

A. Foundational

Much of the work of the Commission was directed in trying to strengthen the foundational underpinnings of forensic disciplines by calling for additional research and a review of the current literature. The Commission believes that the following three foundational areas have not been completed:

1. Undertake a survey of law enforcement agencies conducting forensic science analysis.

Although the Commission was focused on drafting recommendations for the Federal government and DOJ forensic laboratories, the Commission also recognized at the outset that the number and diversity of entities at the state, local, and Federal level relying on each other and the extent to which forensic services are provided to the criminal justice system are not fully understood. For example, state and local agencies frequently call on the expertise and services of Federal laboratories, while conversely, the Federal prosecutors on occasion use services of local examiners in lieu of Federal laboratories. In addition, there is a growing trend by laboratories to outsource work to private laboratories for forensic analyses. However, Commission recommendations adopted by DOJ are not binding on non-DOJ laboratories. Additionally, information sharing across jurisdictions is often necessary. This is particularly the case since databases, such as DNA, fingerprints, shoeprints, digital forensics data files (e.g. hash sets of known or suspected child exploitation files) and the like, are increasingly relied upon by agencies at all levels. Interoperability needs to be considered.

The Commission believes that a better understanding of the full scope and quality of laboratories and FSSPs that deliver forensic science data is essential to addressing many critical questions. The DOJ Bureau of Justice Statistics designs, implements, and establishes surveys on forensic services, and it is willing to share these data with the Commission. Data have been gathered by different organizations, but a survey focused on answering the Commission's questions has not been completed. Opportunities for doing so should continue to be a priority.

2. Develop implementation and enforcement recommendations for the uniform code of professional responsibility.

The Commission recommended a national code of ethics and professional responsibility for FSSPs and Forensic Medicine Service Providers (FMSPs). A revised version of the code that was passed by the Commission was adopted by DOJ to be used in DOJ component Federal laboratories. However, there are still substantial questions about how broadly such a code should or could apply and how (or even if) enforcement mechanisms should be implemented. What can or should the accrediting bodies do to move this forward? Is there an interplay between certification of examiners and a national code? These and many other questions remain unexplored and unanswered.

3. Address digital forensics.

When the Commission began its work, digital evidence was specifically excluded from its scope. The Charter was later amended in 2015 to allow the Commission to consider digital forensics. What became obvious right from the beginning is that the challenges facing digital forensics are in some ways unique. This area of practice is fast paced, often done in law enforcement settings by technicians rather than scientists, and has security issues that may not be of concern in other areas of forensics. Digital forensics, as a fairly new yet pervasive area of forensic science, can benefit from guidance of the Commission or similar group regarding quality assurance, foundational reliability, evidence preservation, and more. This entire area of forensic science needs more study and significant input from subject-matter experts. The Attorney General as well as the Federal government could benefit from further evaluation of these issues.

B. Operational

1. Provide guidance on evidence preservation and retention.

There has been guidance by other organizations concerning biological evidence preservation.²⁴ However, this is a complex area, and more work is needed on the scope, policies, and methodologies necessary for biological evidence preservation, as well as other kinds of evidence preservation (e.g., digital evidence). What can and should be done regarding retention of evidence that may have forensic value in the future? What are the legal consequences of granting access to evidence to individuals other than officers of the court, such as crime victims and their families, so that they can do additional forensic testing? Guidance is needed for the forensic testing of cold-case evidence, particularly when advances in testing may make re-evaluation worthwhile, and for the retesting of evidence in a case that has been previously litigated. Are there, or should there be, ways that victims can pay for private testing of untested evidence when their interest in answers continues beyond the criminal justice system's needs in pursuing the case? What is the status of state legislation/requirements/practices regarding evidence testing and destruction? Are there practices in place in state jurisdictions that should or could be adopted federally? Are there, or should there be, guidelines for evidence handling by defense experts, court personnel, and even jurors to ensure ongoing preservation and integrity of biological material on items of evidence in a trial?

2. Consider examiner certification: is this feasible, and should this be a requirement for Federal examiners?

The Commission has weighed in on certification and expressed its view that FSSPs should be encouraged to certify practitioners. There was exploration as to the cost, accessibility, and training issues surrounding certification. The Commission did not fully address this issue, and further exploration is needed.

3. Address source code accessibility and commercial transparency.

As forensic analysis evolves, the role of computers in forensic analysis has also grown. These technologies have led to questions about discovery of closed-source software programs used to generate the analysis or used as part of commercially available instruments during forensic analysis. Should source code be available to prosecution and defense for analysis? Should the Federal government have policies about using open-source or closed-source instrumentation in their laboratories? If access is allowed, what guidance should be given in relation to access? Are protective orders appropriate?

4. Consider recommendations regarding how to address human factors issues in MDIs, especially around cases involving child death, in-custody death, and police shootings.

Human factors such as implicit, cognitive, and implied bias can and are being addressed in forensic science disciplines. In particular, MDI presents unique issues and challenges related to human factors. When cases are high profile or involve issues of great public interest, these factors may be magnified. Examining and exploring these human factors and how they affect these kinds of cases could lead to great insight in all MDIs.

²⁴ NIST/NIJ Technical Working Group on Biological Evidence Preservation. Retrieved from: <https://www.nist.gov/topics/forensic-science/nistnij-technical-working-group-biological-evidence-preservation>; <http://nvlpubs.nist.gov/nistpubs/ir/2013/NIST.IR.7928.pdf>

C. Relational

1. Train forensic science users—law enforcement, lawyers, judges, and the public.

The Training on Science and the Law subcommittee was one of the first subcommittees created by the Commission. It was charged with the task of looking at training lawyers and judges on forensic science. What became clear over time was that this training was important, but this work could wait until after issues surrounding foundational reliability and laboratory operational reforms were addressed. As a result, the Commission made only a general recommendation that a forensic science curriculum should be developed.

Many questions remain. What does this curriculum look like, who is to implement such a curriculum, and what funding and resources are needed for curriculum development and distribution to accomplish this goal? Lawyers need guidance on who should determine when something is foundationally sound: When is forensic analysis sound enough to be used as a forensic tool or an “investigative lead,” and when is it robust enough to be admissible? Are these concepts, or should these concepts, be distinguishable? Judges and lawyers alike need to understand the differences between presumptive and confirmatory testing, and they require better guidance on how to assess and evaluate admissibility. The subcommittee did mention that there is a need for education among the general public, but no further action was taken.

2. Make recommendations for how autopsy findings regarding cause and manner of death might be presented to the fact finders (whether in investigation or adjudication phases of a case).

The Commission’s MDI subcommittee made several recommendations to improve the country’s coroner/medical examiner system. Recommendations regarding the more relational aspects of those involved in MDI, the fact finder, and the public need additional exploration. Considering how “cause” and “manner” of death findings are presented and understood could lead to improved communication between these organizations.

3. Establish key principles of a defendant/victim notification process.

The Commission adopted a Recommendation on Root Cause Analysis that makes a policy recommendation for the adoption of root cause analysis protocols for all FSSPs and forensic science medical providers (FSMPs). In addition, the Commission’s recommendation for a model code of professional responsibility, which in part recommended FSSPs to “appropriately inform affected recipients (either directly or through proper management channels) of all nonconformities or breaches of law or professional standards that adversely affect a previously issued report or testimony and make reasonable efforts to inform all relevant stakeholders, including affected professional and legal parties, victim(s) and defendant(s)”, was only partially adopted by DOJ. Unresolved issues include how to identify those adversely affected; what processes can or should be used to do so; who should be involved in this process; who is responsible for notification; can there be systems developed to ensure that today’s victims and defendants can be reached—if necessary—decades later; and should there be a model process developed for notice of affected professionals and legal parties, victims, and defendants? There are individual cases around the country that serve as examples of how this might be done. Additionally, most effective examples of large-scale notifications have been collaborative processes between FSSPs, attorneys, court clerks, and others. Discussion, debate, and serious consideration as to how to most effectively implement such a process needs more work.

4. Establish research-based means of effectively and accurately communicating forensic science information with the judicial system and the public.

Appendix A. National Commission on Forensic Science Commissioners and Biographies

Co-Chairs:

Acting Deputy Attorney General
Dana J. Boente

Acting NIST Director and Under
Secretary of Commerce for
Standards & Technology Kent
Rochford, Ph.D.

Vice-Chairs:

Nelson Santos

John Butler, Ph.D.

Commission Staff:

Jonathan McGrath, Ph.D. (DFO)

Danielle Weiss

Lindsay DePalma

Commission Members:

Thomas Albright, Ph.D.

Suzanne Bell, Ph.D.

Frederick Bieber, Ph.D.

Arturo Casadevall, Ph.D.

Gregory Champagne

Cecelia Crouse, Ph.D.

Gregory Czarnopys

Deirdre Daly

M. Bonner Denton, Ph.D.

Jules Epstein

John Fudenberg

S. James Gates, Jr., Ph.D.

Dean Gialamas

Paul Giannelli

Randy Hanzlick, M.D.

Hon. Barbara Hervey

Susan Howley

Ted Hunt

Linda Jackson

Hon. Pam King

Troy Lawrence

Marc LeBeau, Ph.D.

Julia Leighton

Hon. Bridget Mary McCormack

Peter Neufeld

Phil Pulaski

Matthew Redle

Sunita Sah, Ph.D.

Michael “Jeff” Salyards, Ph.D.

Ex-Officio Members:

Rebecca Ferrell, Ph.D.

David Honey, Ph.D.

Marilyn Huestis, Ph.D.

Gerald LaPorte

Patricia Manzolillo

Hon. Jed Rakoff

Frances Schrotter

Kathryn Turman

Former Chairs:

James M. Cole

Patrick Gallagher, Ph.D.

Willie E. May, Ph.D.

Sally Q. Yates

Former Commission Staff:

Andrew J. Bruck

Robin Jones

Brette Steele

Victor Weedn, M.D.

Former Commission Members:

Thomas Cech, Ph.D.

William Crane

Vincent DiMaio, M.D.

Troy Duster, Ph.D.

Andrea Ferreira-Gonzalez, Ph.D.

Stephen Fienberg, Ph.D.

John Kacavas

Ryant Washington

Former Ex-Officio Members:

Mark Weiss, Ph.D.

chief, arson and explosives section, FSL-W; in 2007, he was named chief, FSL-W, and in 2007, he became the deputy director, ATF laboratory services. As a leader in the forensic science community, Mr. Czarnopys has directed numerous projects, task forces, and programs that have advanced scientific disciplines around the world. As a national response team (NRT) chemist, from 1991–2000, he led research that addressed ATF concerns regarding contamination at the scene of explosions related to clothing worn on the scene, training and remediation of explosives. The completion of his study resulted in the establishment of ATF protocols and procedures regarding the processing of explosive materials both on the scene and in the laboratory. Other scientific projects shepherded by Mr. Czarnopys during the last 15 years include disciplines such as DNA, trace evidence, tobacco analysis, fire research and the NIBIN program, all of which are at the forefront of ATF's efforts to solve violent crime and protect the public. He recently oversaw the International Organization for Standardization (ISO) -17025 accreditation of all four ATF laboratories. As a result of his efforts, ATF is a leader within the forensic science community and is a sought-after partner in field. Mr. Czarnopys received a B.S. degree in criminalistics from Michigan State University (1988) and has attended ATF supervisory and managerial training classes since 2001. In 2007, he attended a 2-week leadership training program presented by the prestigious Center for Creative Leadership. In addition, he completed the formal segment of the ATF Leadership Development Program and the Treasury Executive Institute/Executive Forum. Mr. Czarnopys is an expert guest speaker and an active participant in scientific forums such as the American Society of Crime Laboratory Directors (ASCLD), is a past member of the Subcommittee on Forensic Sciences, and is the current chair of the Council of Federal Forensic Laboratory Directors.

Deirdre Daly

Ms. Deirdre Daly was nominated by President Barack Obama to serve as the U.S. Attorney for the District of Connecticut on March 13, 2014. She was confirmed by the U.S. Senate on May 21, 2014, and was sworn in on May 28, 2014. Ms. Daly is the first woman to be nominated and confirmed as the U.S. Attorney for Connecticut. Ms. Daly was the U.S. Attorney in an acting or interim capacity since May 14, 2013. She currently serves as a member of U.S. Attorney General Loretta Lynch's Attorney General's Advisory Committee and as a member of the National Commission on Forensic Science, which the Justice Department established in 2013 to improve the reliability of forensic science. Between 2010 and 2013, she was the First Assistant U.S. Attorney, during which time she assisted in the oversight of both the criminal and civil divisions. From 1985 to 1997, Ms. Daly was an Assistant U.S. Attorney in the Southern District of New York, where she prosecuted a wide range of cases, from racketeering and murder to corruption and fraud, and she later served as the Assistant-in-Charge of the White Plains office for 3 years. After leaving DOJ, Ms. Daly was a partner at Daly & Pavlis LLC, a Connecticut law firm with a practice focused on corporate and commercial litigation, white-collar criminal investigations, SEC enforcement actions, and corporate internal investigations and monitoring. A graduate of Dartmouth College and Georgetown University Law Center, Ms. Daly served earlier in her career as a law clerk for the Honorable Lloyd F. MacMahon, U.S. District Judge for the Southern District of New York. (*Joined the Commission in August, 2015.*)

M. Bonner Denton, Ph.D.

M. Bonner Denton received his B.S. in chemistry and B.A. in -psychology degrees in 1967 from Lamar State College of Technology, and his Ph.D. in chemistry in 1972 from the University of Illinois. Today Dr. Denton is a Galileo Professor of chemistry and professor of geological sciences at the University of Arizona. Research interests include analytical instrumentation, optical spectroscopy, mass spectrometry, separation science, and scientific imaging. Over the years Dr. Denton and his group have developed methodologies that are today widely used in the field of forensic science. He pioneered the development of high resolution array detector technology for both ultra-sensitive spectroscopic analysis and microscopic imaging. The high performance achievable in modern raman, fluorescence and atomic emission spectroscopies is directly traceable to contributions made by Dr. Denton and his research

group. Currently Dr. Denton is applying new advanced detector innovations leading to the development of ultra-trace level explosives detection instrumentation capable of detecting small quantities of explosives at more than 40 meters standoff distances. Dr. Denton is a fellow of the Royal Society of Chemistry; fellow of the American Association for the Advancement of Science; fellow of the Society for Applied Spectroscopy; and fellow of the American Chemical Society. He has published more than 200 peer reviewed publications and holds 15 patents in the field of chemical instrumentation.

Jules Epstein

Jules Epstein is professor of law and director of advocacy programs at Temple Beasley School of Law, where he teaches evidence. He has published extensively regarding the death penalty, eyewitness identification, and evidence, and is faculty for the National Judicial College, teaching evidence and capital case courses. In the area of forensics, Professor Epstein has worked on two DNA workgroups and in capital case trainings for NIJ, and on a working group on latent print issues for the National Institute for Standards and Technology that led to publication of *Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach* (NIST Interagency Report 7842, 2012). He is co-editor of the *Scientific Evidence Review* (ABA, 2013) and *The Future of Evidence* (ABA, 2011) and served as section editor for the *Encyclopedia Of Forensic Sciences*, 2nd Edition. Professor Epstein has lectured on forensics to judges and attorneys.

John Fudenberg

John Fudenberg is the Coroner of The Clark County Office of the Coroner/Medical Examiner (CCOCME) in Las Vegas, NV. The Coroner is an appointed position and functions as the head of the department, Clark County employs six full-time and eleven part-time board certified forensic pathologists. The CCOCME also employs 30 Medicolegal Death Investigators who are all ABMDI certified. There are nearly 17,000 deaths annually in Clark County and the office investigates nearly 75 percent of those deaths. CCOCME is the only Coroner's Office accredited by both the International Association of Coroner's and Medical Examiners (IAC&ME) and the National Association of Medical Examiners (NAME). John has been employed with the CCOCME for 13+ years and has 16+ years of law enforcement experience from Minnesota and Las Vegas. John is the Past President for the International Association of Coroner's and Medical Examiners (IAC&ME), served as the Chair of the Scientific Working Group on Medicolegal Investigations (SWGMDI) and the Chair of the Medicolegal Subcommittee of the OSAC.

S. James Gates, Jr., Ph.D.

Sylvester James (Jim) Gates, Jr., a theoretical physicist known for his work on supersymmetry, supergravity, and superstring theory at the frontiers of his field, received B.S. (mathematics & physics) degrees in 1973 and a Ph.D. (physics) in 1977, all from the Massachusetts Institute of Technology. His thesis was the first at MIT on supersymmetry, a topic that has dominated fundamental theoretical physics since. He is currently University System of Maryland Regents Professor, the Toll Professor of Physics, and center for particle and theory director. He serves on the U.S. President's Council of Advisors on Science & Technology (PCAST), and the Maryland State Board of Education. His scientific work, together with that on STEM (science, technology, engineering, & mathematics) education policy, lead to engagements with the public and policy makers around the globe on the topics of science, STEM education and policy, and diversity. Since 1972 he has taught as a college-level instructor (mathematics/physics) at the University of Maryland, MIT., Caltech, Howard University, and Gustavus Adolphus College. He has been recognized as the recipient of College Science Teacher of the Year (Washington Academy of Sciences–1999), and the Klopsteg Award (American Association of Physics Teachers–2005). Since 1996, with “Breakthrough: The Changing Face of Science in America,” he appeared in seven documentaries, with an eighth (“Mystery of Matter: A Search for the Elements”)

broadcast in 2014. This led to recognition with the Public Understanding of Science and Technology Award (AAAS–2006). His presence on the Web is such that more than 1 million hits have been recorded on Web sites affiliated with his activities. Professor Gates is the recipient of the 2011 Medal of Science and the 2013 Mendel Medal, and he is a member of the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts & Science, the American Physical Society, the National Society of Black Physicists, and the American Association for the Advancement of Science, being a fellow of the last three organizations, and the Stellenbosch Institute for Advanced Study in South Africa. His election to the NAS makes him the first African-American physicist so recognized in its 150 year-long history.

Dean Gialamas

Dean Gialamas is the division director (civilian chief) for the Los Angeles County Sheriff Department's technology and support division. In his role, he leads and manages the Department's technology services, which includes communications, fleet, information technology, records, biometric identification, forensic sciences, crime analysis, and law enforcement information sharing programs. With more than 1,100 sworn and technical personnel and a budget of more than \$216 million, the division supports the entire department in the application of science, technology and innovation services to public safety. Previously he served as crime lab director for both the Los Angeles County Sheriff's Department and the Orange County Sheriff's Department, each ASCLD/LAB ISO 17025 Internationally accredited entities. Over his 24-year career in forensic science, he has worked in both public and private forensic laboratories. He is an active member of several professional organizations and has been appointed to several state and federal task forces and workgroups regarding forensic science issues. He served on the editorial board of the Forensic Science Policy & Management Journal, on the White House Subcommittee on Forensic Science Interagency Working Group, and is a past-president of the American Society of Crime Laboratory Directors and the California Association of Crime Laboratory Directors. Mr. Gialamas also served as an instructor for several criminal justice agencies and universities, and he currently consults on forensic science management and leadership principles and issues. He holds dual majors in chemistry and biology from UC Irvine and a Master's degree in Criminalistics from Cal State Los Angeles. He is professional certified in forensic science by the American Board of Criminalistics and is a proud graduate of the West Point Leadership and Command Program.

Paul Giannelli

Paul C. Giannelli is a distinguished university professor and the Albert J. Weatherhead III & Richard W. Weatherhead Professor of Law at Case Western Reserve University. He received his J.D. degree from the University of Virginia, where he served as articles editor of the *Virginia Law Review*. His other degrees include an LL.M. from the University of Virginia, an M.S. in Forensic Science from George Washington University, and a B.A. summa cum laude from Providence College. After law school, he served as both a prosecutor and defense counsel in the military. Professor Giannelli has written extensively in the field of evidence and criminal procedure, especially on the topic of scientific evidence. He has authored or co-authored 12 books, including *Scientific Evidence* (5th ed. 2012), and has written more than 200 articles, book chapters, reports, book reviews, and columns, including articles in the Columbia, Virginia, Cornell, Vanderbilt, Illinois, Fordham, North Carolina, Wisconsin, Ohio State, and Hastings law reviews. Other articles have been published in specialty journals at Northwestern, Georgetown, Texas, and N.Y.U. In addition, his work has appeared in interdisciplinary journals, such as the *Journal of Law, Medicine & Ethics*, *Issues in Science and Technology* (National Academies), *International Journal of Clinical & Experimental Hypnosis*, and the *Journal of Forensic Sciences*. He is also co-author of a chapter on forensic science in Federal Judicial Center/National Academy of Sciences, *Reference Manual on Scientific Evidence* (3d ed. 2011). Professor Giannelli's work has been cited in nearly 700 judicial opinions throughout this country (including seven decisions of the U.S. Supreme Court) as well as in foreign courts. In addition, he has testified before the U.S. Senate Judiciary Committee and served

as: reporter for the American Bar Association Criminal Justice Standards on DNA Evidence; co-chair of the ABA Ad Hoc Committee on Innocence; and a member, National Academy of Sciences, Bullet Lead Elemental Composition Comparison Committee.

Randy Hanzlick, M.D.

Randy Hanzlick, MD, is a board-certified forensic pathologist, Emeritus Professor of Forensic Pathology at Emory University School of Medicine, and retired chief medical examiner for Fulton County, GA. Born in Ohio, he graduated college and medical school at Ohio State University, where he also did his pathology training. After completing his forensic pathology training in Atlanta, he remained in Atlanta and has worked in the field of death investigation since the early 1980s. He is a past-president of the National Association of Medical Examiners and former pathology/biology section officer for the American Academy of Forensic Sciences. Dr. Hanzlick is active on numerous committees for professional organizations and on multiple federal panels and projects related to death investigation and death certification, such as the CDC Guidelines for Investigation of Sudden, Unexplained Infant Death and the NIJ Guide for Death Scene Investigators. Author of two texts, several manuals, multiple chapters, and about 200 publications, Dr. Hanzlick's major interest areas include the development of professional guidelines, improvement in death investigation practices, death certification and mortality data, electronic data system development and data sharing, and the role of the medical examiner in public health surveillance and epidemiological research. Dr. Hanzlick was also a primary developer of the original NamUs system for unidentified deceased individuals. He has received multiple awards including the National Association of Medical Examiners' Lifetime Service Award (2007) and Milton Helpern Laureate Award (2014), and the American Academy of Forensic Sciences Distinguished Fellow Award (2009).

Hon. Barbara Hervey

Judge Barbara Parker Hervey was elected to the Texas Court of Criminal Appeals in November 2000. Prior to her election, she worked for 16 years at the Bexar County District Attorney's Office in San Antonio, Texas, where she prosecuted landmark cases and trained office personnel.

Judge Hervey is currently a Commissioner on the National Commission of Forensic Science, an advisor to Center for Statistics and Applications in Forensic Evidence (CSAFE), an advisor on the American Law Institute's panel to rewrite the Model Penal Code: Sexual Assault and Related Offenses, and an advisor for the American Association for the Advancement of Science (AAAS). She is also the Chair of the Court of Criminal Appeals' Grants Committee, which awards approximately \$18 million per biennium to educate participants in the Texas criminal-justice system; the Chair of the Texas Criminal Justice Integrity Unit, which identifies areas of the criminal-justice system that can be strengthened; a member of the Rules Committee of the Texas Court of Criminal Appeals; and the Court's liaison to the State Bar of Texas.

Formerly, she was a member of the Timothy Cole Advisory Panel on Wrongful Convictions and the Governor's Ad Hoc Committee to Rewrite the Texas Code of Criminal Procedure. She also was a faculty member for the National College of District Attorneys, was recognized as a distinguished alumna from St. Mary's University School of Law, and was awarded the Rosewood Gavel for Outstanding Judicial Service. Judge Hervey is an accomplished author and has spoken at more than 250 lectures, including at the National Academy of Sciences and the White House Subcommittee on Forensic Science. She also participated in a wrongful-conviction study conducted by the International Association of Police Chiefs in 2013.

Judge Barbara Hervey is a native of New Jersey and earned her Bachelor of Arts Degree in 1975 from The University of North Carolina at Greensboro and her Juris Doctor in 1979 from St. Mary's University

School of Law. Judge Hervey and her husband, Richard Langlois, live in San Antonio, Texas, and have three children and two grandchildren.

Susan Howley

Susan Smith Howley has worked with the National Center for Victims of Crime since 1991, serving as its director of public policy since 1999. From 2002 through 2005, she also served as the Center's director of victim services. During that time, she has worked to promote the rights and interests of crime victims, advocating for laws and policies that help victims pursue justice and recover from crime. She has also led major projects to improve the national response to victims, including co-leading Vision 21: Building Capacity, a project to examine the challenges and solutions to building the capacity of crime victim service providers, and directing a project to develop recommendations to bridge the gap between research and practice in victim services. She also oversees the National Center's work to promote victim-centered policies and practices in the processing of backlogged sexual assault forensic evidence. Ms. Howley has served on the National Advisory Committee on Violence Against Women, the Victims Advisory Group to the U.S. Sentencing Commission, and the Sexual Assault Advisory Committee for the Peace Corps. She was the 2011 winner of the Congressional Victims' Rights Caucus' Lois Haight Award for Excellence and Innovation. She received a J.D. in 1987 from Georgetown University Law Center.

Ted Hunt

Ted Hunt is chief trial attorney at the Jackson County Prosecutor's Office in Kansas City, MO. He has been a prosecuting attorney for more than 22 years. In that time, he has prosecuted more than 100 felony jury trials, the vast majority of which have involved the presentation of forensic evidence. He is a teaching faculty member for a number of organizations that train prosecutors, law enforcement, and laboratory analysts on various aspects of the courtroom litigation of forensic evidence. Mr. Hunt is also a member of the Board of Directors for the American Society of Crime Lab Directors Laboratory Accreditation Board (ASCLD/LAB); a member of the International Association of Chiefs of Police (IACP) Forensic Science Committee; and a member of the Missouri Crime Laboratory Review Commission.

Linda Jackson

Linda Jackson currently serves as Director of the Virginia Department of Forensic Science (VADFS). VADFS provides scientific analysis of evidential material for all law enforcement agencies, Commonwealth's attorneys, medical examiners and other agencies in the Commonwealth as prescribed by law; provides expert testimony at trial; maintains a DNA Data Bank; and trains law enforcement personnel on forensic related subjects.

Ms. Jackson has a B.S. degree from Wake Forest University and an M.S. in Chemistry from the University of North Carolina at Charlotte. She began her career with DFS in 1995 as a Controlled Substances Examiner and then was promoted to Mass Spectrometer Operator, Section Supervisor, Controlled Substances Section Chief and Chemistry Program Manager before assuming her current position. As Director, she has worked to increase laboratory transparency by offering all Breath Alcohol instrument records and test results on the VADFS website. She has worked with the Department of Criminal Justice Services to publish annual seized drug statistics for use by Virginia public safety and public health agencies and is a member of Governor McAuliffe's Opioid Executive Leadership Team.

Ms. Jackson was a member of the international Scientific Working Group for Seized Drug Analysis (SWGDRUG) from its inception in 1997 until 2014 and served as the Vice Chair from 2013 - 2014. She has been a certified assessor for the ASCLD/LAB-*International* program since 2004. She currently serves on the Virginia Commonwealth University Department of Forensic Science Graduate Academic Committee. She is a member of the American Academy of Forensic Sciences (AAFS), the Association of

Crime Laboratory Directors (ASCLD), the ASTM E30 Committee on Forensic Science and the Mid-Atlantic Association of Forensic Scientists (MAAFS). She served on the White House Subcommittee on Forensic Sciences Interagency Working Group on Standards, Practices and Protocols from 2009 - 2012.

Hon. Pam King

Pam King is a Minnesota district court judge, presiding in criminal, civil, family, juvenile, and probate matters. She was appointed to the bench in October 2015. Previously, Ms. King was a member of the Minnesota public defender's trial team. In this role, she worked statewide representing criminal defendants in cases involving complex litigation and/or forensic science. She also consulted with public defenders on a variety of forensic issues including DNA, pathology, toxicology and drug chemistry. In 2011 she was named one of Minnesota Lawyers' Attorneys of the Year for her role in Minnesota's source code litigation. She was part of the Minnesota State public defender DNA Institute, working with a small group of lawyers to become proficient in forensic DNA testing and interpretation. She presents and teaches in Minnesota and nationally on forensic science issues and litigation skills. Ms. King is a fellow in the American Academy of Forensic Sciences as well as a member of the Olmsted County and Dodge County Bar Associations. She was previously a member of Minnesota Society for Criminal Justice, National College of DUI Defense, and the National Association of Criminal Defense Lawyers. She graduated from William Mitchell College of Law and completed her undergraduate degree at Drake University. Prior to working for the Minnesota State public defender, Ms. King had a private practice representing clients in the areas of criminal and family law.

Troy Lawrence

Troy Lawrence is a twenty-eight-year veteran of the Fort Worth Police Department and is currently a sergeant assigned to the digital forensic lab. He grew the lab from a one-person, part-time, position to six examiners (sworn and civilian) that processes computers, mobile phones, and forensic video. Mr. Lawrence began his forensic career in 2000 and attended the 2001 International Association of Computer Investigative Specialists (IACIS) training event in Orlando. He earned his Certified Forensic Computer Examiner (CFCE) on September 13, 2001. Mr. Lawrence served many roles for IACIS. He was a peer-review coach, certification regional manager, and chairman of the recertification committee prior to being elected to the IACIS Board of Directors. He served 3 years as secretary and since 2012 has been the director of training. He continues to assist in the teaching of various topics including the managing a digital forensic lab course that he co-wrote. Mr. Lawrence is a past member and former president of the local High Tech Crime Investigator Association (HTCIA) chapter. In 2003, Mr. Lawrence testified before the Texas House of Representatives regarding mandatory lab accreditation for digital evidence. As a result of his testimony, he was invited to join the Scientific Working Group on Digital Evidence (SWGDE). As a SWGDE member, he frequently contributes to the writing of best practices and quality assurance manuals for the digital evidence community. Mr. Lawrence serves as a subject matter expert in various classes for the National White Collar Crime Center (NW3C) and has served as a part-time instructor for various forensic training programs. He has a B.B.A. degree from Texas Wesleyan University.

Marc LeBeau, Ph.D.

Marc A. LeBeau, PhD, is the Chief Scientist of the Scientific Analysis Section of the FBI Laboratory. He has worked as a Forensic Chemist and Toxicologist for the FBI since 1994 and has testified in federal, state, and county courts throughout the United States.

Dr. LeBeau holds a Bachelors degree in Chemistry and Criminal Justice from Central Missouri State University (1988) and a Master of Science degree in Forensic Science from the University of New Haven (1990). He was employed in the St. Louis County Medical Examiner's Office (1990-1994), before

beginning his career with the FBI. In 2005, he received his Doctorate in toxicology from the University of Maryland – Baltimore.

As a Fellow of the American Board of Forensic Toxicology, Dr. LeBeau is active in numerous scientific organizations. He is a member and Past-President of the Society of Forensic Toxicologists. Additionally, Dr. LeBeau serves as the President-Elect of The International Association of Forensic Toxicologists and is a Fellow of the American Academy of Forensic Sciences (AAFS).

Dr. LeBeau has served as the chairman of the Scientific Working Group on the Forensic Analysis of Chemical Terrorism (SWGFACT) and co-chair to the Scientific Working Group on the Forensic Analysis on Chemical, Biological, Radiological, and Nuclear Terrorism (SWGCBRN). He was also a co-chair of the Scientific Working Group for Forensic Toxicology (SWGTOX). He is currently the Toxicology Subcommittee Chair of the Organization of Scientific Area Committees (OSAC), Chair of the AAFS Standards Board's Toxicology Consensus Body, and a Commissioner on the National Commission on Forensic Science.

In 2004, Dr. LeBeau won the *FBI Director's Award for Outstanding Scientific Advancement*, the *End Violence Against Women (EVAW) International Visionary Award* in 2008, and the *Alexander O. Gettler Award* from the Toxicology Section of the American Academy of Forensic Sciences in 2015.

Julia Leighton

Julia Leighton is the former general counsel for the public defender service for the District of Columbia (PDS). As general counsel, Ms. Leighton advised the PDS's board of trustees, the PDS management team, and PDS lawyers on a wide variety of legal issues. Ms. Leighton is also a former member of the D.C. Bar Legal Ethics Committee and a former member of the D.C. Rules of Professional Conduct Review Committee. While serving as general counsel, Ms. Leighton was also a member of PDS's forensic practice group and was a 2001 founding member. Prior to becoming PDS's general counsel, Ms. Leighton spent 11 years litigating criminal cases; 8 years as a staff attorney at PDS, and 3 years as a trial attorney in the Environmental Crimes Section of the U.S. Department of Justice. Ms. Leighton received a B.A. in economics from Bowdoin College magna cum laude, and her J.D. from the Georgetown University Law Center, cum laude.

Hon. Bridget Mary McCormack

Justice Bridget Mary McCormack joined the Michigan Supreme Court in 2013. Before her election, she was a law professor and associate dean at the University of Michigan Law School. Justice McCormack continues to teach there as a lecturer. Justice McCormack is a graduate of the New York University Law School. She spent the first 5 years of her legal career in New York, first with the Legal Aid Society and then with the Office of the Appellate Defender. In 1996, she became a faculty fellow at the Yale Law School. In 1998, she joined the University of Michigan Law School faculty, where she taught various clinical courses as well as criminal law and legal ethics. As the associate dean for clinical affairs, she substantially grew Michigan's clinical offerings, founding new clinics focusing on domestic violence, pediatric health, mediation, low income taxpayers, international transactions, human trafficking, juvenile justice, and entrepreneurship. In 2008, she cofounded the Michigan Innocence Clinic, in which she supervised students representing wrongfully convicted Michiganders. The clinic was the first law school innocence clinic exclusively handling non-DNA cases and exonerated seven people in its first 3 years. Her clinic innocence work focused, in large part, on forensic science issues. Justice McCormack currently chairs the Supreme Court's Limited English Proficiency Implementation Advisory Committee and participates with a number of professional organizations, including the American Bar Association Access to Justice committee, the American Bar Association Working Group on Pro Bono and Public Service, the advisory board of the National Consortium on Racial and Ethnic Fairness in the Courts, and the judicial elections committee of the National Association of Women Judges, and she serves as a board member of

the National Board of Legal Specialty Certification. In 2013, Justice McCormack was elected to the American Law Institute.

Peter Neufeld

Peter Neufeld co-founded and co-directs the Innocence Project, an independent non-profit. The Project currently represents hundreds of inmates across the country seeking post-conviction release through DNA testing. In its twenty-five years of existence, the Innocence Project has been responsible in whole or in part for exonerating more than half of the three hundred and forty-seven men and women to be cleared through post-conviction DNA testing. The Innocence Project has been transformed from a clinical program with the single focus of exonerating the wrongfully convicted into a leadership role in identifying and addressing the systemic causes of wrongful convictions while at the same time enhancing public safety. The Project has been instrumental in reforming police practices in eye witness identification, interrogation, and forensic science. In February 2000, *Actual Innocence: Five Days to Execution, and Other Dispatches From the Wrongly Convicted*, co-authored by Peter, Barry Scheck, and Jim Dwyer was published by Doubleday. The second edition was published by Penguin in 2003. In 2014, Peter collaborated with the New York Hall of Science on the creation and publication of the interactive iBook, *False Conviction: Innocence, Guilt & Science* authored by Jim Dwyer. In addition to his *pro bono* responsibilities at the Innocence Project, Peter is a partner in the law firm Neufeld, Scheck & Brustin, specializing in civil rights and constitutional litigation. From 1995 to his resignation in 2016, Mr. Neufeld served on the New York State Commission on Forensic Science which regulates all state and local crime laboratories. He is also a trustee of the Montefiore Medical Center and the Albert Einstein College of Medicine. A 1972 graduate of the University of Wisconsin, Peter received his law degree in 1975 from New York University School of Law.

Phil Pulaski

During March 2014, Chief Phil T. Pulaski retired as Chief of Detectives of the NYPD with more than 33 years of law enforcement experience. Previously, he was Deputy Commissioner of Operations and Commanding Officer of several large commands including the Intelligence Division, Counterterrorism Bureau, FBI / NYPD Joint Terrorist Task Force, Detective Borough Manhattan, Detective Borough Bronx, Special Investigations Division and Forensic Investigations Division. Chief Pulaski also served as a Managing Attorney in the Legal Bureau, a captain in the Internal Affairs Bureau, Commanding Officer of the Arson and Explosion Squad, Acting Director of the Police Laboratory and Coordinator of the NYPD's Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) investigative programs. As Chief of Detectives, he was responsible for more than 3600 personnel assigned to more than 150 Detective Squads and units. He successfully managed scores of major investigations including murdered police officers, shot police officers, serial killers, quadruple homicides, mass casualty incidents and civilian deaths resulting from police action. Additionally, he significantly re-engineered the Detective Bureau; and, implemented innovative new investigative operations, integrity programs, management protocols and computer systems. Chief Pulaski also served as personal adviser to Police Commissioner Raymond W. Kelly on all forensic science matters; and, managed all of the NYPD's forensic, digital/multimedia, investigative and other physical evidence programs. He significantly re-engineered the operations of the NYPD Police Laboratory, Crime Scene Unit, Latent Print Section, Bomb Squad, Forensic Artist Unit, Computer Crimes Squad and Medical Examiner Liaison Unit; and, was responsible, together with the Director of the Police Laboratory, for ensuring the Police Laboratory was accredited twice under the ASCLD/LAB International Program and once under the Legacy Program. Shortly after September 11, 2001, as Commanding Officer of the FBI / NYPD Joint Terrorist Task Force, Chief Pulaski managed, together with his FBI counterpart, terrorism related investigations and intelligence operations including the 9-11 World Trade Center attack and October 2001 anthrax attacks. During his tenure, the Joint Terrorist Task Force interdicted several serious threats to NYC. Chief Pulaski holds a Juris Doctor from St. Johns University School of Law, Queens NY; and practiced law for the NYPD and

privately for 30 years. He also holds a Bachelor's Degree in Chemical Engineering and a Master's Degree in Environmental Engineering from Manhattan College, Bronx NY; and worked for 4 years as an engineer for the United States Environmental Protection Agency. He also worked as an adjunct assistant professor at John Jay College of Criminal Justice for 3 years. Currently, Chief Pulaski is studying for a LLM advanced law degree at Touro Law School in Suffolk, NY.

Matthew Redle

Matt Redle is the county and prosecuting attorney for Sheridan County, WY. He was first elected to that position in 1986. Mr. Redle is a graduate of the Creighton University School of Law. Since 2004, Mr. Redle has served on the Permanent Rules Advisory Committee, Criminal Division, for the Wyoming Supreme Court. Mr. Redle is a past vice-president of the National District Attorneys Association Board of Directors. He is a vice chair and member of the American Bar Association Criminal Justice Section Council. Mr. Redle is a member of the ABA Criminal Justice Standards Committee. Mr. Redle is a member of the Juvenile Prosecutor Leadership Network at the Center for Juvenile Justice Reform, Georgetown Public Policy Institute, Georgetown University. He has spoken on topics relating to science, the law, and legal ethics at events sponsored by the American Academy of Forensic Science, the American Bar Association, the National District Attorneys Association, the National Institute of Justice, the National Sexual Violence Resource Center, and the Criminal Justice Section of the Indiana State Bar, among others. On September 9, 2009, Mr. Redle was privileged to testify before the U.S. Senate Committee on the Judiciary in a hearing entitled "Strengthening Forensic Science in the United States."

Sunita Sah, M.D., M.B.A., Ph.D.

Dr. Sunita Sah is an expert on judgment and decision making. Her research focuses on institutional corruption, transparency, improving decisions, unconscious and unintentional bias, influence, professionalism, and advice. Incorporating organizational behavior, psychology, and behavioral economics theory, Dr. Sah studies how professionals who give advice alter their behavior as a result of conflicts of interest and the policies (such as disclosure and second opinions) designed to manage them. She serves on the National Institute of Science and Technology Human Factors Committee. Dr. Sah's work has been published in top academic journals in medicine, management, economics, and psychology and has received coverage in the international press, radio, and television. She has won numerous best paper awards from the Academy of Management, Society of Business Ethics, Society of Judgment and Decision-Making, and Society of Personality and Social Psychology. She also serves on the editorial board of the journal *Organizational Behavior and Human Decision Processes*. Dr. Sah teaches critical and strategic thinking at Cornell University, where she is currently an assistant professor of management and organizations and the Balen Sesquicentennial Faculty Fellow at the Johnson Graduate School of Management. Prior to Cornell, Dr. Sah held academic positions at Georgetown University (teaching ethical decision making) and at Harvard and Duke Universities. Before entering academia, Dr. Sah worked as a medical doctor for the U.K.'s National Health Service going on to be senior consultant and European marketing director at IMS Health Consulting. She holds a Ph.D. and M.S. in organizational behavior from Carnegie Mellon University, an M.B.A. with distinction from London Business School, an M.B. Ch.B. in medicine and surgery, and a B.Sc. (Hons.) in psychology from the University of Edinburgh. (*Joined the Commission in August, 2015.*)

Michael "Jeff" Salyards, Ph.D.

Dr. Salyards is the Executive Director of the Defense Forensic Science Center. He has served in this position since December 2012. From 2009-2012, he served as the Chief Scientist. Before coming to this position, he was a Principal Analyst with Analytic Services and authored a study about the best methods to train military personnel to collect forensic material during the conduct of military operations. He holds a PhD in Chemistry from Montana State University, a Masters of Forensic Sciences from The George

Washington University and has completed a Fellowship in Forensic Medicine from the Armed Forces Institute of Pathology. A former Director of the Defense Computer Forensic Laboratory and AFOSI Special Agent, he has 29 years of combined experience in investigations, forensic consulting and teaching. He served as the Deputy for Operations and Assistant Professor at the Air Force Academy Chemistry Department and was honored with the Outstanding Academy Educator Award. Dr. Salyards has served on the Board of Directors for the American Society of Crime Laboratory Directors/Laboratory Accreditation Board, the Department of Justice National Steering Committee for Regional Computer Forensic Laboratories, the Council of Federal Forensic Laboratory Directors, the ASCLD Board of Directors, and as a Commissioner for the Forensic Education Programs Accreditation Commission. He was appointed to the Organization of Scientific Area Committees Forensic Science Standards Board in 2016. He is a Fellow of the American Academy of Forensic Sciences and has an impressive list of publications and presentations. In January of 2014, he was appointed to the National Commission on Forensic Science. Dr. Salyards is a retired commissioned officer in the United States Air Force. He has been married for 25 years and has three daughters.

Ex-Officio Members

Rebecca Ferrell, Ph.D.

Rebecca J. Ferrell, Ph.D., is program director of the biological anthropology program at the National Science Foundation (NSF), where she also serves as co-lead of NSF's forensic science efforts. She received her Ph.D. in anthropology from the Pennsylvania State University, after which she was a postdoctoral fellow at Georgetown University's Center for Population and Health and an assistant professor of anthropology at Howard University. Dr. Ferrell specializes in skeletal and dental anthropology, and she is interested in using the skeleton and dental microstructure to understand stress, health, aging, and mortality in past and present human populations. She has also conducted research on human reproductive aging and the evolution of menopause and is broadly interested in research on aging. In 2009, she transitioned to federal research administration as a scientific review officer at the National Institute on Aging, National Institutes of Health (NIH), where she served as a designated federal official for the peer review of grant proposals. At both NIH and NSF, she has served on working groups to address regulatory and processual challenges in peer review. Since arriving at NSF in 2014, Dr. Ferrell has managed a diverse portfolio of research on human and primate evolution, behavior, and biology. She is also working with colleagues across NSF and at other agencies to identify and cultivate basic research with relevance to forensic science, and to launch a forensic science Industry-University Cooperative Research Center.

David Honey, Ph.D.

Dr. David A. Honey currently serves as the director, Science and Technology, and as the assistant deputy director of National Intelligence for Science and Technology. In this assignment, he is responsible for the development of effective strategies, policies, and programs that lead to the successful integration of science and technology capabilities into operational systems. Prior to this assignment, Dr. Honey served as the deputy assistant secretary of Defense, Research, in the Office of the Assistant Secretary of Defense (Research and Engineering), from August 31, 2009, to November 4, 2011. Before that, Dr. Honey was the defense sector general manager and a senior vice president in a small business pursuing innovations in national security. Dr. Honey also served on the Air Force Scientific Advisory Board. He has also served as the director of the Defense Advanced Research Projects Agency (DARPA) Strategic Technology Office, director of the Advanced Technology Office, and deputy director and program manager of the Microsystems Technology Office. Dr. Honey is a retired Air Force lieutenant colonel who began his military career as a pilot (B-52D/H and FB-111) and later transitioned into managing a wide variety of technical programs involving intelligence, surveillance, and reconnaissance. He received a B.S. in Photographic science from Rochester Institute of Technology; an M.S. in optical science from the

