPORTE: Thanks, Peter.

Can we have the presentation?

So I'm going to talk about NIJ's post-conviction DNA testing program. This program I have a lot of love for because I managed it for almost four years. And started back in 2008, so I got it in its infancy. I have watched the program grow significantly.

My co-presenter here, Dr. Greg Dutton, knows the program very well. I handed it off to him a few years back, and he's continued to evolve it as well, too. He's here to handle any questions if we get into the minutiae of the program. I can certainly talk about the overall aspects of this program.

So, of course, the usual disclaimer. Slides. I'm not allowed to give any opinions, so if you hear them, they're my opinions not those of the Department of Justice.

The program, this is just – the current solicitation is out right now. It was posted on March 23, 2017. It closes on May 9, 2017. But this – basically the program is to provide funding to assist jurisdictions in defraying the costs associated with any kind of post-conviction case review, evidence location, testing of DNA evidence in violent felony cases where that testing may show that the results – where the results may show that someone was actually innocent.

Really this kind of – the simple idea of this program and how it differs from BJA's wrongful conviction program, is our program is for very four specific purposes. One of them is to identify any potential post-conviction DNA testing cases where you could potentially show actual innocence.

Funding can also be used to review appropriate cases to identify those in which DNA testing could prove the actual innocence of the individual, so it's very focused on finding evidence.

And then locating evidence. And you'll see I have some numbers here. Locating evidence, as you might – I don't know how you would perceive this – but is not an easy task. We spend a lot of hours and we spend a lot of money on just trying to find evidence to begin with.

And then the final purpose of this grant is then to perform the DNA analysis of any biological evidence that's found.

So at that point in time the program stops, so we don't cover all of the other things that happen, which is a lot of stuff, which could be the investigative part. The prosecu – or not the prosecution but all of the legal things that take place afterwards.

The program itself, so that gives you an idea of the number of awards and the amount of money that we've funded each year. So since 2012 we've received a $4 million appropriation. We generally give all that money out. So you'll see that those numbers don't add up, at least from 12 to 16, don't add up to an even $4 million, but that's because we don't actually get $4 million total. It's appropriated, and then there's administrative expenses and so forth that are taken off the top.

But we fully get – we get lots of applicants for this, so there's quite a bit of demand. But since 2008, we've awarded a little over $40 million.

So here's kind of – here's the numbers that are I guess somewhat interesting. Since 2008, we've provided funding to review 73,522 cases. And then of those there's been evidence searches in 29,000 cases. There's biological evidence in 25,000 of those cases. DNA analysis was conducted in a little over 1,700 of those to analyze almost 3,000 pieces of evidence. They had 233 CODIS uploads, and then 52 CODIS hits resulting in 39 exonerations.

So one thing I do want to be very clear with in this data is that do not interpret 73,522 minus 39 as rightful convictions. Okay, so there's a lot of stuff that goes on in these cases. And we try and do as much as possible to fund whatever we can to review these cases. But a lot of times evidence is just not found, so there's no evidence to be found at all.

We're starting to keep track of some metrics of when we do get a CODIS hit, and then that CODIS hit actually matches the person that has been convicted. So we're still working on some of those numbers.

And then as you'll see I've got an asterisk for FY14 and 15 and that's because those are still open awards. So that's still all ongoing activity. So those numbers will grow over time.

This is kind of an interesting slide. If you look at the total hours in reviewing cases that we've funded, it's been 325,000 hours, which is approximately 37 years of reviewing cases. And hours locating evidence, 101,000, so that's 11.5 years spent just trying to locate evidence from these cases. So you can see there is a huge effort that goes into all of this.

So we've had 39 exonerations in 12 states. Those are the list of the exonorees that we've at least helped fund in some way or another. And we generally – so what happens in some of our cases is although the focus is on DNA, every once in a while, a case will – there won't be any DNA located but there will still be an exoneration once we start funding the case. So you'll see some asterisks next to those individuals. They were exonerated but it wasn't because of DNA in our case, but it started with our case. Or with our funding.

There's a map of all the states that have received or currently receive post-conviction DNA testing money. So we had Idaho last year. A couple of new states. Puerto Rico was one of them as well, too. We're constantly trying to expand this program so that every state could potentially, at least at some point in time, receive money to take part in this program.

And then generally in terms of application demographics, so we get a wide variety of things. You can see just the geography up in the top right-hand corner is pretty well evenly dispersed amongst the U.S.

I will talk about our peer review process. So our peer reviewers, generally we put together a panel of a prosecutor, defense attorney, a judge, and a DNA expert. There's a lot of people in this room that have peer reviewed for this program as well. I'm not going to name names, obviously. So we try to keep it balanced that way as well, too.

And then finally there's just some – we have a lot of information on the program. We have all of the stories of each of the exonorees on our website as well, too. And then we have some other information on post-conviction DNA testing.

And that's it.

UNIDENTIFIED SPEAKER: (Inaudible).

PETER NEUFELD: Gerry, thank you very, very much.

Our next speaker is Executive Director of the Innocence Project, Maddy DeLone.

MADELINE DELONE: Okay, like magic it came up. That's good because I'm doing nothing down here.

UNIDENTIFIED SPEAKER: (Inaudible).

MADELINE DELONE: Hi. So I'm Maddy DeLone. As Peter said, the Executive Director of the Innocence Project, and thank you, first of all, for inviting me here, and it's really great to be on the panel with the other few people.

And from the Innocence Project, just also to thank all of you for the extraordinary work you've done over these last three years. A number of people from the Project have watched the work very, very carefully. We've contributed comments when we can. We think it's an unbelievably important institution that helped really for the first time, as has been said a number of times today, bringing a lot of key stakeholders together and adding the very critical addition of independent scientists who have deep expertise in their fields, and I think it's really through a conversation like this in whatever form it gets to take, and I guess this exact one is now off the table or appears to be. We hope that there will be some continuation like this because otherwise I think we work more back to where we were before and we didn't get as far in that prior period. So I just thank you for showing us all, showing the country, that there is a conversation worth having and progress that can be made.

Our mission is up there. It's to – we have two parts of our program. One is to free innocent people who remain incarcerated. And to bring reform to the system responsible for their unjust imprisonment. And our reforms, all the reform work we do, are focused on preventing the wrongful convictions from happening in the first place. I think you heard David Angel say that's where the conviction review units go. And, in fact, I think that's where this Commission starts, which is what do you do on the front end to make sure that later on you have not, in fact, incorrectly contributed to the conviction of an innocent person.

I'm going to do three things, and I'm going to try to do them very quickly. First talk a little bit about the number of people we know who have been exonerated in the United States since 89, so I have an update on David Angel's numbers. A little bit about the contributing factors that lead to the wrongfully convicted whose convictions were later overturned by DNA, so that's the Innocence Project's DNA list. And finally to talk about what the Innocence Project sees as the advances in forensic science over these last three years as the Commission was first instituted and to suggest some additional areas of work, which some body, like this one, or perhaps the individuals who have dedicated so much time – this will work? Okay –

dedicated so much time to this task will do in different capacities. It would be a shame to have all this good work and energy and information gathering lost.

Now? No. Nope. Okay. Great.

So this is the National Registry of Exonerations which was started at the University of Michigan has now recently relocated to UC Irvine. But the National Registry keeps track of every post-conviction exoneration that is after the stage of the appeal has been exhausted that has been found in the United States since 1989. 1989 is the first recorded year of a post-conviction DNA exoneration, and so the Registry decided to start their count in that same 1989 year.

So the bigger number, the 2,008, which is actually 2,011 today, it was 2,008 on Thursday when this was submitted, is the number of people in the country whose cases have been revealed who are innocent and convicted, and the smaller number, this 349, is the number of post-conviction DNA exonerations that the Innocence Project counts on our list, the list that we keep. And our definition of a DNA exoneration is one where the new DNA evidence is critical and central to establishing the innocence of the previously-convicted person. And they are also exonerated by the same definition that David raised earlier.

We know that, and there have been some discussions in past presentations, that there are some differences between the way that the Innocence Project categorizes cases and contributing factors that cause wrongful conviction and those that are counted by the National Registry. We continue to work with the Registry to try to harmonize that data so that it won't be confusing to people, although we certainly encourage people to call us when they are confused because there might be different data on each site and we can – the easiest thing for us to do is to go down to the source documents and explain to you why we designate something as one sort of problem or another.

The DNA exonerations, as has been said several times, there are 349 of them to date. They come from 37 states. They represent 20 people who were originally sentenced to death. They include 37 people or about 11% of people who pled guilty. During the exoneration of the 349, there were 149 people who actually committed the crime that were identified, the people who committed the crime then our client served time. And those 149 people went on to commit an additional violent crime, we have documented 147 convictions, so there are probably many other crimes that were committed, but these are ones for which there were convictions. So I think the point that David made and Keith made earlier is just this is also of public safety importance. Getting it wrong, not being as good as we can at getting it right, has two profound implications every time. One is the innocent person goes away, spends time in prison, is lost from their family. And the other is the person who committed the crime goes undetected and often goes on to commit additional crimes. Two reasons to work very, very hard at the front end to get it right.

DNA. The exonorees spend an average of 14 years in prison. On average they go in at 26-1/2 and get out at 42 years of age. This is a distribution of exonorees by race. You can't see it. It's 30% are white, seven percent Hispanic, 62% black, and one percent Asian among the 349. Clearly men and women of color are overwhelmingly represented – disproportionately represented there. And they spent the good portion of their young adult lives in prison.

The contributors to wrongful conviction. So these are the categories we count. These are the patterns that we see time and time again. It's important to remember that these are DNA exonerations, so we are often talking about sexual assaults or sexual assault murder. There are some other kinds of crimes in there, but that's the predominant core. And it's important just when you compare it to the contributing causes in the broader sample that's registered by the Registry that this is in part because of the kinds of crimes that were here. It's also the kinds of crimes where biological material that can be identified with the perpetrator to the crime are likely to be found, sexual assaults and sexual assault murders.

You see the 71% of the cases, of the wrongful convictions, include misidentification by at least one eyewitness. Forty-six percent of them misapplication of forensic science. Thirty-two percent false confessions, admissions or guilty pleas. Most of those are false confessions. And 17% incentivized informants.

In the area of misapplication of forensic science, which is really the material that you have been working on, we divide the kinds of contributing factors into five sorts of data, and sometimes any individual case will give you two examples. One is just the issue of the unreliable or invalid forensic discipline. I think the bite mark in Mr. Harward's case is such an example.

Insufficient validation of a method is another area.

Misleading testimony. We heard a bit about that today. Overstating the evidence to enhance probative value. Downplaying exculpatory evidence. Or failing to include any statement about the limited use of the technique.

Sometimes there are multiple kinds of science in a case, and we count the case as a problematic science case even if an analyst got one technique right and testified appropriately and another one and testified. So somebody could testify appropriately to serology and inappropriately to hair, and we would identify that as a misapplication of science for the purpose of a contributing factor to the wrongful conviction.

There are some mistakes, and those are also included there. I think an example is a DNA sample that was switched by the police department and eventually it was unraveled and the police helped but the person who had the switched sample was identified with the actual crime scene sample went to prison while the other person didn't. Eventually it was reversed.

Or misconduct. And there are some examples of forensic misconduct throughout the cases.

Just to also point out that people look at our website and see these numbers, and then when they actually try to identify what's the harm – what is the actual forensic problem in the case, the narrative descriptions that we put up on the website which are abbreviated for purpose of keeping the attention span of the average reader sometimes leave out those details. We will try to go back in because I know it causes some people concern to read the profile, see it's marked as a misapplication of forensic science and not be able to see what the misapplication was. So we will work through the cases to try to identify them. But, again, we ask that you please call us and ask your questions and we can provide detailed information, transcripts, anything else we have on these cases.

And just look at the time. Sorry.

I think – wrong way. So this group has been dedicating a lot of its time and important work to improving forensic science. We think about the work that's being done and needs to be done in sort of three areas. I think you divide them differently but bear with me. For us it's the issues having to do with sciences and standards, ideas of validity and reliability of the discipline and the setting of standards. Testimony which includes both report writing, although you might include that up above but also testimony in courts. And the basic idea of testimony is making sure that you're taking the scientific principles and the work that you've done and translating it to the science to language that the police, the prosecutors, the defense attorneys, judges, and the juries can understand and that capture the important elements of the scientific test or assay that you have that you have done.

And finally, there is work to be done and work that you've addressed in addressing errors when mistakes occur. Things like the conviction integrity unit that David discussed, that's another way of addressing

error. Finding those mistakes. And also the federal grant programs have been incredibly useful in finding the errors and then at least bringing justice back to the people whose lives were taken away from them.

There's been much progress on the national level. Just to remind us, in 2005 Congress first commissioned the NAS study which was released in 2009. In the end of 2013, the National Commission Forensic Science, this group began to meet. NIST began to take on a more robust role. The OSACs were developed. And finally in 2017, while all of your work was going on, the PCAST issued its report on forensic science.

Your document – the documents that you've prepared for the Commission, going through them there are enormous numbers of important things that you have added to the field and to help improve forensic science. From our humble place where we sit and look for reform that protects the innocent.

First of all, just as I've said before, having this multidisciplinary group here together is extremely important, really first, in particular having independent scientists in such strong numbers that there is really a voice and an opportunity for them to bring in from their fields of study the important principles that will help make the scientific work in this arena better for all.

In Science and Standards, NIST has implemented some technical merit evaluation and is committed to doing more foundational validity. There may be slowing down on that from your initial plans, just based on some of the uncertainty of funding, but we really hope that that work will continue. We know that NIJ is looking at the post-doctoral translational research programs. Hopefully they will be able to continue.

There have been documents addressing scientific certainty saying that it is – and calling for the end of it, and the Department of Justice labs, it offers too much, it's more robust than what can possibly be true. And that earlier work – in earlier Commissions, you voted on documentations, case records, and reports, something you didn't pass in a second iteration earlier this morning, but the earlier document is there and the Committee's work, I think, is very useful and will be useful to others.

You've also had strong recommendations on root cause analysis, the Code of Professional Responsibility, and forensic discovery. And while the Department of Justice did not adopt the recommendations fully on root cause analysis and the Code of Responsibility in their full form, the recommendations themselves were useful for others and as a strong foundation for the work ahead. As we heard this morning, the discovery recommendations from this body were in large part adopted by the Department of Justice and should make the discovery, at least in the federal system, more robust and more fair, and we hope that as appropriate states will adopt these practices, too.

Finally, just a few things. I think when I wrote this slide last week we were still hopeful that this body could be renewed. As the new Administration seeks feedback on the next steps in forensic science, we would encourage anybody setting policy to include the same strong showing of independent scientists that this body has held.

We think it's important that the foundational research continue. It is needed in so many disciplines, and as I know this body is well aware, that research is needed for technical merit evaluation that also must continue.

Similarly the standard setting based on strong research will be critical in this area.

There is much work to be done on the role of science in the cause of death and manner of death determinations. If not done by this group, we hope some of you will continue to pay attention to those issues.

We also believe that crime labs need the operational support to incorporate new research standards and practices into their workflow, and he Innocence Project stands ready to stand with them and work with them to advocate for appropriations for programs like Coverdell Laboratory and improvement grants to help make the science stronger and stronger.

The Department of Justice, I guess, hopefully is still drawing on all of you who remain committed and interested will continue to facilitate the development of the Ultras and for the continued – and seek your input on how to continue and to continue the forensic science discipline reviews. They are an important quality assurance mechanism, and the results of those kinds of reports are very important to people like Keith, no longer like Keith, but new people who are coming into the system who are facing courtrooms where testimony will be given and if it unfairly and unscientifically casts certainty over opinions that are given or made will result in more and more people being wrongly convicted in part with the contribution of forensic science, so I hope you will think of new ways within the Department of Justice, or new ways that all of you can help ensure that we get better and better at more accurate testimony and at more accurate report writing to ensure that these sorts of things don't continue to happen.

We believe that the federal grant programs that Gerry and Pria describe should continue to allow innocent people who have been convicted to be identified and freed. That there should be a model defendant victim notification process when errors do occur, and we're in the addressing error section, both as a moral duty, although some people don't think it's necessarily moral, but also then, let's say, for a due process duty and a right.

There should be model policies for retrospective reviews by some portion of this body or one of these new groups. Labs all over the country need guidance on how to do these reviews well. There are requests that come to us asking for help to do them. We are not the experts. We would feel much better about a set of reviews that were sort of – and procedures that were developed by a body like this, but they are sorely needed if we're actually going to ferret out error and make sure we understand the implications of those errors.

And finally, I think there is a need, and you haven't gotten to it, and I think, you know, Keith's case and the data Peter gave at the beginning about the fact that bite mark evidence, despite every scientific body that's looked at it, and many forensic science bodies that have looked at it, you know, continues to be admitted in courts. There's yet to be a court in the United States that has kept it out. The Texas Forensic Science Commission agreed that it was problematic and shouldn't be used until it was more valid, but people are going into courtrooms every day in this country – maybe not every day, but often – and being convicted in part on bite mark evidence. And we really need a body like this to help the legal system understand that science changes. And you can't rely on the precedent of what you did with science A 20 years ago to admit science A, when you understand its frailties, into the courts today. The courts, the prosecutors, the defense attorneys, are not as good as they could be at figuring out what to do when the kind of evidence they always admitted changes, when we understand something different about it. And it would be very helpful for a group like this to really grapple with that question. And then there should be ways that innocent people inside, whose convictions rested in part on that bad science, on that frail science, on that error-ridden, error-prone science, how they can get back into courts and try to vindicate those claims. So there's something very important left to be done in that whole area of addressing error.

I think my time is probably more than up. I'm just going to do here what I do to myself. Let's see if I can do it. They locked me out. It's the very last slide, is just to leave you with the people who have spent time inside for things they didn't do. each of the men is a person who was wrongfully convicted. It doesn't like it. Sorry, I can't get to it. Well, you just have to look at Keith. He's like thousands of people. And –

UNIDENTIFIED SPEAKER: (Inaudible.)

MADELINE DELONE: They are a reminder of the fact when the system gets it wrong, real people are harmed. Exonerated men and women inspire us to make the system better. I hope they will be a reminder to you and will inspire each of you to continue this important work and to make the system more fair and more just and to continue to decrease the number of preventable wrongful convictions.

Thank you very much for your work.

PETER NEUFELD: Thank you very much, Maddy. With Nelson's permission I'll take two comments, and I think we're out of time then. So does anybody have a question or a comment? No? One. Yes.

JOHN HOLLWAY: Mr. Harward?

KEITH HARWARD: Yes?

JOHN HOLLWAY: I want to apologize to you on behalf of myself and other people who have been involved in the criminal justice system. But I want to apologize to you not just in terms of the scientists and the odontologists, because it's a legal problem as well. And we as lawyers have an obligation to make sure that the scientific testimony that comes through is authentic and is validated, and that is the purpose that I think has gathered everybody here. And the tragedy of what happened to you, I really appreciate your empathy with the ultimate – the other victim in your case, the woman who was assaulted. I think that's essential. And making sure we get the right guy in the right way is the motivating factor. And what I think is your story really brings out the tragedy of putting this Commission on hold. Because what we have done here, and I've only been a – I'm only here by proxy today, but I've been part of two subcommittees, and what I've seen is that everybody here has been motivated, not necessarily with the same perspective, but we've come to recognize each other, and respect each other's views, and that becomes the foundation upon which real progress can be made. And I worry that by putting this Commission on hold, the next group that comes together will lack that foundation, will have to build that foundation, and we will lose time to help the other people like you who are incarcerated improperly, or worse, the people who are still to be incarcerated improperly because we have not solved these problems yet.

So I really want to thank you for bringing that to our attention.

With bite marks in particular, it all started with one case where there was no Fry (sp) hearing. There was no hearing. The judge simply said, I'll allow it, without the hearing. Lawyers in 16 cases in 12 states then went with precedent on that case until the West Virginia Supreme Court said we can just take notice on this it's universally accepted. And so that's actually not just a failure of science, that's a failure of law. And the organization of law, the Department of Justice, that is putting this Commission on hold, needs to recognize that we as lawyers tend to think that peer review means other lawyers and not go outside. And so the interdisciplinary nature – I want to thank all of you, it's been a pleasure working with you. The interdisciplinary nature of what we have here has been really special. The ability to build the relationships that we have has been really special. And I hope that we can encourage the Department of Justice to be quick in their assessment of this and bring this group back together.

Thank you.

PETER NEUFELD: And as in life, I think the final word will come from the bench. Judge Hervey.

HON. BARBARA HERVEY: I, likewise, want to thank you, apologize to you, and thank you for being part of trying to fix the system. But I did want to correct Peter on one thing. In Texas six dentists have come forward with their lists, and notifications will be sent out on these cases at the next Texas Forensic Science Commission meeting, and notification has already been sent out on hair and DNA mixtures. So –

PETER NEUFELD: I think that the moral is that, particularly with the word that we got this morning, Judge Hervey, that this Commission will cease to exist, that all of us around the country will be turning to Texas to be the leader in almost every aspect of reforming forensic science. Thank you.

HON. BARBARA HERVEY: Thank you, and we will continue to share whatever we have, and you've got all kinds of brilliant people in here that are going to keep marching forward, not just the state of Texas.

JOHN BUTLER: Okay. Thank you Peter, thank you panelists. That was very informative.

We'll take a 15-minute break and reconvene.

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Part III

NELSON SANTOS: Okay. I'm going to turn it over to Susan who will moderate this session.

SUSAN HOWLEY: All right. Great. Thanks. This afternoon we're going to have an opportunity to focus on another participant with a strong interest in the justice process and a strong interest in the works of forensic science, and that's the victim.

As with defendants, victims have a need to have confidence in the justice system, and they can't have that confidence if they don't understand the processes at work and if they aren't kept informed of the status of the investigation and what happened to the evidence that they provided, and if they don't feel that they are respected and heard.

The panel you're about to hear from will remind us of the needs of the victims and survivors for respect and transparency, what can be done to help victims and survivors understand forensic evidence so they don't feel so at sea with everything that's going on, and how we can develop trauma-informed procedures to provide notice to victims throughout the processing of the forensic evidence.

I am pleased this afternoon to be able to present Natasha Alexenko who is a survivor turned advocate. She is using her experience and hard-won knowledge to improve the response to other victims through her organization, Natasha's Justice Project.

I'm also pleased to welcome Gina Scaramella, who runs the longstanding and well-regarded Boston Area Rape Crisis Center, one of the oldest in the country. BARCC recognized the need for victims to have basic information about DNA processing and undertook work to provide that information in a way that could be understood by victims and their friends and family.

And then Rebecca Campbell, a professor of Psychology at Michigan State University, who has used her talents as a researcher to inform change for sexual assault survivors. Her work evaluating Detroit's project to resolve the rape kit backlog included an examination of its challenges in locating and identifying and notifying victims. Together they illuminate the importance and potential of including the victim in our work to make forensic science more transparent. And with that, I'll turn it over to Natasha.

NATASHA ALEXENKO: Thank you, Susan. It's really an honor to be here, particularly sitting next to these two incredible women who work so hard for survivors and to create a safer community, so I'm honored, truly.

My name is Natasha. I am a survivor of sexual assault. I was raped, robbed, and sodomized at gunpoint while I was a college student. It's a day I will never forget. It's a day that continues to haunt me, and my family and friends as well. That's the thing about sexual assault, it's not just the survivor that is affected by the crime, it's the people around them that love them and care about them, and then the individuals they meet later in life who are also hurt when they find out what's occurred.

After I was sexually assaulted, my immediate desire was to take a shower. I wanted to jump in a hot shower and just stay there forever. If it weren't for a roommate of mine who said, "Look, your body is basically a crime scene right now, we need to get you to a hospital to do a rape kit exam." It is the last thing I wanted to do at that time, absolutely the last thing. It's basically a very invasive gynecological exam. And as you can imagine, after that much trauma to once again endure poking and prodding and answering a lot of questions to a crime that was just committed that you can't quite absorb yourself in that point in time.

But I knew that when it was explained to me that this was how we would eventually find the perpetrator, of course, it was something I wanted to do immediately. And, you know, afterwards, I was running under the assumption -- and this was in 1993 -- that my kit had been tested, because why else would I go through all of that for nothing. And I also was running under the assumption everyone was doing everything they could to make certain that this monster was put away.

And I received a phone call about a year-and-a-half after I was raped and robbed, and I was told that the case was cold and that they were closing it. And I remember exactly where I was when I received that phone call. I remember every detail of it. But what I remember the most was the profound sense of guilt I felt inside. I spent the year dealing in terms of, you know, being a victim of crime and doing my best to heal through the trauma, but this was suddenly a new feeling, a feeling of helplessness and a feeling of guilt that I couldn't do my part in putting away someone who is no doubt in my mind hurting other people.

And I was not aware my rape kit was not tested, so I went on assuming it was actually my fault, that perhaps I didn't do an adequate job in describing my perpetrator. Perhaps they didn't believe me. Maybe I didn't give the appropriate details, so I fought really through a lot of guilt. And I felt that any victim, of the man that raped me, met up with in this process was my fault as well, and that was really hard. That was a really hard thing to deal with.

In 2008 I received a phone call from the Manhattan DA's office, and I was told that my kit had a match in the CODIS database to a man named Victor Rondon, and, indeed, in all those years from 1993 to 2008, Victor Rondon was on a nationwide crime spree. He committed crimes in seven different states across the country. He created additional that victims. He was a burden on law enforcement. He was a burden on taxpayers. He was a monster.

But somehow knowing that that DNA contained in my rape kit had, indeed, found this man was something I'll never forget, just that feeling of relief. And I was fortunate enough to have my day in court, face my perpetrator, and work with incredible, incredible prosecutors, law enforcement, and the team, the forensic science team. And I was really grateful to face him in court and to testify as the complaining witness, and know that he is presently behind bars until 2057, where he can no longer harm anyone else. And that was just such a great feeling.

And I really like to point out the fact that being at trial and putting the man that raped me in jail wasn't necessarily what I needed to heal or what I needed to move on. You know, that came in a different way. That had nothing to do with identifying or putting my perpetrator behind bars. But what it did was it

created an advocate in me. I became an advocate because, even when I was ready to give up on myself, it turned out the prosecutors had not given up on me.

I also became an advocate because the forensic science world really opened their doors to me, and I really felt like I was just part of this fantastic team. And I just really found strength in that, and just really knowing that each rape kit -- and we're looking at hundreds of thousands nationwide collecting dust -- each rape kit represents a human being whose body was a crime scene, and each rape kit represents someone like me who probably wanted to take a shower and instead went and did a rape kit test. And I know what that was like, and I don't want anyone else to feel like it again that helpless. I want to help empower others.

And, you know, it's certainly been very difficult to continually talk about my story, sometimes in great detail. But, you know, one of the reasons I find it so encouraging is because, as I kind of move forward, I meet these incredible people working in the field. And we'll get to talking and it feels like, you know, we can just kind of solve all the world's problems when we're finished. And I've just always really, really been grateful for than opportunity.

And because of that, it's like this multi-disciplinary team approach that's working so well right now. It's also working well in terms of advocates, because as a survivor I often have an opportunity to sit next to experts in forensics or who are familiar with the legal system, and I think that's a really powerful message. And I think that it does a really good job in communicating to the general public what we're doing to keep them safe from harm; what we're doing to ensure that they -- we're using the tools necessary to put people behind -- the appropriate and the right people behind bars and that's really empowering.

And I think one of the most important things right now is for me to continue to share my story in terms of my assault, and to be as open about it as I can, and to also share just what creates a victim from going to that to a survivor and then finally an advocate, what is that. And I wish I could take credit for becoming an advocate because of some inner strength. But the real truth of the matter is I became an advocate because of the people around me that inspired me.

You know, I'm here and I'm looking at certain people I've worked with that I've learned from that I've met, seen at different conferences, and I'm just so grateful, because no one has ever really treated me like the victim. I'm being treat as a colleague. And as a colleague, I can impart that wisdom to the other survivors out there, because it's so important for them to understand the process. Because after you're assaulted it your head is just kind of swirling and you're not certain how to appropriately grasp what's occurred, and it's hard to know that, you know, a lot of us have never even had anything to do with the criminal justice system. So all of a sudden to be thrown into this process and all of a sudden to understand the process of DNA and forensics and how some of that works, that's something that's new to so many of us.

But what I do know, as the survivors across this country who have that knowledge and who are empowered with that wisdom, not only help move the justice system along but become the biggest cheerleaders for the field, because it's important. Because without this amazing scientific work and the work of the prosecutors and getting everything ready for court, I mean, we wouldn't have the strength and be able to, you know, wake up in the morning and know that the world is a better place. And, you know, I'm just so grateful.

It's interesting, Rebecca and I -- Dr. Campbell and I were in this very room. We don't remember when. But we were presenting with one another, and I always just enjoy presenting with her because, you know, she talks about the neurobiology and what goes on her our brains with trauma. And I'm always like, see,

see, she's right. She gets me. But I'll never forget, and this is just -- there was someone in attendance at that conference -- and I hope I don't embarrass you, Dr. Campbell. But she was sitting there and she was like, "Oh, my God, oh, my God, I just met Dr. Campbell. Oh, my God." And it jus goes to show you, I mean -- and this is not someone that was necessarily an expert in the field, it was a woman who just knew the great work that Dr. Campbell as done and how things have changed.

People know, it's not just this room. We're all sitting here and we have been working on this for many years. The word is getting out. Things are really evolving out there, thanks to, really, everyone's work here in the room. And I think the most important thing is just to continue this partnership, to continue to work with one another, because oftentimes we're able to kind of communicate to our constituents through each other.

I'm not a forensic scientist but I can kind of put things in laymen's terms to explain to survivors, and, you know, it's important. Often I'll go to a lab and talk to some of the criminalists that are working there and let them know how important their work is to me and how it changed my life.

So I hope that this great work continues. I think that we owe it to the general public. I know from my story alone, you know, we talk about public safety issue, and you can just really see real results. So, again, I can't tell you how grateful I am to be here and for all of your work through all of the years. And I certainly hope our paths will continue to cross. And I will continue to advocate for this work as long as someone will give me a microphone. Thank you.

SUSAN HOWLEY: Thank you so much, Natasha, for sharing. Gina.

GINA SCARAMELLA: Hi everybody. I think I have some slides that are going to come up. Yeah. Great. Well thank you for inviting me, too, to be on this great panel and to talk with you a little bit about some of the great work that's happening in Massachusetts. Oh, sorry, not good.

So I wanted to share with you just a few things, a little bit about the Boston Area Rape Crisis Center, a little about our role in forensics, and then the development of our access to Forensic Information Project, which was our effort at getting out to our communities. So, clicking. Okay.

So a little bit about BARCC. As Susan was saying, we are a long-standing center. We're one of the first in the country, and one of the largest and most comprehensive definitely in New England, but probably in the country, and we do a high volume of service, both to survivors directly, their families, as well as prevention education in the community, and keep a large circle of partners around us to help continuing to improve so that survivors don't have to keep experiencing the not-so-good things that can happen.

So we work on a few different levels around forensics. The individual level, we work most closely when we accompany survivors to the hospital, and we do that well over 400 times a year, so that's more than once every day. And those are folks who are over the age of 12 and who have been raped within five days. And we do that in partnership with a sexual assault nurse examiner program at seven hospitals that are designated. But there's another, about 12 hospitals that are non-designated that we also respond to, and we do that through our hotline program. The hospital staff calls our hotline directly and we do patch somebody.

At the seven hospitals where we have a designation, the same nurse and the advocate get paged at the same time, and we both show up within 40 minutes. So that is our individual level. At the state level I'll talk more about our forensic project. And at the national level I just want to mention this great OVC supported pilot project that we've been on for the last few years, that's testing the ability of the telemedicine technology to work for increasing the quality of forensic exams in low volume or high turnover areas.

So it's a national project run through the Massachusetts SANE Program, where they're in several sites across the country, including military sites, trying to use telemedicine to increase that quality of service so that survivors are obviously getting better evidence collected and have a better experience, but also so that the clinicians involved start to feel like they can do this work and they can learn how to do a better job collecting evidence.

Our role in the project is to focus on the advocacy, so the circle outside of that clinical exam to make sure that there are people who are talking about sexual violence in the community, letting people know that the service exists, as well as ensuring that there are services for people to get attached to post-exam. So that is how we intersect.

So I thought I would just sort of chronologically tell you how we came to this access to Forensic Information Project, and it really started in the late '90s, when everything, as those of you who are in the field remember -- was about date rape drugs. I mean, date rape drugs, date rape drugs, it was pretty constant. And we had a case where -- actually, didn't need to go there yet -- where because all of that was going on the SANE Program, us, the crime lab, et cetera, had come together to create a toxicology kit and a consent form that we started to use, again, in the late '90s, and it was a survivor who taught us that we had a gap in our system, which was that if the survivor did not report the case, that those results from the toxicology kit were unable to be gotten.

So this survivor, Maria, was in a position of having a situation where she was raped by a coworker and didn't want to go forward and press charges unless she knew what the result of that toxicology kit said. So that was just not a mechanism that existed. So we worked with our partners in the State Crime Lab and came up with a strategy to do that, which was our toxicology line, statewide reporting line. And so, again, it's only for unreported kits, and it's only about the toxicology kit, not the whole evidence collection kit.

On a monthly basis the crime lab faxes results of the unreported kits to us by kit number, so it's anonymous. Survivors are given the information, that number, when they're discharged from the hospital and told to call it within 12 weeks if they're interested in finding out the results if they haven't reported by then. And so that was sort of our first foray into communicating more directly with survivors about forensic issues, and it's a great partnership. It continues. And we get about around seven calls a month to that line now.

So the second case, sort of fast-forwarding another five years or so, happened during sort the mid 2000s, when CODIS and DNA and backlogs and all of that started happening in the news, and we also had in Massachusetts a big exposé about problems in our crime lab. So the Boston Globe was pretty well smattered with stories about mismanagement at the crime lab, issues where cases weren't handled properly. And so it really stirred up a lot of emotion for people who had, like Natasha, described, trusted the system to take care of what the efforts they had put into it.

And this case came to us in our legal advocacy program, and essentially the person, like many other people, was stirred up hearing about CODIS, not understanding what it was, what they should do. They had been raped probably 25 years prior at their college in another state but someone who had broken into their apartment, and they had gone and gotten a rape kit done at the time but had not heard anything since. And so we were able to work with her and get her to the right place. But we realized we really didn't have a way of talking with people about what they should do if they find themselves in that situation. And people are hearing all these words and it's talked about a lot in the media, but there really wasn't a way to get correct information.

So we started about a year-long project trying to learn a little bit more about how people were seeing what was going on and what was available. And so we did a little gap study to basically identify the

information gaps between what survivors wanted to know and what they were able to access through the people and systems and the Internet. And so we did do surveys of survivors, of advocates. We did key informant interviews, and we did an Internet search. And that's the one that's the most interesting to me. We basically asked this guiding question. It's, "If you were going to go seek information about forensics, about DNA, about CODIS, what would you find?" So this is in probably 2008.

And what we found is that things sort of clumped into three groups. The first was that there was information out there but it was very technical high-level information. It was for people like you and me to understand the concepts, not really because you were asking a question. So it was not very accessible, even if it was current.

And then group number two, which was really concerning, because they were better at communicating directly to a survivor's needs were like the law firms and other people who basically had some hook to get you to want to go into their site. It was commercialized, ask-me sites were popular then. It was, you know, ask Mike and you could ask Mike anything and it would come up, things like that. So it was a lot of inaccurate information, very, like, inflammatorily presented, not professional, or commercialized.

And then the third thing that would come up was just news about cases. So it was, you know, all the newspaper stories, all the shows about it, the whole CSI effect was happening. So that was all coming up, but it didn't tell anybody anything about what they should do in terms of their own case.

So we've put together collaboration with these folks who are people we work with a lot. And I won't read through them because you can see them. And we've added people to that list since then, but this is skill kind of the core group. And we came up with three goal, which was to give survivors and their families accurate information, because we knew that our hotline counselor might say one thing to a question, and another hotline in the state might say something else. And we felt like if we could all come together and put all the information together and communicate it, we could all say the same thing.

The second was to make information available online and by phone in English and in Spanish with a survivor-centered feel. So it was for you, asking a question, getting your answer. And that we would create additional resources to go along with training, outreach materials, and ways of promoting the site. So that is what sort of merged the Mass Statewide Access to Forensic Information, the project, which has those three parts. And they're managed by my colleague, Katia Santiago-Taylor, who works both to keep that partnership going with bi-monthly meetings but also does directly to survivors through these services.

And, again, the services are the toxicology alert line, where people, 12 weeks after their unreported case, can get information about their toxicology kit results, and we're able to talk with them about what it means and what it doesn't mean. You know, we're in good communication with the crime lab. If we have questions, we can always ask them. And we could talk with them about possible next steps, depending on what is found.

And what we found is that not that many people actually change their mind at that point about reporting, but what they do do is think about -- it just changes how, you know, it's your body, it's your test result. It allows you to think about what happened to you with more clarity.

And then we started a surviverape.org website, which I hope you're go check out. It's in English and Spanish as a full site, and then also has an abbreviated site in Portuguese and in French. And this is where we put our accurate information for survivors and families in an accessible way. It has a frequently-asked-questions ability, so we have people come in, can ask their questions, and we answer them, and those tend to be highly-used pages. And as you can see, since we started in 2013, we went from about 7,600 sessions now to 116,000, and even in the first quarter of this year we're going to blow that out of the water. So it

really is information that people want to see. It is going to have a redo, because some things have changed in Massachusetts, and just to improve the site as our understanding of how people use it improves.

And then because any of us who have been a health crisis or any other crisis know that a website is never enough, it has people with it. So these are advocates who answer the forensic information line in Spanish and in English. They can answer questions related to the evidence collection kit or the tox kit. They have all those partnerships. If there's a technical question we can reach out to SANE Program. We can reach out to the crime lab. We can reach out to the police, to the DA, and just ask hypothetical questions or make a connection for them if it's appropriate. So it really is just a person who can help facilitate whatever it is the survivor is needing or asking for.

So I don't know if we're going to do questions at the end, I think. Yeah. So thank you very much for having me.

SUSAN HOWLEY: Thank you. Gina, that's so inspiring to hear about that great work that you all are continuing to be leaders in the country. Now, with that, we'll turn it over to Dr. Campbell.

REBECCA CAMPBELL: Thank you. Good afternoon everyone. Clicking the mic. There we go. My name is Rebecca Campbell. I'm a professor of Psychology at Michigan State University. In that capacity I do basic research on trauma and how it affects the brain and the body. Natasha already embarrassed me on that. But what we try to do in that body of work is understand from a neurobiological perspective what is happening to survivors at the time of the trauma, and the immediate aftermath to help them understand and know why they feel the way they do, why they react the way they do, and I share that research now in trainings all throughout the country. Natasha and crisscross the country, often together, to talk about, from the survivor perspective and from the science perspective, about what we know about trauma.

Also in my research, I study how victims experiences with the criminal justice system unfold and how that affects their mental health, and the short answer is, not well, which led me to research in the City of Detroit in 2009/2010, when they discovered that they had about 11,000 untested rape kits sitting in storage. So from that work, I've been able to bring together what we know from basic research in psychology and trauma, what we know from applied work on victims' involvement in the criminal justice system to try to figure out what do we do about reengaging victims when we find out that their kits have not been tested. In many cases in Detroit it was for decades.

So in the brief time that I have with you today, I want to share with you what we know what the state of the research is on victim notification on previously untested rape kits and what are some of the issues we're trying to do and move forward to promote survivor engagement after what can be a very prolonged period of time, where they sat and they waited and they waited and they waited. So, first off, let's begin with getting this to click. Let's begin with getting this to click. There we go.

I'm a social scientist, not a forensic scientist, but, like your discipline, we have to start with an operational definition. I don't know any other way to begin anything without a definition. So what do we mean by victim notification? Hold on two seconds. Okay. So what we mean by victim notification is the process of re-contacting sexual assault survivors to inform them that their SAK, their sexual assault kit, has not been tested. It wasn't tested when they originally made the report, and now it either will be tested or it has been tested. And here I'm drawing a distinction that in some jurisdictions that they do reach out and try to talk to victims before they submit the testing. That's not super common. What's more likely is they've gone ahead and done the testing and now they need to reach out and talk to the victim about what that testing revealed. There are huge psychological implications of reopening survivor's trauma.

Now the other thing that happens in victim's notification is that survivors are often asked, do you want to participate in the reinvestigation and possible prosecution of your case. So in the midst of a very difficult

psychological situation there's a very complicated legal issues that have to unfold. So there's two key things we need to think about in notification, so let's take two seconds to unpack them.

So, from a psychological point of view, what victim notification is, is a reactivation of traumatic memories, often completely out of the blue. Natasha told you she got a phone call, years -- how many years --

Years.

Year. A long time. She's going about her life, she gets a phone call. These survivors come home from work and there's somebody waiting for them at their doorstep. It is a long time. It is an out-of-the-blue notification, and we're reactivating traumatic memories. What does that mean? Well from a psychological standpoint, what you're doing is you're triggering a potential flashback by that completely out-of-the-blue reactivation of the trauma memory. If they've been struggling with post-traumatic stress disorder in the past, you're going to re-exacerbate those symptoms and other mental health problems they might have.

After the notification is over, it is not atypical that a survivor might turn to substance abuse because the reactivation of that trauma is so severe. And for those who have been struggling with sobriety, victim notification can be enough to compromise their sobriety and they will relapse. So we're talking about some very, very serious psychological consequences that go with victim notification, so we need to be mindful about that.

Now, from a legal standpoint, there is also some very complicated issues that are trying to happen. It's not uncommon that law enforcement, when they finally do find the survivor and they talk to him or her, there's a lot they want to do all at once. They might want to review the prior statement that the victim made. They might want to try to take a new statement. They might have photo lineups. They might want to try to discuss the DNA findings, and then they're going to basically put the $6 million question in their lap of do you want reengage, do you want to prosecute, and they just came home from work. They just picked up the phone, and they've had this huge trauma reactivated, and then the police are like, "and do you want to do this." So it is a lot to take in all at once. It is an enormous, enormous ask of survivors.

So given that we have really complicated legal and psychological issues, it stands to reason, then, that we want to know what's the best way to do this? What are the best methods for victim notification? The problem is, is we don't know. And I want to take a second here to explain why we do not yet have best practices for victim notification.

In the context of sexual assault, this awareness of the problem of untested rape kits is still relatively recent, so there hasn't been a whole lot of research funding or anything along that way to promote research in this area. What limited research we do have comes from two jurisdictions, the one I worked with, Detroit, and the other, Houston. Both of these were funded through the National Institute of Justice to do action research projects, which were multi-year collaborations between researchers like me, practitioners like all of you, to focus on just those two cities to see what we could learn from that.

Now I ask you, do you want to make national policy on what happened in Detroit and Houston? Probably not; okay? But it's a start, but that's it. You know, when we talk about the state of the state of research, we're talking about empirical data from two studies and even in these two projects it was very hard to study this issue. For those of you with a social science background and familiar with the fact that we need institutional review board ethics approval to do research, IRBs are very skittish about allowing social scientists to collect data on active legal cases because maybe the research would somehow interfere with the process and the like material, you know, could be subpoenaed, I can explain that, I can't give it. It's complicated. So IRBs do not want us to actually try to do research on this, and yet we very much need

research on how to do this so that we can be attentive to the psychological and legal issues. It gets a little complicated.

This is also hard to figure out because of victim confidentiality. There's some information that can't be shared. It was not a good moment in our Detroit research team when I had to sit across the counter port to Gina, and I said, "Can you let me know this information," and the advocate said, "I cannot give you that information." And I said, "Why the hell not?" And they said, "Because the federal Violence Against Women Act protects victim confidentiality absolute." I'm like, "Absolute? I'm Becky. I'm a researcher. I'm here to help." They're like, "No, you can't have it." And I understand that, and we worked through that.

But there are times as a researcher there's information I want to have that I just can't have. And I get that, and I understand that. But it does make it difficult for us to understand how to do notification when sometimes, for very valid reasons, we cannot get to the very people who might want to give us that information.

And then a final factor of why it's hard for us to know what is best way to do this is the community context. This is not going to be a one-size-fits-all solution. And I want to talk a little bit more about why victim notification and idea of best practices is going to be very challenge for this issue. And I want to do this by taking you through a national tour very quickly of all the jurisdictions that have disclosed that they have large number of untested kits. So this started in New York City and Los Angeles; okay, number one largest city, number two largest city. And I think people are like okay, well this is clearly just a problem of the two largest cities. Well then Detroit and Houston also stepped up and said, "Well we have large number of kits." Houston is the number four city, and pretty much nothing surprises anybody about Detroit anymore in terms of its crime. But then Portland and Salt Lake City and Phoenix and Memphis and Dallas, and then more, and then more.

So this is what the map looks like now. This is from based on information from the Bureau of Justice Assistance Program that I now work with, the Sexual Assault Kit Initiative, SAKI. Once they made some resources available to jurisdictions that have large numbers of untested kits to say go ahead and put your hand in the air, nobody's going to hurt you. We can give you training and technical assistance. We can help you with funding to test the kits, training to work with survivors, this is how many places have now put their hand in the air to say we have not tested rape kits. And in some cases you can see there there's entire states that have said at the state level we have not been testing rape kits specifically.

So just looking at that map what is going to work for victim notification and engagement in Alaska and Jacksonville, Florida, is probably not the same thing because community setting is going to matter in terms of how you do victim notification. Are we doing this in an urban area? Are we doing this in a rural area where people know each other? Is this a Tribal land where we're going to be dealing with different jurisdictional legal issues? Is this a military setting? Is this a campus setting? So the idea that we could have best practices on victim notification you've got to take into account all of those different contexts and what's best in one city might not be best in another.

We also need to think about how to do victim notification from the survivor perspective, and whether what we're doing matters to victims of different culturally specific groups, immigrants, particularly in the current age of what their legal status might be. Victims with disabilities, victims from the LGBTQ+ plus populations, how you reengage someone matters who they are. And if they are a member of a marginalized or vulnerable population, how you do that might be very different.

How you're going to notify victims depends on how many you're trying to do. In Detroit, we were staring down about 10,000 notifications. So, if you're thinking about a protocol of trying to notify 10,000

survivors, it's a little different than what your protocol might look like if you're trying to identify 200 or 20.

And then, finally, what resources are in the community to help you do this notification? Do you have Gina? I mean, everybody wants to have Gina's center, but not every -- not all of us live in Boston. So, do you have a local rape crisis center? Many jurisdictions don't have that. Do they have system advocates, someone in the police department or the prosecutor that can help do this notification? Do they have multidisciplinary response teams, or a SART, Sexual Assault Response Team? Basically, who do you have in your community that might be able to help you do this?

Some communities, Boston has the deluxe version. Detroit had none of these. None of these. They did not have a freestanding rape crisis center. At the time we started, they did not have system-based advocates and they did not have a SART team. So, there's going to be huge variability in jurisdictions in terms of where their readiness is to do this kind of work.

So, that pretty much shoots the idea of best practice kind of out the window, but I hope it gives you a feel for why it's going to be hard to get a one-size-fits-all, because we are going to have to tailor this to individual communities. So, as a social scientist, that doesn't make me particularly comfortable. How are we going to do this? So, what we tried to do in Detroit was think about, okay, if we can't say they're empirically-supported, you must do this, can we come up with empirically-supported questions to help you create your own victim notification protocol in each community.

So, that's what we did. We created an empirically-supported document, 12 essential questions for victim notification. It's now being released through BJA to help other jurisdictions that have large numbers of untested kits. I believe it's in your mystical, magical materials that were distributed to you. In the interest of time, I'm not going to take you through in detail all of these 12 questions, but I do want to just give you a little snapshot of them to give you a little bit deeper understanding of what kinds of complexities jurisdictions are wrestling with, and, again, try to highlight where the role of forensic science is going to be in many of these.

One of the first questions that a community has to deal with is trying to figure out who should be involved in creating the protocol. And I can say now that my work with the BJA-funded project, I see tremendous variability across the country, where there's some jurisdictions where the lab has said, "We're going to do this," and the advocates are like, "Really? Lab, you're going to do this?" And they're like, "Yeah, we're going to do this because we know DNA." And the advocates are like, "That's great. I'm so glad you know DNA. Tell me what you know about trauma." And they're like, "I know DNA. I know DNA really well." And that kind of conversation gets you very quickly to the need for a multidisciplinary team. Law enforcement, prosecution, crime lab, and advocates, and forensic nurses, you need all of those disciplines in the room because it is both psychological, legal, and forensic. The victims are going to have very technical questions about what this all means, so you need all of the disciplines there.

It's also really important, in the second question, to figure out what the protocol's guiding principles are going to be. And the reason why you need that is because there's going to be a lot of borderline calls here, and you're going to see some of those in a few seconds, where it's not clear what you ought to do. So, you're going to need something to fall back on to say what are we trying to do. We're trying to be victim-centered, "survivor-centered" was the term Gina used. We're going to try to let victims and survivors make their own choices about what they want. We want a principle that says we're trauma-informed so that the people interacting with survivors have the current knowledge about trauma and how it affects them.

Third key question jurisdictions have to figure out is what the heck kind of protocol do they need to develop. Broadly defined, you have two choices. Active outreach, are you trying to write a protocol where it says we are trying to find you, survivor, what Natasha experienced. They reached out to Natasha, active outreach. Are you trying to create an opt-in program where you create cool materials like Gina's folks have done, where survivors can reach out to the service providers to say 1-800-Where-The-Hell-Is-My-Kit? Or do you need both; okay? And jurisdictions need to figure out what they're going to do, is it active outreach, is it 1-800-Where's-My-Kit, is it a combination of the two?

The fourth key question that they need to talk about is when are you going to notify victims. Are you going to notify them before you send everything out for testing and give them a choice to opt in or opt out, or are you going to submit after testing? From a practical point of view, almost every jurisdiction I know is doing this after testing. If the survivor released the kit at the time she or he had the exam, and it can be tested, most jurisdictions are saying we're good, survivor consented to release the kit, let's move forward with testing. If the survivor did not release the kit, like it's an anonymous kit or some other means, then obviously it should not go forward for testing. So, most jurisdictions are saying if there's consent, let's just go ahead and get this out for testing.

This fifth question is the one that's going to bring every jurisdiction to their knees. I've seen this in Detroit and I've seen this everywhere else. Why? Why are you calling Natasha? Why are you calling survivors? Why are you making this contact? And most likely this is going to depend on forensic testing results and possible legal action. What do I mean by that? Let's consider, very briefly, a couple scenarios.

What do you do if there's no DNA found in the kit and the case is beyond the statute of limitations? What's the right thing to do? Do you notify? Do you reopen someone's trauma to say, "I'm sorry your kit wasn't tested. There's no DNA. Your case is beyond the statute of limitations, but we thought you'd want to know"? Exactly. You're all like, "Uh, I feel kind of uncomfortable with this." Yes, everybody feels uncomfortable with this question, because you can be very paternalistic, "maternalistic," and you can also really put someone through hell with notification. So, that's one of the things the community has to decide on.

What if there's no DNA found in the case, but the case is still within the statute of limitations? So, there's no DNA to help you out, but you could go forward, but there's no DNA; what do you do in that situation? What do you in the situation when DNA is found in the kit, but the case is beyond the statute of limitations? So, this, for stranger rape victims, could be the opportunity to say, "We know who did it, but there's nothing we can do because your case is beyond the statute of limitations." Is that a fair thing to do to survivors?

What about some other quick scenarios to consider? Technology is my friend. What if DNA is found in the kit, it has a CODIS-eligible profile, but there's no hit yet? Do you get someone's hope up, do you give them the heads up this could be coming, or do you just let sleeping dogs lie? What do you do if DNA is found in the kit, there is a hit, but the case is beyond the statute of limitations? What do you do if DNA is found in the kit, there's a CODIS hit, and the case is within the statute of limitations?

This also underscores why you need the multidisciplinary team approach, because prosecutors, bless you, will have very strong opinions about this, law enforcement will have strong opinions, advocates are going to have very strong opinions on this, and this is why, at the national movement, we're very happy to have Natasha and Natasha's Justice Project to help us bring survivor perspectives, those who've gone through these different scenarios. Like I said, this is going to bring a community to its knees in trying to figure out what to do with these situations.

And then who's going to make this decision? Is one person going to do it? Is it a single discipline? In Detroit, we decided it was a multidisciplinary team because everybody wanted to be able to sleep at night and nobody wanted that one decision on their shoulders. They're like, let's decide together.

What do you hope to happen in this first notification? You have to balance the legal and the psychological issues, and the brain's ability to take in complex information. That was a very interesting moment in the Detroit Project when the, bless them, the police brought in their list of everything they wanted to do in the notification, and I got to put on my psychologist hat and said, "There is no way, under God's green earth, that this is going to work." And they're like, "No, no, it will work." I'm like, "No, it won't. It really won't work. Trust me. Trust me. Trust me. You've just reactivated a traumatic memory. The brain is not processing complex information. This is going to take more than one meeting." And then the advocates went, "What? More than one meeting?" I'm like, "Oh, yeah, you're going to need two meetings." They're like, "Oh, my gosh."

So, we had to come up with a process for two different meetings, one was a short, then a long, to get everything accomplished. And who's going to do this? Next question. Is it going to be law enforcement? Is it going to be a systems-based advocate? Is it going to be a community-based advocate? Is it going to be a forensic nurse? Everybody has different ways to do this. Law enforcement's like, "We have to be there." And the advocates are like, "Okay. Great. We have to be there, too." And they're like, at least in Detroit, they're like, "You can't be there. It's physically not safe." So, who's going to go out?

In other jurisdictions, they're like, "We want a multidisciplinary team approach, which everybody says, "That sounds great," and then you think about a team of people showing up on the doorstep after your day at work. And you're like -- there's no way, potentially to sort of hide the -- it's like, "Oh, whoops, never mind, all of us were wrong. We're going to leave now." So, they have to come up with sort of elaborate protocols for what if you show up at the wrong door. What if you show up at the door and the survivor is not in a safe place to talk to you, and you have this fleet of people standing there. You know, there's ways of -- you have to work through all of these different issues, very complicated things. And, again, what works in one place is not going to work in all.

How are you going to do this? Are you going to do it by phone? Are you going to do it in person? Are you going to do it in mail? Most survivors say, "Don't send me a letter. It's not safe." Phone sounds pretty good, unless you work with mobile-poor populations, like Detroit, where that's not going to be an option. So, you, very often, are going to be showing up on people's doorsteps. So, you have to think about safety and confidentiality and privacy issues.

A community has to grapple with what information they can give. This was a fascinating discussion to watch between the advocates saying, "You have to give the survivors all of the information, including the forensic testing results." And the prosecutor is saying, "Over my dead body." And the lab is saying, "Hmm, I'm not even sure how we would do that in a quick, coherent way." So, you have to think through what information you're going to give to victims once you notify them.

You need very extensive training for your people who are going to do this, on trauma, on the protocol, on working with different populations, and, as we learned in Detroit, self-care strategies. It was very hard for the people who did these notifications to see survivors yell at them, scream at them, tell them to "Get the -- off their porch," on the other hand, to cry, to invite them into their home, to ask them to pray with them, to have coffee or tea. You can see any number of reactions from survivors, and they had to take whatever they got, and then they had to somehow get on with their life the same. So, we had to think about how to support the people doing the notifications.

And then, finally, last key question, this is my training as a psychologist, your training as forensic scientists, how are we going to monitor and evaluate this to know that it's going well? That was a very odd question for everyone. I said, "So, we're going to do some research on this; right?" They're like, "No." I'm like, "Yeah, we are," because we need to know how to do this. And, again, that may not -- everybody may be so caught up in the prior 11 questions that they don't want to think about evaluation, but you need evaluation.

So, those are the questions. That's what communities have to struggle with. And when you can struggle with those and develop a protocol, as we did in Detroit, what does research say? Okay. This is not going to be the long part of my talk because there's two studies. So, if you want to think about the sort of state of the state of the literature, we have one study out of Detroit that was just published, Houston's still under peer review. This isn't going to take long. But it suggests that a trauma-centered -- victim-centered, trauma-informed principles will work. Most victims do not have an adverse reaction to notification, even if they yell and scream and tell you to get off the porch, it's possible they're going to yell after you, "Wait a minute, wait a minute, come back in here." Okay. Most will stay engaged. Most do choose to reengage and most do reconnect with services, and most do need extensive services, particularly in mental health and substance abuse after they've been notified.

So, it's a hard thing to do, but it can be done. It needs to be done and it has to involve all of the different disciplines that have anything to do with survivors and forensic issues. So, I thank you for this opportunity to address you today. And how are we doing on time? Did we do it?

MALE SPEAKER: [Inaudible].

REBECCA CAMPBELL: All right.

SUSAN HOWLEY: All right. That was a lot to take in. We have time for a couple of questions, if anyone has a question. And Cecilia, you can be first.

CECILIA CROUSE: First of all, I'd like to thank the panel. Natasha, sharing your journey can't be easy, especially as often as you said that you've done that. And I certainly appreciate you doing that. And also congratulations on your purpose that you explained so eloquently. I appreciate that. I've read, Dr. Campbell, almost everything that you've written. I've kept in very close contact with what's been happening up there. It's been -- there's been a lot of instances where we've used and not used, when it was suggested, some of the processes.

I have a question for Gina. Is an un-reporter the same -- let me back up. With our new Senate Bill 636 in Florida, if we have a non-reporter -- I guess my first question is at the same thing, but a non-reporter is someone in which they do not report with regards to law enforcement. So, there's no law enforcement report. However, sexual assault kit is taken in what we call our Butterfly House, and that is kept for one year. But until a report is written by law enforcement, the crime laboratory -- that's not -- we accept it into our evidence unit, but we can't go and get it. We can't do anything with it until the non-reporter, which have one year, and the victim advocate calls and says, "You know, the one year is coming up." So, I guess my question is with regards to the toxicology reporting system that you have, and did I understand you to say that they can request for toxicology to be done without having a police report or -- I mean, how does that happen?

GINA SCARAMELLA: [Inaudible]. Okay. In Massachusetts, all toxicology kits are tested, whether it's reported or non-reported.

CECILIA CROUSE: So, a victim doesn't request it. You just automatically --.

GINA SCARAMELLA: It's part of the consenting process for the kit. We let them know at the time they're consenting to have a toxicology kit done that it will be tested, and that, if they report, it would be part -- something they can get the results of through the jurisdiction where it happened with the prosecutor or police that they're working with, or, if it's unreported, we'll give them a number at discharge where they can call and get that information in about 12 weeks.

CECILIA CROUSE: And who gives that? Is it -- it's not the scientist, obviously.

GINA SCARAMELLA: No, for that reason that Rebecca was saying. No. So, they have trained us on sort of the basics of what typically comes up in the tox kits, which is obviously alcohol, number one. And then Xanax and that kind of stuff is probably number two. And I don't think we've had -- if we've had any, it's been only a very few of what we were thinking that we were going to find, which I'm sure you already all already know, Rohypnol and GHB never. So, yeah, that's the way it works. It's 100 percent testing for tox kits.

CECILIA CROUSE: Are you keeping metrics on the results, I mean holistically, not only just results, but the victims, if they decide to report?

GINA SCARAMELLA: I was thinking a lot about that as I was preparing for this presentation. And I think it's something we just haven't been able to focus on enough. And I think this is the time it's really important to go back and see what the impact has been of doing this. Anecdotally, I will, as I mentioned, say that it really has not turned cases. Just as extending the length of time for the evidence -- holding the evidence collection kit, because that's another function that we do is request an extension. In Massachusetts it's six months that they hold kits without reporting, and then you can request an extension and go another six. That is the law that's about to change to hold it for the entire statute of limitations of 15 years.

So, our local folks are -- our crime lab, we have a Boston crime lab and a state crime lab, are struggling with that because we're -- they're concerned that the view from the public is going to be that we have untested kits, but what we have is, of course, unreported kits that are being stored. So, we need to do those metrics and that work. Our crime lab is excellent and it's just something we haven't focused on enough in terms of pushing that information together.

SUSAN HOWLEY: Thank you. Dean.

DEAN GIALAMAS: Ladies, I want to thank you for your presentation. And in particular, Natasha, you know, you've taken this tragedy and as a personal story, and you've turned it into really a heroic effort that you've been doing all across the United States. It's benefiting groups like us. It benefits the criminal justice system. It benefits the survivors, you know, that are struggling as well. So, thank you for that.

I would be remiss in saying that we were one of the "posterchilds" up on your map. I'm from Los Angeles. And just to provide everyone with a little bit of closure, in case you didn't know, we had about 12,000 untested sexual assault kits between L.A. City and L.A. County Sheriff that was discovered in the 2006 to 2007 timeframe. By 2011, we had eliminated that complete backlog and both agencies have been able to keep up since then. But to your point about notifications, the Sheriff's department has taken on a formalized notification program.

And my question to you is this, we have a policy in the laboratory where we test every sexual assault kit, regardless of investigative need, and we've discovered there are some cases that would never have been tested, but it provided some pretty substantial information, linking either to suspects or linking other cases together. So, we've seen that benefit, but I'm curious on the notification piece. There's multiple ways that we can notify. We're currently using a letter format, and that was chosen by, as you mentioned, a

collective group, but has any research suggested or showed a type of notification that has a, for lack of a better term, a better effect or a more positive outcome, and can you elaborate on that just a little bit?

REBECCA CAMPBELL: Two studies, both of which used variations on in-person notification. So, as a social scientist, I have to say there's no data to suggest that mail won't work. All I can tell you is that we have an unbalanced design where only one method has been evaluated. It goes back to the issue of the size and scope of what you're trying to do. So, yeah, you were the posterchild of one of the bigger ones, and it's amazing that they've been tested and cleared. And in that situation where you have that many survivors that you need to contact, that's when I hear people do talk about mail with a combination of an opt-in approach.

The Joyful Heart Foundation has done some survivor focus groups, not sort of peer reviewed research but some focus groups. And the mail system was sort of mixed, but there was acknowledgement that if the scale is big enough, that might be appropriate, but can you combine that with the 1-800-Where's-My-Kit with, you know, good public announcements, and to have, you know, advocates staffing the line, working with a multidisciplinary team.

So, the Houston Project, which is also I think on National Criminal Justice Reference Service, had survivors who were not involved in cold cases look at letters and say "I like this, I don't like this." So, I could refer you to that. They weren't thrilled, overall, with letters, but they did have some feedback about what to put in a letter and what not to put in a letter.

SUSAN HOWLEY: All right. Julia.

JULIA LEIGHTON: Thank you all very, very much, and thank you for taking the time to share your stories here, and the research, and the research that needs to be done. I'm struck by some overlapping themes between the two panels that we've had, and the issues that we have yet to address here, and that I think we've tried to identify as being critical issues. And one of those is the treatment of evidence, how do we preserve it, how long do we preserve it, how do we notify people? However you want to define them, how do we notify people, whether they be survivors or incarcerated?

And I think it's just -- you know, it's sort of one of those painful things. It was going to be inevitable. It didn't matter which panels we had on our last session, whatever they were. If they had been last January's panels, we'd have thought, "Gosh, we should have started there," or these panels, "We should have started here." And I think it just goes back to the issue of, while much has been done, a lot remains to be done. And these two panels, from what might seem like very disparate perspective, share some really common, common threads of what it -- of how lives are destroyed and what efforts need to be made about how you communicate with people that have been put in that situation, and what responsibilities we have to thinking through the notification, thinking through the preservation of evidence, and grappling with what went wrong and coming up with solutions. So, thank you very much.

NELSON SANTOS: Okay. I think that's it. One round of applause. Last final applause. Thank you. Okay. That takes us to the wrap-up session, which we're a little early on. And considering that we were going to wrap up some issues that we kind of voted down, I'm not sure exactly -- I guess I'll open it up to folks on any topics that you'd like to discuss at this point in time. And if we don't have any topics to discuss, then we'll go into the public comment period. So, I open it to the floor for any comments, questions, on anything that's happened today. It's difficult to wrap up when there's no next meeting to talk about. So, Jules.

JULES EPSTEIN: Well, I have a comment. In light of the announcement that we received this morning, I realize that we voted down two proposals. I'm assuming it was done on merits. In other words, that whatever people thought about the overarching issues, reports and what should be in them, science or

scientific results and how they should be communicated, that the concern was linguistic and not with the issue itself as being important to forensic science. I just felt it important to express my chagrin that we are going out doubly, not with a bang but a whimper. We were closed down. And being closed down, we went out in an ignominious way by voting down two proposals without ever taking an affirmative stand.

A year or so ago, at one of our meetings, Paul said to this group we're not grappling with the fundamental issue that every day in court there's testimony still going on that is not necessarily the most accurate. And I'm sure I'm understating what Paul said. I don't -- there's probably not a mechanism for doing this, because obviously we don't have anything to vote on, but I, for one, want to go on record that, as a member for 24 hours more of this commission, I strongly believe and am convinced that the forensic disciplines have significant needs on the two issues that we couldn't resolve today. And I hope it's clear that the fact that we didn't vote affirmatively on two proposals is not a statement that all is well. I don't know how to communicate that otherwise as a sense of the commission, but it's a sense of one commissioner.

NELSON SANTOS: Okay. So, seeing no other tents up, John, do you have -- okay. Okay. Yes, Arturo?

ARTURO CASADEVALL: I mean, I totally agree with what has been said. You know, the commission may be going away, but the issues that we have discussed are not going away. And I am an optimist. I like to think that, despite what many of us feel was not the completion of a lot of work, a lot of the discussions that went on here, a lot of the exchanges that went on here will change the future in a way that it will lead -- some of this work will have to get done. These problems are not going away. And sadly it's kind of a missed opportunity.

On the other hand, I come from the world of science where often dogmas and problems just take a long time to bid resolve. So, with something like this that has been going on for a long time, it's likely that it will take some time to work itself out. And I think this commission will have made a tremendous -- have been a tremendous catalyst in that future that we will one day get to.

NELSON SANTOS: Okay. John, do you want to open it up for public comment?

JONATHAN MCGRATH: Yes. So, there were a few people that registered online in advance of the meeting to provide public comments. So, now is the public comment period. Okay. Seeing no hands in the room, we will have a second public comment period tomorrow at the end of the day's proceedings. If there's nothing else, I adjourn this meeting. We'll meet -- reconvene at 9:00 AM tomorrow morning here. Thank you very much.

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NCFS DAY #2, TUESDAY, APRIL 10, 2017

Part IV

JONATHAN McGRATH: Welcome back to the National Commission on Forensic Science Meeting 13, Day 2. Thank you for those that are dialing in through the webcast. We will get started in a few minutes. I'm going to hand the microphone over to Nelson before we get started with our first speaker.

NELSON SANTOS: Good morning, everyone. Before we start with Dr. Speaker, I'd like to give Pam the floor to go over some of the amendments that were made to the summary document as a result of the votes we got yesterday. We had indicated that we would go back and fix those so that we can see what

that looks like. I think John has it available for viewing. Again, unless there are issues with this, we're just going to move forward without a vote; I think it's pretty benign.

PAM KING: When we voted on this document yesterday, I had highlighted for the group that there was this language, which is now up on the board, that references the two documents that we voted on yesterday. As a result of voting both of those documents down, I thought it was appropriate to change the documents, which was what we voted on – to approve the document, with an additional change, once these were voted on one way or another.

The language that I've added to the document is what is below in blue. The highlighted portion, which says, "These two documents are currently in draft form and may be finalized by the subcommittee for discussion and vote by the full Commission at the upcoming Meeting #13, in April of 2017," that would be deleted. Then the new language, which you can see below, would be, "At the 13th meeting, neither draft received the required two-thirds majority vote; however, the issues each report addresses have been of concern to the Commission since its inception and remain crucial to the forensic science community."

UNIDENTIFIED MALE SPEAKER: So moved.

UNIDENTIFIED MALE SPEAKER: Second.

GREGORY MOTTA: I just want to ask, do we document other documents throughout the process that were voted on but turned down?

PAM KING: All of the documents appear in the Appendix, which has not yet been amended to reflect this change as well; but within the document itself, yes, almost all of the—

NELSON SANTOS: Pam, I don't know that we've had one that has been voted down. It usually goes back to subcommittee and then readdress itself; but because it's the last meeting, it doesn't have that opportunity. I think it's consistent with some of the other topics that we had indicated for future to address. So I think putting this statement in is consistent with what we've done before on other topics we wanted to look at.

PAM KING: And certainly the document itself identifies all other issues.

NELSON SANTOS: Yeah, I think it's consistent.

Any other concerns? All right, so that's what it will look like then finalized. Thank you.

Our first speaker goes by the name of Speaker, so this is very apropos; it is Paul Speaker from West Virginia University.

PAUL SPEAKER: Good morning.

First a little bit about who I am and what we're going to go through here this morning. As Nelson mentioned, I am from West Virginia University; and my connection to the forensic science community is consistent with our Forensic Science Initiative at WVU. Early on in the process, Max Houck, who was running a project, brought us in to be able to speak to some of the scientists with ASCLD to try to give them a little bit of a sense on becoming an organization on their own and running things. So he asked some of his friends in town to come in and speak to them about strategy, about budgeting, about a variety of business issues that we had; and I got invited to that, and that was my start.

Out of that Forensic Science Initiative, one of the things that became apparent very quickly was we had all of these people in very prominent positions running organizations but very few who had any formal

training. Their formal training became as scientists; they were very good as scientists, but put into management and decision-making places.

So he, along with Dick Riley, one of our colleagues in forensic accounting, put together a proposal funded by NIJ, which is Project FORESIGHT. I'm going to talk a little bit about the history of the project. I'll try to do as little as possible, enough to keep you informed; hopefully, those who are very familiar with the project, not to bore you in the process; and then spend a little bit of time talking about the work that we currently have underway, including some results that have just finished up on a couple of the papers that we're working on, but to give you an idea of what this can help do for forensic science services in general.

As I said, Project FORESIGHT is a natural development out of the Forensic Science Initiative. For those of you that know Suzanne on the Committee, you probably have a little bit of a sense of what we're doing at West Virginia; but it is a byproduct of some of the efforts of Senator Byrd to be able to bring more things to the State of West Virginia. With the fingerprint identification facility moving nearby, we have the birth of the Forensic Science Initiative here.

Our Project FORESIGHT was something that followed on the heels of a project that had been conducted in Europe, the Quadruple Study, where we had four laboratories in Europe that got together and said: How do we begin to connect some of the various things that we have in place here on casework and the details you would have on casework, but to connect that with the financials and the budgetary restrictions that you have in the laboratory and to be able to talk about some of the personnel things that we have in place?

NIJ funded this project for their fiscal year 2009 and then again for 2010, and we were able to do quite a bit with this. Now, the difficulty of course in the laboratories is that the systems that house the information on casework were generally separate systems from what would hold anything on financials and may also be completely separate from anything on personnel matters. So it was not a simple matter to extract data, to be able to get to that; and what we did is we gathered a group from 17 laboratories in North America – I say North America because we had two Canadian laboratories that participated from the onset of the project – but to come together to, first of all, define a language.

Now, for me, I'm from the dismal science, from economics; so I'm not from the physical sciences, but I do read voraciously. So you'll notice that in leading up to just opening this meeting, I had my kindle open; and I was here reading, of all things, a novel about a crime. So I do that all the time. So I thought I understood the language. When I read crime novels, I seem to get a pretty good sense of what we mean by a case, a sample, an item, a test – whatever these things were.

What we discovered when we sat around the room was that 17 laboratories, 17 different definitions for *everything*. So it took us about a year-and-a-half, and it was this dance that we would do – two steps forward, one step back. I got very good at it. But we came up with a language; and from the perspective of people in the business school, it did not matter to us what people wanted to call things, just that everybody agreed to call it the same thing.

So fortunately, we had the Quadruple Study to begin with; and we had, really, quite a bit of work – every two months coming together for a day-and-a-half of meetings to be able to kind of hash things out. But we came up with something. Is it perfect? No, but it was agreed upon; and so the agreed upon, as you're finding, is a really remarkable thing to be able to come with something where everybody says this is what we're going to do.

Now, our incentive here was not to *tell* people what to do but to simply find out what's going on, what's working, what's not, where do some of the principles we have from our disciplines help to be able to

explain what's occurring here. Above all, as we have in the last of that, is we want to share what works; we want to get the information out there. If somebody is doing something well, describe, figure out why that is happening, what's going on; and if something's not, to identify it and find ways to be able to improve it.

So amongst other things, we break our data down by areas of investigation. You can see here it had been a longer list, but we've compressed some of the data to simply have enough that we would have something that we could talk about in some detail. But blood alcohol, crime scene investigation, digital, DNA casework, database, and so on, all the way down to trace. Trace is one of the areas where we did have to combine a couple of areas. We didn't have enough reporting separately on things like hairs and fibers, paints and glass; so we combined some of those within trace.

But this fit very, very nicely; and some of the data I'm going to show you is just from one of these areas. I chose DNA casework largely because we have the greatest number of participants who do DNA casework, so we get some nice large data properties that go along with that. But anything that I go through here and show you today, these are things that can be looked at down to the detail of any of these areas of investigation.

Now, along with these, what we do when we talk about budgets and expenditures here, we are talking about a full accounting of all of these kinds of things. So we're taking from the specifics of what's going on, on personnel; looking at what's going on with, say, consumables in a particular area; capital expenditures spread over time -- laboratory equipment, for example, falls into the IRS' five-year class for depreciation purposes, so we look at five years and spread that out.

But we also have all of the infrastructure of the laboratory in place. We're asking, "What are the utilities?" I've gone into laboratories, and I notice the lights *are* on. I know that there is heating and cooling. Sometimes it happens to be heat in the summer and cooling in the winter, but there is heating and cooling going on. So we look at all of those costs that are going on and allocate these to be able to kind of see what is happening and what goes on through there across each area of investigation.

Participation in FORESIGHT is voluntary. Now, I have data; we began this in fiscal year 2009, but we have laboratories that were able to go backwards and extract data for us all the way back to a few of the laboratories from the fiscal year 2005. We've just collected and are analyzing the fiscal year 2016 data with that. In fiscal year 2016, I had 136 laboratories provide data. To provide data, what they are doing is they are sending me an Excel workbook that has one page that's extracting a good bit of detail on casework. By casework, they'll talk about how many cases do they have for each area of investigation. So certainly, you have cases that come in across multiple areas; so we're going to report that in each area.

How many items of evidence have been submitted across those cases? How many items have been examined internally? How many have been outsourced? How many samples taken from the items that are examined internally? How many tests that are run on all of those samples? How many reports are written?

We have a series of examples that show people how to count – you know, how would you count across these things; and time has continued to add additional examples with those. Along with this, they report some information with respect to personnel -- so how many full-time equivalent employees are both from a technical side and from a support side in each area of investigation; how much are generally out there that are working across areas – and we have a way to allocate those; hours that are spent in casework versus other types of activities – so we look at all of these things on the casework page.

On the financials, we break down to a great bit of details on this. Sometimes it's just general laboratory expenditures in a particular area. The biggest thing is personnel expenditures, which we get detailed by

area of investigation; and we allocate those with the FTE to be able to talk about compensation and things that fit in from there. It talks about consumables and, as I said, all of the things in the infrastructure.

Then in the report, they are automatically provided some detail on the output. So immediately upon filling it in, they get some output results. We go ahead further, analyze the data, and provide reports back to each individual laboratory. The reports go anywhere 80 to 120 pages in length, detailing how do they compare to other laboratories around the world; how do they appear over time; and each year, we add some new items to that.

We had 116 of the laboratories were U.S. laboratories in the most recent year, which is nice because we're getting a growing number of international laboratories. We *do* have representation from six continents; we're getting a lot more.

Now, this last piece of this is Project FORESIGHT 2020; that is the big addition, and I want to show you a little bit about this. This is a project that is currently underway. But the biggest difficulty for laboratories to participate in the study – there's no charge to them for participation, that was thank you to NIJ really for taking care of paying for our time historically on this to be able to analyze it. But the cost is in the time to prepare it. So we put together, along with ASCLD – worked with the leadership at ASCLD -- to put together a proposal to fund a project called FORESIGHT 2020, which will automatically extract the data.

Now, to give you more detail on the metrics, I have listed at the end of this slideshow 20-something publications that we've had out of the project already. This is one that appeared in 2015 that gives you a really good idea on what kinds of things we extract from the data. If you want to go in and look at more, this is *Forensic Science Policy & Management*, and it really kind of shows you what we produce and the kinds of things that come out of there.

Now, FORESIGHT 2020, this is the project that is currently underway. It is a project that is awarded to ASCLD; but Max Houck serves as the Project Manager, and I serve as the technical consultant on this project. This is what's funded by the Laura and John Arnold Foundation. This is an *amazing* couple in terms of what they've done, in particular for things that improve the justice system. In this, we had spoken to them; and what they wanted to be able to do is to make it easier for more laboratories to be able to benefit by this analysis.

So we have a cooperative effort with the major LIMS providers to basically provide freeware to be able to connect this with existing LIMS systems so that the data that we have is automatically generated. I'm going to be able to show you a couple of screenshots of what we have on the beta testing on this to give you an idea of what comes out. It's not only to be able to generate our report, which is currently annual, or to be able to generate automatically some of the reports, say, from grant work for NIJ that it can extract the data and put that report together; but the key is this last one, is that it offers a dashboard, something that a manager can look at for *any* time period to see what is going on and to be able to work their way through.

So if you want it for the entire year, you want to compare it to prior years, you want to look monthly/quarterly, you want to look by individuals in the laboratory, how they're performing – it has that capability. So this is a little bit easier to be able to see, I'm sure, from the slides directly. But just to give you an idea on this, this would be the first level of the screens just looking at what is happening. So this screen would scroll down. There are all kinds of graphics that go along with this.

You have the ability to dictate the time period at the top. So you can say: I want it for the most recent quarter; I want it for the current year; I'd like to look at what happened last year. It automatically updates to what is going on in the laboratory – how many cases have you seen over that period of time, what is the

current activity, what kinds of requests for services out of each of those cases, how many tests are going on, and so on. Then you get a graphical depiction on how this is working over time. That's just the Home Page.

The next page is strictly the FORESIGHT Page; and in this, these are the items that we're asking for – so, again, defining the time period that you want across the top. What it's doing is it's breaking down for each area of investigation. You can see there you have a crime scene investigation; you have fingerprint identification; you have this working its way down, digital evidence. This is the total number of cases over that period that have come into the laboratory. It also has these are the number of items that we're looking at in here, or how many samples have been examined in here, how many tests have been run. It continues to track these down at each level.

If you are interested in additional items that we have from this, looking at the next one breaks down to these. Those bottom graphics give information, for example, on turnaround time – so how long are things taking, what's going on with that relating to any of these things. And of course, the manager has these at their fingertips. They can say what happened last week, what's going on today, last year – really being able to make this a very, very prime managerial tool. And it's free – free for all laboratories, again, thanks to the Laura and John Arnold Foundation for funding this to make it available.

We've had great cooperation certainly from at least three of the major LIMS vendors; they're excited about this, putting this in place. We're going through the testing with some individual laboratories right now, and the project is scheduled to wrap up at the end of February next year, in which it will be released and available for laboratories, whoever would like to have it, take advantage of that.

So that's the project that's currently underway. I would say certainly to anybody who is attending the ASCLD meetings this year, we have our annual FORESIGHT meeting there; and everybody is always invited. We like to get questions, new topics. Things are going on, but Max will be there to speak a little bit more about where that project is.

Now, that's a little bit on the history; and I'll certainly take any questions you have later about the project. I want to give you an idea on some of the work that we're doing currently, including I've got some results from projects that are currently underway, not yet published, but hopefully were now results to writing up things for submission on a couple of these.

To give you a little bit of an idea, we get our ideas on projects first and foremost from our membership. When we have our meeting, we find that people ask us questions: Do you know about this? What's going on here?

They give us ideas on things to investigate. Other times, we see things in the data itself that raise questions that we have. I published a piece a couple of years ago on lease versus purchase. Lease versus purchase in corporate finance is a big topic, but it's one that's pretty much been settled; and I was surprised to see how little leasing was going on, recognizing that this is a way to expand budgets. So Will McAndrew and I did a piece together on that that was published. So we look for scientists to tell us, managers to tell us, this is an issue and so we start looking at those.

Four of those that I want to talk about – one of these is probably jumping higher and higher to the top of the list, given the current political climate – and that is return on investment. So what is the return on investment?

We're working with RTI right now, the Forensics Technical Center of Excellence, on a project, this very first one, which is what is the return on investment from the DNA database? I want to talk a little bit about that and some of the results that we have.

The second is process improvement. You'll notice that a lot of laboratories are investing in Lean Six training and what's this going to do. We want to be able to measure what can you actually get out of this, and so we'll talk a little bit about that here this morning.

The other is one now that I have more international labs: Is there a difference between the performance in U.S. laboratories versus worldwide? That one is sparked in part by a very talented young man, a master student in biostatistics, who has been working with me, who jut noticed something in the data. So I want to talk a little bit about that.

The last of these is *extremely* important, which is the predictive capability of efforts that are currently underway. So when you invest in reducing backlog, what's going to happen? We can predict this; we have very, very good economic law that sits behind this. Now we have measures to be able to talk about this. So I'm going to talk about those four here.

The first of these, I want to give some credit to an article you see in there from Jenn Doleac at the University of Virginia. If you've not met Jenn, this is a brilliant young woman who just does some really cool things that happen to be affiliated with forensic science. She published a paper in one of *the* leading journals on *The Effects of DNA Databases on Crime*. This is kind of the first really, really good return on investment.

Now, what Jenn is able to show in this – you can see there the quote that it opens with: "In 2010, 761,609 offender profiles were uploaded to CODIS. This cost the State and the Federal Government approximately $30.5 million but saved at least $1.2 billion – that's billion with a "b" – dollars by preventing new crimes. So you want to look at what the return on investment is there. Now, the difference that we have, or the contribution we can make to what Jenn has done here, is she was going from some very general data in terms of what the actual costs are.

By our study, and where we can detail what it cost laboratories – and it's a little bit higher than that when you take a fully loaded view of the cost of the laboratory and spread those things out – we can also individualize what the contribution is by laboratory; and that's what we're taking a look at. So what we're working out is to try to take a general look at the benefits and measuring the societal benefits and taking a look at this down to the jurisdictional level and what these impacts are going to be, and it certainly has some policy implications here.

Now, if you think about this, one additional entry to the DNA database – not one hit, just an entry and what the cost of that is -- brings back to society roughly $20,000 in societal benefits. Show me anything that has that kind of rate of return, and you want to see what the value is.

So this is what we've been looking at is to say things that you're doing to improve it, what can you expect to get?

So there are some questions about right-sizing, where to put your money, how to organize things, how to be able to work it to get the greatest returns. Now, we're going to see some increased demand for services as more is put towards this, so turnaround time reductions are going to have some effects that we'll talk about in a moment. It is going to be a moving target that you're planning for, but there is good economic science to help project what that path is going to be. We're talking about more data-driven kind of decision making. But just taking results that we have currently, this is suggesting that even a small laboratory that is not producing at a high level or at a very low cost, we're talking about returns in the nature of 890% for an addition to the DNA database.

For a laboratory that's operating at peak cost effectiveness, you're talking about 3,800% returns for that laboratory. To put that into perspective, the leading company on the Dow Industrials, Apple Computer, its

return on investment is 28%. So if you want to be able to talk about what the contribution of the forensic sciences is going to be, in this case, dramatic – and this is just one area. This is one of 19 areas that we're going to be, hopefully, looking at over time to be able to talk about overall returns.

Okay, now process improvement – we wrote a paper back in 2009 when we first looked at the data; and in that paper, we did a decomposition of the data. How do you describe what's going on? What should a manager be looking for? What can they compare to?

In our early study in 2009, we have a small group of labs; but out of those laboratories, one of our participants was from Orange County, California. Another of our participants was the State of West Virginia. Well, economic climate in the state of West Virginia, where the laboratory is located in South Charleston, where the laboratory was located in Orange County, there are very, very different economic conditions. In particular, there is a big difference in terms of salaries, compensation that you have to pay; so there are market forces at play.

We wanted to be able to take account of that. We wanted to be able to take account of productivity differences – a variety of different things in this. So we wrote a paper on decomposition that we have there. We've looked at this and were able to come up with a sense of efficiency and what you should anticipate based on jurisdictional size – what is the level of activity, and what is efficient for you versus in a market economy, where I come from. In corporate finance, I was working in the banking community and analyzing the banking community. Well, what happens in the private sector is in for-profit environments, you knock everybody out who is not the lowest cost provider. But in a jurisdictionally-based market, such as you have in forensic sciences, things operate differently.

So we wanted to try to take a look at that; and, in particular, what happens if you want to instill your own improvements. So Lean Six is one we talk about; there are many other process improvement methods. What can you expect to gain and some of the policy implications you're going to have with that?

Here are some data, and this is kind of interesting. By the way, people have seen me geek out on this one before; but what you see theoretically in economics, in the for-profit sector you don't get to observe what you know theoretically goes on because you knock everybody out that is not operating at the lowest costs. So what I have is data here. This is for DNA. I wanted to ask questions about, well, if you undertake a project on something like Lean Six, what can you gain?

So what this data shows is on that vertical axis, we're looking at how many DNA cases are processed -- and this is DNA casework, not the database but DNA casework -- per $1,000 spent. Along the horizontal axis, it's the number of cases submitted over a year. So you find the amount that comes out per $1,000 is relatively low when you've got a very low volume; but if you can see in here, there is a specific shape that is suggested by this. This is what we look at econometrically. That curve that's in there, that isn't a freelance curve; that is the best linear unbiased estimator of this relationship. So what it is – it's the result of a quadric regression.

Now, there are better, more complicated techniques that can fine tune this a little bit; but you get the rough idea. This is what we refer to with respect to productivity is that there is an ideal size. So if you were talking the private sector, you're going to find in any business there is a right size to be, where productivity is going to be its highest for the level of activity that you have with that.

So for those of you – I see several coffee containers around the room. There was a difference in size between the place where you stopped for coffee and perhaps the Walmart that you passed on the way. There is a right assistance for a big box retailer – although we're not sure what that size is going to be anymore, thank you, Amazon; but there is a right size for Starbucks. Everything has its right size.

The same is true in terms of processing work at the laboratory level -- whether it's DNA, fingerprint identification, trace, whatever it might be. There is a size in which you're going to get the highest level of production. What we're trying to do is to be able to measure that; taking the data that we have in any particular area and say, okay, here's what we would see. So I'll give a term to that curve and call it the efficient frontier.

Now, what we'd like to be able to do for any laboratory whose market size is determined by jurisdiction, to say for your size, how do you fit relative to that efficient frontier? What gains can you get? Not what can you be to be the so-called perfect size that we would have in a market economy, but how do you fit in this?

This has been one of the bright spots of what we've discovered, is that while the image of the public sector is often maligned, certainly by free market economists who would say, oh, the government sector can't do things right – because we have this image – and please forgive me anybody that works for the Department of Transportation – but we have this image of the Department of Highways and eight workers and one shovel and everybody is sitting around.

But we're not finding that in the laboratory. What we're finding is that laboratories tend to operate near this efficient frontier. Now, occasionally there are issues; and we try to help identify what those things would be.

So here is what we'd like to be able to look at. If you are below this curve in productivity, can we measure what a program such as Lean Six can do for you? What's that gap? What are the gains? Is it worth the expense going through this? Because you may be really close and the exercise itself costs more than what the gain can be.

So I was first noticing this in a very, very interesting project that went on in the Netherlands. To go through a process with Lean Six, and this is one of the citations with this in science and justice; and it's a remarkable project. What happens if you really invest in quality in this sense, in process improvement – what kind of gains?

When I saw the presentation – in fact, it was an invitation from NIST almost three years ago -- thank you, Mark – and it was a great presentation; it was fascinating. I kept looking in the data and saying they made a couple of comments. They found that as they improved, their level of activity went way up. And I thought, well, you've got several things happening. Can we separate out how much of this is an improvement from Lean Six and how much of it is a natural improvement that you get from scale economies – economies of scale, rightsizing –- and to try to be able to split these things down. So you'd like to be able to combine this work to be able to say, here's where we're headed; this is what we're going to see; this is what our policies should funding as we move forward. At the time, they increased their work dramatically. So they had to rebudget and recalculate what everything was going to be.

Now, the inverse of this is just looking at the same data with respect to average costs. So people are always happy about productivity – what are you getting per dollar spent? Well, maximizing that is the same as minimizing the average cost; they're two sides of the same coin. This is the traditional economies of scale that an economist would look at. So again, this is what I geeked out on; I was just so excited to see the data -- so trying to look at things that improve and minimize that case – so size does matter.

Now, what does this mean?

Well, in the case of forensic sciences, we're also working with public health laboratories on this. Public health laboratories have found in some areas of work that they do regionalizing some activity has been an improvement for everybody. By simply saying, you know, not everybody can be the one that looks at this

particular problem. But if we can work something within a region that everybody can benefit, everybody can lower the cost; and we've seen some success with that in the forensic sciences.

We did a study in Canada in which we took a look at the entire forensic services in Canada. One of the things that they discovered is by moving all trace evidence activity to a single laboratory, everybody lowered their costs. The difficult part was how do you prioritize; how do we move money? Those turned out to be fairly easy to be able to deal with, but scale of economies helps to tell that.

In looking at this, this is what saw with the data. We're beginning to tell people with this, to be able to say, you know, you're too close to get a lot of gain from investing in this; you may want to think about some other things to be able to do to improve. To be able to hand each laboratory, here's what you measure; you're already at efficient. So a new productivity improvement isn't going to change things.

Now, this next one – as I said, John Bassler is this young man whose been working with me; he's finishing up his masters in biostatistics. Interesting guy – he's the biggest research assistant I've ever had. He was in football; he was a lineman at WVU. You don't find too many math and stat undergrads, but they exist on the football team. So he noticed in the data that over time, anybody who has the data about their laboratory, they just tend to improve – no particular program, knowledge alone seems to be a behavioral trait that improves things.

So we're looking at how this moves over time. We began asking questions about U.S. labs versus international labs and is there really a difference, or is it just that the domestic labs that we've had in our study have been there long enough to notice improvements and to get better? So we're working through a study on that: Does knowledge alone improve your operations? Early data on that is suggesting some things in that direction.

Now, this is the one that I find most fascinating. We were invited in the fall to speak with respect to sexual assault kits and policies trying to improve this. While this particular interest was in sexual assault kits and backlog reduction, we were just interested in all backlog reduction programs and what happens with this. So as backlogs go down, so does turnaround time seem to be affected by this.

Now, in economics, there is a metric that we use; it's called "price elasticity of demand." For *any* industry, you can *very* precisely predict what the reaction is going to be when you change your price. So what happens if you lower it? Well, if you lower it, we know from the law of demand, the quantity demanded is going to go up; people want more. But they want enough more that you make more money out of it.

Well, forensic science for the most part, there's not a charge. So there is no price. Your price becomes wait time. So I gave this a name; and rather than call it the wait time elasticity, I liked the name the queueing elasticity of demand – get in line. So what happens when you reduce the line?

What we found first of all just on some simple metrics in looking at this is that it was less than minus one. What that means is this; if you reduce turnaround time by 1%, the demand for your services goes up by more than 1%. So I was teasing Gerry last year and saying backlog reduction program was the wrong name because if you're successful, you'll never be successful. Huh? By being successful and actually enhancing capacity, and he came to me immediately afterwards and said, "We changed the name already, capacity enhancement."

So a very, very important clue about what's going on – but we can measure it. It's a moving target, but we can measure it. So we got the results – not yet published, but I'm going to run through some of these now.

The first of these is the metric with respect to casework. Now, this is looking from data that we have on laboratories from 2005 through 2016, 531 observations. So we measured this – the elasticity with

turnaround time with respect first of all to casework. Across that dataset what we have found: that a 1% reduction in turnaround time increases casework by 1.29%. So part of this that's going on – yes, there are other factors that could be at play in here; but largely, it's suggesting this. Cases are being submitted that weren't being submitted before. So, okay, you've got to plan for these increases as you get better; but it goes much deeper than that.

We looked at this with respect to the number of *items* presented – minus 3.9 for a 1% reduction in turnaround time. Yes, we have an increase in cases; but back up the U-Haul because more items are being – almost 4% increase in the *items* that are asked for consideration. The better the job you do, the more the demand for the services. That doesn't mean that every item is going to be examined. So when we go down and look at what the laboratories are doing here, what we find is the number of samples that are actually examined is increasing at dramatic rate. For a 1% reduction, it's almost a 3% increase in the throughput.

How do you fund this?

You've got to plan for it; you've got to be able to look at this. And these are very rough estimates simply based on annual submission of data. Once we get data from our FORESIGHT 2020 project, where we can then begin to examine for much shorter periods of time, what are these impacts – when does that knowledge become generally known that, hey, they're getting better at this; they're getting faster; let's give them more.

Right now, I can only use annual data. So I look at what was your turnaround time one year; what happened to the submissions the next year? Now if I can begin to do a quarterly or monthly or whatever it would be to try to find out and predict what this is, to be able to take every individual market and to say this is what the demand for your market looks like because I've got time series data for the individual laboratories. FORESIGHT 2020 allows us to do that.

So what do you need? What do you put into the funding awards? How do you go to your funding body and say, "Look, here's what's going to happen here." Not here's what happened historically; I now have a predictive model. You can look at program effectiveness, and you can go back. I'm still struck by things in 2013's GAO Report and saying, well what does it --? You've got it. Does this work? Yes, you can come out and you can pull it right out of these things. Policy implications – to be able to now extend to that return on investment to the individual laboratory, to be able to talk about what goes on there; and we can track it better as we work our way in here.

Moving forward, as I said, topics we look at are occasionally something we find in the data; but generally, it's an observation that some lab director has – What's happening with this? What's going on there?

As I said, we have at ASCLD 2017, once again, that's Sunday evening right before the meetings begin. Anybody that wants to is invited. Please talk. This is how we get our ideas. We welcome anybody to participate with that.

The FORESIGHT 2020 support continues through February 2018, but we are about to be flooded with data. The ease with which laboratories are able to provide data and get it through there and the big thing comes as an *industry*. One individual laboratory does not necessarily have the incentive to go through this. And it's figuring out how, as an industry, you share, you get more people. I've got a small group of us that are working with this data. We'd love everybody to have access to the data and have other people researching things – but to look at ways to house the data, to collect the data, to make that available.

Our project funding, as I said, for FORESIGHT – that ran through fiscal 2010. We stretched it out as long as we could to be able to keep funding the activity that goes in there. This foundation – some grants from

RTI is keeping this in mind. But as an industry, there is so much that you can benefit from by learning these things – keeping that on the table.

Finally, if you look within the current climate, certainly being able to speak a language that is a language of business – and whether you like calling forensic science an industry, it is. It is a collection of, yes, public sector corporations that are units that are making decisions for different goals, certainly. But collecting that information and being able to learn from each other and how to do things better – not just in the science, but how to select across these – is just a very important thing to keep in there as something as we work forward.

I'd be happy to take any questions that anyone has with this.

NELSON SANTOS: I'll start off with a question because now I'm really concerned. So I have 25,000 samples in backlog; and if I read what you said right, the more efficient I get, the greater my backlog is going to get.

PAUL SPEAKER: Yes.

NELSON SANTOS: When does it plateau?

PAUL SPEAKER: Well, that's the thing. What you see is a demand schedule; it's not one elasticity measure. So this is kind of an average across the industry. So this is where we'll begin to get that out of FORESIGHT 2020, is to be able to look at that where we can go and we can look at *your* individual demand schedule and say, "How's that going?"

So what you find is typically at very high prices, you find very elastic responses. You lower price a little bit, and you get big increases percentage wise – big increases; but eventually, it eases off with this. We'll be able to see where that point is. We'll be able to measure that for you, for any individual laboratory and say, "This is what your demand schedule looks like; as you get across that, you're going to find at lower and lower levels it begins to ease up."

NELSON SANTOS: Okay, because I think what's happening with us is exactly what you're saying. The demand – so we can't provide it quick enough. So they're going to state and locals – our DEA agents. So once they start seeing it come back, you're right; it's going to come back to us. But I'm hoping there's a complement.

Cecilia?

CECILIA CROUSE: Thank you, Paul. I've heard your presentation several times; and once I get past the word "economics" I'm okay.

I just had a couple of questions. We've conducted Lean Six Sigma in our forensic biology unit, and it took us about a year-and-a-half through a grant from NIJ, which we sincerely and deeply appreciate. The most important things was buy-in. The second most important thing was that we ended up making sure that there were black belts that stayed in our laboratory so that when issues like this happened, they could use their Lean Six Sigma training.

What we have found out was – and this is my concept of what we have found out. First of all, the team approach – they love it. They are cranking out a lot of work. They are finding out *exactly* what you're saying; and we have a case submission policy, where you're only allowed so many items depending on the type of case. That's helped to regulate it, but now we're getting more cases. So that initial ceiling – this is what we know is coming through the door every month, this is where we need to be – that's moving because of this.

The question that I had is I want to know what the effect of critical thinking is. Has anybody thought about the fact that what we are finding out is that there are occasions when having this production line, this robotic line, that the critical thinking on some of these cases is not happening because other people are making the decision. The serologist comes in; they do the screening; *they* put what should go forward. And then the DNA teams all get them, and they all rotate; and it's this big dance that kind of happens.

Then at the end, for example, someone would say, "I don't understand why you did the boots; we really needed to have the bandana done."

"Well, there was blood on the boots."

"Well, yeah, but they were bleeding; it's not…"

So my concern is, are we creating through this – we're creating efficiency; backlog has come down; they love the process. My concern is do we have technicians and what happens to the scientific critical thinking that comes with casework?

PAUL SPEAKER: Well, that's a great question and a very timely one since I just took a call about a month ago from some guys working in the area. My background is economics and finance; so my tendency is to be more interested in the projects that are really looking at numbers from that standpoint. I got a call from somebody working on their master's thesis in management that wanted to measure more of those qualities. So they'll be presenting at ASCLD on a proposal for a project looking at those: How do we marry both of these metrics – and the critical thinking being the key one on this?

So what they've done is they've taken from studies across *all* kinds of businesses – any kind of industry that you have – and looking at those predictive capabilities on your ability to improve. Do you have those things in place as well, combining them. Where we're simply trying to measure what the potential is from a financial standpoint or a productivity standpoint, and we want to marry to the two concepts to be able to say, okay, this is how you're going to gain and this is how you're going to be able to sustain it.

What we're finding, anecdotally at least in a few laboratories, is they've gone into a process; but some failures are happening later down the road. The ability to sustain it – and a lot of it comes back to that critical thinking aspect. So how do you get the sustainability to get the improved results but also get the intellectually stimulating environment so you're getting good kinds of results? So that's one of the topics that we'll be discussing at ASCLD.

NELSON SANTOS: All right, Susan and then a couple more, and then we've got to close.

SUSAN HOWLEY: Mr. Speaker, I was wondering how well you've been able to isolate a causal relationship between the reduction of the turnaround time and increased demand. It seems that when people are addressing backlogs, you also have other things going on – like new State legislation that has timelines for how fast samples need to be submitted to the lab. And then there's all this accompanying increased public awareness, or especially awareness among law enforcement that, okay, now we really do need to count the evidence that's been sitting in the closet and get it turned in.

So how much have you been able to really say it's the fact that we're reducing the time and offering better service that's led to the increased demand?

PAUL SPEAKER: Typically, when you're going to look at elasticity, there are a variety of things that you assume are held constant. So certainly having a smaller time period in there to be able to look at things becomes an essential piece of that. Other things that would affect it – so if I'm looking in here, the results I gave you were just for DNA casework. So what's going to affect that? Well, the turnaround time in other areas is going to have an impact on that.

So if fingerprint identification is taking longer, then you may shift some of the emphasis in a particular case over to that activity, for example. So we know there are a lot of things that are going to affect that; and that's where the time series work with FORESIGHT 2020 is going to help us, where we can narrow that down to a scenario in which we have more of a constant environment.

Right now, what we won't pick up is if there was one thing that occurred from one year to the next. Now, will that one activity have affected so many things across time? No, so we're not terribly bothered by the – in economics, we always refer to "ceteris paribius," all things equal. We're going to hold everything else constant with that. But we'll be able to do more of that once we have the shorter time periods to be able to measure on that – be able to correct for seasonality, for cyclical behavior, and be able to talk about very specific events as you look at an individual laboratory – this law went into place or this thing changed.

NELSON SANTOS: All right, Jim and then Jules, and then we'll go to our next panel.

JIM GATES: Thank you.

Paul, thank you for the wonderful brief. I'm a scientist, and so I love data; and this was a data rich presentation.

My question had to do with something that you touched on, but I'd like to hear an expanded response. Many of my fellow Commissioners know that I have, on a number of occasions, brought up the issue of performance evaluation versus proficiency evaluation. One of your comments was looking at the issue of performance evaluation across, I think, international borders – I believe it is. Could you expound on that, particularly on the axis of do you have *data* that will sort of tease out whether one of these approaches – namely, performance evaluation versus proficiency evaluation – needs a more efficacious treatment of caseloads?

PAUL SPEAKER: One of the things that we do in decomposing the data is we're able to take a look at a lot of the detail as well as the explanation. Our decomposition is a fairly simple one; and it's a process that now is one hundred years old right now, a thing called a "DuPont expansion," and named after the company DuPont, where an employee – I won't go through my normal dynamite salesman jokes here – but he said, "How do you look at data and performance? It looks too good to be true."

At the time, DuPont was looking at investing in General Motors. They had all this excess money, and they wanted to be able to put it in something. So this employee, who was at Carnegie Tech, had a couple years of that good quant work, said, "All you have to do is multiply by the number one in a variety of forms and create a series of ratios, and you can kind of break down what's going on."

So we've done that here. In looking at the laboratories, we look at what their overall performance is and we say, well, let's try to explain, to see what are the pieces that are telling us what's going on with this. So I just showed a couple of the curves with this; but we do that. We go ahead and we look at the overall performance; we look at productivity; we look at markets; we look at investment in capital because any laboratory can improve its performance and particularly by let's put off that investment in the new GC Mass Spec or whatever it might be. We can get more out of it right now. So we break all of those things down.

Now, at the international level, our interest in looking at this was more out of our very early discussions where particularly our Canadian counterparts would talk about some of the loss that they had to contend with and why differences would be in place. We get a lot of those similar comments that are coming out of our Australian laboratories, where they talk a little bit about the detail.

So what we've done is we have a look where we can compare to the efficient frontier – and we're trying to figure out what the best metric is on that; right now, it's a fairly crude one. It's simply what's the percentage gap from that? And we look at that percentage gap over time, and it turns out that everybody narrows in on that efficient frontier, regardless of where they're from. So it's really a matter of taking a look and saying, okay, how long have you been tracking your own data that you've got some improvement?

A good case in point for why this happens is a 2010 article that's listed at the back there by John Newman, myself, and David Dolly, where we looked at how did the Toronto laboratory use the data? And I'll say this – very, very smart director. He went and showed the results to every unit manager and said, "What would you do differently?" And, boom, they tracked it and began to find things.

So you can track a lot of very, very particular events to the results; and say, yeah, this is a performance-related thing. We can pull other things out and separate things and say, "This is purely a size phenomenon that this is happening."

JULES EPSTEIN: Good morning and thank you. I have one quick question; and if it's off topic, please say so.

One of your slides talked about this remarkable economic gain from having DNA databases. So I went and read the article, and I realized it's not your article; and if it's tangential, say so. But are you really confident in those numbers? It seems, at best, to be a correlation, not a causation; and it's based on a theory of the author that people who commit crimes actually think to themselves when they get out, "Aha, they have my DNA; I will be more circumspect."

So again, I've really enjoyed learning a lot about everything else; but it seemed to be a big part of this. So I'm just asking, is that good – I was going to say economics or science?

PAUL SPEAKER: Yes, it is very, very good economics that's in there. This is probably – I think it's the second most cited journal in economics, where this appears and the rigor that it's gone through. So I have a lot faith in the work that appears there.

JULES EPSTEIN: All right.

NELSON SANTOS: Okay, thank you, Paul.

All right, we're going to move right into our next panel, which is actually our first feedback about our work from the legal perspective. So if I can have the speakers come up, please.

BILL FITZPATRICK: Good morning, everybody.

My name is Bill Fitzpatrick. I've been the elected District Attorney of Onondaga County, located in Central New York, a community of about half a million people, for the past 26 years. I've been a homicide prosecutor most of my adult life. I've taken over 80 defendants to trial, 4 homicides, most of those cases involving forensic evidence; and I did an extensive period of time as a defense lawyer in my community. I'm a long-time member of the New York State Forensic Science Commission. I've served with Peter Neufeld for a number of years. I currently have the honor of representing America's 2,500 elected and appointed prosecutors and am Chairman of the Board of the National DAs Association; and I speak to you today on their behalf.

Although I will not dwell in my comments on it, there is much about the National Forensic Science Commission that my members find troubling. It's the belief of NDAA that state or national forensic science commissions, as the title suggests, should actually be composed of practicing forensic scientists

with input from any advisory panel that a government deems necessary, composed of practicing defense attorneys, prosecutors, judges, ethicists, and certainly other scientists. It is an inherent conflict for prosecutors and/or defense attorneys to sit on an accreditation or policy board determining whether or not crime laboratories are practicing under acceptable standards and then to use that determination in court to either validate or attack the evidence that lab has analyzed.

In addition, discovery rules, reporting standards, testimonial parameters, et cetera, should not be determined by a majority vote of a Commission. If I were to have taken the PCAST report seriously, which I did not, or the 2009 NAS report, which I did not as well, and to embrace some recommendations suggested, I could actually picture myself in my office telling a grieving father of a domestic violence victim that even though his daughter's ex-boyfriend was ID'd fleeing the scene, even though he left a fingerprint that matched his left thumb in the victim's blood at the scene, and even though a forensic odontologist matched a bite mark on the victim's chest of the defendant, and the .32 caliber recovered from his jacket pocket was ballistically matched to the projectile in his daughter's head, it's just right now the case is too thin to proceed, and I won't be able to prosecute. Please.

Finally, I see the word "customer" leaking itself into our vocabulary when talking about the Defense Bar and public crime laboratories. Defense lawyers are not customers of crime laboratories. A customer does not buy a car, be totally satisfied with every aspect of the car – its performance and reliability – and then spend the next year trying to denigrate the salesman.

With that said, let me point to common ground that should unite all practitioners and scientists in getting sound, reliable information to the factfinder and assisting them in making one of the most profound decisions that our system allows – whether or not someone has been proven guilty beyond a reasonable doubt.

My members believe that, number one, all forensic crime laboratories should undergo rigorous accreditation by ASCLD Lab, ANAB, or other recognized agencies with some time left over to actually analyze evidence.

Secondly, we believe the comparative identification disciplines – such as tool marks, identification, ballistics, fingerprints, bite mark evidence, tire and footwear impressions, are reliable science; have withstood the test of time; and should be constantly tested, improved, checked for error rates; have recognized standards; and be presented in a *fair* manner in court by certified scientists working in accredited labs to help a jury make its determination.

Thirdly, that an Office of Forensic Science should be created under the auspices of the Department of Justice. Its mission should be the constant improvement of forensic science; how best to present conclusions in court; and it should develop rigorous ethics training for forensic scientists working in public laboratories with continuous monitoring so that mistakes, such as composite bullet lead analysis or exaggerated hair comparison testimony, are avoided and eliminated.

It would also develop training programs for judges who, as the gatekeepers in criminal trial, must make the initial determination of what evidence presented and what experts, pseudo or otherwise, are allowed to testify. Such a body would also provide advancement of accreditation, certifications, research, grant money, interoperability of databases, and guidance for testimony reviews.

The Office – and this, I speak for myself and not on behalf of my members – but it's my belief that the Office would ensure that coroner systems in the United States are replaced by medical examiner systems. This could be accomplished with a program with tuition relief for forensic pathologists who will commit to serve underserved areas. I assure you from personal knowledge that there is a serious scandal in this country of homicides going undetected because of lack of competent forensic autopsies.

Fourthly, every DAs office should make conviction integrity a priority. DNA testing, it is our belief, should be allowed at *any* time during the course of a criminal trial, including post-conviction; and it should be allowed anytime if possible or germane to the issue of guilt or innocence.

Fifthly, that states that do have forensic science commissions, whether appointed by the governor or state legislatures, that those commissions should be populated by forensic scientists. Secondly, we believe that each state should have a prosecutorial best practices committee. They currently exist in 30 states in the Union. These would provide rigorous training on the latest developments in forensic science, the bounds of permissible testimony, the examination of past errors, and constant ethics updates. Thirdly under this category, a Defense Bar best practices committee with similar training responsibilities and a recognition by each state that in cases involving complicated forensic science issues, a court-appointed lawyer must be certified by said committee as competent to practice in that area.

I hope this Commission will consider these criticisms and suggestions as you near completion of your mission. Sadly, neither an unethical prosecutor nor an unethical defense attorney is going to be much bound or deterred by any recommendations that this or any other body makes. The overwhelming number of people that I represent care passionately about justice. A district attorney in a medium-sized office will exonerate more defendants in a month than a busy defense lawyer will in his or her lifetime.

But our ultimate mission is to keep our community safe, to speak through the victims of violent crime. We all take these oaths to protect and defend the United States Constitution, and we need evidence to accomplish our goals to convict the guilty and, just as importantly, to exonerate the innocent -- evidence that is fairly obtained, rigorously tested, and presented in a manner that assists – not misleads – a jury.

Tomorrow morning, I will be in New York for a meeting of the New York State Forensic Science Commission to discuss and debate an issue that I have been pushing for, for over five years – familial DNA searching, a proven, acceptable method of scientific analysis that has demonstrated concrete results in the states where it has been used, and yet has been withheld from my citizens by the same worn-out clichés about racism and privacy and the sky is falling that are the exact same arguments that were made against the use of DNA databases in the '90s. This issue, in a nutshell, represents the very, very best and the very, very worst of matters that we discuss. I hope this body opts for the very, very best.

I appreciate your time very much, and I wish you Godspeed in completing your important task.

NELSON SANTOS: Judge?

DAVID WAXSE: Well, from a slightly different point of view, my name is Dave Waxse; and I am a Federal Magistrate Judge. I know that not many of you are judges, so let me give you a quick background on what a Federal Magistrate Judge is.

We are considered the same as district judges, with certain limitations. The great limitation that I appreciate is we don't do any felony cases; we can do anything else a district judge can do, but even at the party's consent, we don't do felony cases. We do preliminary criminal matters, and that's where my interest in forensic science developed because one of the preliminary things we do is something called an "identity hearing." I've been on the bench 18 years now, and I've only had one of these.

What an identity hearing is, is when someone in the Federal system is arrested in one district by a warrant out of another district, they have a right to challenge the question of whether they are the person named in the warrant. So I, a couple years ago, had a case where the defendant said, "That's not me." He had been living in Kansas for 30 years, had no criminal record, had a job and a house.

According to this warrant, in 1972 in Texas, he failed to show up at a trial. It had a different name; but what had happened is this guy was not a citizen. He had a green card for the last 30 years; and every 10 years you go in and check and redo your green card, and they do a fingerprint scan. The fingerprint scan said he was this same guy in Texas that had this warrant from 1972. He said he wasn't. So the statute says if there's that dispute, they have a right to a hearing.

So we set it for hearing. Having read some about forensic science, I was interested to see how the attorneys would approach this. Neither attorney – neither the prosecutor, the assistant U.S. attorney, or the public defender – had any concept about science and hearings. So they called as their witness a fingerprint examiner, who was not the FBI's person because she was busy; this was a local woman, who started testifying in a manner that seemed a little shaky to me. But neither attorney asked any questions. She said that was a match, and that was the extent of that. I thought, "If I'm going to send this guy away for something he says he didn't do, I'm going to get to the bottom of this."

So I started asking the normal Rule 702 questions about what she had done. It was kind of astounding to me because education wise, she said she'd taken a correspondence course in fingerprint examination; but she couldn't remember who the course was from. I started asking her how she does her fingerprint examination; she said, "Simple, I just look at the fingerprints; and they're either a match or they're not."

I said, "Is there any, to your knowledge, any scientific research backing that method of identifying people."

She said, "No, I don't know of any; but this is what I do, and this is a match."

I said, "Well, I've got to have a little better information." So under Rule 706, I have the right to appoint the court's expert to do this. Having read that National Academy of Science report, I called Professor (inaudible), who she said she'd be glad to be the expert in this. What happened in the interim, since this guy had no criminal record I had released him on bond. Unbeknownst to me, the Government had appealed that release to a judge in Texas, who quickly reversed me and said, "Keep him in custody until he gets here."

Well, while I'm trying to get the expert set up, the public defender decided they'd had enough waiting in Kansas. He came in and said, "We're going to waive this hearing and go to Texas." Because one of the problems had been there was no clear law in the United States on who had the burden in these identity hearings and what the standard was. There are so few of them that there was no law.

He said, "We don't know what the law is here; but we know in Texas, they've got to prove beyond a reasonable doubt this is the defendant."

So they went to Texas; and within a day they were back because the prosecutor looked at all the evidence and said, "I'm not wasting my time on this," and dismissed the charges.

So with that background, I got interested in how all this works or should work; and just coincidentally, at that time I was Chair of the Judicial Division of the American Bar Association. Are there any ABA members in this group?

A few -- for those of you who aren't members, we are an association of approximately 400,000 members that's been in existence since 1878; and our purpose is to serve equally our members, the profession, and the public by defending liberty and delivering justice. The ABA is a membership organization that's governed by an elected House of Delegates and the Board of Governors. One of the groups making up the ABA is the Judicial Division, which consists of approximately 4,500 both Federal and State judges in the United States. As the Chair of the Judicial Division, I was able to select a program for the Division to

focus on during my year. I selected forensic science and criminal justice as the program and appointed a committee to work on an issue, which coincidentally included Judge Hervey and Professor Henderson and Barry Scheck, who have been here and part of this meeting.

The committee then drafted a resolution for the House of Delegates to consider; and it's kind of ironic because our resolution was that we urged the NCFS to develop a model curriculum for judges in the law on forensic science. The ABA passed that resolution; and as far as I know, that's the last thing that happened on that issue because the ABA structure is not very good at following up on resolutions. To my knowledge, your group has not been approaching to find the solution to that problem with the curriculum.

But the committee has continued to work, and what we've done is worked with other groups. Right now, we're working with CSAFE at Iowa State to work on such a curriculum. Part of our effort has been to attempt to educate judges through both programs and written materials in the interim. One of my duties as Chair was to write a monthly column for something called the JD Record, which I did all those on forensic science. We also published, as a Division, a quarterly judges' journal that included an issue on forensic science.

One of the things we did is with Northwestern School of Law, we conducted a symposium on forensic science; and that symposium ended up in this law review article in the *Journal of Criminal Law and Criminology* containing the papers from the symposium. Some of us have been continually making presentations to various groups; and these have included ABA webinars, one of which we got Judge Harry Edwards, the Chair of the NAS Commission, to be on our webinar to explain to lawyers and judges what they had found. The most recent one I've been involved in, former Judge Gertner and I made presentations on forensic science to a conference in Kansas City of about 400 lawyers and judges.

In addition to the efforts of the Judicial Division, the ABA Criminal Justice Section, through its own Committee on Science, Technology and Forensics, has been doing similar things; and they've been having annual seminars on forensic science, I think, for about 10 years. The last one was chaired by Barry Scheck.

The point I want to make though is this problem still exists. There are still cases that just amaze me, where I read opinions by judges who clearly have not understood the forensic issues. And a common way of avoiding that is to simply say, "Well, we've always done it this way; and I don't see any reason to start checking on it now." So that's why we still have bite mark cases, when the science says you don't have very much there with some guy saying, "This is a bite mark and it came from this person."

The ABA's goal is to try, through various means, to educate judges and lawyers about this problem and try and get to the situation where the number of exonerations goes down because there are fewer bad convictions. It's just been amazing when you start studying these exonerations. For those of you that are interested in that area, there's a book now, maybe three years old, on convicting the innocent that looks at the first 250 exonerations the Innocence Project did and tried to analyze, well, if they weren't guilty, how did they get convicted.

The statistics are pretty scary because the largest cause of improper convictions is bad eyewitness testimony. The second largest cause is bad forensic science. They sort of tie together because there's a lot of scientific research pointing out the problems human beings have of identifying other human beings. It involves both what you see and what you remember, and we're not good at it; and when you start doing it cross racially, it's unbelievable. It's almost like it never happens correctly when you start asking one race to identify someone in another race; and yet that's the largest cause of wrongful convictions.

So many of these things, like eyewitness identification, could be helped by judges allowing expert testimony on what jurors should understand about eyewitness testimony and the problems with it.

Because in addition to the problems of human beings having difficulty doing it, there's the problem of some law enforcement being very successful at using various techniques to convince witnesses this is who they saw. In some of those cases, the testimony is just amazing. When you see these situations where someone is saying with 100% certainty, "This is the person," and it turns out, whether it's through DNA or other evidence, they were not the person; and some of them have spent long years in prison based on improper eyewitness identification.

So the probation, from our perspective, continues; and since our resolution to ask you to do something hasn't resulted in it yet, and since the attorney general has apparently decided you're finished, we're going to have to redo our resolution, I think, and find somebody else to help us.

Any questions about the ABA's position or role?

NELSON SANTOS: We'll take questions after.

VANESSA ANTOUN: Hi, I'm Vanessa Antoun from the National Association of Criminal Defense Lawyers. So already I have demonstrated the problem some lawyers have with technology and science.

I'm here from the National Association of Criminal Defense Lawyers, and thank you for inviting me to give a little bit of our input and perspective and our positions on the use of forensic science in the courtroom. NACDL is a membership organization of criminal defense lawyers; and we even have some members that aren't criminal defense lawyers, some associate members who are scientists or practice forensic evidence. We have judges. We have over 8,000 members, and their background and practice areas range greatly. We have public defenders; private practitioners; we have individuals who have absolutely no experience in forensic science issues; and we have individuals who are actually scientists or who have great experience doing this in their cases.

A little bit of my background – prior to coming to NACDL, I was a public defender for over seven years and eventually ran the Public Defender Office out in Fairfax County, Virginia, and was in private practice for a short time before coming to NACDL. I give that background just to illustrate where we're coming from.

Some of the things NACDL has done in the forensic area include developing some principles and statements. Our position statements, just like any organization, are developed and ratified. We have a collaboration with the DOJ, the FBI, and the Innocence Project on the microscopic hair comparison analysis review; and some of those experiences have informed our position. One of the important things we do regarding forensic science is conduct trainings for attorneys to understand how to use it and to be better equipped to address it in court.

I want to say at the outset, NACDL and its recommendations and principles – it is not about any effort of the Criminal Defense Bar to prevent the use of reliable scientific evidence or to prevent prosecution in any way. What we are striving to do is to help everyone strengthen forensic science and its use in the courtroom. To that end, NACDL did develop principles and recommendations for strengthening forensic science, particularly its presentation in the courtroom; and I will just briefly go over those. I believe you have the full document in your materials, but I think it will serve as an outline to some of the comments we have about the impact the Commission has had on what we do.

As far as those recommendations and what we are working towards as an organization, one of the main points is the forming of a central science-based agency independent of law enforcement, such as the National Commission on Forensic Science, or an equivalent organization; promoting the culture of science that encourages independence, openness and objectivity; adopting a national code of ethics; reinforcing that prerequisite research to ensure the reliability and validity of forensic theories and

techniques, and their limitations or measures of uncertainty; providing greater education to legal professionals, who often lack scientific experience, so they can fully understand and evaluate forensic evidence; ensuring transparency of the process; and providing appropriate discovery and disclosure; and, of course, having the appropriate accreditation and accrediting bodies.

We would support the continued existence of the National Commission of Forensic Science, or a body like it; and there are many perspectives from our membership in NACDL as to why this would be important. First of all, from our perspective, it's very important to have scientists working together in an open manner, open debates, public comment, and coming up with a consensus product that everyone can see. This perspective is very much needed in the criminal justice system, as we have heard from others on my panel, because the folks working on these cases are not in a good position to determine the reliability of forensic evidence in most instances.

There are few in the criminal justice system working as lawyers on either side or judges that have a serious scientific background and are in a position to even necessarily understand what the terminology means. Does this word mean what you think it means? In many cases, to a lawyer, it means something completely different than what the scientist is trying to convey; and that can become a real problem, as we've seen looking at testimony and looking at cases where it is not necessarily that anyone is saying the individual providing the testimony is mischaracterizing anything in many instances; but the fact that words mean different things to different people and without understanding what those terms mean, it's very difficult to even present the testimony in a fair way.

So work this Commission does on things like language for reports and what goes into a case record are very important in the criminal justice system for people to be able to have that open view of what goes into these conclusions.

Another reason why work from this group, or a similar independent body, is important is because there is an overburdened system. It simply isn't the case that we can say the players in the system – the judge and the prosecutor and the defense lawyer – are in the best position to determine what evidence is reliable and judge it because we don't have the resources to do that in terms of training, in terms of time. And that becomes a problem when that factors into what evidence is used and how it's presented.

The forensic disciplines, many of them – and I do not have a scientific background at all – came about as a tool to identify individuals and potentially catch perpetrators and bring them to justice, as opposed to trying to find an explanation for a phenomenon that occurs in the natural world.

From the perspective of NACDL, one of the important things about the work of the Commission, or a similar body, is that the scientists bring that independent, non-adversarial perspective to what is going on – not just can this be used to convict somebody, but what does it mean independent of the other implications surrounding that piece of evidence. As lawyers, we need scientists to tell us what good science is and what bad science is and what they look like because the fact of the matter is many times we can't tell ourselves. Even if we have an idea of a potential problem with a certain discipline or a certain individual's conclusions that we want to address, we're not sure how to do it.

This is aided by Views Documents and other reports that this Commission has put forward on ethics, on the use of terms such as "reasonable scientific certainty." This openness and explanation really does help, from our perspective, defense attorneys to understand what they're looking at; to better challenge it if that is appropriate or to better understand that there isn't any challenge there at that point.

NACDL would also like to thank the Commission for being productive during all these years so far with the understanding that with any organization, it is not always easy to come to a consensus or produce

consensus documents. But we have been pleased to see that this has happened many times, and those documents are out there for all of us to use.

Another reason why bodies such as this are important, from our perspective, is accreditation is not a solution to all the problems and all the issues that can arise with the use of forensic science in the criminal justice system. Because it's brought transparency and debate to these issues and gives scientists and the scientific community an opportunity to openly discuss this and receive comments from the public, gives people like me at NACDL and prosecutors an opportunity to get an outside view, we believe that brings value and openness and can create an environment that furthers the reliability of forensic science and aids everybody in the criminal justice system in presenting it.

The idea that we would move away from the National Commission on Forensic Science and the suggestion that all of this work would be placed under law enforcement's exclusive is very problematic to NACDL. That is certainly not in line with what our principles are; and it just because of some of the items I have mentioned in regard to the transparency, the lack of resources, and putting this type of forensic evidence under an adversarial system. That is how some of the issues began, and we all know the impact of forensic evidence and how, if it's not used correctly or if it's misinterpreted or mischaracterized by anyone on either side – defense attorneys included, it can lead to wrongful convictions and serious consequences. We're not equipped to determine these things, but we are aided by some of the work product from this body.

Lastly, NACDL would like to recognize that there is obviously still much to be done. I don't need to tell you that, but I would like to formally state from our perspective that there are so many items still on the table where work needs to be done by an independent scientific body – standards; the uniform language for testimony and reports that had been proposed and may be revised and released again; issues related to defense; access to experts; providing feedback on the forensic science discipline review or now what may be done in place of that or what may replace it; and the importance of having such a review to make sure evidence that has been used in the past was reliable and that the testimony was appropriately within the limits of the science.

NACDL looks forward to continued work on forensic science through open debate and an independent agency that by its work promotes a culture of science, provides necessary education to the criminal justice players outside the adversarial system. Yet science is always changing, and it's very hard for a lay person to absorb those changes and to understand them and to use them in such a high-stakes setting as a criminal trial. A body like this *does* make it easier, and that understanding is crucial to promoting fairness in the system.

I thank you for this opportunity to give some comments and am happy to answer any questions.

NELSON SANTOS: Okay, let's open it up for questions.

Just so the record is straight, we did pass a work product on training curriculum. It wasn't a curriculum. The AG endorsed it and asked researchers and others to develop a curriculum. That's the extent, and actually we're going to have a panel later on to discuss that exact issue.

All right, Greg?

GREGORY MOTTA: My question is for the ABA and the National Criminal Defense Lawyers Association. The Commission issued a series of recommendations, and the mandate of the Commission was aimed at government laboratories and resources because it's a Commission of the Attorney General. But as came up frequently during the discussions, it was recognized that some of the failure -- like the use of vague terms such as "a reasonable degree of forensic certainty" or "a reasonable degree of scientific

certainty" -- applied and confused jurors whether it was offered by the Government's expert or the defense's expert.

So my question to the American Bar Association and to the NACDL is you have the recommendations of the Commission, and you have the press releases of the Department as to those which they've adopted. You have a current effort underway to examine those and to determine whether or not you're going to issue recommendations to your members to voluntarily adopt and impose those with regard to defense experts.

DAVID WAXSE: From our perspective, those issues are still being looked at. The ABA has numerous sections, divisions, committees; and I don't have knowledge of what all of them are doing in this area. From my limited research, the Criminal Justice section is working on many of these issues. The Science and Technology section is also working on some of them. The Judicial Division right now has kept its committee in place on forensic science; and they are working, as I said earlier, with CSAFE to try and get a curriculum developed so they can be submitted to the proper agencies that would be able to actually adopt it.

VANESSA ANTOUN: So if I'm correct, what you're asking is if NACDL has in the works the adoption of a formal policy advising defense attorneys to not use the same terminology you discussed.

GREGORY MOTTA: (Inaudible)

VANESSA ANTOUN: To my knowledge, that is not specifically in the works. I will go back and see, but that's definitely an idea that I can propose or that we should consider because it seems like something that might be important in raising awareness to defense attorneys about what's going on, a formal position. So I'll take it back.

DAVID WAXSE: Let me add one little piece to this. When Judge Gertner and I did this presentation a couple of weeks ago, it was amazing to me because it was for both judges and lawyers; and large numbers of them afterwards said, "This is just amazing stuff. We wish we had understood this when we were practicing in these kinds of situations." And it's just constantly amazing to me how many lawyers and judges don't even recognize this being an issue.

NELSON SANTOS: Paul?

PAUL GIANNELLI: I'd like to make a comment, just for the record. Actually, some of the presentations illustrate what's wrong with the criminal justice system. I was really in favor, very pro forensic science. I was a prosecutor for two years, turned out to be more, and then they sent me to the GW forensic science cause, and I taught forensic science at the JAG school, and then I've been teaching. So it's 47 years of dealing with these issues. Over that time, I went from very pro to very skeptical and, on some of my bad days, just so cynical.

Some forensic science disciplines – and that's an important statement because it is a huge field – but the pattern disciplines have not been grounded in science. Prosecutors and defense attorneys and judges have abdicated their responsibility to challenge this testimony. I have no confidence – and I'd like to submit an article to the Commission as a public comment to support my views, which I've studied for a long time and written about, that deal with the manipulation of science that is controlled by law enforcement.

What I didn't see is any self-correction. I haven't seen the pattern evidence, people correct, unless they were forced to do it; and that's very unscientific -- the lack of self-correction. In fact, it's a circle the wagons in my research I've found attitude, and fight everything and everybody. It's incredible that I've

looked at and was trained in bite marks 47 years ago, and there's just no research that supports it; and incredibly, it's still being admitted at trial.

That's an embarrassment to the criminal justice system; it's an embarrassment to the legal system and the lawyers that that has still happened. And we had these pattern evidence people who were testifying that they're infallible, that they can make statements this is the person to the exclusion of all others. And they were doing that for 50 years, and nobody questioned it. They got a zero error rate; and that, yes, hair evidence is consistent. That doesn't mean it's positive, but there may be some other person in the world that has the same hair. I mean, that is incredibly misleading; and no one did anything about it.

I'd disagree. I think that the National Academy of Science report was good precisely because it had independent scientists. I don't mind taking the lawyers off the commissions and stuff, but you need independent scientists. So I'm very concerned about the future. And so I disagree with Bill about the bite marks and the other evidence, as if it's scientific. I think it's been demonstrated *not* to be scientific, and a lot of times I'm embarrassed. You don't look at these death penalty cases and the arson investigations – I was on the Bullet Lead Committee -- the overstatements in fingerprints and firearms identification, the overstatements in hair evidence. So you see this over and over and over again.

Now, I'm not saying they're junk science – well, some of them are – but other ones have just made unscientific statements. You say I am a forensic scientist, but don't apply scientific protocols and analysis to what I testified to. That is hypocritical to take that position.

So I just wanted to go on the record; and I will submit my research, if you want to read it, on what I have documented – I think I've documented – the manipulation of supposed scientific research when it is controlled by law enforcement. Thank you.

BILL FITZPATRICK: I don't want to get into a debate about the criminal justice system in America; but let me correct one thing. That law enforcement is not self-correcting, that is just absolutely not true. New York State, we started a Best Practices Committee about seven years ago; and as I mentioned earlier during my testimony, it's been copied in 30 states. I expect it to be in all 50 states. And what we do is exactly that; we self-correct. We root cause/analyze any wrongful convictions; we try to prevent wrongful convictions; we look at developing trends in science. Myself and Peter Neufeld spent a great deal of time in New York working collaboratively to correct the over exaggerated hair testimony that occurred throughout the United States – issues such as witness interrogation, defendant interrogation, eyewitness testimony, improving identification techniques. These are all things that we do in a self-correcting manner and discuss on an almost weekly basis.

NELSON SANTOS: Gerry?

GERALD LaPORTE: I'm just going to tail off of Paul's comments; but, Paul, one of the unfortunate things about this Commission is we have come together to try and solve a problem. I think that we all agree on that we need to get better at. But getting up here and bashing law enforcement, prosecutors and that sort of thing, that's not a constructive way to do this. I think unfortunately those kinds of comments have really divided the community.

I've enjoyed working with everybody on this Commission; and it's been truly, truly beneficial for me. I've learned so much. But we've got 18,000 law enforcement agencies, and I'm guessing that most of them don't want to get it wrong either. They're doing their job; they're working hard every day. None of us want to get it wrong.

But I want to direct a couple of questions sort of as a going forward to the panel. First of all, thank you very much. I don't know if each of you could just give me like sort of a quick thing on there's going to be

some continuation of this work, I think, going forward; and I'm kind of interested in like if we were to do something to improve upon the work that's been done in here, what's kind of one thing that each of you would like to see carried on?

I realize training is a big issue, but I think training can go on around this country without this Commission. That can go on. So I'm kind of wondering if you each could pick one thing of something that – in essence if this Commission was to go on -- what's one thing that you would like to see the group kind of do.

BILL FITZPATRICK: Well, if we go in the same order, I'm sure the Judge is going to talk about training. If I'm preempting you, Your Honor, I apologize. I think training is something that pops into my mind immediately; but because it appears to be the Judge's bailiwick, let me leave that to him. I would say constant reexamination and improvement of forensic sciences.

I started as a prosecutor in 1977. In 80 murder trials, I used hair testimony once; and it was not comparison testimony. The defendant had a genetic defect that caused his hair to twirl around itself. It was so unusual, that the microscopist mentioned that it seemed to be very similar to the hairs that were found at the scene; and there was a tremendous amount of other evidence that wound up convicting him.

But constant improvement, delineation of scientific standards, improvement about DNA – I suspect that we're in an area right now, and we discussed this in New York, where DNA can be analyzed at a crime scene. Is that a good thing or a bad thing? I've urged caution on that because I don't want police officers making determinations and possibly destroying evidence at a crime scene. But these things are developing exponentially; and I think that much good could come, Gerry, from continual exploration into improving that product in a way to get it into court. That would be (audio break).

DAVID WAXSE: Well, I think clearly training and education would be the No. 1 thing for us. Part of the problem is that I've talked about reasoning lawyers and judges; but there's also this problem out there of training or educating the public because these people end up on juries with the idea that every case can be solved by some kind of scientific thing, based on what they've seen on television. And it's hard to get them to actually listen to what the judge and the lawyer are presenting about science because they've already made up their mind that this is the answer, so we don't need to spend too much time thinking about this.

As I said earlier at the beginning, I don't try felony cases; but I try jury trials, and it is a very scary thing to talk to jurors after a verdict and find out the basis for their decision. It may be the best system we can come up with; but it's scary when you start analyzing what goes on in there because it just amazes me some of the things that are used to make decisions that didn't even come up in the trial, but the jury has somehow gotten hooked on something.

So the system has lots of things that need to be improved; but we've got to start, I think, with the lawyers and judges.

VANESSA ANTOUN: Since training has already been addressed, I will say that I believe one of the things that would be very important to NACDL is an independent group with independent scientists, such as this, developing, in an open and subject to debate and transparent way, some consensus documents as you all have been able to produce as opposed to potentially views and policies being developed by an agency in a non-transparent manner, where defense, prosecution and judges don't know what went into it and it doesn't aid in their understanding like the open process with the comments from all the scientists does.

NELSON SANTOS: Jim?

JIM GATES: Thank you, and I'd like to thank the panel for the briefing.

My comments mostly are directed towards Attorney Fitzpatrick.

NELSON SANTOS: Can you move closer to the mic?

JIM GATES: Certainly, I first of all would like to thank the panel for the briefings; they were informative as usual.

I have some comments mostly I'd like to address to Attorney Fitzpatrick, who had a very stimulating opening set of comments. I was a member of the PCAST Working Group that wrote the forensics report, which I suspect you probably know; and I guess a couple of things come to mind from your opening remarks.

The first thing is that – well, let me go to sort of the big one. You mentioned the word "race" in your presentation at some point, I think; did you not?

BILL FITZPATRICK: I made reference to arguments that are made against familial DNA searching and being racist, the same arguments that were made in the '90s about the DNA data.

JIM GATES: Sure, and so that sort of rung a bell with me because I'm probably the only person around this table whose had a policeman, on more than one occasion, draw a gun on them for no good reason. I'm also the only person around this table who is of the African diaspora; I suspect those two things are connected in some way and so when people bring these sorts of charges, not in an absence of evidence.

Speaking of evidence and the PCAST report, I'm not sure if you are the gentleman who made this statement; but there was a statement from the NDAA about the PCAST report actually directed towards a version of the report that had not even been released. One might have a little bit of issue with evidence there, as you're criticizing something that's not in its final form; but that happened.

Speaking of evidence, there was a time when leeches were used in medical practice. It was a tradition of some long standing. We don't do it today because, well, we've learned that we can treat in better ways. You mentioned pattern matching evidence in your opening statement, bite marks. When we talk about evidence from the point of view of science, we're talking about things that have an empirical basis in measurement. In fact, Einstein actually says that Galileo is the father of all science because he's the person in the Western tradition who pointed out that if you use the word "science," it has got to be based on measurement and observation. If you don't have a body of knowledge based on observation and measurement, then you cannot call it science, according to Einstein and Galileo.

So while there may have been traditional practices, a body of literature established/used, if it's not based on observation and evidence that you can test, then it doesn't qualify as science. That was the main point that was attempted to be made in the PCAST report. The PCAST report, unlike some of the ways that it has blown up, is very limited; it's on pattern matching, and not all of pattern matching but the pieces of pattern matching where we were confident, where you could put metrics on the measurements and then say we have a good way to proceed with arguments.

The other part of the PCAST report was indeed on probative testimony in the courts. I suspect that you've probably tried cases where you've had forensic experts perhaps use some variation of the term "scientific certainty." For those of us who are scientists outside of the discipline, that rings a bell because I don't think there's any other part of science where that expression would exist. That suggests that within the forensic sciences, there's something that's very different about understanding the definition of science.

That also suggests that it's extraordinarily important that forensic science include in its conversation scientists who are not part of the company, who are not part of the community, because we will bring you back – this community – we will bring you back to what science is as it has developed in the entire Western tradition.

My final comment is I've been the last couple of days talking to a couple of reporters because they've noted the sunsetting of this group. And let me use this as an opportunity to thank every single Commissioner around this table; I have learned a tremendous amount about this community. I am still a student of this community. I think most of you have concluded I'm pretty collaborative; but the part of this community I find that is likely the most resistant to change is the part of the community that you represent. So with this, I'm finished; and any response that you'd like to make, I'd love to hear.

BILL FITZPATRICK: Very, very quickly, I don't know the circumstances of an officer drawing a gun on you; but I think it's that type of logic that has something to do with what this group is doing that permeated the PCAST report.

Secondly, the fact that NDAA criticized the report before it was actually published is actually not correct; what we criticized was a version of the PCAST report in the *New York Times* leaked to them by a PCAST member before the appropriate community had a chance to examine it and comment on it. The National DAs Association has written a very, very extensive critique of the PCAST report which, in my judgment, has had zero effect on any criminal justice matter in the state of New York. I can't speak for the other 49 states.

NELSON SANTOS: Let's go to you, Suzanne, since I missed you the last time; and then we'll come back – a couple more, and then we'll break.

SUZANNE BELL: Bless you, Nelson.

I think my colleagues have done a great job of defending the role of independent science. So I want to direct a question to the panel; and this is more about cases where we see, like for example, where drug tests in the field are used and end up in plea bargaining convictions, so the juries never get to see this. Is the answer to that kind of problem – because one of the things, and I'd talked to Peter about this, it seems to me that one of the core issues is lack of access to scientists by all parties. And it's appalling to me to read about those cases because drug chemists know what (inaudible) tests are for. They're not for identifying drugs; they're for something different. They're for screening presumptive; but there never was, except in the 1860s, that's not what they're for.

Similarly when things that scientifically have really been debunked, yet they keep getting into court. And the scientists amongst us, all of us, are probably just shaking our heads and saying, "How can this continue to happen?"

So my question to the panel is in particular thinking about plea bargain cases, which are the vast majority of cases now, how does forensic science get in the game; and how do scientists get in the game, and how can they get integrated into the system to help address those kinds of issues? And that's to all of you. Thank you.

DAVID WAXSE: It all gets back to the proper education of the lawyers and judges because the lawyers involved in those plea negotiations should not let the fact that a field test that's not valid determine whether their client pleads guilty.

One of the sad things is the Supreme Court got into this area years and years ago with a Delbert decision that said, in essence, scientific approaches need to be taken to evidence; and the simple things of you have

to have the science in a situation that can be replicated and can be tested. It's now been put in a Federal Rule of Evidence; 702 says almost the same thing. And yet, we have all these cases where it's not being followed. I hope it's just simply because they've not learned – the lawyers or the judges – that it's there and it needs to be followed. The sad thing would be if they recognize it and still ignore it.

BILL FITZPATRICK: Susanne, this may be a little off topic but one of the great problems that we have in New York is the dangers now of field testing. Some of these concoctions that are out there can be so dangerous to the officer that you almost have to wear a hazmat suit. I'm only speaking for my community. In other major metropolitan areas, a young man comes in and the field test was positive for X. If he wants to get the hell out of there, he pleads guilty, not realizing the ramifications of a long-term criminal conviction. That would never happen in my community which, as I said, is about half a million people. We would never take a plea until the drug has been properly identified.

But in terms of – and forgive me, I don't know your background; but I would love to discuss this with you further if you have some ideas about that – how to improve that system – not only for officer safety, but for the accuracy of the results as well.

SUZANNE BELL: It seems like for there to be access to a review of something like that, external to that. I don't know if you'd consider making a BS in chemistry a requirement for law school, but that's not going to happen. But my concern is how do you say as a defense lawyer or – I mean, somebody is working on a plea agreement -- do you have a database where you can go and say, oh, here's somebody who will do this for me; who will look at this. Because reviewing a field test result or something along those lines, it seems like that's a resource that's not available to you; is that correct – in the plea bargaining stage? Because your jurisdiction, that's terrific; it may not be that way everywhere else, right? Anyway, that was my question, how can we address that?

VANESSA ANTOUN: I'll just briefly try to address it – not specifically in the terms of the field tests, but generally speaking the use of lab reports in a plea negotiation or what might cause someone to enter a plea. Two of the things that have been addressed are the training, but also the communication with the forensic analyst who did the results. Letting the prosecutor know this is what it means, letting the defense attorney know this is what it means, and having them absorb that information can sometimes be two different things.

So I think there needs to, where possible, the lab report reflect as much information as it can to be able to explain what that result really means because there are many situations, and will continue to be many situations, where it's just the lawyers looking at it. And they don't have the funding or resources to ask an expert. So they look at it; they don't understand it; and the consequences can be serious. So hopefully, increased use of terminology that is maybe more understandable and part of it at least tailored to an understanding from the legal community.

DAVID WAXSE: I think one more little piece is that judges have an obligation to make sure that justice is being done. If you get a situation where it looks like both sides have not really done what they should have done to make sure this is the correct approach, the judge has an obligation to do that. And the judge has tools, as I mentioned in the beginning. Federal judges have the right to appoint their own experts. If you have a question as a judge as to what's being done here, you should not just go along with it because both sides have agreed; you have an obligation to make sure it's being done correctly.

NELSON SANTOS: Okay, we've got to break for lunch so they can distribute it.

Julia, your tent was up and Matt; and then we'll close it. sorry.

JULIA LEIGHTON: I wanted to address Greg.

I think that there was an important question that you put, where you were essentially asking about whether the defense is adopting some of the recommendations. And I wanted to point to that directly. Actually, I do a lot of training; that's what you do when you retire. You don't *do* anymore; you teach. And we are in the process of planning training where one of the things we're talking about is the various recommendations of this Committee, with an eye towards getting the courts to adopt them and therefore uniformly apply them.

The reason I don't turn around to you, my client, and say, "Hey, is it okay with you? This jurisdiction let's everybody use reasonable degree of scientific certainty. But you and I, we're going to take the high road; and we're not going to do it. But by the way, you didn't get to pick me as your lawyer; I was court appointed to you."

So I can't, if you will, unilaterally disarm on essentially the cases of poor people that can't afford lawyers. What I can do, and what we are doing, is training people about these recommendations with the hopes of implementing them through the courts with the understanding that the courts, we hope, will apply them uniformly to both sides. And I think that that's the best role the defense can play because we have to represent the individual interests of each client, and I can't make policy decisions that might adversely impact an individual client. But there *is* a way to do this through the courts, which is the uniform application.

I think the ABA – Matt can address the ABA and what they're doing because I think they also are looking for ways to do uniform application.

GREGORY MOTTA: So if I could just say, my question was actually a factual question. Both of the witnesses had said they were tracking the documents and the recommendations and so on like that. So given the discussions we had here – which is if this language is deceiving to a jury, it's deceiving to a jury whether it comes from the mouth of a Government expert or a defense expert. In that sense, it doesn't support any end of justice.

So the natural question was these are nationwide organizations that represent lawyers who are outside of the Government service. What are they doing to address these issues relative to their old ranks?

With regard to defense experts, there are a number of defense experts who are routinely and regularly used. And the question, I think, does have to be asked of the defense expert, even in civil litigation on some of the issues we've look at. We haven't addressed civil litigation; but some of the very same issues of cause of death occur in wrongful death actions, all kinds of other things that we've discussed here.

So I guess the question really is for this population of lawyers who serve outside of Government service, are their associations looking at that and entering into a dialog with lawyers saying, "You need to be having these discussions; you're a defense expert. What are your limitations? What do you see? What are your reported crimes? How much open discussion are you allowing, and how is it consistent or inconsistent with the recommendation coming out of Commission and adopted by the Department? Because even though we have a limited mandate, unless I heard something wrong, these were issues that cut across all plains.

JULIA LEIGHTON: And my point is that we can do that. We can't dictate a policy and impose it on an individual defendant; but we *can* do it, and *are* doing it, by training and by getting people to make these requests of the courts. Then the courts can apply them, and presumably will apply them, to both sides.

GREGORY MOTTA: So I'll make sure I'm arrested in the District of Columbia?

JULIA LEIGHTON: Because…?

GREGORY MOTTA: Because that's where you practice.

MATTHEW REDLE: And, Greg, I'm this year's Chairman of the Criminal Justice Section of the ABA. I want you to know that the ABA had already adopted policy by way of a resolution that came through the Criminal Justice section on many of the topics that we've weighed in on since and adopted. They have been displayed in our publications and available to practitioners; but like, as frequently happens, that hasn't been enough; and we're looking at other ways of doing that.

Additionally, it's my understanding that the leak of the PCAST report to the *New York Times* may very well not have come from a PCAST member but rather from some individual in Government.

NELSON SANTOS: You know, I wish I had the standards like they do at the confirmation hearings where you get two minutes and then they defer time. It's hard to control. One minute, please, because we've got to break.

PETER NEUFELD: Just three things, just to clear them up – one is that – and I appreciate Bill, as an honorable person mentioning our work; but I think there are a couple of misunderstandings here.

Professor Gates, there were meetings of the New York Commission; but, frankly, they were dysfunctional. In contrast to the work of the Texas Commission, that New York Commission not once in 20 years ever reviewed a body of cases where wrongful convictions had occurred and attempted to do an audit. In fact, whereas 12 states decided to do their own error reviews, New York simply said, "No," and kicked the bucket to an Attorney General.

Two, there has been a case recently in New York, contrary to Mr. Fitzpatrick's assertion, that actually *did* rely on the thinking of the PCAST report to suppress expert testimony from a handwriting example. It happened in the fall of 2016 in New York City.

Three, and most importantly, is I think that Mr. Fitzpatrick's statement on behalf of the NDAA where he says that *he* knows that these disciplines are scientifically reliable, including bite marks, is exactly the reason why *this* Commission, by more than two-thirds vote, decided that those kinds of decisions and assessments should not be made by prosecutors, should not be made by defense attorneys, but should be made by an independent scientific body. And it's why *this* body, *this* group, voted to recommend that NIST take on that responsibility, just to avoid those kinds of categorical pronouncements by people like you and me, who are basically scientifically illiterate and said that in the interim, until NIST can do that, that other *independent* scientific bodies are free to do it as well.

But those decisions about reliability and validity should not be coming from lawyers making those decisions, when they don't know better. They should be coming from independent scientists. And I only hope that NIST continues to take on that responsibility and other independent scientific groups do it as well. Thank you.

NELSON SANTOS: Do you have a comment?

BILL FITZPATRICK: Yes, as you usually do, Peter – as you do in New York – you usually wait till the end and think you can get the last word on something. I have never used bite marks in a case. The only times I have ever used bite marks is to exonerate an individual. The case that you're very familiar with in my jurisdiction, it was actually the withholding of legitimate bite mark evidence that led to a conviction.

I'm not saying that bite marks are the equivalent of fingerprints or DNA. If you listened to what I say, exactly what I said, these decisions should not be made by Commissions.

PETER NEUFELD: That's not what you said in the first paragraph, Bill. You said—

BILL FITZPATRICK: I see that nothing about you has changed.

NELSON SANTOS: Excuse me, wait, wait, wait, I wish I had the control that the Chairman at confirmation. Okay, that's fine, but it's getting argumentative and it's not productive at this point.

NELSON SANTOS: I understand, but it's not productive. You said your thing. Let's break. Thank you. Please come back at 11:40 a.m.

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Part V

NELSON SANTOS: So, if I can have everybody sit down. I'm going to turn it over to Judge Hervey, who is going to moderate this session. Barb.

BARBARA HERVEY: Good afternoon. All of you know me. And I just want to say a couple -- I hate the word "queer" but -- queer things. First of all, I'm a little concerned about the last discussion because, after all these years of us working collaboratively, I really, really hope we're not going back to finger-pointing, because that's how I took it. And, please, let's not do that. And from my perspective, I think all of us, whatever discipline we come from, whether it's science or the law or law enforcement, the criminal justice system, as a whole, cannot be improved if we all don't work together. So, that's my personal opinion.

I'm going to speak last about Texas. You've heard about Texas a few times. I'm going to introduce the members of our fine panel, but what I will say is a little bit about me. I became very involved or very concerned about "forensic science" when I was robbed at gunpoint on the River Walk in San Antonio, when I was in law school. And, unfortunately, in that situation, there were three people who were involved in the robbery, my boyfriend at the time, we had a visitor from Atlanta who never came back to see us ever again after this experience. The robbers got a whole 13 dollars from us; after all, we were law students, we had no money. But the detective at the time, they did a show-up, and he really pushed us to ID all three people, which we could not do. And from that point on I was very concerned about eyewitness identification, and it progressed.

Presently, the Texas Court of Criminal Appeals, we have two supreme courts in Texas with equal jurisdiction, equal power, supposedly, although we don't get invited to the parties. We work very closely with the Texas Forensic Science Commission in our trainings. And at the present -- and our court maintains a grant from the legislature. They're playing with the numbers right now. I'm going to get less money than I usually do, but we get somewhere between 15 and 20 million dollars per biennium to train all of the lawyers and all of the judges in the state. And we, like I said, we work with Lynn, with the Forensic Science Commission. And we do all kinds of unique and exciting things, and we will continue to do that, regardless of what happens here. We will continue to train, as I hope all of you will.

So, without any further information about us and Texas, I'm going to introduce Carol Henderson. I'm sure a lot of you are familiar with her wonderful work. She's the founding director of the National Clearinghouse for Science, Technology, and the Law, and is a professor of law at Stetson. And you can read about her, her bio's in here. I don't want to take up anymore of her time [inaudible].

CAROL HENDERSON: Thank you, Judge Hervey. I will see if our technology works here. Okay. Okay. All right. I wanted to mention first that our path forward since 2009, and, of course, the NAS report, has been a long and winding road, particularly when it comes to what's been going on in training. And it is

also a worldwide issue when it comes to training. And we're going to talk a little bit about what's going on in the rest of the world as well.

Okay. Some of the things that have been going on in continuing legal education forensic science have been done by both professional associations as well as government agencies. And in the slides, which you do have in your information packet, you can see different groups, like the American Academy of Forensic Sciences, the ABA, which we've had some speakers with the judicial division as well as the criminal justice section; of course, the NACDL, the American Association for Justice, and, of course, the NDAA all have done training. The thing is we do not have any universal training. So, we have all of this fragmented training, and it really hasn't been compiled in one place.

With judicial education in forensic science, which I know Judge Hervey is a big advocate, as well as Judge Waxse, who was here and spoke to you, again, we have different organizations who are doing the training. Again, there is not a universal curriculum, and I think that is one of the things that we have been working toward.

As was mentioned by Judge Waxse, the ABA, in August of 2015, passed a resolution where they encouraged this body to go ahead and develop a model curriculum for federal, state, local, territorial, and tribal justices. Also, this body itself passed a directive and said that they would like to, again, have universal curriculum so that we could do training, and not just of lawyers and judges but also that we could be spread out to forensic science providers, law enforcement and victim advocates like the groups we heard from yesterday.

So, the group that I head and direct at Stetson University College of Law is the National Clearinghouse for Science, Technology, and the Law. And what I want to do is tell you a bit about this. Many of you are familiar with it, and I know you actually use our database that we have, and our training materials. We were founded in 2003. We have 1.4 million visitors from over 170 countries using our database. We've trained over 14,500 forensic professionals. That's everyone from the practitioners of forensic science to lawyers and judges. We have over 600 students who have participated and worked on pro bono projects to help us with our research. We produce an e-newsletter called "It's Evident," which, right now, because our project is dealing with training capital litigators, focuses on issues for capital litigators. We have 144,000 data points in our database, which is free for anyone in the world to use. We also have 8,886 multimedia records. We have a collection that is available through interlibrary loans. So, if your local library, even if your law school library, does not have this particular piece of information, we can send it to you. And we have received grants both from NIJ and from BJA.

So, now what we're doing is, with our BJA grants, we received 800,000 dollars from BJA to do 16 interactive webinars, six live training sessions. We have continuing legal education credits given two hours per webinar, and 11.5 hours for each live training session. And all the webinars are also available on demand. So, if you're in trial, on the bench, or something else, then you can go ahead and receive the training after the live part.

We have an education and training page on the NCSTL.org. And there you can see other things that we've developed, like with NIJ, we did DNA for the defense. We did Law 101 so that we could also train the practitioners of forensic science in the legal system.

Now, our webinars are not talking heads. I must tell you, it is like a mini TV show. We are very blessed, I have to say, at Stetson University College of Law, we're the number one trial advocacy school in the country. Number two is Temple, which Jules told me to tell you. And so one of the things that we do is we have two TV studios, and we have a person who knows how to produce shows who is on our, you know, production team.

So, what we do is we have to develop, just like you would a TV show. We have identifying, of course, who's going to speak, outlines, scripts. We have to do pre-production, post-production. We coordinate with our continuing legal education group. We have advertising and graphics. I would say outreach, not advertising, probably would be the better terminology. And what we do is get the word out to all those who can utilize these types of services, and bring them then these skills that they learn to the courtroom; okay? And we then make them on demand. So, during the course of the webinar, all the participants online, and we've had over 200 at one time, will send us questions to be answered by the people who are the speakers. We also have video clips, and I think this makes a big difference. Instead of having a talking head alone, we will go -- and I'll talk about some of the ones we have produced -- actually to a crime scene, for example, and then process it.

So, here, for example, is our first webinar that we did, which was "Crime Scene Essentials." And this was on March 2nd, 2016. And we set up, with LEIC, which some of you are familiar with, the Law Enforcement Innovation Center, a crime scene, and then took the participants in our webinar through the crime scene, discussing what is done or should be done at every single stage, including, say, presumptive tests, all kinds of other things. And so the participants who are there online with us would go ahead and type in questions. And we had two people, one was a crime scene reconstruction expert and the other person is both the DNA analyst as well as a blood stain pattern analyst, and could answer any of the questions that the participants had, as well as give their own expertise and talk about things that made a difference when they were processing scenes.

Our second webinar was on crime laboratory essentials. And we had the great cooperation, of course, here from Ann Talbot. She had just opened her laboratory up there at the Metro Nashville Police Department. And we took the participants through a crime laboratory and showed them actually how each piece of equipment worked. So, it was something -- I think it's much better if somebody sees how something is done and actually gets the video and can look at it and then also ask questions of the speakers as well as other participants. We also bring in sometimes lawyers as well as scientists. Even though our goal is to train in forensic science, we have to say, well, how are you going to use it in the courtroom, and that's why we'll also have guest speakers who are lawyers as well, both defense and prosecution. So, our game plan is to train both the prosecutors and the defense counsel who are doing the capital litigation death penalty cases.

Okay. On our third webinar, this one I talked to Angela Williamson, who is my policy advisor, and I said have they ever done, I would say, a live autopsy; okay? It makes no sense, of course, but have they ever filmed one and presented one online? And she said, "Why don't you ask if they'll do that?" So, I wrote a memo and said this would be an incredible learning experience, and I did get I would say -- prosecutors and defense counsel say we need this online. So, that's what we did. We actually had a medical examiner film an autopsy. We didn't show it from start to finish, but we concentrated on areas like strangulation, blunt trauma, different gunshot wounds, and then had people discuss it, both the person who actually filmed it while doing the autopsy as well as issues that can arise during an autopsy.

Then what we do is we put them on our Education and Training page. We also produce bibliographies of information so you don't go to court without having both scientific data to bring with you as well as case law. So, our bibliographies cover both science and law. And that's also posted on our training page.

Now, we have future webinar topics that we've contemplated, but we are trying to get feedback, too. We get feedback from the people who participate in the other webinars, as well as people who say, "You know, I wish I knew more about X." So, for example, we have a lot of opioid problems these days, as I think many of you are aware. And so when we do our toxicology essentials, we want to concentrate on that. We, of course, are going to talk about bias, because that's a very hot topic at this point. Also, how do you understand a scientific report? How do you locate, evaluate, and select expert witnesses? How do you

do appropriate discovery when you're dealing with expert testimony? And also we'll talk about how you do a motion in limine. And, again, that's why videotape is very important. So, if you have a video to demonstrate things and people can also then talk to our live speakers, all of this really helps in learning and absorbing data.

Now, with our live training sessions, they go for two days and we have, again, 11.5 hours of continuing legal education. This was the agenda that we had in July last year on Forensic Science 101: Interpreting DNA Results, and you can see the rest of the topics that we cover. At the next one, we want to have judges present to be asked the judges panel. Another idea, which Angela had which I thought was great, is "Ask the Lab Personnel," have actual scientists there at a roundtable where the participants in the live session can go ahead and inquire about issues that can arise.

Now, what does the future hold, and this is one thing I know that Judge Hervey and all of us on this panel have been talking about? Where do we go from here; okay? Now that we know we have all this data and we know that training is important, what do we do? Well, there's certain things, and this is where we can talk -- it is global, not local, when it comes to forensic science. And what they've done in the U.K., and I have sitting next to me John Butler, who's working on the first we call them either a "primmer" or a primer on forensic science. So, what the judges have requested, we were part of a Royal Society meeting over in the U.K. back in February of 2015, and they said we would like sort of, I would call them "in a nutshell" things, if I remember from law school, that we would have this information.

So, what they're doing in the U.K. is they're developing these primers for judges. And John can probably talk more about it probably later about what is going on over there. So, they're doing one on DNA first, and then gait analysis, which is apparently a hot topic in the U.K., which is not here in the U.S., but that's one of the other issues that they said they needed to have a "primmer" or primer on. So, you can see that this is being done with the Royal Society, which is the oldest scientific society in the U.K. And then in partnership with the Judicial Colleague and the judiciary in the U.K.

Now, here's some of the things, I think, if we continue on the path forward, what we should be doing in terms of training. We have to coordinate training across all groups, judges, lawyers, forensic scientists. We need a level playing field so everybody knows what the other team is doing. And I don't mean that in terms -- I'll tell you, when I train people, both prosecution and defense together, I give them strategy sessions. They can run into a room without anybody from the "other side," I'll put in quotation marks, all right, because I think that's good if they feel that way. However, the science is the same no matter what.

I think there has to be an ethics component. That is a theme I heard throughout all of the last two days, that we really are concerned about not just lawyers ethics but forensic scientists ethics as well. And, again, both sides should be thinking about, well, all right, if I'm a lawyer, I need to know what kind of ethical codes are out there for forensic scientists. Same thing, the forensic scientists should know, well, is the lawyer doing the right thing, what kind of codes do the lawyers have in terms of ethical guidelines?

We should also gather all the training information in one place accessible to all. That's been a problem. I know on my training page, I bring as many things together as I can, but we have to make sure that everything -- there's nothing missing, and that we have all of this training data together. We should also have mobile access to training materials. The recent ABA Legal Technology Survey Report from 2016, which I just pulled, is amazing. Most lawyers, and this won't surprise any lawyers in the room, work off of mobile devices mostly, 90 percent at home, in airports -- I think all of us know this, okay -- and other places. So, you have to make it user-friendly on mobile devices when it comes to your training. Now, I know some of you might rather check Facebook instead of a training, you know, video or something like that, but there's no such thing as a lot of downtime anymore, and that's another thing we want to take a look at.

Okay. You should have the continuing education and certification credits, because I think most people -- in fact, the vast majority of states require that for attorneys. And then we should follow up on previous work that's been done, both by NIJ and other groups. And two things came to mind here, one is "Scientific education for judges: what, where, and by whom," by Mara Merlino, who's now in Kentucky. And I would say you need to look at this. It was 2003. We need to follow up on this. It was what every resource that's out there on forensic science education at law schools and at other institutions. That has not been followed up since 2003. Okay.

The other one is this focus group on scientific and forensic evidence in the courtroom, which I was on the panel, and also Jules Epstein was, Ron Reinstein -- Judge Reinstein, and that has not gone anywhere. And I reread it the other day. I'm a packrat, I save everything. And so that was one thing I said 2007, some of these are the same things we're bringing up now, and we need to follow up on things that our tax dollars worked on before. So, I think this is just something to consider is we should move forward in this path that we have been traversing for a while and actually get some things done.

Okay. So, you can contact me. That information is in with your handout material. And, of course, I want to thank BJA for my funding at present. And we continue to march forward on our path. Thank you.

BARBARA HERVEY: Excuse me. Thank you. And now we're going to have a presentation from Dr. Angela Williamson. And she joined the Bureau of Justice Assistance DOJ as a senior policy advisor. Again, her long and extensive résumé is in your materials. She's an excellent -- excuse me -- excellent addition to this panel. And without further ado, I don't want to cut into her time, Angela, please.

ANGELA WILLIAMSON: Thank you. So, I'm going to tell everyone how we are using our taxpayers dollars to do training. So, Stetson is one of our grantees, and I just want to follow up about the other programs that we're doing besides the capital litigation.

So, the first thing that we have in BJA, which makes us a little bit different to NIJ, is that BJA does very similar things to the National Institute of Justice, but we also really focus on training and technical assistance. So, that's kind of what differentiates the two departments. I know it's often confusing. And I hope everyone's familiar with NTTAC, which is our free National Training and Technical Assistance Center. And they service everyone in the country, so anyone in the criminal justice system who needs assistance with any topic you can think of, I haven't listed topics because it's really anything you can think of. You can contact NTTAC. You can get -- it's short-term assistance. You can get access to training events, to webinars, to experts. So, anyone that you need help with, any expert across the country is provided free of charge by the Bureau of Justice Assistance. Sorry.

Just important links. You can go to the website to see previous trainings, upcoming training events, archived webinars, resources, and a catalogue of things that NTTAC offers. More specifically, some other programs we're working on at BJA. This has stopped working. Okay. The Homicide Enhancement Training and Technical Assistance Project was something that I've been involved in in the past, and we are doing this in collaboration with the Police Executive Research Forum. In a nutshell, we are going into jurisdictions that have an increase in homicide rates and a decrease in solve rates.

So, our current sites we're working with, no surprise, Baltimore, Pittsburgh, Cleveland, and Miami P.D. And they've -- all sites that -- their police chief has reached out and said, "We have a problem. What can you do to help?" So, again, it's not a bunch of bureaucrats going in to help. We work with the Executive Research Forum, and they have a team of subject matter experts who are from the field. So, it's not people who don't know what they're talking about. It's actual practitioners going in, meeting with the sites to assess their problems, and to develop strategic plans to really help these sites get up to speed.

I'm sorry. So, one of the things we do with our homicide program this year was we held a training in this very room and we had all the police jurisdictions in attendance. And we also had some jurisdictions that have successfully addressed similar problems, and experts from those fields as well. Some things we trained on were how to improve homicide clearance rates, tools for building an effective homicide unit, which seems really basic, but when you go into these jurisdictions you don't even have digitized files, you don't actually have designated cold case units. You have SOPs that are dated 1995 and haven't been updated since then, and you have checklists that don't have a single mark on them.

So, often, it's really fundamental issues that we're finding, but then we also have the forensic issues where there's no communication between the lab, the crime scene personnel, and the detectives, or very limited understanding. So, one of the main trainings we're making sure that all these sites are getting are understanding forensics, the capabilities, and working more hand in hand with the labs and the crime scene units.

The main program that I oversee at BJA is the National Sexual Assault Kit Initiative, which has really been driven by findings that NIJ found when they did their research projects, particularly with Houston and Detroit. The program was developed to not only test sexual assault kits, but really to get at the fundamental issues of why sexual assault kit backlogs keep happening in this country.

A whole list of things that we fund, the program is not just funding forensics and testing. We fund the sites to actually count the number of kits they have, which can take up to six months. It sounds like an easy task, but you'd be surprised where these kits are hiding. We pay them. They have to track the kits so there's a full accountability of all the sexual assault kits. They have to do a slew of performance metrics so, by the end of this program, we know exactly why the problem happened, how they're fixing it, and the main outcomes. We train them on anything you can think of to do with the issue of sexual assault as a crime, and in the forensics arena as well. And we pay them to investigate and prosecute the crimes, as well as support the victims involved.

We have nearly hit every state in the country for our grantees so far. To-date, we've handed out about 80 million dollars in funding for sites. And right now we're reviewing the latest applicants. And we'll probably award another 20 awards for another 40 million dollars. So, about 120 million dollars has been invested since 2015 in the program.

The other biggest thing that we're doing with this, which is a little unusual, is that we actually carved out, to-date, 11 million dollars just for training and technical assistance. Because we didn't want to give funding to the sites just to test their kits and not really understand what they were deficient in, what they needed training in, areas for improvement so that, once the funding runs out, they have sustainable practices and policies in place.

So, Research Triangle International has 11 million dollars from BJA. They're our main provider. They have a team of about 50 subject matter experts from across the country. Rebecca Campbell is one of our experts. We have people like that on the team. So, prosecutors, victim advocates, investigators, forensic scientists, policymakers, Joyful Heart, RAINN, they're all members of the SAKI TTA team. We have a website, SAKItta.org. And like Carol said, it's important that we have one place where we have all our technical and training documents, webinars. Everything to do with the crime and sexual assault is on this website and updated continuously. And this is available to the public as well. This training and technical assistance started as just for our grantees, but now it's for anybody in need in the country.

So, some of the training topics that we focus on are how to tackle the crime and sexual assaults and backlogs from a multidisciplinary approach. That's helping sites get their policies and practices in place. And, again, sustainability, how they get a SART up and running, and how they keep it once the federal

dollars run out. From a law enforcement angle, we're helping them with guidance on investigative steps after you get a CODIS hit, because I think most people know that in a lot of these cases you get a CODIS hit and it never even gets to a detective. And if it does, does it always get followed up on, and especially in a timely manner, not so much.

What to do when you get multiple CODIS hits, CODIS hits outside states? For example, Detroit have had CODIS hits from their sexual assault kits to 40 different states. So, one of the biggest things we're working on is how do we get these sites talking to each other, how do we get all this case information linked up? We help them with writing policies and procedures on investigative standards. Collecting and handling evidence, we're helping them work with their SANEs on how to do this and how to do it more efficiently and more effectively, and really basic stuff like managing investigations and case information to make sure things don't slip through the cracks.

We train our prosecutors well. The biggest problem that we're facing, these are all cold cases. So, how do we get engagement from prosecution? How do we successfully prosecute a cold case sexual assault? We train our witness preparation, cross-examination of expert witnesses, and presenting sexual assault evidence at trials so that juries understand it. The same programs, not every state, not every jurisdiction we work with has actual SANEs, so we're working with sites to enhance this and try and encourage their policymakers to actually have funds carved out for SANEs. And, again, we fund SANEs under our program, but we want to make sure it continues once our funding runs out.

We work with the crime labs as well, so making sure that the crime lab information is linking up with investigators and prosecutors, everyone involved in each step of the actual case. Understanding DNA analysis, we all know that we have investigators and prosecutors out there who still don't understand. It's a uniform training for everyone who's involved. And how to prioritize cold case evidence, so what do you do when there's tens of thousands of sexual assault kits and how are you going to prioritize what you should be testing first?

Victim advocacy is a huge component as well. Support and training regarding notification, the debate on how to notify a victim is huge. And we've seen some great practices. We've seen some practices that don't work so well. And there's going to be some really good findings that come out of this work to really provide national standards on how victim advocacy should be done for cases like this.

So, some of the trainings that we've delivered to-date, we've done DNA 101 for law enforcement agencies; utilizing CODIS for sexual assault kits. It seems really basic, but a lot of people still don't really understand CODIS, what can get uploaded, how hits happen, what it means when you get a forensic kit or a suspect hit. So, we cover the basics like that as well. How you conduct a large-scale, multijurisdictional inventory, what does that mean? Well, a lot of our grantees are states. So, how do you get every jurisdiction within your state to play nicely and to actually do a proper inventory so that in five years the Washington Post doesn't come out and say, "Whoops, there's another 5,000 kits that you missed"? We don't want that happening.

Research, so a lot of our sites have research partners. And we're actually doing a research project with NIJ as part of this as well, to really -- what does all this mean? What can we learn from this and what policies can we set up for the future so it never happens again? As I mentioned, strategies for victim notification, this is ongoing and this is something we're really working on from training and technical assistance.

Sexual assault kit evidence tracking, most sites have an Excel spreadsheet. It's a start, but we need to do a little bit better than that. So, we're really helping our sites enhance what they have for tracking so that it kind of relays to all the players and that it's easy to use and that it's not lost in the future. Cold case sexual

assault, where do you even start when you start investigating? And one of the really important topics, which if you know Rebecca Campbell, she always presents on this, the neurobiology of trauma and consideration of how you treat the victims, how you notify them about the case, and how you involve them in the sexual assault kit process.

So, that's just a snapshot of some of the things we're doing with training in BJA. We have other programs and we're constantly expanding and looking at things that need to be trained on in the field. Our goal is to make sure everyone gets education and training. So, regardless of when the grant money runs out, we want to make sure these resources are permanent and are always available via the web for everyone. Thank you.

BARBARA HERVEY: And now we have a judge who I know quite well, and he's kind enough that when I go to Arizona to see my grandchildren, we often get together and discuss training. I know, that's really bad, but we do. Ron Reinstein is a consultant for the Supreme Court in Arizona. And he trains and trains and trains. And just learning about their methodology, we share ideas. I've been invited to Arizona. He comes to Texas quite often, speaks for one of our grantees in particular. And he is here to talk about their very different and unique strategy in Arizona. Ron.

RON REINSTEIN: Thanks, Judge Hervey. Well, I really appreciate being asked to participate in this panel. You know, I see a lot of faces that I've known for a long time, people that I've really learned from, Cecilia, forensic science, and Kathryn about victims issues. It's just been -- and Dean about the proper management of a crime lab. But I'm going to talk to you a little bit today about what we've done in Arizona. Judge Hervey has the Cadillac of training for a state. We operate on a shoestring. We have no legislative authority. We have very little funding, but we've been able to accomplish, I think, a lot with what we have.

We started -- the Arizona Attorney General formed the Arizona Forensic Science Advisory Committee in 2007. They appointed me as the chair, and I've been the chair since then. It's a broad-based committee made of all criminal justice stakeholders, prosecutors, defense attorneys, law enforcement, medical personnel, victims, judges, and the state crime lab and all the local crime labs in Arizona. And we really -- one of the things we've really developed was a commitment to training.

We started an education subcommittee I believe in 2009. And since the inception, Jody Wolf, who's the Assistant Administrator at the Phoenix Crime Lab, has been a chair of the Education Subcommittee. Jody's the past president of ASCLD. And really the education component of the Forensic Science Advisory Committee has been a labor of love for Jody. She devotes a lot of time to it. She's very committed to it. And, in fact, she provided most of the slides for this PowerPoint. I'm not a PowerPoint kind of guy.

The -- all right. What we decided to do in 2009 was look into doing an Arizona Forensic Science Academy. And, again, the academy board is made up of a number of the people who are on the advisory committee to get a broad perspective from our membership on what was needed for training. And our program goals are to increase the criminal justice practitioner's understanding of forensic principles, scientific methodologies, and evidentiary concerns. Our target audience is, first, lawyers and judges, prosecutors, defense attorneys, and judges, and I'll talk about that in our -- as to our basic and advanced academies. And then branched out to education for forensic scientists and also law enforcement.

We wanted to start, first, with a basic academy. And what we decided was that we wanted to develop an innovative course that would bring both prosecutors and defense attorneys together to learn about the scientific issues which are presented in criminal cases from the experts who actually do the science. And, you know, from a state perspective, as we all know, lawyers and judges are kind of anti-science. And most

of our lawyers and judges know very little about science, let alone forensic science. So, this is different because we have prosecutors and defense attorneys in a room together, learning in a non-adversarial manner.

It's presented by experts from the accredited and recognized labs in Arizona, and also it's a forum that encourages open discussion and questioning from all sides, but not in an adversarial manner. We don't point fingers at each other. We try to start from scratch as to that this is a collaborative effort that we want everybody in the legal field to understand about forensic science. I'm not -- this is not working to get me to the next slide.

All right. So, the training programs that we offer are the basic forensic science academy. It's a multi-week program. It consists of lectures, a tour of the crime lab, and the medical examiner facilities. We offer autopsies to all the participants that -- they're not going to have an autopsy, but they view autopsies. We offer hands-on exercises, of course, continuing education credit. And these are some of the topics that we utilize in the basic academy. And also we utilize judges and experienced lawyers for some legal issues in the basic academy. And we cap the basic academy at about 40 participants each time. The advanced academy has less participants in it.

Our academies rune every Friday afternoon. And each of the participants is expected to attend 80 percent of the sessions, at least. Some of them have to be -- have long motions on their Fridays, but we've had really good attendance from all the participants. And it usually runs from about 1:00 to 4:30. The advanced academy is also multi-week, but I think the basic academy is about 11 weeks. The advanced academy is about nine weeks. Again, that consists of lectures. We do case debriefs in the advanced academy. We bring in some national experts for guest lectures to the academy.

We brought in Chris Plourd from Arizona -- I mean from California. Dean has spoken, I think, on our forensic science series. Judge Hervey, as she said, has been here. Lynn Garcia and Mike Coble from NIST. We've had Sue Ballou come in from NIST. We've had Melissa Taylor come in from NIST. We also give, of course, continuing education credits for the advanced academy. And this is a more in-depth review and analysis of forensic science disciplines. We limit it to DNA and biology, latent prints, firearms. We've added digital in this the latest one that's going on right now, and then we have an ethics component as well, and legal issues. I may give up on this clicker.

We perceive the need for lawyers who mainly do work in the limited jurisdiction courts doing misdemeanors. So, we started one 3-D Academy, we call it Domestic Violence, Drugs, and DUI. Again, this is multi-week. It's shorter. The domestic violence had to do with the analysis of strangulation cases because that turned out to be a big, big problem in the Phoenix area in particular for DV cases. Again, we do in-depth review and analysis of those disciplines and those are the topics that we cover in the 3-D, and that was really appreciated by the people who do misdemeanor work.

Then we decided we wanted to develop a forensic science speaker series, lecture series for forensic scientists, but also to invite lawyers and judges to attend as well. We've done 21 of those now. We usually have six a year. They're standalone, four-hour lectures. It provides continuing education credits for forensic scientists. And we bring in usually recognized experts as lecturers, both national and local. The topics are identified to meet the continuing education needs of forensic scientists and attorneys, as well as law enforcement. Some of the examples you see there are DNA mixture interpretation. Mike Coble came in on that with -- from NIST. Analysis, emerging drugs, ethics issues, cognitive bias. Glenn Langenburg from Minnesota came in and talked about cognitive bias issues. But that has been very well attended as well by forensic scientists in particular.

Judges training is a little bit different because judges really can't go every Friday afternoon. So, what we decided to do was invite judges to come to any of the sessions for the advanced or basic courses that they were interested in, but we saw a need that there had to be a really standalone judicial training for forensic science. Chief Justice Scott Bales has been really supportive of this. He made forensic science training for judges as part of his strategic agenda. We partnered with the Arizona Judicial College in December. We did a two-day dedicated conference. We brought in three national speakers and all the rest were local. Jules came in and was the keynote speaker, along with Sue Ballou and Charlotte Word, who's back there, taught our biology and DNA session.

And we ran the gamut, the basic issues, Daubert issues, forensic biology and DNA, death investigation, controlled substances, firearms, toxicology, digital, and latent prints. We filled a lot in a two-day period. We're going to be doing those judicial trainings at least every two years. We're going to do the next one in 2018. And we're hoping to expand that to a three-day program because of the evaluations that we got that were through the roof. I mean, we -- on a scale of five, virtually every session drew 4.8 to 5 as the evaluation, because it was something that was clearly needed by judges.

In addition to the two-day training, we have, each year at the State Judicial Conference the last several years, we've brought in somebody from out of state to do a focused program on forensic science. The other thing that we really wanted to do was impress upon the judges the issues that have been brought forward by the Arizona Justice Project and the Innocence Project. So, we brought in experts on eyewitness identification, on false confessions, on neuroscience and the law. We brought in Chris Mumma from the North Carolina Center for Actual Innocence with one of her clients, Dwayne Dail, to talk about his experience and the issues that were involved in his case regarding eyewitness identification, then eventual exoneration by DNA.

Ray Krone is one of our two "exonerees" in Arizona. Ray has spoken several times in Arizona and has been, you know, a real force in, I think, promoting change and getting judges to understand the issues. I know Peter talked before about bite-mark evidence. We stopped using bite-mark evidence in 2002 after Ray Krone's exoneration. The attorney general of Arizona, as well as the Arizona prosecuting attorney's advisory council, decided together that they would not use bite-mark evidence anymore. That's why there's no cases in Arizona. They repudiate bite-mark evidence because there has not been one instance of it -- of being used.

We did another program at one of our judicial conferences which was really interesting. It was victims of crime and victims of justice. So, victims of crime, we brought in Brooks Douglass. I don't know if any of you know him. I'm sure Kathryn does. Brooks' parents were murdered in Oklahoma. His sister was raped and shot and left for dead, and Brooks was left for dead as well and shot. Gave a very compelling talk about that. And then we brought in Ray again to talk about him being a victim of the justice system. And what was really remarkable, maybe not so remarkable, is the relationship that Brooks and Ray had in seeing how they both were really victimized. And it made a huge impact, just as Dwayne Dail did when he came in and talked with Chris Mumma.

We also had another program where Ray came in and we brought in jurors. The jurors were brought in that were in Ray's trial. And those jurors, you know, they felt so guilty. They were crying. And Ray was -- I don't know if any of you have ever heard him. He's a pretty articulate guy. And, you know, he does not blame the jurors. He got apologies from the law enforcement officers that were there, the detectives that were involved. The only person who didn't apologize to him was the individual prosecutor who tried that case. The district attorney -- county attorney himself apologized, but I know that's always stuck in my Ray's craw over the years that the individual prosecutor didn't apologize.

The training that we've delivered, we've done six basic academies now since 2011. We're on our fifth advanced academy currently. It's -- this Friday will be the second session of that. We've done the one 3-D academy. We've done 21 forensic science series lectures. We've had the one judicial training, plus the additional judicial conferences. I also do a presentation at new judge orientation each year for all the new judges that are -- that have come into Arizona to the superior court system. We've had, 1,200 total attendees over the years.

And right now, what's next, we have the current advanced academy going on. We've got three forensic science lectures scheduled now for in the next couple months. We're going to go to webinars. We've made a kind of testing on that. We're going to try two of those because the problem we have in Arizona, you know, for those of you who know the state, about 68 percent of the population is in the Maricopa County-Phoenix area. It's difficult for some attorneys to come for our trainings that are spread around the state, especially since it's every Friday. And so we're going to attempt to do the webinars. And, again, we're going to continue to do judges training.

If any of you have any questions, there's my contact information, Jody's contact information. And the last one is Marna McLendon, who's with the Attorney General's Office. She's our staff person. She's an attorney who retired from the AG's office and has done a lot of work in this field. And Marna just finished a report for RTI on forensic science commissions, and I know she spoke extensively with Judge Hervey and others. Thanks.

BARBARA HERVEY: Excuse me. Next, we have Kevin Lothridge, and he's an accomplished forensic scientist and business leader. And he has served as the President of the American Society of Crime Lab Directors, and is a fellow of the American Academy of Forensic Sciences. And so, without further ado, Kevin, thank you.

KEVIN LOTHRIDGE: Thank you, Judge. As it was stated, I actually am the CEO at the National Forensic Science Technology Center. We've been around 21 years, going on 22 years. We had a humble start with 1,500 dollars and a mission to do good things from the American Society of Crime Lab Directors. And from that time, we've done a lot. I think we should have been called the National Forensic Science Training Center sometimes because we do a lot of training and have done a lot of training.

One of the first things that we realize, as you're dealing with technology, you have to deal with training. And we focus primarily on the laboratories themselves and people working in the laboratories, so technology training. However, over our 21-year history, we have done many projects for NIJ and BJA. And I sent around a little flyer just to show you some things that have been done. And when I get to the end of my talk, I'm going to talk about where the gaps are and kind of charge the group -- even though this is the last meeting -- with some things that should be continued on.

It should be noted that all the people sitting up here have really done a great job in developing training capabilities. Those of you who have delivered training know that you can't just decide one day you're going to give a training class. You actually have to have some capabilities and you need to be thoughtful about what you're going to invest in, are you going to use those tools over and over again, because forensic science training gets very expensive.

Some of the things that we do are not only in the U.S. but for international customers. Forensic science is a global business. The opportunities and challenges are the same. Therefore, if you're smart and can leverage partnerships, you might find that there's way to expand the training that's developed in one country to another, and I'll speak about that. We've also branched out from state and local crime labs to things that support law enforcement to work with our military as well as the Department of State and other countries in looking at their needs. We not only train analysts and crime scene technicians, we also

take training into the field to individuals that may use a forensic service. We also, as I've said, have done a lot of work in site exploitation training or training for the U.S. military.

What's it take to build a training program, which is one of the things I think this group needs to think about? You should really look at having an instructional design staff, not just a bunch of really great subject matter experts, because we can all tell a wonderful story. That doesn't mean at the end of the story somebody's going to be able to do something better. And, in this case, we actually have subject matter instructional design folks that work with scientists to actually make sure the pre-learning and post-learning meet the goals of the individuals.

We also use subject matter experts that are leaders in their field and know the technology and how to get that information across. I put up here we have a DEA license -- it's not because Nelson's sitting next to me -- but we also have an ATF license, because when we do the training for people on technology, we use real substances instead of simulants so that if they're asked "What did your training contain," they can say, "We used the same types of materials we're going to analyze in our day-to-day work."

We've also been a big advocate for the last at least 17 years of blended learning where we have some web-based delivery as well as stand-up, face-to-face delivery. People ask, "Well, why did you guys that?" Our background is we came in support of a lot of academic institutions. And one of the things that's problematic is if you have a subject matter expert who develops the content and goes away, then that content may go with them. If you build a web-based delivery system, that material is there for other people to either adapt or use so that investment that you make up front can be spread over several years. And we put on our own online learning system. It's called NOLS. Being from Florida, it's not for the Seminoles, even though I'm a big fan, but that's what it's called.

And NOLS is very interesting because a lot of people told us our customers -- and I heard the word "customers" today, and "clients," and all those things -- the people that want training will access training that's available to them 24/7. Carol talked about they would rather watch a -- go to Facebook or whatever it is. We have a lot of people in here who were there at midnight, 1:00 AM, doing training programs. And it's really, really important that there's a system that these people who want the training can get it. We've looked at all those online programs. We've standardized on Desire to Learn, which is a commercially available program. We worked with the company so that we could actually charge the people per seat usage instead of a big, giant fee. We don't maintain servers or anything. It's almost like a subscription service. They can be self-paced, can be combined with instructor-led.

I'll give an example of that. We do training for the Australian military. All of the online courses there are prerequisites before the people show up. That way we know we have a baseline of information. We also then have all the lectures in the online learning environment so that if they have to step out, they haven't missed anything. They can go back and get that same information. Or we can point them to exactly where that's at.

We've also converted some of these to a fee-for-service basis for just anyone that wants to use it. So, we have an introduction in intermediate crime scene. We have a forensic biology, a digital crime scene, and a DNA analyst program. I look around the room and see people we've asked for some input on, how do you price these, how would you use this as a practitioner. The introduction to crime scene is 129 dollars. The forensic biology and the digital crime scene I think are 79 dollars. And then the DNA analyst, which is a much more complex program, is about 995 dollars. We do have good uptakes. And how do we know, you know, that people want this? We actually have the statistics to show what's going on.

The online growth is about 20 percent per year. We have a YouTube system with videos on there that anybody can go see. If you haven't been there, please visit and subscribe. 1,900 subscribers, doesn't

sound like much for the really popular viral videos, but we're talking forensic science, so I'm pretty happy with that 1,900. 4,000 views and hundreds of minutes seen. We actually did a project for BJA called Forensic Science Simplified. Earlier, the panel right before us was talking about who are your jurors, who are the general population, and I'll talk a little bit more about that, but that 700,000 people went to Forensic Science Simplified in 2016 alone. We're the top ten at the NFSTC. Free online training, introduction to CSI online, CSI Guide, which is a joint product of NIST, NIJ, BJA, and the NFSTC. Online courses, DNA analyst online training, and, in general, forensic training. There is clearly a huge need for additional training venues and outlets, but it also needs to be quality training.

As I said before, we switched in the mid-2000s to being supporting the Department of Defense in their application of forensic science. I don't know how many people actually realize the amount of forensic science that goes on outside the criminal justice community, but it's quite substantial, particularly in the intelligence community. And what are the things that we teach them? We teach them basically the same type of crime scene -- it's a tactical crime scene. You have to deal with the same type of problems. The only thing is they may only have 15 minutes. And sometimes time is not your friend. We have other studies out there that say if you spend a lot of time on crime scenes, you may not do a much better job, you may do a worse job actually.

So, we teach them the same exact things. That allows us to leverage off the work we had already done for the traditional crime scene community. Standard scientific processes vetted by the groups sitting around the table and the people that have worked on that. So, it's been -- it's really wise. I think there's a lot of comments about we need to have standardized training. The materials out there, there's just not one place to go get it. And I don't know that it's wise to keep making investments if things are out there, if you haven't done a good catalogue of what training is.

So, who else wants to be users of this work? The general public. How many people in the room have actually been to Forensic Science Simplified? Show your hand. Raise your hand. Come on. Okay. There's a few of you. ForensicScienceSimplified.com goes there and it actually is meant to be a global resource, because we've used international partners to look at all the various topics in forensic science to make it understandable. It's not to train a scientist. It's not to train a law enforcement officer. It's to train people who are interested versus the 200 hours a week that they can watch on TV with the word "forensic science" in it.

We have YouTube, there's a lot of training videos and things on there. Much like Carol, we have our own video production folks. And the last one I have to say we did because we got so tired of the faux forensic things that are out there, the fake forensic science. So, if you haven't went to see our forensic series, it would be great. It's one year old. We actually won a Communicator Award for it. And we've had more than 10,000 views of that.

So, it's a series. So, we did the Netflix thing; right? So, you can binge watch the whole process. The first one's my favorite one because it's zoom and enhance. So, how many people have always thought that from any satellite in the world we can zoom in on any picture and get a clear identification and everything? So, we take a lot of time to make some fun out of what the fake forensic science is and what the real side is. And we cover every topic from zoom and enhance to entomology to the other things. So, again, training is not always just for a goal of learning something, but it is pretty cool.

We're proud to announce that we just partnered with our friends in Australia to put the first virtual proficiency test for crime scene online globally. It's been used in Australia and New Zealand for quite some time. It's actually called After the Fact. You can go to CSIskills.com and take a look at that, but it allows you to interact and allows people on the backend to review your work. More tools like this should

be made. The current practitioners of forensic science use these tools much better than probably anybody else in this room does. And you have to address those needs.

So, for the mundane, we teach forensic chemistry, what do you talk about? Presumptive screening, I heard somebody talking about drug testing this morning. Yes, it's a presumptive test. You have to explain those things. What about how do they use these other things. The picture here depicts -- one of the interesting things here, the guys on the right side there are actual hazmat people who actually use the same tools that they use in the field, but, guess what, had never seen a real substance with their systems until we actually showed them that. So, it's important.

Biometrics, again, many of you have heard the term "biometrics." We throw it around. It means everything from fingerprints to facial to iris to DNA and rapid DNA now. DNA analysis, not only online theoretical pieces, but the most difficult thing about training in forensic science, and Ron had it in his, you have to do hands-on practical pieces for people to truly understand what's going on. To give a lecture only on how to collect a fingerprint is not very helpful because the people can't probably do it.

And in the current environment that we're in, we actually have to look at, you know, other situational things that we hadn't traditionally thought about. So, it stretched our capabilities. So, we do look at IED awareness and HME awareness on a lot of the activities.

So, where are the gaps? We've been doing this for 21 years. That list I showed you there was a lot of products that are out there. There's really no unified content and it's really difficult to judge quality. People judge quality sometimes by what they pay. We did a lot of things for Gerry and the folks at NIJ for free, and all we told them they had to pay was attention. And sometimes they didn't pay attention when we were doing that. So, it's important to know that cost -- there is a cost driver to this. You heard Paul Speaker talk about return on investment this morning. Just because I run a nonprofit, that doesn't mean I'm for loss either. You have to make sure that you're looking at what the cost is and how you can sustain this.

We're not really good at life cycle support. We build it once. We think it will live forever. And unless you put resources in the out years to make sure it's maintained, kept up, updated, then you have a one-time product that may be there for a long time, but it may not be as current as it needs to be. There's a lot more that needs to be done with officers of the court. A little story about the NFSTC. One of the first things we did was principles of forensic DNA for officers of the court, simply because it was the early days of DNA. The scientists were having a hard enough time understanding it. Then we figured we're going to give it to somebody else. So, we actually put that together in early 2000-something. I can't even tell you the date. Those types of things are more important, particularly if we're starting to use advanced technology in the field where it may or may not go to a laboratory before it gets to you in the court.

It would be great if we could identify the requirements. I'm a big requirements guy now. We used to get projects and they'd say, "Build us a toxicology training program." Well, if I build the one that you want me to build, it may not be the one you're thinking of. So, give me a firm list of pre- and post-learning outcomes that you want, that we can make sure that whoever takes that training will actually get the desired outcome.

And the last thing, and I'm sure that I won't be around when this happens, a standardized lexicon of what we're talking about in the field of forensic science. I didn't say it had to be agreed upon, I just said to standardize it. So, I think that's important. And Judge Hervey, you asked where the gaps are. I think, if you listen to the panel, they're pretty -- some pretty consistent things that have went along with that, and I just -- you know, I would hate to see us keep going down this path another 14 years from now or

whenever the next time we get together is. There's my contact information. I appreciate your time, and glad to be here.

BARBARA HERVEY: Okay. So, now I get to confess about how pathetic I am with technology. Ron, you know Ron's a judge, too, and, you know, he confessed. So, there's my PowerPoint in the middle of the floor; okay? Now -- okay.

MALE SPEAKER: It's upside down.

BARBARA HERVEY: I understand. I even -- I brought colored pens in case people wanted to play, besides me. But what I did -- first of all, it took me a long time to get that weight paper. I had to look all over for it. But I put this in my office and I drew on it as I thought of topics that we train on in Texas, that the rest of you train on, that we've been discussing since the inception of this commission. And I'm sure there's a lot more that should be added to this, but this is my concept of all the stuff that we have accomplished. And I like it. I think it's pretty. I used different colors and everything, but there's my PowerPoint.

Now, as I was listening to the other panelists who all do a brilliant job in training, I have a lot of similar comments, but I'm going to start with the question that my co-chair on education at the beginning just asked me. He asked me, "Why is Texas seemingly, you know, ahead in doing all this stuff?" Well, I probably shouldn't say this live, but anyway, one thing is you got to learn how to trick your legislature or your commissioner's court or whoever's controlling the money. Now, with the federal government, I can't do that. I just can work it in Texas. And so, so far, except for this session, because they're telling us we're poor like everybody else, we just tell them what a great, great thing they're doing by giving us this money, because it makes Texas a star. And it's because of you, you legislative people, that we can be a star. And they like that. So, they give us the money to train.

But, to answer Jim's question about how we got involved in this in the first place, it really happened kind of on a bad note in that we started -- we are the court of last resort, obviously, for criminal cases, and some of our work is non-discretionary. Unlike our civil counterpart, everything they take is discretionary. We have no discretion when it comes to the appeals for death cases. And we have no discretion when it comes to writs of habeas corpus, and that's where this first came up. We get between 4,000 and 6,000 writs of habeas corpus a year. We have been told that we are the busiest court in the country, busiest appellate court. That's unfortunate because we have 150-some-odd-thousand people in prison.

But what happened years ago was we started to see this phrase, "actual innocence," coming through our writs. And so, of course, you have defendants that always say they're innocent, but this "actual innocence" phrase, I didn't understand what they were really talking about. And a lot of the -- most of the writs are pro se, so a lot of the times you never know what they're talking about and you have to guess. Well, wanting to understand what was actually being sent to us, I took the presiding judge with me and we went over to talk to a brilliant professor at the University of Texas, Professor Dawson, who is no longer with us, unfortunately.

And he spent all day with us explaining this concept, and he was a great believer in the criminal justice system. He said, "But obviously it has some flaws." And after we had this time with him, the court, together with the University of Texas, put on the very first conference for our state on actual innocence. And we invited all of the stakeholders. We particularly wanted the legislature to be there. And we discussed the situation, what were we going to do with it. We had all these problems in the system. And our goal has to be to fix it at the front end so that we don't have to deal with this with all these thousands of writs. And that's how we got involved.

And, as you well know, Texas has had quite a few exonerations. And we are trying desperately to keep that from happening. But what I'm afraid of is that when we try to train -- right now, our legislature happens to be focused on mental health. So, they're not as concerned about forensics anymore. So, we have to keep them on track there. But what they want to do with mental health, and it's a good example because this happens with forensics, too, is they decide, oh, my gosh, we've got this crisis, so we're going to take this bunch of money and we're going to throw it at the wall, and we're going to train some aspects of this problem. We might hit some. Maybe we'll educate five people in this area, five people, but that's not the way to do it. So, we face that problem in the future with training on mental health, but we also have that problem with forensics.

So, when we train in Texas, the good thing about having the court of criminal appeals be in charge of the money for training is that we are the people that see where the problem areas are. So, for example, when we saw this phrase "actual innocence" come up; okay? And then some claims early on about eyewitness identification. And Peter, not to criticize you or Barry in any way, because you're brilliant people and you've helped us a lot, but I wanted to put on a presentation first for the court to understand what I was trying to get at with education on eyewitness identification.

So, I brought in Barry and I called the New York office and I said, "Okay, look, I was born and raised 22 miles outside of New York. I want Barry to come in and talk about eyewitness identification and the need for change, but he can't put on a New York presentation." I said, "Do you know what I mean?" Your staffers laughed, said yes. Barry came down. He was excellent, as always. And in Texas, they don't like to listen -- I say "they" because I'm still from New Jersey in my mind -- but in Texas, we don't like to listen to anybody, in other states, the feds, each other, whatever. But Barry did a brilliant job. And the most conservative judge on my court leaned over and said to me, "Is this all you've been talking about? Is this all we need to do?" And I said yes. Well, then the court was very behind this concept. So, that's how we get involved in these things.

So, the court set up an integrity unit of its own in 2008. And we'd already been talking about the different trainings we needed in forensic science, but, with this unit, we took -- we had 14 members. I purposely picked people that were from across the board, every stakeholder group was represented. I didn't pick any bomb-throwers because you can't get anything done with bomb-throwers. And I was made fun of because, in Texas, all 30 statewide officials are Republican, most of the people I put on this group were Democrats, because I thought, well, I can already talk to the Republicans, I need to convince the legislative Democrats that this is a good thing to do. And we sat and we talked about issues.

Now, everybody had an idea of what we should be looking at, and it was very helpful. So, then what we started to do was we started to bring in experts on various topics. We'd present to the court. And then all of our grantees, we have eight at the present time, and we would have them sit in and then suggest that they take these trainings back to their constituents and train. And what's good is that, since we control their money, sometimes if they say, "No, we're not going to train in this area," oh, really, because guess we're not going to give you any money. We'll find someone else that will train on this topic because the training will occur. So, it works very well and our constituents are very good about not only being involved in these areas and reading all kinds of things or going to other states or going to other conferences and taking care of these things themselves, but they take a lot of guidance from us and what we learn from looking at the writs.

Now, the unfortunate thing for me, I went to a CSAFE meeting not too long ago, and what was interesting, I think there were maybe one or two other lawyers there, but mostly brilliant scientists. And one of the brilliant scientists made the suggestion that -- or told us, rather, that a federal judge friend of hers had said that experts can't give opinions on the stand. I asked her what planet he came from, but anyway, I read her the rule and there was a gentleman from England and a gentleman from the

Netherlands there. And the gentleman from England said, "Do you know the difference between a fact and an opinion?" So, we started to get into a very detailed legal discussion, which was great. And they didn't understand what I was talking about about our interest in this project. And, of course, I was very interested in theirs. And it was a really good exchange and it really reinforced, for me, the need for this intersection of science and the law.

And for me, since I deal with habeas, at the end of my beautiful chart, the problem is we can have all of the rest of the stuff trained on and hopefully absorbed by some of the people, but when it gets down to the very end and we have habeas, we only have a group of people, and maybe your states are different, that really understand habeas. So, if we've done all this work and the lawyers don't know what to do with it, based on new science, then we've failed.

So, what the court is doing now is we're training on habeas, because that's our specialty. And we're training lawyers on how to do that so they can, you know, look at all these things that may or may not have gone right and challenge that, and hopefully go back through the cycle to teach us all how to look at these problems. But there's a lot of stuff there to be trained. We can't give up, regardless of whether this commission ever sees the light of day again or not, or some like body. We've got to keep doing it. And we have enough people here that are interested. We can all collaborate. And money is a big thing, but there are a lot of ways to train people by sharing resources where we can all do this.

You know, I've talked to Carol a lot about borrowing her stuff, because Lynn, who's in charge of the Forensic Science Commission and is wonderful and has done a brilliant job in Texas, she and I work hand-in-hand all the time on training. And we've decided our next big show will be concentrated on collection, preservation, and storage of evidence, because I think everybody in this room would agree, if we don't do it correctly at the front end, forget all the rest of it; okay? So, we're going to do that, and we're going to -- I've already talked to some people from the FBI. And I'm going to bring in some experts. And that's what we're going to do.

Now, one thing Carol said that I would repeat is my concept of training, when it comes to science, is it's science. What the individual groups, defense or judges or prosecutors, do with it in their camps, that's another story, but if it's science, there's a great resource situation that you can fix if you present across the board. It's good for -- and it's really good to bring in the stakeholders, like the legislature or your commissioners courts, so we understand the science. And you can't just train them once. It took me three times to listen to Bud Bidoli [ph] talk about this DNA mixture situation for me to understand what he was talking about, not because I wasn't trying, but I understood I needed to -- I needed to pay attention and learn and learn and learn. And so you've got to repeat it. You can't just do it once. You've got to keep repeating it.

And as Keith said, you've got to have hands-on stuff. So, you've got to make them work at it. The judges for habeas, when I teach judges, they get a habeas and they're going to have to figure out what the answer is. You're going to have to work on it. I was fortunate enough to go to Los Alamos for a program for judges. And when we walked in, they said you're going to do a physics problem. I laughed. I said, "No, no, no, I'm a judge. I can't do physics." "No, you're going to do a physics problem." And lo and behold, we did. And my team won. I think we cheated or something. I don't know. But anyway, we won. And at the end of the week, I could think more like a scientist on how to approach things, and yet understand what I needed to do with that information in the courtroom.

And as far as judges are concerned, I often give this speech, and so being on a Supreme Court helps me in my state. When I talk to them about training, I say, you know, the judges are the hardest people to train, and that's because judges think they know everything. And if they don't know everything, they don't want anybody to know they don't know everything. And we have to get over that. No one -- no one is more

important, no one is smarter, no one is better than anybody else in the room when we're trying to learn this to fix the criminal justice system. That's what it's about.

We can't have any more people like the gentleman that was here yesterday, you know, to tell his horror story. That's just not good. It's good to bring their stories to the forefront so that we all not only feel a little bit guilty and ashamed, but that we realize we've got to work at fixing it. And I'll leave you this one last thing -- oh, and I have an interesting situation. I was a prosecutor and I'm married to a defense attorney. My daughter is a prosecutor. My son-in-law is a defense attorney. So, we have some interesting discussions. Fortunately, now I'm a judge and I go, "Well, if you don't like the law, I don't care," but anyway.

The one biggest thrill I had in working with all of this is I went to an Innocence Conference. And one of the speakers was an "exoneree" in Texas. And he was very articulate. And I went up after he spoke and introduced myself. And he got up and he hugged me and he hugged me. And then he brought -- I went back to my seat and he brought his entire family over and he said to me, "You saved my life." And I said, "No, I didn't save your life. I wrote the opinion. The court saved your life." And it was one of the best feelings I've ever had since I started on all of this.

So, I appreciate everything all of you have done and meeting you and talking to you and sharing experiences with you. And, please, anything that we can do, what I say in every speech I give with training is any ideas that you have, please share them not only with me but with the rest of the people in here so we can continue to work on this and not give up, and make the system as good as it possibly can be. So, thank you very much.

Oh, one last thing, not that it will matter. And I don't know how much stroke he really has on the Hill, but I had a conversation with Senator Cornyn and staffer during the break. And I told him that it was ridiculous to stop this forward motion, and that I knew that sometime back he and Senator Leahy were very concerned about DNA and forensics and all of this, and that they really needed to talk and do something about this. So, I'm supposed to have a meeting with Senator Cornyn's office when I come back for ALI in May. And so maybe somebody will pay attention. So, I hope that does something, whatever.

JOHN BUTLER: We'll go ahead and take questions for a few minutes then. We have until 1:15 scheduled. Jim.

JIM GATES: As usual, I want to thank the panel for the briefing. I find that I learn so much listening to the content experts like this. My question is actually directed towards Keith, however, and this online sort of resource that's out there so that the public gets a chance to look at what real forensic science is like versus the images that Hollywood feeds them about how forensic science works. So, my question is the following, I can imagine being called to serve on jury duty, and one of the -- perhaps one of the things that would be, like, really good for me to do is to actually watch those videos and watch that training as a prospective juror. And I'm curious whether anything like that has happened, to your knowledge?

KEVIN LOTHRIDGE: Not to my knowledge, nobody's told me that they were on jury duty and they used Forensic Science Simplified or any of our tools.

JIM GATES: But there's sort of no -- so, there's no sort of formalized request or requirement to get -- you know, we talk about educating judges and lawyers, but your point was, yeah, we need to educate juries. And this looks like a really interesting resource. And I'm just surprised that I haven't heard more about it being used for that purpose.

KEVIN LOTHRIDGE: It's out there. It's widely available. Everybody should have the right scientific information. If you listen to all the topics for today -- I wasn't here yesterday -- but if you treat science as

the most important thing, and everything is totally unbiased -- and there's a lot of bias on the sheet out here -- that people can make their own decisions. They may understand something that they didn't know before.

In the U.S., STEM is not as important as it should be. And sometimes you're asking people to make decisions, almost like solving a physics problem in Los Alamos, without the tools to be able to do that. So, we put together at BJA's request, and almost as an on-ramp for anybody. If you're just a general population and you want to go learn about forensic science because you hear about it a lot and it's in every TV show that's out there, isn't it good to have a resource out there that anybody can use.

JIM GATES: No, no, I'm not opposed. I'm just surprised that this is somehow not part of best practice in actually, you know, having the cases heard. Why aren't -- why isn't there more of a push to get our jurors to be in a better position to evaluate forensic science? This looks like a low-cost tool to me.

KEVIN LOTHRIDGE: It's been paid for now, so it's basically free.

JOHN BUTLER: I have Dean, and then Cecilia.

DEAN GIALAMAS: [Inaudible].

JOHN BUTLER: Okay.

CECILIA CROUSE: Thank you, Dean. I have a rather large question, and so I'm going to try to focus it. For the last couple years, the Florida Association of Crime Lab Directors, we've been meeting and we've been mulling the idea -- not mulling it, we've actually tried to formulate a way to move forward with the state to get a commission. And I actually brought the RTI commission report. It's been very, very helpful. One of the things that it does not discuss is the difference between an advisory board, a board, a commission, and an investigative council. And I'm not sure I know what those differences are, but one of the things that is not a difference is when they talk about special stakeholders and partners. And Ron, you were talking about who's on your specific commission, and it does not include an academician. So, one of my questions --.

RON REINSTEIN: Oh, it actually does.

CECILIA CROUSE: Oh, I'm sorry. I didn't see.

RON REINSTEIN: Yeah, I didn't put it on there.

CECILIA CROUSE: Yeah, it's not in your thing, so, okay. All right. Well, then that answers that question.

RON REINSTEIN: Before David Kaye abandoned us to go to Pennsylvania, he was the member. And now we have another person from AFC on there.

CECILIA CROUSE: Okay. I missed that. I'm -- I'm glad for that. One of the issues that we're having is that there are other governmental entities in the State of Florida that already have a part of what we want to do, and they're not necessarily willing to give up their entity to be a part of this entity, especially since we haven't really formulated the entire template. So, my question is the crime lab directors are getting together a meeting in August or September, and if someone from -- someone who has a commission would actually come and guide us, if nothing else, are we looking at an advisory board or are we looking at a commission, because I hear there's a difference between the two?

RON REINSTEIN: Well, I think, for a commission, you need some legislative authority and funding. That's why I call Texas the "Cadillac." Lynn Garcia is funded. You know, she's the executive director of the commission. They have authority to, you know, do studies that they've done and make

recommendations. Ours is an advisory committee. It was formed by the Attorney General's Office. It's all voluntary. We get great attendance from everybody -- all the stakeholders. And it's really a collaborative effort to inform the various stakeholders in the justice system about ongoing issues regarding forensic science. And hopefully from that get buy-in to not use certain types of, you know, things in forensic science or to use things, you know, that are really, really good and positive. It's worked for us so far. And as far as our academy goes, I know Stephanie Stoiloff has contacted me in the past about doing a similar thing at Miami-Dade on having an academy for judges and lawyers.

JOHN BUTLER: Dean and then Julia.

DEAN GIALAMAS: Thank you. I just wanted to thank the panel for your presentations today. And I hope everyone who is here and everyone listening online recognizes that there already are some pretty amazing and powerful tools in the training aspects of what we can do. We just need to give them the tools to train on, and I think that's really the next step. So, I just want to thank all of you for being a part of the presentation today.

Judge Hervey, I just wanted to say thank you for your presentation, too. It's the first time I've seen a recyclable, biodegradable, energy-efficient PowerPoint that's been delivered. And I might be rather sarcastic and suggest that if you can hold on to that, I think it would make a perfect tie for Mr. John Butler.

JOHN BUTLER: Julia and then Gerry.

JULIA LEIGHTON: Thank you very much for the presentations. I may have missed it or maybe it's sort of deeper in the slides, but one of the -- there are two topics I was wondering how you all address, if you address, and how you address. And the first is training on statistics. And then the second is training on what is scientific methodology.

CAROL HENDERSON: Actually, that's something that's come up recently. There's been a lot on statistics, I know, and big discussion with OSAC as well. And, in fact, I think David Kaye just wrote an article that was published in Harvard Law Review explaining statistics and forensic science because there was a question that came from José Almirall at FIU. And he's on one of the subcommittees, and actually I think he's on the FSBB -- or is it FSSB? And he had asked about this. And I think this is an area -- I know in law schools that's a real problem that we don't have statistics, economics-related, except if you're in Chicago, I think. So, there's some areas, again, that we have to branch out and do.

The same with the social sciences, too, a lot of times we're looking at different areas of forensic science, but not the social sciences. I'm finding, especially in death penalty cases, when we're talking about mitigation and aggravation and things like this, we need to have approaches. So, as I said, like the list I have is rather fluid at this point because I'm trying to find out where are the needs. And sometimes the needs will change over time when you have a lengthy time period for grants as well.

RON REINSTEIN: We brought in Mike Coble from NIST to talk about DNA mixture interpretation. I think he's been there twice now. And -- but that's really an area that needs to be discussed. You know, one of the things that we try to do is do the basics and then more in-depth review, but leave specific issues for the Arizona Prosecuting Attorneys' Advisory Council for their advocacy and strategy, and the Arizona Public Defender Association, the Arizona Attorneys for Criminal Justice for the defense side on those as far as strategies and advocacy. But statistics is definitely something that, you know, we're going to be delving into.

JULIA LEIGHTON: And I guess I would commend those topics because they seem very foundational before even getting -- so, that our audience is -- so that we're just also thinking human beings, that we

have sort of foundational understanding, and then can listen and ask intelligent questions as we learn how things are applied. And so that's why -- I mean, they're tough; right? They're tough topics to teach to lawyers and judges, and to some analysts, because they don't seem directly related to understand sort of the fundamentals of the scientific methodology, the fundamentals of statistics, so that they can be thoughtful consumers of the rest of the information they get.

RON REINSTEIN: I will tell you that one of the things -- well, Carol has sponsored a Law 101 for Forensic Scientists as far as being an expert witness. And one of the things that came up a number of years ago, David Kaye came to me after I had done one of my DNA admissibility hearings and asked if I would speak to the International Association of Forensic Statisticians, I think it was. And I said what the hell could I possibly talk to them about? And he says, "I want you to talk to them the same as you did in court in the admissibility hearing." And it was a world-famous expert who testified.

I had a consolidated hearing so that all the cases that were pending at the time on that particular aspect of DNA were consolidated into one hearing so that both the prosecution and defense could focus a lot of funding for experts. And it was, you know, a multi-day hearing, multi-week training. And one of the world experts -- I read everything that they had presented to me. I listened to them. And, at the end of the day, I said -- his name, I won't mention it now -- I said, "I've listened to you. I understand you're a world expert, but I really haven't understood almost a word that you said the entire day. And what David wanted to talk -- me to talk about was the fact that experts need to talk the language of judges and lawyers and jurors, and we need to speak the same language so that we can understand what they're saying as well.

BARBARA HERVEY: [Inaudible] taking off on what Ron said, it's got to be a "Dick, Jane, and Sally" approach to that because we're not going to get it. And we have to have some other name for it. You say statistics, I'm not even going to listen because I won't understand, but it's got to be a real basic thing for people to not only want to listen but to try to understand it. And it is something that needs to be addressed.

GERALD LAPORTE: Cecilia, thanks for bringing up that state commission report. So, just I want to sort of take the credit and the plug. So, that was an NIJ product. And one of the reasons that we did that, we worked real hard to get that done within this year in the event that the -- this commission was going to sunset in its guidance for states, if they're going to set up their own commissions. I had pitched the idea to this commission at some point in time, but sort of that didn't take any traction. So, as usual, I just took it upon myself to take care of it on another end. So, thanks for bringing that up, by the way.

CECILIA CROUSE: I actually went to the very end of it because I was hoping there would be a section on what didn't work, and there was no such section.

GERALD LAPORTE: I'll say there was probably some of that in the original version, but we cleaned it up and we tried not to opine too much, if you will, as opposed to just report on good things and not necessarily all bad things. But I do have a question for the panel sort of up for grabs. It probably pertains more to Carol, Ron, or Kevin, but what efforts do you guys make to ensure that the forensic science training materials and the curricula that you develop are scientifically sound, like, the things that you're talking about have good [inaudible]?

CAROL HENDERSON: [Inaudible]. Sorry. We had an advisory council. Now, of course, you can't fund an advisory council with OJP's change in some regulations, but that was one of the things, to have scientists look over materials. And then when we would have a group, a committee build things, it was lawyers and scientists together. So, we didn't want to have -- the lawyers cannot speak the language as one problem, but also know the science. And the scientists still have to know how are we going to translate this to go into court. So, that's one method we did, but now with the OJP thing about not having

an advisory council, that does create some issues. And I think but Kevin does have an advisory council, is that correct?

KEVIN LOTHRIDGE: I don't have an advisory council. We use the instructional designer as the gatekeeper, because they're the subject matter expert. Then we use a series of scientific subject matter experts to make sure that they're all in concordance. And then when the product is done, you have to have a deep, deep review, which is painfully hard, to make sure that everybody that you get to do the review understands exactly what the outcomes, and don't try to put their own personal flair or flavor onto the training, because that goes back to the desire to have the lexicon and the requirements so that we know what the content has to be.

JOHN BUTLER: Thank you all for your participation on this panel. I appreciate all of your input.

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Part VI

NELSON SANTOS: So, this is our last panel for the day, and I guess the last panel for this commission. So, that's a dubious distinction that you folks have up here. I'm going to turn it over. You want to moderate this, John? I'll turn it over to John.

JOHN BUTLER: I guess Jeremy Triplett is up first, from American Society of Crime Lab Directors; right? Go ahead.

JEREMY TRIPLETT: All right. My first technology hurdle has been passed. I've turned the microphone on well. So, we're off to a rocking start. My name is Jeremy Triplett. And I was hoping, with this possibly being our last lunch together for some of us, that we would have had some "collegiation" before I had to present to you. I thought it might make the follow-up questions go a little easier, but, alas, I was -- I had requested a couple hours of "collegiation," but it didn't happen. So, I apologize for that.

It seems like, as I've sat here and listened for the last couple days, that the big theme of a lot of the panels the past two days are sort of half reflection and half projection. So, where have we been and where do we go from here? And so I think it's along those lines that I'd like to offer some comments from the American Society of Crime Lab Directors on how we might be able to assist. ASCLD supports many of the work products that you all have passed over the last three years, and believes that we can assist -- with the news yesterday, that we can assist carry a lot of that work, many of those projects and ideas forward into the crime lab community. And we're excited to do that.

But before I start, I just wanted to take a moment and express my personal appreciation to all of you. I've been up here several times, and through this endeavor I've had the opportunity to meet many of you that I probably never would have before. And I just wanted to thank you for the hospitality, the co-vice chairs always being so kind, and the staff of the commission. I just appreciate getting to know very many of you. And ASCLD really appreciates the important work that you've done over the last three years, but we believe the National Commission truly has furthered the work of the NAS report. And we think that you've given a great amount of attention to very important forensic science issues. And so I just wanted to say, from myself personally, thank you. I know it's been a lot of time and effort. You've probably spent who knows how many hours reading and digesting materials and becoming familiar with all kinds of forensic topics. And so I just wanted to thank you.

ASCLD has tried to be helpful in this process. I think we have. I hope that you feel that. We've tried to be as involved as we possibly can be. I have some of my most respected and esteemed colleagues that are

ASCLD members that are here on this commission, and I look up to you very much. We've tried to put at least one or more ASLCD members asked to be participants on the subcommittee. So, we've been very active in the subcommittee work, and I hope that's been evident. And we've published one or two public comments to your documents. Just kidding. It's been a -- it's been a lot of work, but we've tried to display that we're interested in partnering, being constructive, helpful, and I think we've done that.

So, with that said, I know that I've done this before, but I'll tell you just again who the American Society of Crime Laboratory Directors are. We are a nonprofit 501(c)6 professional society of crime laboratory leaders. We have more than 600 members from all sizes and types of forensic laboratories. We have members from large, medium, small laboratories, federal, state, local, and private laboratories. We actually have some international members, which we think is really wonderful that we can network even globally.

The mission of the American Society of Crime Lab Directors is that we are dedicated to providing excellence in forensic science through leadership and innovation. That plays out in several ways. We do training for crime laboratory leaders on management principles. We try to speak to boards and commissions like this to bring up relevant information about operational issues in crime labs as you're deliberating important topics. We have a symposium and then we have several committees, some of them I'll speak to as I talk about some of the work products that may -- we might be able to help with.

I wanted to share, just before I get into the bulk of my slides, ASCLD has five strategic goals for 2016 and 2017. And I share them with you to demonstrate that I think ASCLD and the National Commission share several important goals. Our five strategic goals for this year were to cultivate forensic science leaders, promote quality operations, serve as a trusted voice in forensic science, advance the science of forensic science, and pursue ASLCD organizational excellence. And with that, I'd like to begin talking about how we might be able to assist you.

So, where do we go from here? Several of the National Commission views and recommendations ASCLD believes we can help implement, or further down the road. And I think that was why some of us were asked to speak to you today. We recognize that some of them are not without challenges. Operationally speaking, some of them will be difficult, but I like to think that sometimes with big change, large change, it's not always easy. It's going to be hard, but we are committed to assist, and with trying to implement some of these.

And I want to, over the next few minutes, highlight a few of the work products and ways that ASCLD might be able to help. I would say this is not exhaustive, so just because it's not in the presentation doesn't mean we don't support it, but these are a few that reached out to me. And my OCD compels me to try to bin sort all my thoughts here, so I've found three topics under which I can categorize them, although my OCD makes it really awkward that that last one doesn't end with "al." So, I wanted to do foundational, operational, and "researchal," but I didn't want to create a new word.

So, what are some foundational issues? And I know a lot of times we're talking about foundational science, and, of course, that's important. What I mean by "foundation" for this topic is just core issues, what are bottom-line issues, some of the just key mission issues that you all have passed recommendations on that we might be able to carry forward. You passed a recommendation on National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers. ASCLD supports a national code of ethics -- a national code, and supports strong ethical standards for forensic scientists. ASCLD is looking to engage and work with the relevant stakeholders to discuss ways we can implement that recommendation. One might look like ASCLD reviewing our own code of ethics to ensure it's consistent with what you published, the code that members in ASCLD ascribe to when they're members, and also encouraging all labs to implement a similar code of ethics.

You passed a views document on inconsistent terminology. ASCLD agrees. And last time I spoke to you, I talked about a few different hats that I wear. This is an ASCLD issues because ASCLD supports OSAC work, and ASCLD is also intimately involved on the ISO technical committee 272, but I can also tell you from OSAC that that work is ongoing. ASCLD supports OSAC'S work in unifying terminology, identifying problematic terminology, and clarifying inconsistent terminology.

So, we support the work that OSAC is doing. ASCLD is also the TAC, the Technical Advisory Committee administrator to ANSI for ISO 272 in the U.S. We administer the TAC. So, we're intimately involved right now with ISO/TC's 272 work on creating new standards. And the first one, we know, is a vocabulary standard. So, we're involved in helping shape that, and believe that your views document on inconsistent terminology, we can go far into addressing that.

Operationally speaking, you -- the very first thing that you recommended, the very first thing you passed was a recommendation on a survey of forensic capabilities. ASCLD strongly agrees with this. In fact, we know very well how hard it's going to be. We tried to do it. We did finish one, as best we could, and we had some great leadership with past President Jay Henry, and RTI also helped us do that. But we -- we tried for I think the better part of four years to do this survey. And we recognize that it's difficult. To whatever extent we can help BJS as they go forward with this survey, we're willing to help. We can blast it out. We can make sure all of our members receive the survey. We can try to be a communication conduit. We strongly are willing to help with that.

We feel that information about the number of labs and those performing forensic science activities in the U.S. is important. As you saw with the Project Foresight presentation this morning, we think having that data is important, and we're interested in gathering data to know the universe, I think, or the discussions at the very beginning of this commission that this survey might help us uncover, the universe of forensic science out there and the universe of practitioners.

You passed a recommendation on universal accreditation. This is probably one that is closest to the heart of ASCLD. Just comparatively speaking, ASCLD has long stood for universal accreditation. It's part of the core beliefs of our organization. In fact, it led us, back in the '80s, to begin looking at accreditation from the perspective of ASCLD Lab. Now, I'll take the moment to clarify that we are now separate entities, ASCLD and ASCLD Lab. Our names are very similar, and so sometimes that creates some confusion, but ASCLD is the professional society, ASCLD Lab is the accrediting body, which has now joined forces with ANAB. But we value accreditation and we think it's very important.

And so how can we further accreditation knowing that more than 95 -- more than 95 percent of state crime laboratories are accredited, but how can we further it? We will continue to educate crime laboratories and digital evidence units on the value of accreditation and we'll provide practical guidance on how laboratories that are not there yet can achieve it. One way we can do that, an effort that we're involved with is called the International Forensic Strategic Alliance. It's a network of organizations similar to ASCLD across the world.

They have created what they call minimum requirement documents. And these are largely used for developing countries that are trying to improve the rigor of forensic science from a very, very bottom line up. And so they don't meet the rigor of let's say ISO 17025 or the supplemental standards from accrediting bodies. They are a good start. And so ASCLD has worked with these MRDs, and those laboratories we would be interested, if they're not there yet, if they're seeking accreditation, if they're working on it for the first time, the MRDs are a good first step. And then, as I mentioned earlier, I won't belabor the point, but we're working with ISO/TC 272 on new international forensic science standards. Accreditation is something we value highly.

Operationally speaking, continuing, you passed a recommendation on proficiency testing. ASCLD supports a robust proficiency testing program. A lot of thought has gone into proficiency testing. And I know there are a lot of people that have advocated for blind proficiency testing. And then we've had the debate over whether it's easier, whether it's not. I still state that it's difficult to implement. I know as I look through my laboratory and the operations there, and I try to picture how I would develop that, forensic science -- forensic scientists are pretty smart actually. They will know when something's not -- is out of the ordinary.

So, but that said, we have several laboratories that are working on creating blind proficiency testing programs and leading many of our labs in that area. ASCLD is committed to sharing that information, those that we know are trying to implement blind proficiency testing. ASCLD has a resource on our website. It's for members to share. We have model policies. We have validation studies, procedures that are available for ASCLD members to share. We're open to ensuring that when laboratories develop a blind proficiency testing program, we get that information out to all the ASCLD members so that they can see how other laboratories did it. It would just help. You don't have to recreate a system from the ground up. So, we're committed to resource sharing on blind proficiency testing programs.

You passed a recommendation on root cause analysis. Being that we highly value accreditation, we also value root cause analysis. It's a key part of some of the accreditation programs. So, ASCLD does support a rigorous quality of program. Many labs already have that. We continue to do trainings at the ASCLD symposium, online, webinars, through our accrediting body partners. And we continue to advocate for robust root cause analysis.

In views on certification, forensic science practitioners, you passed that views document. ASCLD does support this in concept. The idea that forensic science practitioners should be certified. We do recognize that it's difficult financially. So, how we would implement it is difficult. There's a significant cost that would go into certifying every forensic scientist in every lab, not just originally. I'm certified by the American Board of Criminalistics, but originally you do the training and do the examination, but the ongoing cost, every year, of making sure you do the ongoing upkeep is also a financial consideration.

All right. I just failed that one. There we go. And then the last category I wanted to talk to you is a couple of views documents -- a views document and a recommendation you passed that are research-related. You passed a document that views on scientific literature in support of forensic science and practice. And I personally am very invested in this area. I highly value research. ASCLD values research as well. One of the key issues I have, and this is one that they may have to, like, pull up the hook and get me off the stage, is that one of the big problems in forensic science right now at publically-funded labs is we don't have access, many of us don't actually have access, like a university might, to go in and be able to get a lot of that peer-reviewed literature that this views document values.

At my laboratory, if I want an article, say, from Journal of American Chemical Society, what I need to do is drive an hour to go to University of Kentucky, go to the library, print it out, go back home. And there's an electronic process, but we don't have access into that system. And UK is probably the biggest with U of L access. So, I've talked to a lot of my colleagues. I wondered if I was alone. Is it just, you know, kind of me in Kentucky? And I hear this from a lot of my colleagues, that they don't -- they can't have access unless they go somewhere else. So, some mechanism by which publically-funded labs or forensic labs, some mechanism by which they could have access to peer-reviewed journals in kind of the high impact journals would be wonderful. Just food for thought for those going forward, people maybe that fund things. What?

You also passed a recommendation to fund postdoctoral projects to facilitate the translation for research into forensic practice. This is an idea that I'm really excited about the future direction of ASCLD.

ASCLD has a forensic research committee. And one of our strategic goals over the next year is to use that forensic research committee to connect local researchers with local crime laboratories, and act as -- I keep kind of calling it, like, a switchboard operator. ASCLD themselves, as the organization, isn't going to -- can't engage in research. That's just not part of our scope and abilities, but what we can do is we know where the crime laboratories are, for the most part, and we can better identify where the research is being done.

And it's particularly for studies, like white box/black box studies, where you're looking for examiners and participants. ASCLD feels like we could play a key role in that and linking up people, and providing some of those participants in black box/white box studies. And so one of the key things we're going to investigate over the next year is how we might be able to create that directory and be advised of new studies ongoing and coming online, and being able to connect people to provide participants for those. And so I'll wrap up. I know we have quite a few people speaking today.

Looking forward, where do we go from here? ASCLD recognizes there are probably going to be a lot of ideas coming forward on how we continue with investigation into advancing forensic science. ASCLD continues to engage and be happy -- wants to lead efforts in advancing forensic science. We would support all initiatives that include several key factors that are important to ASCLD. Participation from people from all sizes and types of laboratory, so federal, state, and local forensic scientists, and a significant input from forensic scientists. We want to continue to contribute in a constructive and a substantive way. And ASCLD does look forward to advancing forensic science in the U.S. I'll say thank you. And I know we'll have questions at the end; right?

JOHN BUTLER: Okay. Thank you very much, Jeremy. Okay. Ken Williams from the American Academy of Forensic Sciences will provide a perspective from AAFS. Thanks, Ken.

C. KEN WILLIAMS: Well, first of all, I'd like to thank the organization or the commission for giving us an opportunity to speak to you today. I'm also very thankful that President Betty Layne DesPortes asked me to speak to you to represent the perspective of the criminalistics section. This is just one perspective that I'm giving you. The American Academy of Forensic Sciences represents the interest across the entire forensic science community. We are a multidisciplinary professional organization, and our objectives are to promote professionalism, integrity, competency, and education. We also try to foster research. We want to improve practice and encourage collaboration, all within the forensic sciences.

As I mentioned, we have many interests to represent. We have 11 sections within the academy, anthropology, criminalistics, all the way down to toxicology. I'd like to draw your attention to the first, anthropology, because, as I said, this is just one perspective. Anthropology used to be called physical anthropology. I think they changed their name just so they could knock criminalistics down a peg, but that's okay. We're still the largest section of the academy.

We were founded in 1948. We have national and international members. We have more than 7,000 members academy-wide. And, as I mentioned before, the criminalistics section is the largest, with more than 2,800 members. It was going so well. There we go.

Let's take a minute to look at the involvement of the American Academy of Forensic Sciences. We have 14 commission members that are members of the academy. So, we have quite a large representation. We also have three ex-officio members. We also have numerous subcommittee member positions. So, the American Academy of Forensic Sciences does have a presence on the commission, and that is something that we are truly thankful for.

When I prepared this presentation, I thought why is there a need to tell you the benefits that you, as a commission, have done for the forensic science community, but then I thought, you know, this

presentation is also available to the public, so it's necessary for them to hear it as well. I'm also glad I did it because now that I know this commission is ending, it's also good for the next administration to hear what some of those benefits are, because, as they try to move forward, they need to see the progress that you have made thus far. And I think panels like this and the panels that we've had over the past day-and-a-half will be great for the next administration to hear.

But the benefits of the commission as we see them as an academy are great. One of them is the fact that you try to seek consensus. You don't always get it, but you do make an effort to obtain it. And that was obvious from the vote that we had yesterday. You needed a two-thirds majority, you didn't always get it, but you continued to move on. And so for that we're thankful for the efforts.

You also identify the key issues that we need to address, and we're going to see some of those later. And they're very evident in the work products that you have continued to push forward. But, to me, the largest benefit is this creation of a forensic science sandbox. Because of commissions like this, you bring together local, state, and federal agencies. Nowhere else can you go and you have lunch in the same room with judges, defense attorneys, prosecutors, federal, state agencies, and just all come together, although, as Jeremy mentioned, sometimes it's a bit contentious, but you're still together in the same room. You're able to share thoughts, and, because of that, it improves the forensic sciences, and that's what the purpose is. We need to do that as a community and as a commission, also as an organization. You also represent the various forensic science disciplines. And, as I mentioned, you're just bringing people together, statisticians, scientists outside of forensic science, officers of the court, and the public.

But there are some concerns. The recommendations that are adopted are only at the discretion of the DOJ. You put them forward. They can either be as a views or recommendation, but it's at the discretion of the DOJ. As a result of that, some of those policies may not affect private laboratories. And they may also not affect the state and local laboratories as well.

The limited number of forensic science practitioners appointed as commissioners, that is a huge concern for the American Academy of Forensic Scientists. And when I prepared this presentation, I was able to use a document that was formulated under the Presidency of John Gerns in 2016. And many of these concerns you will see in this presentation, but that was one that came out quite a bit. And of those limited number of practitioners, only three, one state and two from the county-level, are on the commission. That is a concern for us as an academy.

Your challenges moving forward, there's a very narrow focus as an advisory committee. As I mentioned before, you put forward recommendations or views for the attorney general. So, you can only advise, no true enforcement. The lack of direct implementation authority -- you have great ideas; how can we see them through? We need a little help with that. The limited involvement of independent and non-federal laboratory-affiliated scientists, this goes back to the earlier point where just the limited number of forensic science practitioners, but you have a lot of federal agencies involved.

And by being here this past couple of days I was able to speak with one of your commissioners, and now I know that there are laws or rules that govern commissions such as this. As a state organization, I was unaware of that. Maybe that's something, when you move forward, that you communicate to the greater public. Why is it the commission is composed this way? Explain the rules that you must follow to them so we don't have these same complaints.

Lack of enforcement -- sometimes the things that are said may lack the teeth necessary in order to see them through, but one of the things that the commission can control or advise is funding. And that may be your only true way to affect those laboratories at the state and local level, by holding back funding,

because the laboratories need that funding in order to do the work that they are so desperately trying to do.

So, the needs of the forensic science community, we need a federal entity that is dedicated to forensic science. And with that federal entity, we need leadership. And that leadership comes in the form of guidance and support. And when I mention leadership, you may have remembered in the mission statement for the American Academy that we are a professional organization that provides leadership. Well, that leadership that we're able to provide as a volunteer organization is very limited in scope. We're not designed to make policy. We only provide a forum for discussion, with a diversity of perspective. And we do that with our annual meeting each and every year, where we bring the different people together, where we can hear some of the research that's going on out there, some of the policy that is being affected by the decisions that are made on a daily basis.

But your leadership, as an example, could help us with something that was just mentioned in the previous panel by Carol Henderson, synthetic opioids. That is a large concern right now in the forensic community, not only how to analyze the substance, but analyst safety. What are the proper PPE that we need to wear, and by "PPE," proper protective equipment, masks, environmental controls, or engineering controls, storage, disposal? Many labs are trying to deal with this situation right now, but if we had a national organization that's able to combat this issue, and do it once, that's something that can be publicized to the community, and the labs around the nation, also around the world, can use that information instead of trying to reinvent the wheel each and every time.

We also rely on that entity dedicated to forensic science for funding. We look at the Paul Coverdell Forensic Science Improvement Grant, or the JAG. And how can that funding be used by the public laboratories or the state and local laboratories for OT programs, overtime programs, for instrument purchases and upgrades, consumables, and also accreditation? That's something that Jeremy just talked about, but accreditation is very important for the laboratories.

As you may have noticed in the slides, there's a knotted rope in the corner, and you may have asked, well, why do we have this? And that's just a test for those of you that were actually paying attention with the forensic sciences out there in the room, but that knotted rope is because there are many demands that are being placed on the laboratory. And with those demands, we have many different forces pulling on us. And the labs are that knot right in the middle. And that also signifies that oftentimes our hands are tied in what we're able to do. And I'm not here before you today to sound like a pitiful state employee, because that's not my goal, but by providing this perspective is just to let you know sometimes our hands are tied in what we're able to do.

And don't get it confused, because some of you may hear that and think, well, you're able to do it, but you're not willing. Okay. That may be the case sometimes, but an overwhelming willingness to help can often lead to diminished capabilities. And please don't get that confused with diminished capacity, but diminished capabilities, because the more that the lab is asked to do for a particular customer, the less they may be able to do for that same customer down the road or another customer that needs more evidence analyzed. So, we have this balancing act that we have to do just as much as we can but enough for you as the customer.

And with those demands, we have backlogs. And backlogs, you have to be careful with those because a backlog can be defined in many different ways. Some laboratories can define a backlog as any case over or older than 30 days. A backlog can be any cases older than 15 days. It all depends on how it's defined by that agency. But the better question is to ask about efficiency. Well, turnaround times, that may be a better indicator. How long is it taking that lab to get that case out of the laboratory?

We also have demands that are placed on us by the customers, obviously, there's many agencies, also the prosecutors, defense attorneys, and even victims. Just last week, I had a victim that called and wanted to know the results of her sexual assault kit. And I think back to the panel that we had up here yesterday when they discussed victim notification. Well, that is the perfect instance of that. The only thing I could do as a laboratory manager was to direct her to the submitting agency or the local prosecutor's office, but that is a victim that wanted to be notified of the results of her sexual assault kit because the agency was not providing the necessary information. So, those are demands that are placed on the laboratory.

I haven't been contacted by a suspect just yet, but I'm sure that day's coming. Also, accreditation, we've talked about that briefly and we'll look at that in just a bit, but all of this we have to keep in mind because we still need to maintain quality. And that's what accreditation helps to ensure, quality throughout the entire laboratory, throughout the forensic science community. Accreditation helps to ensure that, but with all of the demands that are placed on the laboratories and on the forensic science service providers, we have to keep quality in mind.

So, continuation of the commission -- well, when I prepared this presentation, I thought yes and I thought it was a no-brainer. I thought something like this was necessary. I thought we needed this in order to advance the forensic sciences, in order to continue to move forward. Unfortunately, my views, as well as some of yours, are not shared by the current administration, but that's not to say they may not find a suitable replacement. And if they do, I hope they take a look at the webcast of this commission's two days so they can see some of the things that have been done, as well as those things that we need to do as we move forward.

And why do we feel, as an academy, the NCFS should continue? As I mentioned before, the commission has identified key issues. One of those, accreditation and proficiency testing. I've talked about that earlier. Also, reporting and testimony; scientific inquiry and research; training on science and the law, as Carol Henderson spoke about in her previous presentation, with the curriculum development. Those are just a few of the key issues that you, as a commission, have put forward. But, again, those items have been put forward to the DOJ as either a recommendation or a view. No true enforcement. There we go.

And, again, with accreditation, I wanted to take a look at a recommendation that you actually put forward as a work product in March of 2016, a recommendation on universal accreditation. It was recommended that all forensic science service providers become accredited. This is beneficial yet very challenging, because accreditation, it is good, but it is very time-consuming. You need analysts that are able to go in to review the standards on an annual basis. You need analysts that are able to go in and make sure they conform to the policies. You need analysts to go in and review the necessary material. All of this takes the analyst away from the bench work. Again, where we have those demands that are placed on the laboratory in order to get evidence or cases out quicker, but that takes us away.

With your accreditation, there was a proposed implementation strategy where it was to direct all DOJ FSSPs to maintain their accreditation. DOJ grant funding provided to non-DOJ FSSPs shall be granted to accredited FSSPs only. That's the withholding of funding. That's the kind of enforcement that you will need in order to affect the state and local laboratories. And also like it was written in your work product "enforce by any means necessary." If accreditation is important, this is the kind of enforcement that is necessary. If labs need to get it done, and in order to receive funding, they will get it done. That's the way it will happen.

Also, draw your attention to the Justice for All Reauthorization Act of 2016, which reauthorizes Coverdell through the fiscal year 2021. There, the applicant must certify accreditation. If not accredited, existing grant recipients must include progress towards obtaining accreditation. Again, this is withholding of funding in order to make sure labs are accredited. And what does this do for the forensic science

community, it ensures quality. Expansion of the forensic science evidence with respect to the elimination of backlogs, it now includes impression, digital, and fire evidence. There are also more funds available to test rape kits.

And the commission, moving forward, these are some of the things that we would like to see as an academy. More involvement from the greater forensic science community, at the state, county, and local level. Continue to maintain a balance of backgrounds. Continue to seek feedback from the providers. But something the providers need to understand is that they are stakeholders in all of this. Many of the forensic science service providers are unaware of the efforts of the commission. This is something the commission should address, or not just this commission but whichever entity the attorney general decides or the current administration decides to move forward, make sure the stakeholders are aware of their stake in all of this.

And continue to advance the forensic sciences. That's what we're all here for. We're passionate about what we're doing. I heard this the past couple days from the panels, from the speakers, from you as a commission, listening to your questions, sometimes as you go back and forth with each other. Everyone has a passion about what we're doing here, we know we have a purpose, we know it has meaning, but we need to continue to advance the forensic sciences.

And with that, thank you, but before I go, I'd like to mention a couple things. One, Jeremy, maybe with your forensic research related -- relatable -- I'll give you that "al" -- but President Betty Layne also told me to take pictures, so if you don't mind, while I have your attention, I'd just like to get a picture of the commission so I can show that to Betty Layne, because being in D.C., you know when the President asks you to do something, you do it. So, thank you very much.

JOHN BUTLER: Thank you, Ken. The next speakers will be from the International Association for Identification, Rus Ruslander.

RUS RUSLANDER: Good afternoon, and thank you for allowing me to be here to represent my organization. The International Association for Identification, which I'll refer to as the IAI from now on, represents in excess of 7,000 members, and I would add that the vast majority of that group of members resides and practices here in the United States, but in total, we represent 70 countries worldwide, so they do look to us and to people like the commission for guidance.

The members are primarily active practitioners in pattern evidence and crime scene disciplines. Our organization promotes standardization and excellence through forensic science profession. We encourage any collective effort whose endeavors work toward that end; therefore, the establishment of the commission and the manner in which it has moved forward has always been and continues to be of extremely high interest and importance to the members of the IAI.

On behalf of the membership, I'd like to thank this opportunity to thank the commission for all its hard work fostering an agenda promoting the advancement, as well as research in forensic science. Since your first meeting in February of 2014, we've looked toward the commission and to its work products in supporting and promoting positions that we have maintained dating back to our presentation on December 6th of 2007 at the National Academy of Sciences Committee on identifying the needs of the forensic science community. While we have not agreed with all of your recommendations, we have appreciated your efforts and the process which allowed for comment and feedback from the community. Before I discuss our vision looking forward, however, I'd like to touch on some of the commission's recommendations, which we do support.

Continuing universal accreditation, that seems to be the underlying theme that all of us seem to -- that and training that we talk about. We fully support your recommendation on accreditation on all forensic service

providers. This not only includes all crime laboratories but based on studies undertaken by the IAI several years ago, some 3,000 identifications units across the country as well. We also support the five-year window, which has been proposed to achieve this feat. While this is a goal that we aspire to, we believe it is important now to map out an implementation plan to achieve this goal in the five years that you've recommended.

Regarding certification, the IAI strongly supports the recommendation that all forensic science practitioners become certified in all categories of testing in which examinations are performed as soon as the requirements of the certification body are met, provided that a certification examination is available. As you pointed out, in part, further on in your recommendation under professional certification, it provides the general public and the judicial system with a means of identifying those practitioners who have successfully demonstrated compliance with established requirements.

As a certifying body of practitioners, we recognized the importance of certification several years ago and developed programs which continue and are recognized by the forensic community, along with many of the stakeholders we serve as a benchmark to be followed by others. I would like to take this time, again, to thank the commission for inviting the IAI to come before you and to describe our programs and extol its benefits to the stakeholder community.

Regarding the proficiency testing, the IAI supports your recommendation in encouraging all -- yeah, did I say that already. I'm having some technical difficulties here. Anyway, if there is one commission recommendation which we're particularly grateful for and supportive of, it is that recommendation on AFIS interoperability. This long-standing problem facing the latent print community dates back many years. To get a sense of how long the problem has been persisted, I go back to years just prior to 1995, when it was professed that interoperability would occur by 1995. Well here I am today in 2017, and we've yet to see a fix to this important problem. We believe that continued attention brought to this issue may one day lead to its resolution.

With the announcement of the Office of the Attorney General yesterday of the commission's termination, the IAI, in furtherance of the commission's past efforts, recommends and strongly supports the formation of the Office of Forensic Science. We believe this office should reside in the Department of Justice and work alongside the OSAC housed at NIST. As stated by the chairman of the consortium of forensic science organizations and Dr. Victor Weedn during a House Judiciary committee on March 28th, 2017, the voice of the forensic science community is not commensurate with the new role and, accordingly, forensic science has been relatively neglected and inadvertently -- I'm sorry -- an adequately supported. Your commission has echoed these statements and provided a roadmap for the public and for the path forward. Now it's time to develop an implementation plan.

We believe that forensic practitioners should be represented in appropriate numbers on all levels of the committees and administration of the proposed OFS. We also suggest that pattern evidence and crime scene disciplines be included in significant proportions. In conjunction with the establishment of the OFS we support the codification of OSAC ensuring not only their existence but continuing appropriations commensurate with their work. We recommend the National Institution of Science of Technology continue to remain the overarching authority, coordinating and facilitating the OSAC's administration meetings and their work products.

Many of our memberships serve in various capacities on the OSACs, and the IAI is extremely happy with and supports the OSAC's efforts. It is crucial, in our opinion, that appropriate offices be set up and qualified leadership with forensic science backgrounds be put in place. We strongly support the creation of this office to do the following: First would be to review the recommendations of your commission and create a strategic plan to advance the operation of our nation's crime labs by implementing the appropriate

recommendations; create a robust research agenda going forward between practitioners and academia. As you're well aware, science is ever-changing and, therefore, forensics as well.

The IAI supports research being done at numerous agencies, to include applied research as it directly results to contemporary questions and issues put forth by the criminal justice system, as well as research as it is conducted at many of our colleges and universities. The IAI also supports collaborative efforts amongst academia, forensic service providers, and forensic practitioners. The IAI supports and promotes the establishment of federal repository of all forensic literature and research, both past and present, which would be made available to interested parties, as mentioned a little bit earlier. Currently there is nothing in existence that would be beneficial, not only to the practitioners but researchers as well. If OFS would be able to coordinate and lead this effort, despite numerous agencies participating in the research, I think that would be great thing.

Secondly, to map our appropriate strategic plan for sufficient resources. That will not only assist in the current operational issues but work to get in front of emerging problems such as the opioid issue. Acquiring and maintaining proper instrumentation, training, accreditation, certification, and proper funding to implement any program all come back to sufficiently and consistently appropriating the resources to achieve not only the needs of forensic community but those being demanded by the stakeholders we serve as well, which includes the judicial system and the community itself.

Without adequate funding and continued commitment to these resources to achieve the recommendations, what good are they. If anything they might as well be considered unfunded mandates. Instead of furring the forensic community and its role in criminal justice, they will become an albatross around our necks, as we are questioned by the judicial system as to why these recommendations have not been put into place. The lack of implementation due to the lack of funding can also be viewed by our stakeholders as a failure on the part of the laboratory, calling into question the reliability of its work.

In closing, the IAI recognizes and thanks you for your commitment over the past three years in recognizing that although we believe that the sciences sound and the resulting opinions valid, in science there's always work to be done and new frontiers to explore. We're grateful that you brought not only attention to the issues facing the forensic community but also your willingness to reach out and inviting us to assist in your endeavor. Thank you very much.

JOHN BUTLER: Thank you, Rus. Our next speaker will from the National Association of Medical Examiners, Randy Hanzlick.

RANDY HANZLICK: Thank you very much. Our presentation, on behalf of the National Association of Medical Examiners will describe the major issues facing forensic pathologists, how commission products have addressed those issues and impacted on forensic pathologists to date, and a summary of future priorities. The NAME leadership has contributed to and reviewed the content of this presentation to ensure that it's consonant with their thinking and not just mine, and we want to thank the commission. As you'll see by the end of my talk today, this commission has produced that touch on virtually every major issue that faces forensic pathologists and death investigators, and we're also thankful for the opportunity to have been involved in the commission directly and to provide comment.

Death is one of the things that happens to all people. It occurs millions of times each year in this country. Each death impacts on somebody or some entity, whether it's a loved one, a business, the courts, law enforcement, an insurance carrier, someone's liberty, safety, or financial wellbeing, vital statistics agencies, or simply a county agency's need to burry an unclaimed body for example. So the death -- the impact of death is far reaching and there should be no shabby or lacking death investigations. Yet, those

conditions still exist. Forensic pathologists play a key role in qualify death investigations and can help improve the situations, but there are needs.

In a nut shell, it's hard to recruit and retain people in the specialty forensic pathology. There aren't enough of us. Many work in outdated facilities, lacking adequate financial support and related equipment and services. Some death investigation systems are antiquated, caseloads are rapidly increasing, salaries are often not competitive, and educational loan debt is high. Independence and autonomy are sometimes hammered by prosecutorial law enforcement, parent agencies, or other interests. Compliance with standards is difficult and expensive. There are fears of infringement on the medical component of forensic pathology practice, and although death investigation is state- or county-based, there's no guiding light of comprehensive support the at the federal level to assist the states in improving the systems that exist within their states.

Forensic pathologists must be physicians with an MD or DO degree, and that should never change because a major component of pathology practice involves complicated medical issues. The recruitment pipeline for forensic pathologist production begins in high school therefore, because a college degree, medical degree, pathology residency training, and specific forensic pathology fellowship training are required. There are obstacles to recruitment at each of these steps.

Further, the average person who goes through these steps is 30 years old or older and has large debt when training is completed. Although some loan forgiveness programs exist, they are few and the financial advantage of them is questionable. The number of pathology residents is low compared with other specialties. Some pathology residents are actively discouraged by faculty when they consider forensic pathology as a career. There are only about 38 places that train in the entire United States, and such training, more often than not, requires the trainee to move to another city or state after pathology training, and most have already moved at least once or twice to go to college, medical school, and then do their pathology residency. Many of have to move yet again to then get a job in forensic pathology. This can be taxing to lifestyle, family, and finances.

Less than two-thirds of only 83 approved training positions are actually funded, and even further are filled. The net result is that only about 30 or 40 new forensic pathologists are produced per year, which is barely enough to offset retirement, death, and attrition due to burnout and other causes. Thus, we have about 600 or so full-time forensic pathologists in the United States when we need a thousand or more to meet need and be compliant with caseload accreditation standards. As you can see, it will take a while to get to that service level.

Many facilities are antiquated. They lack proper equipment, funds, and services, such as modern body imaging and sophisticated and timely toxicology services. Many cases are still done in hospitals or other facilities that weren't designed for medicolegal death investigation and many of these facilities are rated less than adequate, with few plans to improve things in the future. Sorry. Two clickers here is getting to me.

Many jurisdictions have a small enough population that the building and maintenance of a local facility cannot be justified financially. Yet nearby regional centers and services are lacking, have evolved in a norm-formal makeshift way, or are a hundred miles away. Long distances mean time and money, which can discourage death investigations when they really should be done.

In more than 2,000 county jurisdictions an elected coroner, with often minimal qualifications, actually heads the system, and the forensic pathologist is a worker bee responsible to the coroner and may have little input into the operations and case decision-making, at least in the initial phases of the investigation when critical decisions have to be made. This results in great variance in the extent and quality of

investigations around the country and the manner and quality of communication with families, legal next of kin, and other users also varies.

Although the medical examiner coroner's office may be an independent county or state office with its own budget, it's often within the health department, law enforcement, justice, public safety, or even prosecutorial office. These administrative settings can create perceived or real conflicts and adversely impact funding because the parent entity not the medical examiner controls the budget and agency priorities. Such settings can also restrict the types or focus on death investigation, whether extent or scope.

Forensic pathologists are not opposed to the idea of standards. In fact, NAME has its own standards for autopsy performance and accreditation. The International Association of Coroners and Medical Examiners also has accreditation standards. There's some concern however about the recent flurry of entities ostensibly developing standards or the increasing requirements for those entities that develop standards to offer accreditation. For example, complying with ISO to legitimize a standards development organization carries with it additional costs and manpower needs. In addition to NAME and IACME, we now also have the Academies Standards Board with consensus bodies, the OSACs, and the Forensic Science Standard Board. How the interplay between all these will work remains to be seen, and some of it seems possibly redundant. Although the NCSF document about accreditation suggests that accreditation by NAME and IACME is acceptable, it's important to realize that they are not exactly the same. Despite similarities, names accreditation criteria are a bit more rigorous. If these two standards are to be viewed as equivalent, they probably really should be equivalent.

Part of the accreditation standards process requires that caseloads not exceed specific levels. But something as simple as the recent drug over dose epidemic can dramatically increase office caseload to the extent that high caseload can precluded accreditation or result ins loss of accreditation because acceptable caseload is exceeded. If funding is not provided to increase staffing, the issue of accreditation becomes moot in a sense. The cases have to be done regardless of accreditation status.

Today certification of forensic pathology is not a real big issue because formal training in accredited programs is required to qualify for forensic pathology board examination, and many forensic pathologists' jobs require it. Ongoing maintenance of certification however and required self-assessment modules are time consuming and expensive and may pose, actually, a larger problem for forensic pathologists than the basic certification itself. Certification of investigators is a large issue because there are many more investigators than forensic pathologists, and their education, training, backgrounds, and training settings are more diverse than those of forensic pathologists. Certification of Odontologists, anthropologists, toxicologists, and others are of value of course, but less directly related to the daily forensic pathology practice.

Forensic pathologists became appropriately concerned when they heard that consideration was being given to somehow limit the information available to them at the time of autopsy, with issues such as task relevance, cognitive bias, sequential unmasking and the like. It posed the fear that forensic pathologists would become assembly line workers blindly doing the same repeated tasks in a vacuum, with no contemplation or professional judgment component to their work, essentially serving as autopsy-matrons. The concept still prompts concern among forensic pathologists, as is the idea of using required checklists and report formats. Forensic pathologists need timely access to circumstantial death scene, investigative, and medical social history to guide their autopsies and investigations, and thankfully we're still at that point where we have that information.

Forensic pathologists are confused by the way that testimony and other procedures have been handled by the courts and judiciary. For example, cases in which the right to challenge an accuser may be extended to

mean that no substitute forensic pathology witness is permitted, bringing up cases of testimony versus a business document. The concept of reasonable certainty has always been confusing and, thankfully, is being address. In some jurisdictions attendance of a medical examiner in an indictment hearing is standard procedure while in others it seldom or never occurs. The scope of testimony provided by the forensic pathologist varies widely among jurisdictions and the courts. The use of judicial vouching varies. The same expert witnesses seem to appear in case after case, even ones who's credibility might be questioned, yet the practice seems to continue.

The legal and court system seems to lack standards, and many forensic pathologists believe that the problems among forensic pathology practice pale in comparison to those in the legal and court system. Education of judges and attorneys is needed, as well with as the public and juries, in regard to forensic pathology. Some of have even suggested, and we heard this earlier today, difficult cases include some sort of panel of recognized expert to help adjudicate these cases to keep things on more of an even keel. All of these things are things you've heard over and over again just in the last 48 hours.

Although mass fatality training and programs are in place, many areas actually lack actual experience with such events and are not truly prepared to handle them. This problem prompted the recommendation for a national call center, which is a very admirable concept and can be very helpful, but it's probably less urgent right now than the need for resources to conduct quality routine daily death investigations that all offices experience. The debate over coroner and medical examiner systems continue and many still believe that the NAS report recommendation to abolish coroner systems should be pursued. We heard that stated earlier today. The many reasons difficulty of doing so is well recognized, but there remains the need for a model law to help modernize death investigation laws and improve systems of all types, including the need to revisit coroner qualifications and selection processes.

The commission has prepared nine recommendations, which directly address all of the topics that I've mentioned, and a few other products that are peripherally related too. They provide moral and philosophical support to the forensic pathology and death investigation community in the following areas: forensic pathology supply, accreditation and certification, a national office for medicolegal investigations, improving communication, autonomy and independence, communication and information systems for medical examiners and coroners, a national call center for mass fatality management, and a model medicolegal death investigation law.

Thus far the tangible outcome of these recommendations and views is that the NIJ did put out a grant opportunity to fund accreditation, costs, and to fund -- accreditation costs and to fund some of the unfunded forensic pathology training positions. As I understand it, there are about $4 million made available for that program, but I just want everybody to realize that if the full programs that were in these recommendations were implemented, it could cost about $30 million a year, so we appreciate the effort that has been put in sincerely, but it's going to take a lot more in the future to implement these programs.

The recommendation for a national office has gained some momentum from multiple organizations. By a "national office," I mean now of medicolegal death investigation or medicolegal investigation, not the forensic science one. But the other views and recommendations have had little follow up in an organized effort with financial and other support. Forensic pathologists and NAMEs reaction to the ideas of a national office is, in general, supportive, but there is concern about the federal tendency to have an attitude of we are the feds we know best and we're going to tell you what to do, and if you don't do it we're not going to give you any money. It's really important that the commission's recommendations for a national office be implemented as recommended in the report, and that is to assist the death investigation community with funding and resources not to regulate it, run it, or tell it what to do.

It was very important that the commission drew a distinction between forensic science practitioner and forensic medicine practitioner, as this did acknowledge that forensic pathologists are physicians who are not primarily conducting repetitive laboratory tests using sample standards, controls, standard accepted methodologies, et cetera, and that there are distinctions between the two.

So the top priorities are to develop and fund a large-scale program to increase the recruitment, training, supply, and retention of forensic pathologists using loan forgiveness, salary augmentation, funding of all training programs, and other needed measures, such as reducing the costs and time required to maintain certification; improve death investigation systems in states through improvements in statutes; funding for facilities, equipment, personnel and services, including the development of regional autopsy centers of excellence; developing a formal dedicated communication and information system for medical examiners and coroners. And you probably realize by now that most of these could be facilitated by a national office, as has been proposed. Ensure autonomy and independence of forensic pathologists, work with attorneys and the judiciary to improve their understanding of forensic pathologists and their were procedures, and to make it easier for forensic pathologists to interact with the legal system and make sure that standards and guidelines that impact on forensic pathology are developed primarily by professionals working the discipline and that the costs and labor of becoming an accredited body or of becoming accredited are not prohibitive.

All of the other commission views and recommendations are very important that take a backseat to these ones that I'm mentioned. The biggest need at present is planned and effective follow up to commission views and recommendations. It's also the view of NAME that some entities such as the commission should continue in the future, although it appears that the commission in its current form is history.

Okay, I have haven't mentioned research, and this is my last slide. But I want to use it because it's important to realize that, as an example, there's obviously a need for research. Well NAME, the SWGMDI, and the OSACs have already identified specific research needs related to forensic pathology and death investigation. The problem is that forensic pathologists do not have time or resources to engage in research. Manpower and funding for research will have to be provided by research-oriented state or federal agencies, such as the CDC, NIJ, NIH, and others.

So forensic pathology and death investigation, and perhaps many of the other forensic disciplines have already identified need. That's what this group's been doing. That's what many others have been doing. It's been talked about in the 1920s with the original National Research Council reports. If there needs to be a needs assessment now, it seems like that needs assessment should focus on how to address the needs that have already been identified and to implement programs to solve existing and well documented problems.

So once again, thanks to the commission for allowing forensic pathology input and for all the products that you've worked on. I probably have the privilege of being the shortest term member of the commission, but I'm familiar with what you've been doing. Two meeting, good for the CV, I guess. But thank you very much, and I hope all this work continues. Thank you.

JOHN BUTLER: Okay. Thank you, Randy. Our next speaker will represent the International Association of Coroners and Medical Examiners, Frank DePaolo. Thank you.

FRANK DEPAOLO: Thank you. Good afternoon and thank you for this opportunity to address the commission today. I have no formal presentation. I will be just making a few brief remarks on behalf of the ISCME. Let me start by thanking the members of the commission and the subcommittees for the tremendous efforts put forth to date in the interest of improving forensic science. Dr. Hanzlick provided

you with a comprehensive overview of many of the issues affecting medicolegal death investigation, most of which we are in full agreement with.

In the interest of time and to avoid duplication, I yielded most of my time to Dr. Hanzlick so that he could complete this comprehensive overview. I will use this opportunity to provide you with a few very brief comments regarding issues important to both coroners and medical examiners.

I speak today on behalf of the membership of the International Association of Coroners and Medical Examiners, of which I am the current president. The IACME is a professional organization that represents both coroners and medical examiners, the vast majority of our members coming from the coroner systems of course. The IACME currently has just under 1,000 members, which are representative of the more than 2,000 coroner jurisdictions in the United States. Of note, though, only 25 or the more than 2000 coroner jurisdictions are currently accredited by the IACME, and I think only a few by name. As many of you know, accreditation of medicolegal death investigation systems is voluntary, which is likely one of the primary reasons for such low numbers.

Looking forward, I would like to take this opportunity to highlight three areas that must be addressed. First, on accreditation, the commission issued a recommendation that all medicolegal offices become accredited within five years. The IACME strongly supports this recommendation. As you know, the recommendation, as well as others, specific to medicolegal death investigation were forwarded on to the White House for consideration. The IACME believes that mandatory accreditation would actually drive improvements in medicolegal death investigation simply by forcing local jurisdictions to develop competent medical legal offices.

Many coroners and medical examiners in the United States are underfunded, understaffed, and overwhelmed. For example, as Dr. Hanzlick pointed out, the recent surge in opiate deaths has worsened the current situation, with many medicolegal offices left with no options but either to modify the current criteria for conducting autopsies in order to deal with the crisis or by not conducting them at all. We believe that requiring an office to become accredited would force local jurisdictions to provide the necessary resources needed to meet accreditation standards. There is currently no other incentive for a local jurisdiction to direct otherwise scarce resources to a medicolegal operation.

Second, shortage of forensic pathologists, as Dr. Hanzlick noted in his presentation, there are less than 600 forensic pathologist currently in the United States, with a need for as many as 1,200. Consequently there are forensic autopsies being performed by non-forensic pathologists or not at all. In August of 2015, the commission voted to adopt a recommendation to increase the number, retention, and quality of board-certified forensic pathologists. Just a few months ago, the NIJ released a new grant solicitation entitled "Strengthening the Medical Examiner Coroner System," which is a great first start in responding to this crisis, but, clearly, not enough.

Lastly, the coroner versus medical examiner issue addressed in the NAS report. The IACME does not advocate for one system over another in this debate. The IACME advocates for improvement in medicolegal death investigation through training, adherence to standards, accreditation for medicolegal offices and the certification of its personnel.

In closing, our members have been increasingly optimistic over the past three years as a direct result of the nine recommendations made by the forensic science commission, specific to improving medicolegal death investigation. We are disappointed that the commission's charter will not be renewed, but we are hopeful that the newly formed forensic science subcommittee at the DOJ will address many of these issues, many of the issues identified by the commission.

I would be happy to answer any questions you have at the conclusion of the panel presentations today. Thank you.

JOHN BUTLER: Thank you, Frank. Our next speaker will represent the National Sheriff's Association, Tim Scanlan.

TIMOTHY SCANLAN: While the clicker make it's way down here, I just want to start by saying that I'm happy to be here today and to represent the National Sheriff's Association. Many of you know me from serving as a proxy two times, and attending of the meetings. Besides what I do here, my job description is pretty simple. I'm the director of -- the commander of the Technical Services Bureau for the Jefferson Parish Sheriff's Office, and part of that bureau is our Laboratory Services Division. So in saying that, I'll just start by saying that although I'm in charge of the whole bureau, I came up through the forensic science program, first as a forensic scientist, then as a crime lab director, laboratory services commander, and now the current position that I hold.

Much like everybody else, I'll be a little redundant, but I really want to thank the commission members. I think what you all have done here, and I'm privileged to be a proxy twice to actually be a part of it to see what you do and how all the hard work and dedication that has been put into this process. The National Sheriff's Association and the Jefferson Parish's Office thanks for that effort and dedication. It has been contentious at times, but I think that everyone's passion is for the right reasons and we're trying to improve the field of forensic science and it's use in the criminal justice system.

In addition to thanking the members of the commission, I think a thanks goes out to everyone watching right now. All these people that have done public comments, all these organizations who have made comments and helped strengthen the commission's report as they come out, the views document and the recommendations, I think it was a team effort. My other hat is I'm on the board of directors for ASCLD, and, you know, we put a lot of time and effort into doing this, and same with the IAI and the other organization. And I think it speaks a lot to the commitment of everyone in the criminal justice system to maintaining the excellence of forensic science and always trying to improve.

So three things today: I wanted to give a local perspective. I was asked to kind of talk about standard local crime lab, and that's what we are. I was also asked to discuss some accomplishments of the commission and, just like everybody, what we do moving forward. So the Jefferson Parish Sheriff's Office Crime Laboratory is part of our Laboratory Services Division. Our parent agency is about 1,500 people, sworn and civilian officer. The Laboratory Service Division has about 62 employees in it, both sworn and civilian as well. And we do everything a normal crime lab does; crime scene processing, forensic identification, which would be our firearms, tool marks, latent prints, shoe print, tire track, all that standard stuff; forensic chemistry, where we focus on controlled substances, and arson investigation; DNA analysis, everything from conventional serology through full-blown DNA. We have the newest component of our laboratory systems, our digital forensic units, which is -- you know, it's funny hearing the backlog things. We're lucky. In our lab system we don't really have a backlog in most major cases. We have adequate funding, we have workflow processes, and we keep up on our cases pretty well.

I will say digital forensics is one that is the "growest" number of backlog. Everyone here has at least one cell phone on them; right? Nobody has a flip phone, I'm guessing. And it takes time to do that stuff. So I have guys that work for me that will leave home without their gun, but return or back to get their cell phone if they left it; right? So that is the biggest growing area right now, in my opinion, in forensic science, and one that we have to address moving forward.

Quality assurance and quality control obviously is an accredited crime laboratory, we have a quality assurance program. We have our own photo lab, and also the Property and Evidence Division falls under

us as well. The facility that houses our crime lab and our DNA laboratory is 45,000 square feet. We built a new facility in the fall of 2010, and it is both our ISO accredited 17025.

I wanted to include -- I know the words are small, but I wanted to include our mission statement. A lot is said about local and state crime laboratories, especially those affiliated with law enforcement, and I just wanted to read the three bottom bullets. I'm a big proponent in that your mission statement should really show what you believe as an entity. And the three things on the bottom would be provide accurate and impartial forensic analysis of evidence collected from a crime scene and suspicious incident. And we believe in that. Obviously through accreditation we have a buffer that's already built in, but in addition to that, to be impartial, everyone from our bench chemist supervisors all the way through our crime lab director, our Laboratory Services Division commander, and me, the chief of the bureau, are all forensic scientists. All came up through forensic science, and it helps us remain impartial and put forensic science first to help in your criminal investigations.

With that, I'll move onto the National Sheriff's Association. Obviously the National Sheriff's Association is a large organization. It represents 3,088 sheriffs. There's a chief law enforcement person in each parish or county, and they also represent all the deputies and law enforcement personnel, as well as all the public safety professionals and concerned citizens who care about criminal justice in the law enforcement community. It is a key player in criminal justice, and also stretches out now to homeland security issues and tries to improve issues that are important to the law enforcement and criminal justice community. The National Sheriff's Association has been a partner of the commission from the very beginning.

In fact, Greg Champagne, Sheriff Champagne, is the president of the National Sheriff's Association and plays an active role on the commission. So we have full buy-in from us. We discuss it all the time. Before meetings we discuss it amongst the sheriffs, our positions, and how to go and how to comment on different things. So we were a part of the commission throughout the process, and we thank you for letting us be a part of the commission.

We've all seen this document in the research, but I just want to further stress the importance of state and local. I think everyone up here has mentioned state and local, state and local enough. But it's important that the vast majority of forensic analysis is utilized by local law enforcement and done by local labs. In fact, our laboratory does work for not just Jefferson Parish, the people of Jefferson Parish. So we do work for surrounding parishes, we do work for the state, and we do work for the federal entities. We do work for DEA, secret service, FBI, just to name a few. So we are partners across all those different boundaries. And you'll see that throughout the country, that the state and local labs are the backbone of what we do in forensic science and they need to be supported.

So what are the accomplishments of the commission and some of the things that the NSA support? And it's a broken record by now so I'll go a little quickly. But one thing I think is very important about the commission is that you all put a spotlight on forensic science and show it's importance within the criminal justice community and that's important to show, hey, look we had this big chunk of the forensic science community that we need to focus on and look at. The committee meetings and the preparation for the meetings, all the public comment periods, getting all of the forensic organizations involved, law enforcement, defense attorneys, everyone who's involved, prosecutors, put a spotlight on what is needed in forensic science as far as training. It also shows the importance of such organizations like the OSAC and the strong work that they are doing to help strengthen forensic science across the board.

I think one thing that really came across -- and we talked about training a lot today, but you've got to forgive me, I'm a big training person -- is the training for legal professionals, a big part of what we do in forensic science and part of our mission is training. We believe not only do we train our laboratory staff but we hold continuing education for our police, for our prosecutors, for our defense, and to the judiciary.

We believe that if everyone understands the boundaries of forensic science and it's proper application it makes us all stronger. That's a big part of our mission in our crime lab, and I think across forensic science. So I think a big thing this commission did was show we do have some deficiencies in training. In the legal profession, they all don't take biology classes; right? So we have to show them what we do, and the limitations, so that when we go to court we can all have effective testimony. And "effective testimony" means accurate fair testimony.

Another recommendation was universal accreditation. I won't harp on this but it's supported across the scientific community, and the importance of funding for this at the federal and state level. I'll probably say this again, but one of our fellow commission's mentioned that, I won't use your words, but, you know, learn to talk to and communicate with our legislators and get them to understand why it's important to support forensic science. The recommendation on proficiency testing, again support across the forensic science community, and I think it needs to extend to beyond those who work in publicly funded crime labs. I think anyone conducting forensic analysis who plans to testify in a court of law should be part of a proficiency testing and prove they can do what they say they can do. That's an important part of what we do each day, and every accredited crime lab is part of that, and I think it should extend to all forensic science service providers.

Again, it does take funding. So, as everyone else said, it takes funding to put in these programs, to do all the backfill, to get everything done. It needs to go into a robust proficiency program, but it's something that needs to happen.

The code of professional responsibility, as it was adopted by the Department of Justice, is something the National Sheriff's Office supports. But not universal. We think that that's a very robust code that's out there. We think that each organization, much like ASCLD mentioned, needs to help in this process to make sure we have uniform standards and professional conduct. It's something that we can live up to, something that's not created that we automatically fail. But it's something that we can actually put into place that benefit it is people that we serve.

To echo the IAI, crime knows no geographic boundaries; right? So we need to have an AFIS system that is interoperable across the country. Where I am, in Jefferson Parish, we have the I-10 corridor where crimes goes back and forth, and we need to have a uniform AFIS program. And one great thing the commission said was the standards should be set by the OSAC, because those are the professionals who do this every day, and that we need to fund this to make sure that it is uniform, it is robust, and it's something that will stand up and help us across the criminal justice community.

Obviously uniform terminology, as everyone said, is important to us, and OSAC is paving a way in that, and they're doing a strong job, and it is supported across. We all want to make sure that we have the uniform language that we all need so that when we get into court and we say certain words, no matter what jurisdiction we're in, those words all mean the same thing, and that's important to all of us.

So with the commission scheduled to sunset, where do we move forward? Well the National Sheriff's Association, First, wants to say that forensic science is sake component of law enforcement, and it does play a key role in the criminal justice system. And I think you'll see this at the local and state level; that as more funding, people are taking money out of their budgets and the SWAT guys are missing out on some things, maybe because the crime lab needs some money. And you are seeing that shift. But it is burdensome. We do need to have some extra funding. We need it at the state and local level, and federal, to go to our elected representatives and make sure we have that funding. But it is important to the members of the Sheriff's Association and the local law enforcement.

We have to also remember that we have to follow state laws and legal precedence when we actually enact what we do in forensic science. And much like Texas has done, we have to go to our legislators and make sure they understand what we need and what's scientifically accurate. I can tell you that in the State of Louisiana we do a great job of communicating and lobbying -- lobbying is the wrong word, but speaking to our legislators to make sure they understand what's needed.

One of the biggest debacles a few years ago was when all these synthetic cannabinoids came out, and they needed input from the forensic science community to know what to make illegal, how to name it, how to put that into operation, and it's something we worked very closely with. Across the United States with sexual assault kit laws being passed, we have to make sure that these are laws that are passed that we can live up to, that we're not setting ourselves up to fail. And it's incumbent upon us and local law enforcement, local crime labs to reach out to the legislators and make sure we have an open relationship with them.

Again, support OSAC and its efforts to strengthen forensic science. I'm not going to read the mission of OSAC. We all know it. We've all been there. But OSAC has an important role, and especially now with the sunsetting of the commission, that it really needs to remain strong and act as a voice for forensic science and to help codify everything we wish it to do and to help us to remain strong. And then lastly, I know we talk a lot about funding, but there's specific things we need to think about when we fund things. One is obviously obtaining and maintaining accreditation. We need to get that out to everybody that we can, and the funding is either going to come from the federal or the state level to get that done. And the local sheriffs and local law enforcement are chipping away their budgets to help in that, but sometimes the money is not there, so we all have to sacrifice uniformly to make sure this happens, because it's an important part of what we do.

Training: Again, I can't stress enough how important training is, not just for the bench chemist. One thing that ASCLD has pioneered over the last couple years and assisted with it is leadership training. It's important for the forensic science practitioners or the best chemist who have now become a supervisor to understand how to manage their crime laboratories. And we have the ASCLD Leadership Academy, and we're also working with RTI, the National Forensic Science Academy to develop these leadership programs in forensic science to help them not just be a chemist but to be a true leader as they communicate within their laboratory and across the criminal justice system to help better represent the field of forensic science.

Resources: As all these backlogged things come up and all these new demands and that knot gets tighter every time, we need resources. We need resources to move forward. And, again, we're not begging the federal government to help us and do everything. We do believe it's a state and local issue as well. Everyone needs to pitch in and make sure we fund this needed part of the criminal justice system.

And then lastly, university partnerships are important. There's a lot of talk about the science in forensic science. And I would say, ask any of you who have access to Pro Quest to look up the numerous Master's thesis and doctoral dissertations in forensic science that are always overlooked when we have this discussion. That's general acceptance not in forensic science, but in the field of science in general, because, just like I did my Master's thesis, we have to stand in front of a panel and defend the science of forensic science that we put forth in our thesis. And we think that greater collaboration between the crime laboratories and the academic institutions will only help strengthen forensic science as we improve the science, which we do every day.

And I know we have one more speaker, so I'll save my questions until the end. Thank you.

JOHN BUTLER: Our final speaker for this is John Grassel, and he's supposed to on here from the International Association of Chiefs of Police and the Forensic Science Committee there as part of IACP. Do we have you online, John?

JOHN GRASSEL: I am online. Can you hear me?

JOHN BUTLER: Yes.

JOHN GRASSEL: Great. So I appreciate you having me here. And earlier, before all this started, we were told that we had the dubious distinction of being the last panel, so I guess I have the extra dubious distinction of being the last panelist on the last panel. And as my mom sometimes used to say, I think I have a face for radio, so it might be better that you're hearing me through a WebEx. That will hopefully make things go much smoother for you all.

First, in light of the announcement yesterday by the attorney general regarding the commission, I'd like to first thank the commission for their hard work and efforts. Although our organizations may have had differing views in some areas, this does not at all diminish our appreciation for the dedication you have displayed toward our common goal, which is, of course, the advancement of forensic science.

Today, in addition to representing the International Association of Chiefs of Police, I will also be speaking on behalf of the major chiefs, Major City Chiefs Association and ASCIA, which is the Association of State Criminal Investigative Agencies. Together we represent the majority of local, state, and federal law enforcement agencies in the United States and provide quality forensic services to investigate all levels of criminal activity. Our member agencies are committed to supporting quality forensic services, advancing and improving technologies whenever possible, and advocated for the continued research and funding in forensic science.

As we all know, forensic science plays a critical role in the criminal justice system, and our organizations have supported and continue to support the following areas: The first, as we've heard by numerous speakers, the accreditation of all forensic service providers in all forensic disciplines. This accreditation should be conducted by qualified accrediting entities, with expertise relevant to the accreditation of the forensic science laboratories. Also, increased partnerships between scientists and forensic lab and academia. There is a need for a comprehensive national research strategy. That strategy should be developed by forensic scientists and forensic science organizations in cooperation with the criminal justice and academia communities. The research strategy should be based on improving and/or advancing forensic science. Grants should be made available to academic, government, and private sector scientists to perform this research. Partnerships and/or corroborations with practicing forensic scientists should be required as part of the grant application.

We also continue to support the increased grant opportunities and funding to support basic and applied forensic research, expanding and updating of laboratory facilities' equipment and capacity enhancement efforts. These grant funds, when available, should also be used for backlog reduction and general enhancement to forensic public laboratories. Additionally, we support the creation and resulting work products of the OSACs, the Organization of Scientific Area Committees, to strengthen and advance forensic science. And finally, the objective forensic science providers within law enforcement that help focus and improve investigations and provide actionable intelligence to improve police response and service.

Throughout each of the agencies I represent today we have routinely interacted with members of the commission. We've responded to posted documents. We've provided comments, and we've attended meetings in person, and now, via the web. We, in addition, have one commissioner, Ted Hunt, and a vice

chair, Nelson Santos, who I send my appreciation and thanks to their dedication to the commission. Also today, we heard from another IACP forensic committee member, Kevin Lothridge.

Since the 2009 publication of the National Academy's report our organizations have strongly advocated and continue to advocate that crime laboratories should remain within law enforcement parent agencies. Proper forensic science within law enforcement can be used to drive and improve investigations, and improve overall police response and services. Forensic science organizations can function properly within a law enforcement agency. This relationship often provides background information that permits the forensic scientist to select the most probative evidence, prioritize selective analyses, and formulate a working hypothesis. The caveat, however, is the scientist must remain free from undo influence in regards to the analytical conclusions and reporting of results. Law enforcement must commit to the independence and objectivity within the organization. So units must be staffed by scientists and technicians, which may be sworn or civilian, as long as they are properly trained in scientific method principles and receive continuing education in their respective disciplines. Staffing is also a key point for public (inaudible).

Federal funding, as we've heard from several speakers today, we believe that the federal government should have an active role in supporting all publicly funded forensic laboratories. This funding should be provided for accredited crime laboratories and for forensic service providers to meet the growing demands for forensic science to aid in investigations. If we look at some federal grant programs, such as the Paul Coverdell Forensic Sciences Improvement Grant and the CEBR, the DNA Capacity Enhancement and Backlog Reduction Grant Program has good guidelines to follow. From a personal perspective, coming from a smaller agency, without the Paul Coverdell Forensic Science Improvement Grant, we probably would not have had the funds to achieve ISO accreditation, so those types grants are critical for all agencies.

We also support partnerships between academia, the private sector, and government forensic scientists to advance current technologies, as well as to develop new capabilities. I think earlier today we listened to Ken Williams talk about any time you take an analyst away from the bench it obviously leads to a greater backlog. So some of the partnerships between academia and the private sector could help that, in that the research that could be done by academia would be critical, and it would safe the analysts time so that they could dedicate more of their time to actual bench work. We wish to coordinate federal funds related to forensic science to allow for a collaboration with ongoing research efforts by the DOD and other federal agencies, as long as there's not a duplicating of efforts or funding.

We fully support the OSACs, which were created in 2015. We support the development of the national standards for each forensic discipline by the OSAC in a manner similar to the adoption of the FBI DNA QAS that has been developed by SWGDAM.

Some of our priorities and needs; infrastructure. Look at some of the labs, the public labs throughout the country are in a less than desirable state. We seek a national commitment to establishing the facilities needed to provide these quality forensic services and to meet the increasing demands of submissions.

Equipment: A commitment to resource and properly equip forensic providers; personnel for education, and especially continuing education of forensic practitioners; research and development, again, with academia and private industry; quality services, as we talked about for national standards and accreditation; and a needs assessment, by determining the needs of the broad forensic community to assist the Department of Justice information gathering towards assessing and reporting on forensic laboratories.

In conclusion, I would again like to thank the commission for the opportunity to speak today. I applaud you in your efforts to move forensic science forward.

JOHN BUTLER: Thank you, John. Is there any questions, two or three questions before we take a short break, and then we'll come back for our final part of the meeting. Any questions anyone wants to ask? Oh, Julia.

JULIA LEIGHTON: I think these questions are directed mostly to Jeremy and Ken. I heard both of you talking, and we've certainly heard from a variety of speakers today, about what's the appropriate balance between forensic scientists and scientists in any particular commission? We could also talk about the appropriate balance of judges, prosecutors, and defense attorneys. But let's assume that, for the same of this argument, none of them should be involved. What I'm really interested in is what you all have described -- what your view is of what's the appropriate balance, and then, in particular, what you see as the role of the research scientist, independent scientists?

JEREMY TRIPLETT: So I'll start. Ken can clean up. So I do think there should be a balance. I don't know if I have a number in mind, but I think academic scientists and researchers certainly play a role -- and I'm looking at you and not in the microphone -- certainly play an important role. I've learned a lot, through my experience with OSAC, speaking about the issues with the numerous people we have that are academic scientists on OSAC. I think they bring a different perspective. They bring a very rigorous mindset on the application of science. I think it's important. But I also think that, equally important, are practitioners who see day-to-day, and I'm no in no way diminishing what the academic community sees.

But I think it's also very important that a significant constitution of whatever we're talking about, anything down the road, be composed of practicing forensic scientists, which I think their perspective brings -- the perspective they bring is here's what I see every day, actually have a decent idea -- well I know what I don't know, to borrow an old speech. I may not know what I don't know. But I think that's the academic community that they can bring to that. But I think there's a significant amount of practitioners who also know what they don't know and know what they know. And so I think bringing operational considerations and bringing here to the table, here's what I deal with every day, how can we work together to move forward. So I think the mix, it needs to be a mix. It should not completely exclude either community, and I think that's important. I don't know if you're looking for a number. I don't have a number. But I think it's important to have both.

KEN WILLIAMS: I would agree with Jeremy. It's hard to give a number or to obtain a true balance. But I know when you think about the balance, what you need, really, is just that representation, because the issues are different as you look across the jurisdiction. Take, for example, the discovery document that the commission performed. A lot of that reflects upon what's happening at the federal level. We don't have that same type of assistance at the state level. I have defense attorneys putting demands on our laboratory for what they want provided, and I, in turn, have to go to the prosecutors, and in many cases the municipal prosecutor, to have them argue that maybe this isn't needed. But because the municipal prosecutors are unable to do that, that taxes the laboratory, because now we're forced with finding all of the information that the defense attorney says he or she may need.

Like Andrew Goldsmith talked about, he's able to go out and train the prosecutors so they can go out and better advocate for the laboratory. And so if you have more state and local agencies a part of the commission, able to talk about the experiences they're having, this is something maybe that could be put forward.

As far as the researchers, I definitely think they have a place, primarily because the analysts in the laboratory are not able to do the research that is necessary because of all the demands that are placed on them. With the backlogs, with turnaround time, and with accreditation, they just aren't able to do the research that we need in order to advance forensic sciences. So by having those researchers a part of the commission, they can tell you what's being worked on, and many times, by their students who are doing

good work. Just like Tim mentioned, he defended his Master's thesis, I sit on a college board, and they do a lot of good work out there at the academic levels or in those academic arenas. And so by having those researchers there, they can put that information out there for the commission, and they can move forward with it.

GERALD LAPORTE: So, Ken, I'm going to ask you a question, actually put you on the spot a little bit. So, I know you and I are fellow CRIM members. I'm been an AAFS member 20-plus years. But I've always kind of talked about this but never asked probably. But why has the American Academy not taken a leadership position in the forensic science community? So, for example, why did it take this commission to make a recommendation that seems like everybody agrees about, which is universal accreditation. Why did the American Academy really never step up in the plate and say anything like that?

So I think kind of a going forward -- and I realize you're in a tough position, you can't speak on behalf of the academy, like if I ask you this question, maybe even just your thoughts, but has the academy considered or thought about, you know, establishing its own commission of sorts to handle some of these larger issues? I know we look at the federal government sometimes, but I think what a lot of people don't realize, or at least we know it but we don't talk about it, but the federal government can say all kinds of things. The states don't have to listen to what the federal government says because of the structure. But maybe if you had an American Academy that represents 7,000 plus member, states and locals from all over the country, maybe that would have some traction.

KEN WILLIAMS: Gerry, I would have to agree with you. And before I start with that, I would like to remind you, again, that this is just an AAFS perspective, just my own. But before I begin, also, I'd like to take you back to the formation of the academy SDO or the ASV, that was formed under past President Victor Weedn. To me, that was a step taken in the direction that Gerry's talking about, by the academy going out there and saying, we are going to start creating standards for the forensic science community. That was a tough pill for the entire academy to swallow, and that is something we're still dealing with.

But one of the concerns with that would be federal -- well not federal, but funding in general. We are doing our best to make sure we can maintain the SDO. And because of grants through the Arnold foundation, we are able to do that. But when grant expires we really are uncertain as to how we will continue to move forward. And I say all of that about funding to say this; when I mentioned during my presentation that we need an independent entity that's dedicated for forensic sciences, that's an entity that's dedicated to the leadership and forensic scientists. The American Academy of Forensic Sciences is a professional organization, but it's a volunteer when you really look at it. At it's basis, it's a volunteer organization.

All of the leadership, all of the members, they have other jobs, and so to ask them to do what is needed globally or even at the national level, you need a full-time representative in order to do that. I would love to do it. I would love to attend meetings all day. They don't let me out of the lab that often. This is my first commissioned meeting, and, unfortunately, this is the last. I work for the state, and when I go to academy meetings I am self-funded. And so to take the time that's necessary in order to promulgate policies that are going to affect the nation, you need someone that's full time. You need that independent entity, and unfortunately that has to come from the federal government, because they hold all the finances.

JOHN BUTLER: Okay. I have Matt, Pam, and Dean, and we have to go quick, because we're going to take a break soon.

MATT REDLE: Ken and Jeremy, I'm going to make this real quick and easy for the two of you. Do you think the collaboration that you've seen post the NAS report between forensic science practitioners and traditional science, do you see that as strengthening forensics in the future?

JEREMY TRIPLETT: Yes. Is that allowable?

KEN WILLIAMS: I guess when Jeremy said clean up, you really did mean that. Do I see the collaboration in strengthening forensic sciences? Absolutely. As I mentioned in the presentation, it's the consensus that we're seeking. And by having the different people represented, say, in a small room like this, it really helps that we can get all the issues out there on the table. So the more we are able to come together, the more we are able to hear the pains that other disciplines are facing, and not just their pains, but their successes as well, because we can all share together. And it truly does take a village in order to move the forensic scientific community forward. And so the more we're able to work together, the more we can collaborate, we can truly strengthen forensic scientists, and everyone has a stake in this. We need the input from everyone. We need to see your passion. We need to know what you're thinking in order to make this work.

PAM KING: So each of you gentlemen took the opportunity to thank the commission for the work that has been done over the last three years. I wanted to take the opportunity to thank each of you in your organizations for the participation that you and your memberships have had in the work that we have done. I think it was mentioned, at least by one person, the importance of public comment and the importance of the contributions that you've made. So I wanted to thank you all for that. I also wanted to set at least one sort of incorrect assumption from Mr. Scanlan. Fred has a flip phone, just saying.

FREDERICK BIEBER: Consistent with. Thank you, Pam. I appreciate that. Thank you.

DEAN GIALAMAS: I want to thank all you gentlemen for your presentations today. And what I wanted to point out, and it's, as I say this, it will come across, hopefully, with a little bit of humor, but I want to take the serious side of it, and it is, if I look back at the reflection of what this commission has done, there's one formal process that we have that was never documented, was never put forth as a statement, and yet it was the only thing that was absolutely unanimous that this commission did, and it was the creation of a new verb called "collegiate." Thank you, Mr. Pulaski for that one.

Returning it to the serious side, the one thing that was interesting is that was an event that no matter who was in the room, whether there was an agenda, a perspective, a philosophy, there was always a meeting of the minds to be able to do that. And there's been a tremendous amount of energy and momentum put into the direction that this commission has gone. And what I really hope is -- and I'm not looking for a comment, but it's just really a statement, I think, and it's to you and this panel, and actually the previous two panel as well, and my hope is that as professional organizations that there's some way that you can "collegiate" and continue that momentum, because I don't think because the commission no longer exists that that should stop some of the things from happening. And there's clearly still low-hang fruit that can be addressed, and whether it's through regional meetings, some type of a gathering that occurs, a sentinel event, something of that nature, there's some powerhouses up here.

I mean I look at the National Sheriff's Association IACP, ASCLD, AAFS, just those four organizations, not to leave anyone out, but the impact of those particular organizations across the entire community of criminal justice, I think, has a real viability. So I would really encourage you to think about that with you organizations and take that back.

JOHN BUTLER: Thank you all very much. Let's thank the panel again for their (inaudible). We'll take a ten-minute break, and then we'll come back for any public comments, and then Nelson and I have some closing remarks.

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Part VII

JOHN BUTLER: Okay, so we've got public comment I believe John. I will turn it over to you.

JOHATHAN MCGRATH: Sure I believe we have at least one person signed up for public comments. We have a microphone here for Billy Leiserson. You've got three minutes.

WILLIAM LEISERSON: Yes, so I've been attending these meetings for about a year and a half now, and the first thing I would like to say is, how much I appreciate the hard work that you folks have put in. I am new to forensic science, I'm a scientist by training and I worked at the National Institute of Justice for a year. So I was able to learn about what you folks do. So I think you deserve a round of applause and you should applaud yourselves.

The second thing I would like to tell you is that it is disappointing that this venue will be gone. And one of the big values that I have seen during that year and a half and how you have evolved and you work with each other, or the relationships that you have established and just because this venue will go away, I'm going to ask you to do some more hard work, it might even be harder, but that is to maintain those relationships and to work across – invite people who are out of your normal sphere to be worked to give presentations or to collaborate on various issues. Because that part of what goes on here, does not need to end.

Finally, I would like also comment on the need for funding that I've heard from forensic science practitioners, and the thing I would advise people, first of all you are not a funding body, right? There were some people who had got that Congress has a lot to say in that sort of thing, and so do your local legislatures. But it is critically important that you explain the need. And the need is going to be negative, you have to be willing to accept that things are not ideal. So if you are saying that you have a shortage, you have to say there are consequences. What are the consequences? Not just that you don't have enough people, or that you are overworked, that won't go over very well. You have to say the consequences are things like, making mistakes. And you have to kind of own up to that if we continue this way, they will get worse. You know, that we need to deal with the problem now while it's small enough. So with that, that is all I have to say and thanks.

JOHATHAN MCGRATH: Thank you for the comment, are there any more comments? Alright, looking around the room I'm seeing no hands. So I will turn it over to Nelson.

NELSON SANTOS: I will turn it over to John.

JOHN BUTLER: Okay. I put together a few PowerPoint slides, kind of a surprise, right? I've been pretty quiet for most of the meeting that we've had because my job is to run things and not to chime in. But I have a few observations and so I have put together a few slides here.

These are, of course, my own opinions and not those of the Department of Justice or of NIST, I want to make that clear because I will be making some statements that I feel strongly about. I want to go through some historical observations, some personal reflections on some lessons learned I think have come out for myself and just acknowledgements. It's truly been a privilege to be a part of this group, to get to know all of you. And just as Billy mentioned, the importance of the relationships that are developed from this, and I hope as we go forward with those things.

So the first thing I put in Judge Hervey's "PowerPoint" up there. And this is my future tie according to Dean, so I wanted to just say you may see that in the future.

Okay a few lessons from history. So some of you know I have been studying the history of forensic science and through the lens of looking at Wilmer Souder, who is a physicist who worked at NIST, at the

Bureau of Standards. And we have nine of his notebooks that have been rediscovered recently, he did about 838 cases we have record of, almost 80 agencies from across the Federal Government, primarily from 1929 to 1953. A scientist really trying to address issues here. And so that has given me a lens to be able to look at what's happening. And the story that Rich Press from NIST published two months ago, it has been picked up by National Geographic, by the Smithsonian magazine, and a few other places and so it has given us a chance to get a little bit broader audience with this.

I have been also digging into some other things. This is a 1935 book, "Modern Criminal Investigation" which is really the first book dealing with forensic science, written by Harry Soderman and John O'Connell. And they were from the New York City Police Department. And with chapter 29 they have a chapter on police laboratories. And in that chapter they state, "the personnel of the laboratory should be composed of detectives with a scientific advisor that works hand in hand with the detective leading the laboratory. This scientific advisor must be carefully chosen; much depends on him." So from very early time the FBI laboratory was established in 1932, with the input and advise from Wilmer Souder, who serves as a consultant to them. But the point being that from the very early on there's a large law enforcement presence in how forensic laboratories were being run and the attitude that was there.

Next week I have an opportunity to participate in The National Council of Public History conference, and I will be participating with the FBI Historian, the DEA Historian, the ATF Historian in a discussion about some of the lessons learned from the early history of how forensic science got started and how some of these things got going. I think it will be very interesting as we have this discussion.

One of the things I wanted to point out from this, this is an article that Wilmer Souder wrote in 1932. In this he identifies – you see a picture of him here, this was taken in 1928. He had one of the very first comparison microscopes in the United States, this is work he's doing comparing two bullets at the National Institute of Standards and Technology – well, the National Bureau of Standards at that time. So he came up with four recommendations of things, this would be similar to what we have been talking about in the commission here. A minimum standards of equipment that should be used. He talked about standards for records of evidence to accompany and substantiate the experts' opinions, these to include photographs metrological data and interpretations in permanent form. He said that there should be standards for qualifications of experts that include actual tests made against secretly designed materials and reported in compliance with item number two, in other words a proficiency test would be conducted. And number four, there would be a method for constantly following up with experts testifying in court to guarantee the highest efficiency.

So I would just point out here, that 85 years later we are still grappling with these exact same challenges, just looking at things. So, how do these – OSAC has been instituted to help try to prepare and promulgate documentary standards. This is moving very slowly, much slower than what people would like because some of the challenges of communication of the things that are happening there. NCFS, yesterday, we discussed Views Document on Report and Case Record contents and this was not approved as of yesterday. But I think the principles are still there, we need to have standards for how records of evidence are maintained.

PCAST, in last September stated that we need to have data that supports all conclusions that are being made, this has been largely ignored, it's been talked about already today. And lastly, the Department of Justice Forensic Science Discipline Review of FBI examiners has now been put on hold. This is exactly what Wilmer Souder talked about the need to follow up with experts that are testifying in court. So the point that I'm making here is 85 years later we are still facing some of these same challenges. So are we learning from history or are we just repeating it?

So just some personal reflections from experiences here. As Jim Gates mentioned and also Barbara Hervey, interactions with the criminal justice system. My home was burglarized four years ago and so I have had an opportunity – the computer I had wrote my last two DNA textbooks on was stolen as part of that, there was a handbook on forensic science that was sitting on the desk that they actually stole the computer from. But in this I learned a lot about that the criminal justice system has challenges that go far beyond forensic science and measurements. We have been focusing here on forensic science but just as an illustration, the sample collection challenges that existed. I have six children, so there were eight people that were sampled in our home, to do an elimination test for DNA, I requested that be done, so that they could make sure that the tests were done properly in the laboratory. There were three detectives that came and did that, they scrambled the samples, so when the samples got to the laboratory I happened to know the DNA profiles of all of my children, I can prove that I am the father of my children, but – so I like data, as you know. But the point being here, is that when the laboratory called me and said, "your son is showing up as a female and your daughter is showing up as a male and we don't know which one." I have two sons and four daughters. And so the point being that samples can get scrambled before they ever make it to the laboratory, and that's a very important point to keep in mind.

Also just to – In April, 2013, I moved within NIST to be able to help with this commission and with other forensic activities, I left the laboratory, which I had been working in for almost 20 years and this has exposed me to a very different laboratory of learning. I have enjoyed the opportunity to get to know people that work in this type of environment but I am not pipetting samples anymore, I am not doing things directly with DNA, like I was doing before. Likely I will be involved in the future with technical merit review and I may have some more free time on my hands, I guess, and will be helping with validation work as we go forward at NIST. And so this is a part that I hope to help strengthen forensic science.

I go forward from this experience as an optimist. I think there's a belief that as we do small and simple things, great things can be brought to pass and they don't happen as quickly as we would like them to, but even looking back at history like the experiences of looking back at Wilmer Souder and realizing that we are still facing the same challenges 85 years later. I think often in human nature, we are often quick to criticize, but what would you and I be doing going forward to try to strengthen forensic science in the future? And as mentioned I hope we can maintain relationships and grow these things. I plan to continue writing articles, books, conducting trainings when requested and available to do so to forensic practitioners, prosecutors, defense attorneys, and judges. I have worked with all of these groups and I really enjoy the opportunity to be in an independent situation at NIST where I can work with everybody. I am doing the training in a couple months with all the judges from Washington D.C. A few months ago I had the opportunity to train all the judges in Maryland. And I will talk about next, some experience I just had in the U.K. last week.

So Carol Henderson mentioned going to the Royal Society a couple years ago. Last week I had the chance to go back to the Royal Society, which was first established in 1660 is the first scientific society in the world. These issues that we are facing here go far beyond the United States, they are seen around the world and I get an opportunity to interact with people all over the world given my experiences with forensic DNA. But what we did last week was we had a diverse stakeholder group, which I will explain in a moment, to help connect across the disciplines and the stakeholders and this is really important, because otherwise we live in silos. We live in echo chambers in not listening to what other people think. That's why I think a primary benefit of this commission has been the opportunity to hear all these different perspectives and learn from them.

So last week, on Thursday and Friday of last week I was in London. And we participated in some strategic discussions, I was one of two people from the United States that was there. We had judges, the

heads of the Judicial College in the U.K. were part of this, the Head Judge from the Supreme Court of Scotland was there and I got the chance to get to know them. I sat around the table with them. The U.K. Regulator was there. We had a lab director perspective, a forensic statistician, a prosecutor, a defense expert, many, many academic researchers, people coming from outside the disciplines of forensic science to be able to provide their perspectives in terms of DNA. We had a documentary filmmaker and we had a crime novelist and that was very, very interesting to hear the different perspectives there. This discussion was operated in a business modeling environment, which I will show in just a second. But what we really focused on was the need to communicate and training was crucial to be able to move forward with future improvements. We were talking specifically about challenges with DNA mixtures and the complex samples that are being taken now. But we need to take action with these things.

I took a picture of one of the things we did, and this was a goal, as Carol Henderson mentioned earlier, of developing a primer of information to help train judges. What we learned from this in talking to the judges and to the prosecutor and the defense experts and everything is that we need to have different types of information for different people at different levels of understanding, we need to have both written format and a multi-media format. Currently we have a 23-page document dealing – designed for judges in the U.K. that gives very specific information to help in training them. And hopefully this can be designed further to be able to reach other stakeholders that the forensic community can help.

One of the things that I thought was kind of neat from this, we had an illustrator that was present who was capturing all of the discussions. So he would draw all these little cartoons after we discussed. I was in a group that was working on communications. And so what you see here is just a comment that illustrates some of the topics.

This first thing we talked about was developing this matrix of dynamic standards that would be collaborative in nature and continually growing. We wanted to improve the quality of reports and this was something we talked about here in this commission. Right now in the U.K. they have no systematic way to handle reports, they are just whatever is written. We talked about the need to have this pre-trial conference which they have in the U.K. in their Section 19.6, they have a section that allows the prosecution experts and the defense experts to come together before trial and find common ground. And that is something that I thought was very interesting that they actually produce a written document that they can go into court with, what are the arguments that they are fine with and what are the issues they are fine with and what do they have concerns with? We had a discussion about advocacy, a gateway, toolkits to help with that training. And then finally with jury research, we need to understand better where people are coming from. And in the picture you see on the right is a picture kind of the aspirations to get the right people behind bars, that's the vision statement. And then we had a drawing of the von Trapp family in the Sound of Music all working together, to be able to sing "The hills are alive with the sound of great forensic science communication".

So really this commission has provided a unique forum, as I look back on it myself. It's enabled communication; colligation, I put the word in there; and collaboration across various stakeholders into the forensic science community. I think we have benefited a lot from the openness and the public input that's been required by a Federal Advisory Committee act rules. We had more than 600 public comments that have come in that had to be addressed and documents revised to reflect this input. It's just as important to point out we do live in an increasingly polarized society, especially here in Washington D.C., and that's something unfortunately we are increasingly challenged with. There are many unique challenges that exist in forensic science specifically when we operate in a legal adversarial environment. And I personally enjoy getting to know all of you and the members of the commission here in working collaboratively to try to help and understand one another and reach consensus.

I have stated that the world has been watching what this commission has been doing, this is an article from *Nature*, last week about the importance of labeling the limits of forensic science. And I got calls yesterday, and contacts from people all over the world. People asking, what's going on with the commission closing? From New Zealand to various places in Europe. So one of the things as I've look back on this, I found that this has been a unique classroom. Just as an example, Paul Speaker talked this morning, looking at some of the data. We've covered a variety of topics. And as I gone through and counted, I've counted 140 invited speakers that have spoken in 13 meetings before this commission, and that's been very valuable for those who have spent the time watching this on webcast, those who have gone back and watched it later, and those who have been in the room around the table and watching. And I hope that, that's appreciated and people go back and view these presentations.

The National Academy of Sciences Report has called for changes, some of those have happened and are moving forward and some aren't. But they are not really new issues, as I had pointed out with Wilmer Souder's1932 position statement there. The criminal justice system, of course, is not perfect. There are, I think, forensic scientists trying to do their best, but they are facing many challenges to do that. There are many forces at play, some want to keep things as it is and some want to change things dramatically. Which changes are needed? And that's really a hard thing to try to decide as we go forward and think about these issues. As I've thought about this from my perspective and as a scientist, I've realized and Ken Williams showed this as a knot, depicted these challenges as a knot, but really there's a great deal of tension that exists between the science and the law with the legal community looking to the past desiring precedent; the scientific community looking to the future and desiring future improvements. And that tension is what creates a lot of the challenges that exist in forensic science. Also the legal community wants to deal in absolutes, guilty/not guilty at the end; whereas the scientific community operates without certainty, there's rarely ever a situation where probabilities are zero or one.

So challenges with communicating. One of the things I realized last weekor was reaffirmed was that people like narratives, they don't like numbers. As I talked to the judges in the U.K, for example, they want to make sure that science is communicated correctly, but they want to make it easy in a format that they can understand and appreciate. I found that we often talk past each other as we are dealing with things, whether that's forensic practitioners talking to lawyers; or practitioners talking to academic scientists; we don't appreciate that they are subtle and sometimes significant differences in the meaning of a word or phrase. And so I think we will benefit from having uniform terminology but that's always a challenge for everybody to agree on those things. Just to point out, like the reasonable degree of scientific certainty; I believe this little legal crutch has no scientific meaning and shouldn't be used in court, as we passed as a commission.

Some lessons learned, I have four lessons learned in thinking back on this. One is it takes time and patience whenever you are trying to establish a new group, for the group to align, to pull together and to gel. And it took really five meetings for that to happen with this group, and I will show the data in just a moment.

UNIDENTIFIED SPEAKER: I want a narrative.

JOHN BUTLER: You want a narrative? Okay (Laughter) We've been living it for 13 meetings, right? Respect and trust I think are crucial for that to happen, that requires that we listen to and seek to understand the perspectives of others, and that's becoming increasingly difficult in our society. Third is that receiving feedback can be very uncomfortable but in the end it usually helps improve our efforts. I work as an editor for *Forensic Science International: Genetics*, and so I have to mediate between comments coming in from reviewers and then from authors that are very frustrated sometimes. But I see in the end, the papers improve as they are revised and strengthened by the comments that are received. If people will listen to them and seek to improve them. Finally, I believe the community benefits when a

dedicated group works together, like we've seen. When they are open with their work products and I hope going forward that that can happen.

So this is the data of the challenge of ramping up activities and the impact of ramping down. And so this is just the number of documents approved per meeting, and really it took until the fifth meeting to get all the sub-committees operating and getting documents going through the review and approval process. And then we had the summary report, we finished with, yesterday being approved. And then the request for survey of forensic law enforcement, forensic science units was not something that came through, it's just something we introduced just to kind of get the process going. I will point out the most productive meeting was held at NIST. (Laughter) In September of last year, so meeting 11, with nine documents approved.

Okay I wanted to just finish with some acknowledgements. We've have 49 commissioners in total across the two terms and I really appreciated getting to know all of you as we've participated in these meetings. We've had great meeting proxies as well, and we've had sub-committee members; seven sub-committees and that means there's been 60 additional sub-committee members that have participated in this process. I put all the exact numbers of invited presenters to get to the 140 that we've had. And I've really enjoyed the input and the effort that they've put into this.

I would say that the leadership from NIST have been very meaningful to me personally. Willie May is the one who talked me into doing this, serving as the Vice Chair. Working with Pat Gallagher, Willie, and Kent. And Rich Cavanagh has been a great blessing in my life personally, I've learned so much from observing them. The DOJ leadership support, I've really enjoyed working with Nelson and getting to know him better, appreciate the chance to serve as a fellow Vice Chair. Getting to know, just briefly, and meeting with the Deputy Attorney General James Cole and Sally Yates. And then the Office of Legal Policy, who's provided a number of very helpful things as we've gone forward. And finally just the staff of the Commission; Jonathan McGrath and the other DFOs we have had before; Lindsay DePalma, and others who have done so much to help organize meetings. And there's just a lot of things that happen with the logistics that have made this a great blessing in my life and I just again want to say thank you for all that you've done. It has been an honor to be part of this Commission, so thanks.

NELSON SANTOS: Before I wrap up, I think Fred had some comments that he wanted to make you said? Fred? You're not going to get the last word, I am. (Laughter)

FREDERICK BIEBER: Okay. I wanted to thank both of you, Nelson and John, and everybody else on the commission. I wanted to follow up on a couple comments made earlier. And also, urge this group to think back to the medical model as we go forward in forensics, because I think that there are a lot of lessons that are transferable.

If we look back to American medicine, much of it wasn't evidence based until the 1920's, after the Flexner Report when medical schools became four year enterprises as opposed to an apprenticeship. And if we look back 20 years from now, I think we will see that chemotherapy, is a horrendous treatment protocol as we develop new methods of immunotherapy and targeted therapies based on genome sequencing of tumors that are occurring at most major cancer centers around the world. And if we just took a look at the medical mishaps that occur every day, from sample mix ups to failure to diagnose a pregnancy, to failure to diagnose cancer in a patient, to allergic responses to drugs, to aberrant drug interactions in patients who are in hospitals with unanticipated responses to drugs. We would all be afraid to see a doctor or go to a hospital if we knew all the data that exists about untoward outcomes of medical visits, 100,000 patients die a year from hospital acquired infections.

So I think it's important that we don't get too depressed, or overly concerned with the sky is falling attitude about the challenges ahead in forensics because they have occurred in other things that affect people's lives and health namely the medical world. And each time those things have been addressed and found, we now check a medical bracelet before a patient is admitted for a surgical procedure. Are we operating on your right wrist, or your left wrist today Mr. Smith? Those kind of things, those corrective actions have occurred because of the errors that have been documented and identified. And I think we need to do the same thing and put one wreck at a time in the yellow brick road and we will get there here in this field. But only if we work together and not in silos with what Ka Sustein (sp) has referred to as incestuous amplification, where we crowd together in groups that think alike and come out with an even more biased attitude than we went in with.

I think back to, I think it was Justice Learned Hand who wrote in a book called "Essays on Freedom" that the justice system was a three horse chariot with one being the law, one being ethics and policy and the third being science and technology. And he wrote that that science technology horse raced ahead of the other two and made for a very rocky ride and I think that's some of what we see in the collective work that we are doing.

So I would follow up on Jon's comment and I'm very thankful for the opportunity to have worked with all of you. I have really and experienced an epiphany with regard to the concept of bias, both confirmation bias and contextual bias and that's improved my work in the hospital, in the diagnostic lab that I run. And I think that we have a lot to contribute individually, whether we are working alone with the groups that we work with in the public safety arena and with our students who we can teach and inspire. So I would like to thank you for inspiring me and I hope that we will go forward individually and severally to do good things and not feel like the sky is falling with the problems that do exist, but I think they can be addressed. Thank you.

NELSON SANTOS: I promise to be short. No slides. But I do have a few words to say. So four years ago, and I'm not going to start four years ago and go forward. DAG Cole called me into his office and said, "Hey we've got this commission thing would you like to lead it?" And I said, "Sure, I would love to lead it." I had no idea what I was getting into. I all honesty, it's been a very challenging three and a half years for me but it's also been a very rewarding three and a half years. And as I reflect back on what we've accomplished, I think even more important than the 43 products and the summary document, is the colligation, is the collaboration, and the fact that so many of us from so many different places were actually able to accomplish or agree on 43 different things, which I think is very important, very telling. Also the one benefit that I don't think has been mentioned so far, is that forensic sciences historically has not been discussed at the national level every three months for three and a half years, and I think if anything as a forensic scientist for 30 years we can be proud that we've actually raised it to a level that is unprecedented in that regard. So I feel very good about being part of that in that forensic science is maybe getting the attention that it deserves.

So with anything that ends, it always has a melancholy feel to it, and I would say to you folks that we should be optimistic about what the future leads. And we should think and be proud of the fact that we were the first, I don't believe there was another commission on forensic sciences in this country to deal with the issues that we deal with. And because we were the first, we will always be the first. And when we look around the room and we go on our ways, we can always reflect back and say, you know we were there, we started this. And I think we've got it going in the right direction.

So with that, thank you. Thank all of you, for your patience, your understanding, for coming back on time after breaks, not. (Laughter) And for working so closely together, I thought we would get through the entire 13 meetings without a real big argument and today we had a little one, but that was okay. We made it through. I also want to thank the Department for having faith in me to help out in this effort and to

move the dialog on forensic sciences forward. And lastly I want to thank my Vice Co-Chair. John, before this opportunity I've heard of John, the DNA guru and working with John over the last three and a half years has been a pleasure, so I didn't know him and now I consider him a friend, so it was great working with John. So with that, Nelson out.

JONATHAN MCGRATH: So before we go, we do have a token to each of the commissioners for the time and efforts that you spend and the contributions. So we do have certificates to pass out. So if you would stay in your chairs for a couple more minutes while the staff pass them out and they will be able to identify you by your tank cards as they pass them out as well.

I'm not going be long at all, but I have just a couple of comments. I can't really follow well, Nelson and John have both covered the appreciation that everybody. But I do want to thank DOJ in this for this partnership. I want to thank my boss, Gerry LaPorte who brought me on board at NIJ, not knowing what I was getting myself into, coming in on board at meeting number six, it's been a real pleasure working with everybody. I want to thank the commission staff, I'm not sure if everybody understands what goes on behind the scenes and in between meetings, working with the sub-committees; having seven sub-committees, working on 43 work products, that's really been a testament to what everyone's accomplished. And so I really want to give a shout out to not only the commissioners that have participated over the years, but the sub-committee members, there are about 60 sub-committee members that contributed to these work products and I think the last couple of meetings we haven't had sub-committee meetings, so a number of the members have not been able to participate in the room, but I think we definitely need to thank them for their contributions. Also I want to thank the SPO, the Subcommittee on Procedures and Operations that started when I came on board, it's been a pleasure working with you guys in between the meetings as well. Again, the speakers, the panelists and I really want to echo the comments made thanking the public and communities' participation in this effort. So on that note.

NELSON SANTOS: Would you drop your mic? (Laughter) I stole that from Obama, though.

JONATHAN MCGRATH: But I can say I'm the first designated federal officer who has been a forensic science practitioner, taking nothing away from the lawyers that have been involved, but it's my pleasure and role and responsibility to adjourn this meeting and the commission, so thank you very much.

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