CERTIFICATION OF FORENSIC EXAMINERS IN TEXAS: OUR PATH FORWARD

A Joint White Paper Authored By:

Texas Forensic Science Commission and
Texas Criminal Justice Integrity Unit

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EXECUTIVE SUMMARY

On July 11, 2013, the Texas Forensic Science Commission ("TFSC") and the Texas Criminal Justice Integrity Unit ("TCJIU") hosted a stakeholder roundtable meeting focused on certification of forensic examiners in Texas. Participants included forensic science practitioners and managers, prosecutors, defense attorneys, members of the judiciary, advocacy groups and representatives from various national certification and accreditation bodies.

The goal of the roundtables was to assess whether and how the State of Texas may increase the number of certified examiners in publicly funded crime laboratories, with the ultimate goal of achieving 100% certification of forensic examiners statewide. The overwhelming consensus was that Texas is in a good position to assume a leadership role on certification. However, stakeholders recognize a number of challenges must be addressed before laboratories will be able to require certification for all examiners. Many of these challenges are outside the control of laboratories and individual forensic scientists.

The main challenges to certification of Texas examiners statewide include: (1) need for ISO-17024 accreditation of existing national certification bodies; (2) significant need for mobilization of financial resources to support certification incentives and continuing education; (3) establishment of high quality training and continuing education programs through collaboration with Texas universities; (4) need for recommendations regarding which existing certification bodies provide high-quality, meaningful certification programs; (5) shift in some certification programs to include rigorous practical component with testing levels for various tiers of forensic expertise; and (5) establishment of alternative certification process for disciplines with no existing certification body.

The group consensus is that *it will take 7-10 years* for most examiners to be certified. Texas stakeholders should begin this process by encouraging a major push toward increased numbers of certified examiners during the next five years, on a voluntary basis. After the voluntary push, the Texas Legislature may consider a deliberate and measured timeframe under which to implement a mandatory certification program. In support of this process, the following action steps should be taken in the near term:

1. The TFSC and Texas Association of Crime Laboratory Directors ("TACLD") should meet with Texas universities with FEPAC-accredited programs (Sam Houston State University, University of North Texas Health Science Center, Texas A&M University, etc.) to assess their interest in partnering on certification training and continuing education.

2. The TFSC and TACLD should communicate with the certification bodies on a regular basis to assess their progress toward ISO-17024 accreditation, and to make suggestions on general testing improvements as appropriate. The TFSC should report back to the larger community regarding these efforts.

3. The TFSC should determine what resources are available to assist laboratories with certification costs and incentives, pursue those resources to the extent possible, and report back to the stakeholder group.

4. The TFSC and the Department of Public Safety ("DPS") should post a list of recognized certification bodies on their respective websites, using the existing Forensic Specialties Accreditation Board ("FSAB") list and/or American Society of Crime Laboratory Directors—Laboratory Accreditation Board ("ASCLD/LAB") list as a guide.

5. The TACLD should release a position statement on examiner certification well before the next legislative session begins. In the meantime, the TFSC should make public recommendations on certification and the need for support of certification incentives.

6. Stakeholders should begin meeting with key members of the Legislature to educate them on the certification process and the plan to achieve a greater number of certified examiners in Texas.

7. To monitor progress, the TFSC should report at every quarterly meeting and send TACLD and other stakeholders periodic updates. The TFSC and DPS should post a list of recognized certification bodies as soon as possible.

In sum, while there is widespread support for certification in Texas, the initiatives suggested in this white paper will require a realistic, deliberate and well-informed approach. They will also require strategic partnerships between many groups including the forensic science community, institutions of higher education who can assist with training, and the legislative branches of government who have the authority to appropriate funds to make meaningful certification possible for a greater number of forensic examiners in Texas.

THE AUTHORS

Texas Forensic Science Commission

In May 2005, the Texas Legislature created the Texas Forensic Science Commission ("TFSC" or "Commission"). Under its enabling legislation, the Commission is required to investigate allegations of negligence or misconduct that would substantially affect the integrity of the results of a forensic analysis conducted by an accredited laboratory, facility or entity.[1] The Legislature also required the Commission to develop and implement a reporting system through which accredited laboratories, facilities, or entities may report professional negligence or misconduct.[2]

In May 2013, the Legislature expanded the scope of the Commission's jurisdiction by passing SB-1238.[3] Under the new legislation, the Commission may investigate complaints involving forensic disciplines that are not subject to accreditation under Texas law, with the exception of autopsies.[4] The Commission may also affirmatively initiate an investigation of a forensic analysis for educational purposes without receiving a complaint if the Commission determines by majority vote that the investigation would advance the integrity and reliability of forensic science in Texas.[5]

The TFSC has nine members, all of whom are appointed by the Governor of Texas. Seven of the members are scientists and two are attorneys (one prosecutor and one defense attorney).[6] The TFSC's presiding officer is designated by the Governor.[7] Following are the current members of the Commission:

- Vincent Di Maio, MD, Former Chief Medical Examiner of Bexar County (Presiding Officer).
- Sarah Kerrigan, PhD, Chair of the Department of Forensic Science, College of Criminal Justice, Sam Houston State University (Vice Chair).
- Richard Alpert, JD, Chief of Misdemeanor Division, Tarrant County DA's Office.
- Jeffrey Barnard, MD, Chief Medical Examiner of Dallas County.
- Arthur Eisenberg, PhD, Chairman of Department of Forensic and Investigative Genetics, University of North Texas Health Science Center.
- Jean Hampton, PhD, Chairman of Department of Health Sciences, Texas Southern University.
- Brent Hutson, PhD, Forensic Odontologist and Director of Department of Clinical Fixed Prosthodontics, Texas A&M University Health Science Center, Baylor College of Dentistry.

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[1] TEX. CODE CRIM. PROC. § 38.01(4)(a)(3).
[2] *Id.* at (4)(a)(1)-(2).
[3] Tex. S.B. 1238, 83rd Leg., R.S. (2013)
[4] *Id.* at 3(b-1).
[5] *Id.* at 3(a-1).
[6] *Id.* at 2(a).
[7] TEX. CODE CRIM. PROC. § 38.013(c).

- Bobby Lerma, JD, Criminal Defense Attorney, Brownsville, and Past President of Texas Criminal Defense Lawyer's Association.
- Nizam Peerwani, MD, Chief Medical Examiner of Tarrant, Parker, Denton and Johnson Counties.

In the years since the Commission was established, Commissioners have committed significant time and resources to improving forensic policy and practice in Texas. In addition to handling complaints, self-disclosures and related investigations, the Commission is actively engaged in promoting the development of professional standards and training and recommending legislative improvements. The certification initiative that is outlined in this white paper is a major component of the Commission's commitment to forensic development in Texas.

Texas Criminal Justice Integrity Unit

The Texas Criminal Justice Integrity Unit ("TCJIU") is an ad hoc committee created by Judge Barbara Hervey of the Texas Court of Criminal Appeals ("CCA").[8] The TCJIU was established in June 2008 and held its first formal meeting in August 2008. The TCJIU was created to review the strengths and weaknesses of the Texas criminal justice system. The TCJIU's purpose is to bring about meaningful reform through education, training, and legislative recommendations. The TCJIU meets periodically as needed, and meetings are called by the Chair.

Members of the TCJIU include a diverse group of policymakers and stakeholders in the criminal justice community in Texas. Current members include:

- Judge Barbara Hervey, Texas Court of Criminal Appeals (Chair)
- Judge Sid Harle, District Judge, San Antonio
- Senator Rodney Ellis, Texas Senate
- Senator Carlos Uresti, Texas Senate
- Senator Jose Rodriguez, Texas Senate
- Jaime Esparza, District Attorney, El Paso
- Pat Johnson, Director, Texas Department of Public Safety Crime Lab
- James McLaughlin, Executive Director, Texas Police Chiefs Association
- Mary Anne Wiley, Deputy General Counsel to Governor Rick Perry
- Russell Wilson, Special Fields Bureau Chief, Dallas County District Attorney
- Jim Bethke, Director, Texas Indigent Defense Commission
- Bill Allison, Clinical Professor of Law and Director, University of Texas Criminal Defense Clinic
- Gary Udashen, Criminal Defense Attorney, Dallas
- Edwin Colfax, Project Manager, Texas Indigent Defense Commission

[8] The CCA is the highest level appellate court for criminal cases in Texas. The TCJIU website may be accessed at: http://www.cca.courts.state.tx.us/tcjiu/tcjiuhome.asp

Shared Collaborative Mission

Over the past two years, the TFSC and TCJIU have worked together to develop training and educational programs for attorneys, judges, and law enforcement entities in Texas. Both organizations are committed to working collaboratively to encourage stakeholder participation and provide cost-efficient training and educational programs.

The purpose of this white paper is not to impose any requirements or rules on forensic science stakeholders in Texas. Rather, the paper provides a forward-looking vision for achieving broader levels of certification for forensic examiners in Texas through a combination of voluntary initiatives and legislative engagement.

The Texas Advantage

There are a number of reasons why Texas is well positioned to be a leader on certification issues. Texas has four universities with forensic science programs that are accredited by the Forensic Science Education Programs Accreditation Commission ("FEPAC") of the American Academy of Forensic Sciences. The programs are housed at Sam Houston State University ("SHSU") (Master's program and a PhD pending approval), the University of North Texas Health Science Center ("UNTHSC") (two Master's programs), and Texas A&M University (undergraduate program). All of these top-tier programs could effectively partner with the forensic science community to meet education and training goals using state-of-the-art distance learning technology.

Texas is also fortunate to have members of the Legislature and Executive Branch who are engaged in forensic science issues and committed to improving the integrity and reliability of forensic science. The committees responsible for criminal justice and public safety in both the Texas House and Senate have consistently expressed strong interest in ensuring just outcomes based on valid scientific principles, as have representatives from the Governor's Office, the Lieutenant Governor's Office and the Attorney General's Office.

Texas also has an active and well-organized Association of Crime Laboratory Directors ("TACLD"). The group meets at least two times per year and includes representation from virtually every crime laboratory in the state. Members regularly participate in both TFSC meetings and events sponsored by the TFSC and TCJIU.

Texas also has one of the largest organizations of prosecutors in the world—the Texas District and County Attorneys' Association ("TDCAA"), as well as an active association of defense lawyers—the Texas Criminal Defense Lawyers' Association ("TCDLA"). Moreover, the TFSC has worked collaboratively and proactively with the Innocence Project of Texas on discipline-specific reviews among other projects.

Open lines of communications with laboratory directors and members of the legal community make it much easier to implement a collaborative strategy tailored to the needs of communities across the state.

Unlike some large states in other regions of the country, Texas is not highly unionized. Thus, crime laboratories are not subject to the same restrictions that may be imposed by union contracts and associated rules in implementing policies designed to encourage examiner certification.

Texas also has a forensic science commission dedicated to forward-looking initiatives focused on forensic development. Though the TFSC takes its investigative role and retroactive review responsibilities very seriously, Commissioners spend significant time and energy working on initiatives to improve forensic science going forward.

The CCA receives over $18,000,000 per biennium from the Legislature in training funds for lawyers, judges and law enforcement. The training grant is administered by Judge Hervey who also chairs the TCJIU. This allows for close coordination between the CCA's available training resources and the educational needs of the forensic science community.

Finally, Texas was among the first states to require accreditation of its crime laboratories in 2003. Because Texas was able to successfully implement this requirement and learn from the process, it is easier for the forensic science community to envision a similar scenario with certification.

CERTIFICATION VS. ACCREDITATION: UNDERSTANDING TEXAS LAW

The terms "certification" and "accreditation" are sometimes confused by stakeholders in the criminal justice system. However, the terms have distinct meanings and the policy objectives of each concept are important to understand. As a backdrop for the discussion on certification of individual examiners, it is helpful to review what accreditation is and what Texas law says about accreditation of crime laboratories.

Accreditation refers to a program through which a forensic laboratory complies with an established set of quality standards and relies upon commonly accepted practices based on those standards.[9] While accreditation does not provide 100% protection against lapses in integrity or mistakes by individual examiners, accreditation standards are a key element of a laboratory's quality assurance program.[10]

[9] *See* NAT'L RES. COUNCIL, NAT'L ACAD. OF SCIS., STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD (2009) at 195 [hereinafter NAS REPORT].
[10] *Id.*

In 2009, the National Academy of Sciences released a report entitled "Strengthening Forensic Science in the United States: A Path Forward" ("NAS Report"). The Report recommended that all laboratories be accredited.[11] In 2003, *six years before the Academy released the NAS Report*, the Texas Legislature passed a law requiring all laboratories and other entities conducting forensic analysis of physical evidence, whether public or private, to be accredited by the Texas Department of Public Safety ("DPS") in order for the entity's analysis of evidence or testimony to be admissible in a criminal proceeding.[12]

For a laboratory or other entity to receive DPS accreditation, it must first be accredited by a recognized national accrediting body.[13] The following national accrediting bodies are recognized by DPS:

- American Board of Forensic Toxicology ("ABFT")—recognized for accreditation of toxicology discipline only.
- American Society of Crime Laboratory Directors/Laboratory Accreditation Board ("ASCLD/LAB")—recognized for accreditation of all disciplines that are eligible for accreditation.
- College of American Pathologists ("CAP")—recognized for accreditation of toxicology discipline only.
- Department of Health and Human Services ("DHHS"), Substance Abuse and Mental Health Services Administration (formerly known as the DHHS National Institute on Drug Abuse)—recognized for accreditation of toxicology discipline only in the sub-discipline of urine drug testing for all classes of drugs approved by the accrediting body.
- Forensic Quality Services ("FQS") an outgrowth of the National Forensic Science Technology Center—recognized for accreditation of all disciplines that are eligible for accreditation.

Under Texas law, certain forensic disciplines must be accredited while others are exempt from accreditation either by statute or administrative rule. For a list of required disciplines and exemptions, please refer to **Exhibit A.**[14] The list of disciplines for which accreditation is required under Texas law is subject to change by the Legislature and/or DPS. Additional disciplines may be added to the list as forensic science evolves.

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[11] *Id.* at 215.
[12] TEX. GOV. CODE § 411.0205.
[13] *See* http://www.txdps.state.tx.us/CrimeLaboratory/LabAccreditation.htm for additional information on the DPS crime laboratory accreditation program.
[14] *Id.*

While the accreditation process *does not include certification* of individual forensic examiners, accreditation standards do require laboratories to maintain procedures to ensure examiners achieve a baseline level of competency and demonstrate satisfactory qualifications before being released to perform independent casework. Some accreditation bodies such as ASCLD/LAB also require laboratories to participate in periodic proficiency testing administered by external testing agencies to ensure examiners maintain a satisfactory level of competency over time. However, this baseline level of competency is a far more elementary assessment than what would be demonstrated through achieving certification, as described below.

WHAT IS CERTIFICATION?

Unlike accreditation, which monitors the quality standards of a particular laboratory as a whole, certification assesses the knowledge, skills and abilities of *individual forensic examiners*.

> Professional certification is the recognition by an independent certification body that an individual has acquired and demonstrated *specialized knowledge, skills, and abilities* in the standard practices necessary to execute the duties of their profession. Certification also provides the general public and the judicial system a means of identifying those practitioners who have successfully demonstrated compliance with established requirements.[15] [emphasis added.]

Many national and state policymakers and most forensic scientists in and outside of Texas support certification for forensic examiners, at least in theory. Indeed, Recommendation 7 of the NAS Report states that "individual certification of forensic science professionals should be mandatory, and all forensic science professionals should have access to a certification process."[16]

[15] *See* **Exhibit B**, White House Subcommittee on Forensic Science, Interagency Working Group on Accreditation and Certification, Observations Concerning Certification of Forensic Science Practitioners at 3 (2013) (unpublished work paper) [hereinafter IWG Paper].
[16] NAS REPORT at 215.

In support of its recommendation, the NAS Report makes a frequently cited comparison to other professions, noting that nurses, doctors, lawyers and engineers must be certified or licensed before they are authorized to practice.[17] Some have taken this observation to an extreme, wondering why hair stylists and nail technicians are regulated under state law while forensic scientists face no such requirement.[18] While these comparisons are tempting, they fail to take into account the very real and practical challenges facing even the most valiant and aggressive certification efforts. They also assume certification indicates a baseline level of competency, when in fact most reputable certification bodies award certification in recognition of significant and measurable expertise and skill in a discipline.

In light of the frequent tendency to compare forensic scientists to other professions, there is a risk that policymakers and legislators in Texas will view the question of mandatory certification as a simple one with an obvious answer: "Why not just require that all forensic examiners be certified before they may testify in court?"

While certification enjoys widespread support among Texas stakeholders, the consensus within the forensic science community is that the state should take the lead on this issue in an inclusive and deliberate manner, accounting for the practical realities described below. Those realities will require a resource-building period before certification can be effectively mandated by the state.

In forming its conclusions, the Texas stakeholder group relied in part on a recommendation document drafted by the Interagency Working Group ("IWG") on Accreditation and Certification, a sub-group of the National Science and Technology Council's Committee on Science (Subcommittee on Forensic Science). This group was established by the White House in 2009 for the purpose of advising policymakers on implementation of the NAS Report. As part of that effort, the Subcommittee created IWGs for certain subject areas, including certification. The IWGs included representatives from federal, state and local forensic science and law enforcement agencies, prosecutors, defense counsel and academic communities from across the country. The stakeholder group is indebted to the IWG for the many hours of work and thoughtful deliberation that went into its observations and recommendations. The IWG Paper is attached as **Exhibit B**.

[17] *Id.*

[18] Regulatory requirements for these professions typically involve a licensing regime. Though one roundtable raised the possibility of implementing a licensing system for forensic examiners (in part as a source of potential continuing education funds), most roundtables focused on certification as the most viable next step.

Structural Challenges with Current Certification System

A major challenge for any state looking to increase its percentage of certified examiners is the varying levels of quality among existing certification bodies. There is no single body charged with certifying forensic examiners either at the national or state level. As noted by the IWG, various certification bodies have existed in different disciplines in forensic science for decades.[19] However, certification bodies do not exist for all forensic disciplines.

Some certification bodies are accredited by the Forensic Specialties Accreditation Board ("FSAB").[20] However, FSAB accreditation is a voluntary process. Certification bodies are invited to participate in FSAB accreditation if they meet certain established requirements, "such as periodic recertification, a sufficient knowledge base for certification, a process for providing credentials, and a code of ethics."[21] The list of certification bodies accredited by FSAB is attached at **Exhibit C.**[22]

Even among those certification bodies accredited by FSAB, programs vary in certain key areas, such as: "eligibility, use of proficiency tests, practical exercises, training, continuing education, recertification requirements, etc."[23] Moreover, there are "vast differences in the certification examination processes and essential elements for forensic science disciplines which leads to fragmentation of the various certification programs accredited by the same entity."[24]

While FSAB accreditation is an important first step in creating similar standards among certification bodies, FSAB accreditation standards "are not recognized by a third party or accredited under ISO/IEC 17011."[25] The International Organization for Standardization ("ISO") is the world's largest developer of voluntary International Standards. ISO standards provide "state of the art" specifications for products, services and good practice in many areas of industry.[26] As the NAS report noted in Recommendation 7, certification should take into account established and recognized standards, such as those published by ISO.[27] ISO/IEC 17011 (Conformity assessment -- General requirements for accreditation bodies accrediting conformity assessment bodies) specifies standards for accrediting bodies. In essence, it is the process by which an accrediting body is *itself* accredited.

ISO/IEC 17024 (Conformity assessment -- General requirements for bodies operating certification of persons), describes the necessary standards for organizations who certify individuals. In recommending that all certification bodies achieve ISO 17024 accreditation within 10 years, the IWG asserted that accreditation under ISO/IEC 17024

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[19] IWG Paper at 3.
[20] http://thefsab.org/accredited.htm
[21] NAS Report at 209.
[22] http://thefsab.org/accredited.htm
[23] *Id.*
[24] *Id.*
[25] IWG Paper at 4.
[26] http://www.iso.org/iso/home.html
[27] NAS Report at 215.

"ensures the validity, reliability and quality of the certification programs."[28] Moreover, a certification body accredited under ISO/IEC 17024 "must demonstrate a fair and equitable evaluation of all candidates; an organizational structure to support the mission; policy and procedures for complaints, appeals and confidentiality; and a certification and recertification scheme."[29]

While the forensic science community in Texas may rely on FSAB as an important interim step while certification bodies strive to achieve ISO 17024 accreditation, there are many certification bodies that have not even attained FSAB accreditation. In fact, some bodies simply require that an examiner pay a fee, take a short online course and submit administrative forms in return for a certification document. These discrepancies in standards undermine the fundamental goal of certification, which is to recognize individual skills and abilities and provide the public and judicial system with an accurate and reliable assessment of an examiner's level of ability and expertise. In addition, even the most rigorous certification bodies are managed by volunteers with limited administrative support staff. This means that different bodies are able to offer different levels of service on varying timelines depending upon the availability of its members.

In addition to these structural challenges, some forensic disciplines do not have any corresponding certification body, whether FSAB-accredited or not.[30] Both the IWG and Texas stakeholders recognize that something must be done to provide certification for these smaller disciplines. Suggestions for how to handle this dilemma in Texas are proposed below.

The purpose of enumerating these challenges is to describe the certification environment accurately so that policymakers and stakeholders may craft an effective and efficient plan for Texas. *However, stakeholders agree that these issues should not deter efforts to move forward, and that Texas is well positioned to emerge as a model state for increasing certification among its examiners.*

[28] IWG Paper at 4.
[29] *Id.*
[30] *See* IWG Paper Appendix.

THE PATH IN TEXAS:
COLLABORATION THROUGH STAKEHOLDER ROUNDTABLES

The TFSC has sponsored two forensic roundtable events to date. The first was a gathering at the Texas Capitol in June 2012 entitled "Strengthening Forensic Science in Texas: Moving Forward." A diverse group of forensic stakeholders were invited to discuss challenges and improvements broadly based upon the 2009 NAS Report. The TFSC released a paper summarizing the roundtable findings. It is attached hereto as **Exhibit D.**[31]

One of the recommendations from the 2012 roundtables was that the TFSC conduct a survey of Texas crime laboratories to determine the extent to which forensic examiners in Texas are certified, and to better understand the challenges related to certification efforts. A narrative document describing the full survey results is attached as **Exhibit E**.

TFSC Certification Survey

A total of 489 forensic examiners were represented in 22 publicly funded laboratories at the state (59%), county (23%) and city (18%) level. Controlled substances (22%), forensic biology/DNA (17%), alcohol toxicology (15%) and firearms/tool marks (15%) were the most common disciples or sections within the laboratory population, representing the largest numbers of examiners (167, 123 and 49, respectively).

None of the publicly funded laboratories reported having sufficient examiners to maintain a 30-day turnaround in all disciplines in which they were accredited. The number of additional examiners needed to maintain a 30-day turnaround totaled 95 and ranged from 1 to 42 per organization. This represents a significant increase in scientific personnel of almost 20%. Data regarding laboratory workload and turnaround times is important to consider when assessing the potential ramifications of pulling examiners off the bench, whether for certification activities or any other initiative that does not involve pending casework.

Of the 489 examiners covered by the survey, a total of 63 (13%) were certified. Two laboratories did not report certification by forensic discipline, but among the remaining 20 laboratories, the disciplines with the highest rates of certification were latent prints (21%) and firearms (16%). Certification rates among examiners in the most common disciplines, controlled substances and forensic biology/DNA, were 4% and 5% respectively. The American Board of Criminalistics (ABC), the Association of Firearm and Tool Mark Examiners (AFTE), the International Association for Identification (IAI) and the American Board of Forensic Toxicologists (ABFT) were the most common certifying bodies.

[31] http://www.fsc.state.tx.us/documents/StakeholderRoundtableReport-June62012.pdf.

Support for certification among the forensic laboratory leadership was evidenced by the fact that 50% of the participating organizations already offered some form of incentive for examiners to become certified. Most of the laboratories support certification or view it as inevitable, but also recognize the formidable challenges associated with this effort in terms of funding, training resources and personnel.

Participating laboratories provided estimates of certification cost per examiner. However, these estimates varied widely, from a few hundred dollars per examiner in straight examination fees to thousands of dollars when accounting for the cost of study, travel and test-taking time away from the bench. Though the TFSC has not calculated a precise estimate of cost per examiner, it is clear that direct costs will include the examination fees, associated membership fees (if required), travel costs where necessary, cost of study materials, and cost of time away from forensic casework for study and/or test-taking. Cost of continuing education will also be significant, and will be in addition to the initial certification expenses.

OBSERVATIONS AND RECOMMENDATIONS: JULY 2013 STAKEHOLDER ROUNDTABLES

In July 2013, as a follow up to the initial roundtable meeting in June 2012, the TFSC and the TCJIU hosted a second roundtable meeting of more than sixty forensic science stakeholders representing crime laboratories, certification bodies, accrediting bodies, prosecuting attorneys, defense attorneys, the judiciary, law enforcement, policy makers and policy advocates. The list of attendees is attached as **Exhibit F**.

The findings set forth below do not establish any new rules or regulations, or impose any requirements on members of the forensic science community in Texas. Rather, they suggest a proactive and collaborative path forward for a higher level of certification among forensic examiners. While stakeholders recognize that much work remains to be done at the national level, and that there are formidable challenges involved in an undertaking of this magnitude for a large and diverse state like Texas, the consensus is that Texas should take the lead on certification as it has on many other forensic science issues.

One disclaimer the group felt important to include is that certification, while a desirable tool for measuring examiner ability, is ***not*** a substitute for quality internal training programs, appropriate supervision, and performance monitoring of staff. All of these components must be functioning at an optimal level to ensure the best possible forensic analysis in a crime laboratory.

1. Should the State of Texas Require Certification for all Forensic Examiners?

Texas stakeholders support certification and believe the state should move forward with a plan to encourage a higher percentage of certified forensic examiners. *However, the group believes it will take 7-10 years until most examiners in Texas could be certified.* Texas should start by encouraging a voluntary push toward increased

numbers of certified examiners during the next 5 years. After 5 years, stakeholders should assess whether mandating certification under state law would be practical and beneficial to the goal of achieving 100% certification of examiners.

During the initial 5-year period (and perhaps beyond), the following challenges need to be addressed and resolved. The TFSC should take the lead in addressing the issues to the extent possible, or in updating the forensic community on the status of each item in situations where the actions fall under the purview of external entities:

- As discussed above, certification bodies themselves need to be closer to achieving accreditation under ISO-17024.

- Financial resources must be mobilized to support lab efforts toward certification.

- Training resources (particularly from Texas higher education institutions with FEPAC-accredited programs) must be established to help analysts prepare for certification examinations.

- Because the quality of certification bodies varies significantly from discipline to discipline, a Texas agency with authority (either DPS or TFSC or both) should publish and maintain a list of recognized certification bodies.

- Where necessary, certification bodies should shift their testing requirements to ensure tests are meaningful and include a practical component. Certification should not merely be a measure of an examiner's test-taking skills. Testing should include an assessment of examiner ethics/integrity and a continuing education component.

- Certification bodies should develop various levels of certification based on different levels of experience, responsibility and mastery of a discipline.

- Something must be done to address certification for smaller disciplines that do not have certification bodies. If the assessment of examiner competency in those disciplines is to be handled through accreditation bodies such as ASCLD/LAB, the accreditation bodies will need to develop a plan for handling certification of those smaller disciplines.

- Cost for continuing education must be supported after an examiner accomplishes his or her initial certification.

2. <u>What incentives have been successful to encourage certification? Can they be adopted broadly across the state?</u>

The TFSC should work with members of the forensic science community to mobilize resources in support of some or all of the following: (1) reimbursement for exam fees upon successful passage by the examiner; (2) study time for examiners; (3) a

bonus, pay increase and/or promotion track linked to certification; and (4) recognition of certification status in examiner's title. Stakeholders recognize some organizations will have limitations on their ability to compensate examiners, which will make uniform application of a certification requirement challenging.

Texas universities, especially those with FEPAC-accredited graduate and undergraduate programs (SHSU, Texas A&M, UNTHSC) should create web-based, distance learning test preparation programs. The programs should take advantage of university subject matter strengths (e.g., criminalistics, forensic chemistry and toxicology at SHSU, DNA at UNTHSC, etc.) and offer a full complement of training approaches. The programs should also have a continuing education component.

For all new hires, Texas crime laboratories should set an expectation at the outset that new examiners will achieve certification within 5 years of meeting eligibility requirements. This should help highlight the most serious and diligent candidates during the interview process.

Accreditation bodies should consider requiring continuing education for forensic scientists, which could help labs gain the leverage for additional funding. For example, many feel that DNA receives the funding needed for training (primarily from the federal government) because specific training requirements exist for DNA.

The TFSC should work with the certification bodies to determine what provisions can be made to establish regional testing sites. The TFSC should ensure Texas laboratories are aware of and have access to these regional testing sites.

3. <u>Have laboratories leading the way on certification experienced any pitfalls and what can we learn from them?</u>

Stakeholders need to be clear in articulating the purpose of certification in forensic disciplines; it is more than baseline, novice-level competency. In fact, as discussed above, some certification bodies such as the Association of Firearm and Tool Mark Examiners ("AFTE") do not even allow examiners to be eligible for certification until they have five years of casework experience. This means that any certification requirement must take into account eligibility requirements. For example, a new firearms examiner would not even be eligible for consideration under AFTE's certification regime until he or she had completed at least five years of practical experience in the discipline. These requirements must be taken into account before any mandates are imposed.

Certification examinations should be challenging and meaningful, demonstrating more than simply test-taking ability or a baseline level of competency. Baseline competency should be determined by laboratories through internal assessments and proficiency testing, which is the responsibility of all Texas crime laboratories under their accreditation standards before and after an examiner is released for independent casework. Certification should signify a level of mastery beyond the base level.

Many examiners fail certification examinations the first time because they do not know what to expect. However, second round passage rates are much higher. This indicates that training resources must include a variety of thoughtful and creative educational modalities so that examiners have a greater chance of passing the exam the first time. Independent study-at-home programs are not terribly effective for certification exams; labs must provide study resources and access to effective training or failure rates will remain high.

Finally, stakeholders will need to develop a consensus to the extent possible on the following challenging questions: (1) What should be done with experienced examiners who resist certification? Is a grandfathering mechanism appropriate for these examiners? (2) How many chances should an examiner be given to pass the applicable certification exam before some type of adverse employment action is taken? These issues will require additional attention by stakeholders in the coming months.

4. Should we identify which certification bodies are of acceptable quality? What should we do about disciplines for which no certification body exists?

DPS and the TFSC should post and maintain a list of recognized certification bodies on their websites. Once certification becomes mandatory under state law, DPS should include the list in its administrative rules in the same way it currently does for accreditation bodies. As a first step, DPS and FSC could recognize FSAB-accredited bodies and/or the list already maintained by ASCLD/LAB. The TFSC should also circulate a list of disciplines for which no certification bodies exist so the community knows how many there are and how many examiners are affected.

ASCLD/LAB and other accreditation bodies should consider how to require a rigorous level of competency for disciplines that don't currently have certification bodies. Stakeholders recognize this will be challenging, as the accreditation bodies may be able to achieve the goal with certain more established disciplines, but may have a greater challenge in other disciplines with fewer practitioners.

5. What role should lawyers and judges have in encouraging certification?

Very few attorneys in Texas ask whether examiners are certified during trial. Most attorneys have a difficult enough time understanding accreditation; certification is still an unknown in many jurisdictions. Certification has the potential to increase the faith of attorneys, fact-finders and the public in the forensic analysis used in criminal cases. Both the defense bar and prosecutors should be involved as certification progresses so they may have input in any new legislation, especially legislation mandating certification.

The TFSC should continue to work with the legal community to keep prosecutors, the defense bar and the judiciary informed of progress in the area of certification. Representatives from each of these groups should be encouraged to take an active role in forensic science issues, and the TFSC should not hesitate to call on the groups regularly for consultation as the certification process moves forward.

It is important to note that if resource issues are not addressed in a thoughtful manner, requiring certification could increase backlogs which would have an adverse impact on the entire criminal justice system. Training will be needed for attorneys and judges on this issue as more examiners achieve certification. Judges in particular need to better understand their gatekeeping role when it comes to integrity and reliability of forensic science and competency of forensic examiners. The Texas State Bar and Center for the Judiciary can play a key role in training, in partnership with the Texas Criminal Justice Integrity Unit.

6. What is an acceptable timetable and how will we measure progress?

It will take a total of 7-10 years to roll out mandatory certification statewide, with the first 2-5 years consisting of gear-up/voluntary push initiatives. The mandatory component should be phased in gradually after the fifth year as part of any legislation.[32] The majority of stakeholders believe a generous timeframe is critical because certain disciplines will move forward at a faster rate than others; much of the timeframe is dependent upon the certification bodies' ability to achieve ISO accreditation under 17024.

Some believe a more aggressive timeline is possible for certain fields such as DNA, controlled substance analysis, forensic toxicology and latent prints. Others believe disciplines currently not subject to accreditation under Texas law (e.g., latent prints, digital evidence, etc.) should be the first area of focus in Texas. These issues will need to be explored as the certification initiative moves forward.

7. What action steps should we take to move forward in the near term?

The following action steps should be taken as soon as possible. The Commission is primarily responsible for these steps but should seek assistance from stakeholders wherever possible:

1. The TFSC and TACLD should meet with Texas universities with FEPAC-accredited programs (SHSU, UNTHSC, Texas A&M, etc.) to assess their interest in partnering on certification training and continuing education.

[32] A minority of participants disagreed with the consensus timeline, arguing it is not fast enough and should be closer to 3-5 years.

2. The TFSC and TACLD should communicate with the certification bodies on a regular basis to assess their progress toward ISO-17024 accreditation, and to make suggestions on general testing improvements as appropriate. The TFSC should report back to the larger community regarding these efforts.

3. The TFSC should determine what resources are available to assist laboratories with certification costs and incentives, pursue those resources to the extent possible, and report back to the stakeholder group. Can we get NIJ grants for certification and continuing education of examiners? Can the Governor's Office or Legislature help? The goal should be to establish a reliable source of funding like the CCA has for training of law enforcement, attorneys, etc.

4. The TFSC and DPS should post a list of recognized certification bodies on their respective websites, using the existing FSAB list and/or ASCLD/LAB list as a model.

5. The TACLD should release a position statement on examiner certification well before the next legislative session begins. In the meantime, the TFSC should make public recommendations on certification and the need for support of certification incentives.

6. Stakeholders should begin meeting with key members of the Legislature to educate them on the certification process and the plan to achieve a greater number of certified examiners in Texas.

7. To monitor progress, the TFSC should report at every quarterly meeting and send TACLD and other stakeholders periodic updates. The TFSC and DPS should post a list of recognized certification bodies as soon as possible.

For additional information regarding this white paper, the Texas Forensic Science Commission and/or the Texas Criminal Justice Integrity Unit, please contact the following individuals:

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To download an electronic copy of this white paper or follow the activities of the TFSC and TCJIU, please refer to the following websites:

http://www.fsc.state.tx.us or www.fsc.texas.gov

http://www.cca.courts.state.tx.us/tcjiu/tcjiuhome.asp

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TITLE 37 PUBLIC SAFETY AND CORRECTIONS

PART 1 TEXAS DEPARTMENT OF PUBLIC SAFETY

CHAPTER 28 DNA, CODIS, FORENSIC ANALYSIS, AND CRIME LABORATORIES

SUBCHAPTER I ACCREDITATION

RULE §28.145 Disciplines and Subdisciplines Subject to DPS Accreditation

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(a) 'Forensic analysis'/recognized accreditation. This section describes a discipline or subdiscipline that involves forensic analysis for use in a criminal proceeding and for which accreditation is available from a recognized accrediting body.

(b) By entire discipline. A laboratory may apply to the director for DPS accreditation for one or more of the following disciplines:

(1) controlled substances;

(2) toxicology;

(3) biology;

(4) firearms/toolmark;

(5) questioned documents;

(6) trace evidence; or

(7) other discipline if approved by a recognized accrediting body and the director.

(c) Limited to subdiscipline. A laboratory may apply to the director for DPS accreditation limited to one or more of the following subdisciplines:

(1) under the controlled substances discipline, subdiscipline may include controlled substances marihuana, precursor analysis, and clandestine laboratory analysis;

(2) under the toxicology discipline, subdiscipline may include forensic toxicology, urine drug testing, and

blood alcohol analysis;

(3) under the biology discipline, subdiscipline may include biology, serology, and DNA;

(4) under the firearms/toolmark discipline, subdiscipline may include: firearms, ballistics, and toolmarks;

(5) under the questioned documents discipline, subdiscipline may include questioned documents, handwriting, and ink analysis (including forensic handwriting comparison);

(6) under the trace evidence discipline, subdiscipline may include: fire debris, explosives, fibers, gun shot residue, glass, hairs, paint, filaments, and unknown substances; and

(7) other discipline and its related subdiscipline if accredited by a recognized accrediting body and the director.

(d) A laboratory may chose to assign a particular subdiscipline to a different administrative section or unit in the laboratory. For example, the subdiscipline of impression evidence, including footwear, tiretrack, and similar impression evidence, may be administratively assigned by the laboratory to its trace evidence section, firearms section, or questioned document section. The director deems impression evidence to be a subdiscipline of several disciplines under this subchapter, including trace evidence, firearms/toolmark, or questioned documents.

(e) If an accreditation for a subdiscipline is accompanied by the term 'only' or a similar notation, the director will deem the accreditation to exclude other subdisciplines in that discipline.

(f) Accreditation of a confirmation test procedure does not carry automatic accreditation of an associated field, spot, screening, or other presumptive test.

Source Note: The provisions of this §28.145 adopted to be effective June 1, 2010, 35 TexReg 4438; amended to be effective August 19, 2010, 35 TexReg 7079

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TITLE 37 PUBLIC SAFETY AND CORRECTIONS

PART 1 TEXAS DEPARTMENT OF PUBLIC SAFETY

CHAPTER 28 DNA, CODIS, FORENSIC ANALYSIS, AND CRIME LABORATORIES

SUBCHAPTER I ACCREDITATION

RULE §28.146 Disciplines, Subdisciplines, and Procedures to Which Statutory DPS Accreditation Does Not Apply

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This section describes disciplines, subdisciplines, or procedures excluded from the definition of forensic analysis or otherwise exempted by the Code of Criminal Procedure, Article 38.35, or by this subchapter based on their nature.

(1) This paragraph describes a discipline, subdiscipline, or procedure that is excluded from the definition of forensic analysis or otherwise exempted by the Code of Criminal Procedure, Article 38.35, and for which no recognized accreditation is appropriate or available. A laboratory may not apply to the director for DPS accreditation for:

(A) breath specimen testing under Transportation Code, Chapter 724;

(B) latent print examination;

(C) digital evidence (including computer forensics, audio, or imaging); or

(D) an examination or test excluded by rule under Government Code, §411.0205(c).

(E) the portion of an autopsy conducted by a medical examiner or other forensic pathologist who is a licensed physician.

(2) This paragraph describes a discipline, subdiscipline, or procedure that does not normally involve forensic analysis of physical evidence for use in a criminal proceeding and for which recognized accreditation is inappropriate or unavailable. A laboratory may not apply to the director for DPS accreditation for:

(A) forensic photography;

(B) non-criminal paternity testing;

(C) non-criminal testing of human or nonhuman blood, urine, or tissue;

(D) a crime scene search team (whether or not associated with an accredited laboratory) if the team does not engage in forensic analysis because it only engages in the location, identification, collection, or preservation of physical evidence and the activity is not integral to an expert examination or test;

(E) other evidence processing or handling that is excluded under §28.142(2) of this title (relating to Definitions); or

(F) other discipline or subdiscipline so determined by the director.

Source Note: The provisions of this §28.146 adopted to be effective June 1, 2010, 35 TexReg 4438

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TITLE 37 PUBLIC SAFETY AND CORRECTIONS

PART 1 TEXAS DEPARTMENT OF PUBLIC SAFETY

CHAPTER 28 DNA, CODIS, FORENSIC ANALYSIS, AND CRIME LABORATORIES

SUBCHAPTER I ACCREDITATION

RULE §28.147 Disciplines, Subdisciplines, and Procedures Exempt from Statutory DPS Accreditation

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(a) This section describes a discipline, subdiscipline, or procedure that is 'forensic analysis' but is not subject to accreditation by one or more recognized accrediting bodies.

(b) Even though a discipline or subdiscipline is forensic analysis, the director has determined that no accreditation is appropriate or available from a recognized accrediting body for the following disciplines, subdisciplines, or procedures and a laboratory may not apply to the director for DPS accreditation for:

(1) sexual assault examination of the person;

(2) forensic anthropology, entomology, or botany;

(3) environmental testing;

(4) facial or traffic accident reconstruction;

(5) serial number restoration;

(6) polygraph examination;

(7) voice stress, voiceprint, or similar voice analysis;

(8) forensic hypnosis;

(9) statement analysis;

(10) profiling; or

(11) other discipline or subdiscipline so determined by the director, including those identified and listed at the department's website.

(c) A request for exemption shall be submitted in writing to the director.

Source Note: The provisions of this §28.147 adopted to be effective June 1, 2010, 35 TexReg 4438

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EXHIBIT B

Observations Concerning Certification of Forensic Science Practitioners (2012)

The implementation of robust and standardized certification programs using accredited certification bodies complements the accreditation of forensic science service providers, forensic units, part-time and private forensic science entities for the overall improvement of forensic science. Certification should be appropriate to the responsibility, activity or function performed.

It is recommended that certification bodies:

- Seek compliance to ISO/IEC 17024. This process should be accomplished within ten years.
- Develop multiple levels of certification based upon the responsibilities of the forensic science practitioner to include, but not limited to, managers, analysts and technical support.
- Develop certifications for each category of testing.
- Include the following essential elements in their certification programs: education and experience requirements, proctored written examination, a practical component, and a code of ethics/conduct. Recertification should include, at a minimum, continuing education and periodic retesting with practical and written components.
- Develop a basic forensic science examination for practitioners who do not meet the requirements of a certification body or for practitioners conducting examinations in categories of testing that do not have a certification examination within five years.
- Collaborate with other certification bodies to develop uniform certification requirements
- Provide or make available the body of knowledge and references that would allow independent entities to develop training programs for certification examinations.

It is recommended that forensic science service providers:

- Determine applicability of certification depending on the job responsibilities of the specific individual and the availability of certification programs, including but not limited to, managers, analysts and technical support.
- Develop a process that ensures all practitioners apply for certification, if a program is available and provide time and resources to achieve and maintain certification.
- Include certification requirements in position descriptions, where possible.
- Provide similar support to practitioners, if there is not a certification program available in a specific category of testing, to maintain knowledge and skills.

It is recommended that accrediting bodies of forensic science service providers:

- Require that all practitioners within a forensic science service provider obtain and maintain appropriate certifications as soon as the requirements of the certification body are met.
- Strengthen their assessment reviews for practitioners with no certification options by incorporating a confirmation of qualifications review of the individual practitioners into the forensic science service providers' ISO/IEC 17025 assessment and accreditation process within three years.

- Review the competency and proficiency of all non- certified practitioners as part of the accreditation process.

It is recommended that accrediting bodies of certification bodies:

- Seek compliance to ISO/IEC 17011.

It is recommended 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 a certification examination is available.
- Obtain certification within five years from implementation of this recommendation.
- Personnel entering the field after implementation shall obtain certification within one year of eligibility or within the required time limit of the certifying body.

Certification of all forensic science practitioners would improve the quality of services provided and enhance confidence in the judicial system. Certification demonstrates that the individual has met established criteria and proficiency in the standard practices necessary to execute the duties of their profession. Certification also provides the public and the judicial system a means of identifying those practitioners who have successfully demonstrated proficiency in the domain relevant to their area of practice. Finally, certification provides another means of external oversight for practitioners. Certification bodies may have to change operating practices to comply with ISO/IEC 17024. They would potentially have to develop new categories of testing and provide varying levels of certification. As a result, certification costs may increase.

Developing new examinations in categories of testing with a small number of practitioners may not be practical. Forensic science service providers may incur increased costs, direct and indirect, to support and maintain certification of practitioners.
Forensic science service providers would be required to have policies and procedures in place if practitioners are not successful in obtaining certification.

Accrediting bodies of forensic science service providers will need to change their standards to allow for the assessment of the qualifications of practitioners as part of the accreditation process. Forensic science practitioners would be required to obtain multiple certifications for different categories of testing in which they perform examinations. This may be difficult to accomplish due to time and cost constraints and may result in a loss of expertise in certain areas. Additionally, there may not be certification programs available in some categories of testing. It is understood that provisions will have to be made for the application of this recommendation to existing practitioners who do not meet eligibility requirements.

In the development of this recommendation, the IWG received information from representatives of the following organizations: American Board of Criminalistics (ABC), International Association for Computer Information Systems (IACIS), International Association for Identification (IAI), American Society for Testing and Materials (ASTM) International, Institute for Credentialing Excellence (ICE), Idaho State Police Forensic Services, American National Standards Institute (ANSI), American Society for Clinical Pathology Board of Certification

(ASCP), American Society for Quality Certification (ASQ), and the Forensic Specialties Accreditation Board (FSAB).

Background:
Professional certification is the recognition by an independent certification body that an individual has acquired and demonstrated specialized knowledge, skills, and abilities in the standard practices necessary to execute the duties of their profession. Certification also provides the general public and the judicial system a means of identifying those practitioners who have successfully demonstrated compliance with established requirements. In addition, certification ensures that professionals maintain technical proficiency and ethical standards of practice. Professional certification programs can include: written and/or practical testing; an evaluation of education, training and practical experience; requirements for continuing education; and adherence to a code of ethics.

Recommendation seven of the NAS report states, "Laboratory accreditation and individual certification of forensic science professionals should be mandatory, and all forensic science professionals should have access to a certification process. No person (public or private) should be allowed to practice in a forensic science discipline or testify as a forensic science professional without certification. Certification requirements should include, at a minimum, written examinations, supervised practice, proficiency testing, continuing education, recertification procedures, adherence to a code of ethics and effective disciplinary procedures. All laboratories and facilities (public or private) should be accredited, and all forensic science professionals should be certified when eligible within a time period established by NIFS."

Professional certification bodies in forensic science have been in practice for over thirty years. However, they do not exist for all forensic science categories of testing. The existing certification bodies in forensic science vary in the following areas: eligibility, use of proficiency tests, practical exercises, training, continuing education, recertification requirements, etc. There are vast differences in the certification examination processes and essential elements for forensic science disciplines which leads to fragmentation of the various certification programs accredited by the same entity (demonstrated in Table 1 below). These differences may be appropriate depending on the category of testing.

There are specialties and subspecialty categories of testing that do not have certification bodies due to the very small number of practitioners. It is recognized in the certification community that it is difficult to create a certification program with less than fifty practitioners.

Table 1: Variations in the Requirements of Three Accredited Certifying Bodies (CB)

Requirement	CB#1	CB#2	CB#3
Degree		X	X
Experience	X	X	X
Written exam (initial)	X	X	X
Practical exam (initial)	X	X	X
Oral demonstration (initial)	X*		X^
Continuing education	X	X	X
Re – testing	X		

* transcript or moot court ^ specific to practical exam

There is no recognition of certification bodies outside of the forensic science community. The Forensic Specialties Accreditation Board (FSAB) was created in 2000 as a voluntary program to assess, recognize and monitor the forensic science specialty boards that seek accreditation. The program reviews and evaluates the operating procedures and standards of applicant forensic certification bodies to ensure that a minimum set of standards are being met. FSAB accreditation standards are modeled on ISO/IEC 17024; however, they are not recognized by a third party or accredited under ISO/IEC 17011. American National Standards Institute (ANSI) is the only accrediting body recognized by ISO/IEC 17011that offers accreditation under ISO/IEC 17024. Accreditation under ISO/IEC 17024 ensures the validity, reliability and quality of the certification programs. A certification body accredited under ISO/IEC 17024 must demonstrate: a fair and equitable evaluation of all candidates; an organizational structure to support the mission; policy and procedures for complaints, appeals and confidentiality; and a certification and recertification scheme.

Forensic science certification bodies are similar to the certification bodies in other industries in their ability to assess the knowledge, skills and abilities of an individual. However, the types of confirmation of qualifications used in other professions such as
licensure, credentialing, certificate programs and registration are not used in the forensic sciences primarily due to their limited scope or specific nature. Licensure is a mandatory process used by a governmental agency which grants a time-limited permission for an
individual to perform the duties of their profession after verifying that this individual has met specific standardized criteria. Registration is a process in which a governmental agency grants a time-limited status on a registry, determined by specified knowledge-based requirements such as experience, education or examinations. The registration allows an individual to practice, similar to licensure, but also maintains a continuous record of past and current occupational status of the individual. Credentialing is a term that includes the concepts of accreditation, licensure, registration and professional certification. Credentialing is the formal recognition or recording of the recognition status of individuals, organizations, institutions, programs, processes, services or products that meet specific standardized criteria. Credentialing is done by an authorized and qualified entity.

Another form of recognizing the knowledge, skills and abilities of an individual is certificate programs. Certificate programs are learning events developed and administered by the certificate issuer. A certificate is presented at the end of a training course as recognition of specific skills. Unlike certification programs, these certificates do not have renewal requirements and cannot be revoked.

Impact:
The implementation of this recommendation is a complex issue due to the number of individuals, private and public entities that need to be involved. To achieve standardization in certification across the forensic sciences, legislative action may be required, but the standardization and development of certification programs should be accomplished prior to any legislative action mandating certification of forensic science practitioners.

The framework for implementation should include the following:

- Coordination of accrediting bodies, certification bodies and forensic science service providers to modify their programs to comply with this recommendation.

- Changes to hiring practices, personnel policies, job descriptions in human resource departments, unions and personnel departments.
- Incentives or pay recognition for practitioners who obtain certification.
- Coordination of legislature, policy makers, judicial system to recognize and enforce mandatory certification.

Implementation may be even more challenging in specialized categories of forensic science testing which have a small number of practitioners. In these situations, other similar specialized experienced scientists, researchers, and academicians should be allowed to assist in development of examinations. Those forensic science practitioners involved in the development processes would be prohibited from taking the examination. When this situation occurs and when practitioners that are so specialized that examinations are impractical, certification could be satisfied with a qualification review panel, a portfolio review and completion of certification programs in related fields (e.g. chemists).

To address categories of testing where no certification program exists, practitioners who do not meet the requirements of a specific certification examination, as well as, other forensic science personnel that may not be active practitioners, a basic forensic science certification should be developed. This could be accomplished by one or more certification bodies.

In general, certifying bodies have varying fee schedules (see Table 2) for the various costs associated with current certification organizations. The total financial cost of this recommendation cannot be accurately estimated since there are many unknown variables, such as the number of practitioners that are not currently certified, the costs associated with developing certification examinations and programs, and the cost for the certification bodies to become accredited.

Educational programs or preparatory courses should be developed to help practitioners prepare for certification examinations. Certification bodies will need to develop programs or policies to address practitioners with more than one certification, for example, continuing education credit hours could be used towards multiple re-certifications. Recognizing also that there may be human resource challenges such as revising position descriptions, certifying existing employees, and modifying employment policies and procedures, policies and procedures also need to be in place if practitioners are unsuccessful in obtaining certification or do not meet the minimum certification requirements. Also, policies and procedures need to be put in place to address those practitioners that can immediately achieve certification versus those that will have to wait for a certification program to be developed, particularly if incentives are being offered. Licensure is not a substitution for certification, primarily because it is only recognized at the state level. A state or local government or agency may attempt to substitute their own certification that is not accredited.

G19 Categories of Testing	Discipline/Sub-discipline	Certification Organization	Contact Info	Accrediting Organization	approx. # of diplomates or certfied individuals	Application Fee	Examination Fee	Recertification Fee/year
	Criminalistics	American Board of Criminalistics	www.criminalistics.com	FSAB	553	$50.00	$200.00	$40.00
Controlled Substances	Drug Analysis	American Board of Criminalistics	www.criminalistics.com	FSAB	160	$50.00	$200.00	$40.00
Hairs, Blood, Body Fluids and Tissues	Molecular Biology	American Board of Criminalistics	www.criminalistics.com	FSAB	186	$50.00	$200.00	$40.00
Trace Evidence	Fire Debris	American Board of Criminalistics	www.criminalistics.com	FSAB	46	$50.00	$200.00	$40.00
Trace Evidence	Hairs & Fibers	American Board of Criminalistics	www.criminalistics.com	FSAB	28	$50.00	$200.00	$40.00
Trace Evidence	Paint and Polymers	American Board of Criminalistics	www.criminalistics.com	FSAB	23	$50.00	$200.00	$40.00
Trace Evidence	Glass							
Trace Evidence	Explosives							
Trace Evidence	Soils							
Trace Evidence	Plants							
Entomology	Forensic Entemology	American Board of Forensic Entomology	www.forensicentomologist.org		15	n/a	$125.00	$25.00
	Building Materials							
	DNA							
	Pattern Evidence							
	Trace Evidence							
	Chemistry	American Institute of Chemists/National Certification Commission in Chemistry and Chemical Engineering	www.theaic.org			$130.00	n/a	$95.00
	Chemical Engineering	American Institute of Chemists/National Certification Commission in Chemistry and Chemical Engineering	www.theaic.org			$131.00	n/a	$95.00
	Chemical Hygiene Officer	National Registry of Certified Chemists	www.nrcc6.org			$150.00	$175.00	$85.00
Controlled Substances	Clinical Chemistry	National Registry of Certified Chemists	www.nrcc6.org			$150.00	$175.00	$85.00
Controlled Substances	Environmental Analytical Chemistry	National Registry of Certified Chemists	www.nrcc6.org			$150.00	$175.00	$75.00
Toxicology	Toxicological Chemistry	National Registry of Certified Chemists	www.nrcc6.org			$150.00	$175.00	$85.00
Handwriting and Document Examination	Forensic Document Examination	American Board of Forensic Document Examiners	www.abfde.org	FSAB	120	$250.00	n/a	$200.00
Handwriting and Document Examination	Forensic Document Examination	Board of Forensic Document Examination	www.bfde.org	FSAB	18	$100.00	$500.00	$100.00
Fingerprints	Latent Fingerprints	International Association for Identification	www.theiai.org		862	$150.00	$300.00	$60.00
Fingerprints	Ten print fingerprints	International Association for Identification	www.theiai.org		91	$150.00	$300.00	$60.00
Scene Investigation	Blood stain pattern	International Association for Identification	www.theiai.org		48	$150.00	$300.00	$60.00
Scene Investigation	Crime scene-4 levels	International Association for Identification	www.theiai.org		1460	$150.00	$300.00	$60.00
Scene Investigation	Forensic photography	International Association for Identification	www.theiai.org		36	$150.00	$300.00	$60.00
Scene Investigation	Evidence Photographer	Evidence Photographers International Council	www.epic-photo.org		47	$300.00	$695.00	$139.00

G19 Categories of Testing	Discipline/Sub-discipline	Certification Organization	Contact Info	Accrediting Organization	approx. # of diplomates or certfied individuals	Application Fee	Examination Fee	Recertification Fee/year
Marks and Impression	Footwear	International Association of Identification	www.theiai.org		86	$150.00	$300.00	$60.00
Audio, Video and Computer Analysis	Video	International Association of Identification	www.theiai.org			$150.00	$300.00	$60.00
Audio, Video and Computer Analysis	Forensic Artist	International Association of Identification	www.theiai.org		22	$150.00	$300.00	$60.00
Marks and Impression	Footwear	Canadian Identification society	www.cis-sci.ca		?	$150.00	n/a	$150.00
Marks and Impression	Impression - Tire tread							
	Evidence Handling	International Association of Property and Evidence	www.IAPE.org			$150.00	n/a	$20.00
Firearms and ballistics	Firearms	Association of Firearms & Toolmarks Examiners	www.afte.org		92	n/a	$250.00	$25.00
Marks and Impressions	Toolmarks	Association of Firearms & Toolmarks Examiners	www.afte.org		39	n/a	$250.00	$25.00
Trace Evidence	Gunshot Residue	Association of Firearms & Toolmarks Examiners	www.afte.org		39	n/a	$250.00	$25.00
Trace Evidence	Serial # Restoration	none						
	Trajectory Reconstruction	none						
Audio, Video and Computer Analysis	Digital Evidence - Digital Forensics Certified Practioner and DFCA	Digital Forensics Computer Board	www.dcfb.org		178	$250.00	$100.00	
Audio, Video and Computer Analysis	Digital Evidence - Certified Computer Examiner (CCE)	International Society of Forensic Computer Examiners	www.isfce.org		748	$395.00	n/a	$75.00
Audio, Video and Computer Analysis	Digital Evidence - Certified Digital Forensic Examiner (CDFE), Certified Digital Media Collector (CDMC), Certified Computer Crime Investigator (CCCI)	DOD Cyber Crime Center	www.dc3.mil/dcita/dcitaCertification.php					
Audio, Video and Computer Analysis	Digital Evidence - Certified Forensic Computer Examiner (CFCE)	International Association of Computer Investigation Specialists	www.iacis.com		1138	$750.00	n/a	$100.00
Audio, Video and Computer Analysis	Digital Evidence - Certified Electronic Evidence Collection Specialist Certification (CEECS)	International Association of Computer Investigation Specialists	www.iacis.com			$750.00	n/a	$100.00

G19 Categories of Testing	Discipline/Sub-discipline	Certification Organization	Contact Info	Accrediting Organization	approx. # of diplomates or certfied individuals	Application Fee	Examination Fee	Recertification Fee/year
Audio, Video and Computer Analysis	Digital Evidence - Certified Forensic Analyst, Certified Forensic Examiner, Reverse Engineering Malware, many others	Global Information Assurance Certification	www.giac.org	ANSI	2856	n/a	$899.00	$100.00
Audio, Video and Computer Analysis	Digital Evidence - Audio							
Audio, Video and Computer Analysis	Digital Evidence - Video							
	Forensic Engineering	International Institute of Forensic Engineering Sciences	www.iifes.org	FSAB		$300.00	n/a	$50.00
	Forensic Engineering	National Academy of Forensic Engineers (NAFE)	www.nafe.org	Council of Engineering and Scientific Specialty Boards (CESB)				
	Civil Engineering	American Society of Civil Engineers (ASCE)	www.asce.org	ANSI				
Toxicology	Forensic Toxicology	American Board of Forensic Toxicology	www.abft.org	FSAB	254	$150.00	n/a	$100.00
Toxicology	Forensic Toxicology	Forensic Toxicologist Certification Board	http://home.usit.net/~robsears/ftcb/index.htm			$150.00	n/a	$30.00
Toxicology	Forensic Alcohol Toxicology	Forensic Toxicologist Certification Board	http://home.usit.net/~robsears/ftcb/index.htm			$150.00	n/a	$30.00
Toxicology	Forensic Drug Toxicology	Forensic Toxicologist Certification Board	home.usit.net/~robsears/ftcb/index			$150.00	n/a	$30.00
	Forensic Anthropology	American Board of Forensic Anthropology	www.theabfa.org	FSAB	73	$100.00	$200.00	$150.00
	Forensic Psychology	American Board of Forensic Psychology	www.abfp.com		281	$125.00	$450.00	n/a
	Forensic Psychiatry	American College of Forensic Psychiatry	www.forensicpsychonline.com					
	Forensic Psychiatry	American Board of Psychiatry & Neurology	www.abpn.com	American Board of Medical Specialities		$700.00	$2,300.00	$150.00
	Forensic Nursing	International Association of Forensic Nursing	www.iafn.org		1500	n/a	$400.00	$116.00
Odontology	Odontology - Bite Mark	American Board of Forensic Odontology	www.abfo.org	FSAB	150	$400.00	$500.00	$230.00

EXHIBIT C

FORENSIC SPECIALTIES
ACCREDITATION BOARD, Inc.
410 North 21st Street, Colorado Springs, CO 80904

Accredited Organizations

(Listed chronologically)

American Board of Criminalistics (ABC)
Accreditation effective March 1, 2004 through February 28, 2009
Re-accreditation effective March 1, 2009 through February 28, 2014

American Board of Medicolegal Death Investigators (ABMDI)
Accreditation effective March 1, 2005 through February 28, 2010
Re-accreditation effective March 1, 2010 through February 28, 2015

American Board of Forensic Toxicology (ABFT)
Accreditation effective March 1, 2006 through February 28, 2011
Re-accreditation effective March 1, 2011 through February 29, 2016

Board of Forensic Document Examiners (BDFE)
Accreditation effective March 1, 2006 through February 28, 2011
Re-accreditation effective March 1, 2011 through February 29, 2016

American Board of Forensic Document Examiners (ABFDE)
Accreditation effective March 1, 2007 through February 29, 2012
Re-accreditation effective March 1, 2012 through February 28, 2017

International Board of Forensic Engineering Sciences (IBFES)
Accreditation effective March 1, 2007 through February 29, 2012
Re-accreditation effective March 1, 2012 through February 28, 2017

American Board of Forensic Odontology (ABFO)
Accreditation effective March 1, 2008 through February 28,

2013

American Board of Forensic Anthropology (ABFA)
Accreditation effective March 1, 2009 through February 28, 2014

Bloodstain Pattern Examiner Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

Crime Scene Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

Footwear Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

Forensic Art Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

Forensic Photography Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

Latent Print Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

Tenprint Fingerprint Certification Board, International Association for Identification (IAI)
Accreditation effective March 1, 2010 through February 28, 2015

International Association of Computer Investigative Specialists (IACIS)
Accreditation effective March 1, 2012 through February 28, 2017.

Revised 1-11-2013
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EXHIBIT D

TEXAS FORENSIC SCIENCE COMMISSSION STAKEHOLDER ROUNDTABLE REPORT

TEXAS STATE CAPITOL
JUNE 6, 2012

I. Background

On February 18, 2009, the National Academy of Sciences released a report entitled "Strengthening Forensic Science in the United States: A Path Forward," (the "NAS Report").[1] The NAS Report identified key areas for improvement in forensic science and offered a number of specific recommendations.[2] The intent of the report was to elevate forensic science standards uniformly across the United States.[3]

In the three years since its release, state and federal courts, legislators, scientists and academics have cited the NAS report frequently as an authoritative source on the strengths and limitations of various disciplines in forensic science.[4] At least two Congressional committees held hearings to address the issues raised in the report.[5] Senator Patrick Leahy introduced legislation attempting to address issues of concern.[6] The Executive Branch appointed its own advisory committee on forensic science.[7] Numerous national organizations have released responses to the recommendations contained in the report, and it remains a significant subject of discussion at every annual meeting of the American Academy of Forensic Sciences.[8]

The Texas Forensic Science Commission ("TFSC" or "Commission") also recognized and supported the NAS Report's efforts to draw attention to needed improvements and resource gaps in forensic science.[9] The Texas Legislature created the Commission in 2005 to investigate allegations of negligence and

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[1] Nat'l Research Council, Nat'l Acad. of Scis., *Strengthening Forensic Science in the United States: A Path Forward* (2009) [hereinafter NAS Report].
[2] *Id.*
[3] *E.g.*, Paul C. Giannelli, *The 2009 NAS Forensic Science Report: A Literature Review*, 48 Crim. L. Bulletin 378 (2012); *Ex parte Robbins*, 360 S.W.3d 446 (Tex. Crim. App. 2011); *United States v. Cerna*, No. CR 08-0730, 2010 U.S. Dist. LEXIS 144424 (N.D. Cal. Sept. 1, 2010).
[4] *See Turning the Investigation on the Science of Forensics: Hearing before Committee on Commerce, Science and Transportation*, 112th Cong. (2011)*; Automated Fingerprint Identification System (AFIS) interoperability and the appropriate Federal Executive Branch responses to the AFIS interoperability issues identified in the National Academy of Sciences 2009 report: Strengthening Forensic Science in the United States: A Path Forward: Hearing Before the Subcomm. on Forensic Sci. of the Senate Comm. on Science*, 112th Cong. (2011); and *National Research Council's Publication "Strengthening Forensic Science in the United States: A Path Forward: Hearing before the Subcomm. on Crime, Terrorism, and Homeland Security of the H. Comm. on the Judiciary*, 111th Cong. (2009).
[5] *Turning the Investigation on the Science of Forensics: Hearing before Committee on Commerce, Science and Transportation*, 112th Cong. (2011); *National Research Council's Publication "Strengthening Forensic Science in the United States: A Path Forward: Hearing before the Subcomm. on Crime, Terrorism, and Homeland Security of the H. Comm. on the Judiciary*, 111th Cong. (2009).
[6] Criminal Justice and Forensic Science Reform Act of 2011, S. 132, 112th Cong. (2011).
[7] NAT'L SCI. & TECH. COUNCIL, CHARTER OF THE SUBCOMMITTEE ON FORENSIC SCIENCE 1 (2009), *available at* http://www.forensicscience.gov/assets/pdfs/subcommittee_charter.pdf.
[8] http://www.aafs.org/
[9] http://www.fsc.state.tx.us/nas-report/

misconduct in accredited crime laboratories.[10] As part of its oversight mission, the Commission is committed to taking a proactive approach to engaging stakeholders throughout the forensic science community in Texas. Commissioners have long believed that a statewide conversation regarding the NAS Report would be beneficial. This need has become more acute over time because many forensic science initiatives recommended in the NAS Report have been stalled in Congress due to political discord, lack of funding or other factors. The Commission recognizes that Texas has and will continue to take a leadership role in identifying ways to improve the integrity and reliability of forensic science, regardless of the pace at which similar initiatives may proceed at the federal level.

II. June 6, 2012 Stakeholder Roundtables

On June 6, 2012, the Commission provided a forum at the Texas State Capitol for issues of concern to forensic scientists, judges, legislators, policymakers, law enforcement and attorneys. The purpose was to identify the most pressing issues facing the forensic science community and highlight possibilities for improving the quality of forensic science and accessibility of forensic services to stakeholders in Texas. Collectively, these roundtable discussions helped identify the most critical issues in our state and allowed those who have already implemented successful new practices to share their success. Through this exchange, the group identified specific areas in which stakeholders may work collaboratively to improve the quality of forensic science in Texas.

Among the roundtable attendees were county laboratories, state laboratories, federal laboratories, city police department laboratories and private laboratories. The funding sources for the laboratories were diverse, including state, federal, county, city and fee-for-service methods. The group also included some forensic scientists and engineers operating as consultants outside traditional accredited laboratory settings. Participants from non-scientific disciplines included defense counsel, prosecutors, judges, legislators and their staff, representatives from the Offices of the Governor and Lieutenant Governor, and representatives from the Commission on Indigent Defense and the Innocence Project. The group's diversity allowed for an educational and productive dialogue including a variety of perspectives within the criminal justice system in Texas.

Following were the subject areas discussed during the roundtables: (1) education and training of scientists, lawyers and judges; (2) certification of forensic examiners; (3) quality and timeliness of forensic services; (4) strategies for improving quality and consistency of forensic reporting and testimony; (5) research and reliability of methods; (6) ethical dilemmas in forensic science; (7) addressing pseudo-science in Texas courts; and (8) independence of crime laboratories in Texas.

[10] Tex. Crim. Proc. Code Ann. art. 38.01 (West 2005).

Roundtable moderators[11] addressed three main themes for each subject area. The first was "strengths and success stories." This provided an opportunity for participants to share their experiences addressing various challenges, and to learn about successful initiatives at other Texas laboratories and in the Texas criminal justice system generally. The second area of focus was "key issues and challenges." This discussion allowed participants to identify the most significant and pressing areas for improvement currently facing scientists and other stakeholders in the criminal justice system. The third focus was "action items," which identified possible solutions, opportunities for collaboration and resource sharing.

[11] The Commission would like to thank everyone who generously donated their time to serve as moderators, including: (1) Judge Patrice McDonald and Dr. Sarah Kerrigan for Education and Training; (2) Dr. Elizabeth Todd and Dr. Art Eisenberg for Certification of Examiners; (3) Dr. Roger Kahn and Mr. Manuel Valadez for Quality and Timeliness of Laboratory Services; (4) Ms. Sarah Chu and Mr. Forrest Davis for Laboratory Reporting and Testimony; (5) Mr. Jeff Blackburn and Judge Sharen Wilson for Pseudo/Junk Science; (6) Mr. Edwin Colfax and Mr. Pat Johnson for Independence of Laboratories and Cognitive Bias; (7) Mr. Ron Singer and Ms. Melissa Gische for Research and Reliability of Methods; and (8) Dr. Nizam Peerwani and Mr. Richard Alpert for Ethical Dilemmas in Forensic Science. The Commission would also like to thank Mr. Steve Collins of the University of Texas system for serving as the group facilitator.

I. EDUCATION AND TRAINING OF SCIENTISTS, LAWYERS AND JUDGES

The NAS Report identified three main purposes for education and training in the forensic science disciplines.[12] The first is to prepare the next generation of forensic practitioners through high-quality undergraduate and graduate programs.[13] The second is to provide continuing professional development for forensic science practitioners so that they may stay current in forensic techniques and research.[14] The third is to educate the users of forensic science analysis, especially judges, lawyers and law students.[15] This roundtable addressed all three of these areas, with a particular focus on the second two.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in the area of education and training in Texas:

- Resources already exist for training of attorneys and judges (*e.g.*, Texas State Bar, Texas Criminal Justice Integrity Unit, Texas Center for the Judiciary, Texas Criminal Defense Lawyers Association ("TCDLA"), and Texas District and County Attorneys Association ("TDCAA")).

- Training resources also exist for forensic scientists *but* to a far lesser extent. Training funds for forensic scientists are often dependent upon the funding capability of the laboratory.

- Some existing national Scientific Working Groups (SWGs) have established recommendations for training and education (*e.g.*, DNA) but recommendations have not been developed uniformly for all disciplines.

- There are some free training resources available through the National Institute for Justice ("NIJ") and other agencies. However, those resources are limited in their availability and scope.

- Texas is extremely fortunate to have *four* programs accredited by the Forensic Science Education Programs Accreditation Commission ("FEPAC") including two programs at the University of North Texas Health Science Center, one at Texas A&M University and one at Sam Houston State University. However, the proliferation of "junk" forensic science programs continues; thus not all forensic science programs offer the same caliber of education and training.

[12] NAS Report at 8-1.
[13] *Id.*
[14] *Id.*
[15] *Id.* at 8-2.

- Texas has many solid organizations representing individual stakeholder groups (*e.g.*, Texas Association of Crime Laboratory Directors (TACLD), TDCAA, TCDLA, Texas Police Chiefs' Association, etc.). However, no one is currently responsible for facilitating ongoing communication between these organizations.

B. <u>Key Issues and Challenges</u>

Stakeholders identified the following key issues and challenges in the area of education and training in Texas:

- There are major deficits in training and education for forensic scientists as well as a need for more interdisciplinary training involving lawyers, judges, law enforcement and forensic scientists.

- There is no dedicated statewide funding source for training and education of scientists as there is for lawyers and judges, leaving laboratories to find the money in their own budgets. Because laboratories are struggling financially, training and education is typically one of the first things cut from the budget.

- There is a lack of uniformity in training and education requirements among forensic scientists. Requirements for training and education tend to be discipline-specific and vary greatly depending upon the particular discipline.

- There is a need for additional training and education opportunities at the regional level within Texas. In-house training is a good start but it is far more beneficial to expose analysts in a given laboratory to analysts from other laboratories, as well as to other members of the criminal justice system such as lawyers and judges. Because it can be cost-prohibitive to send analysts out of state for training, a more cost-effective alternative would be to develop regional training centers within Texas that bring together subject matter experts within each region.

- Training challenges vary from laboratory to laboratory. Larger laboratories have more in-house training resources because they typically have more internal experts per discipline. Lab budgets range from zero training dollars per Full-Time Equivalent (FTE) to $2,000-$3,000 per FTE, though such a high number is extremely rare.

- Attrition of experienced analysts in many laboratories makes it difficult to sustain a robust in-house training program.

- There is no clear indication of what the training needs in the state actually are, including how many forensic scientists there are per discipline, how

many of them receive training currently, and at what level. This makes it difficult to assess potential cost.

- Some lab directors noted a loss of productivity associated with training. Even if the training is free through NIJ, some directors expressed concern that they cannot afford to release people from benchwork even for a week. Loss of analysis time impacts backlogs and the financial bottom line for fee-for-service labs in particular.

- Standards for training need to be determined collaboratively by stakeholders. The quality of training varies considerably, and stakeholders should come together to set standards for training in Texas.

- Currently, there is no comprehensive list of qualified experts in Texas available to provide training.

- Members of the Judiciary noted their needs for training curricula are not necessarily communicated to the people delivering the training. There is a disconnect between what is needed by members of the Judiciary and what is actually delivered.

- Funds for training and education are largely perceived to be non-essential, and it is difficult to measure and quantify the cost to society of inadequate training.

C. Action Items and Opportunities for Collaboration

Stakeholders identified the following potential action items and opportunities for collaboration in the area of education and training in Texas:

- The TFSC and TACLD should prepare and distribute a survey to determine what training and education expenditures exist in Texas. The survey should include numbers of FTEs per forensic discipline and budgets for training per FTE. Results may be compared to the average training dollars for other stakeholder groups.

- The TFSC and TACLD should work with laboratories to conduct a needs assessment to determine what the specific training needs in Texas actually are. How many scientists? Which disciplines? Entry level or continuing education, or both?

- The TFSC should consider conducting a cost/benefit analysis that shows the cost of re-testing evidence versus training and education.

- Texas should invest in a cutting edge training academy where all stakeholders can go to receive great quality training, and where

interdisciplinary training is emphasized. Most of the resources to begin such an academy already exist in Texas among various universities, stakeholders and scientists but need to be coordinated. The TFSC should serve as the coordinator of the training (location, faculty, curricula, etc.) with the assistance of one or two additional FTEs, possibly from one of the FEPAC-accredited programs.

- More academic and private sector partnerships should be explored. For example, many laboratories in Texas purchase their scientific instrumentation from the same vendors. Stakeholders should ask these vendors to help support training programs in the same way that forensic scientists in DNA have leveraged their relationships with vendors in their discipline.

- The TFSC and TACLD should establish interagency technical advisory groups for the various accredited disciplines. Forensic examiners do not benefit from working in a vacuum. The groups would allow for sharing of ideas and resources. The groups should involve practitioners, academicians and researchers.

- The TFSC should consider drafting best practices in training and education relying upon what has already been done in the national SWGs. Currently, most forensic scientists do not have a requirement for a minimum number of training hours. Approaches to implementing this could include: (1) mandating a certain number of hours per discipline through legislative action; (2) mandating a certain number of hours per discipline through DPS rulemaking; or (3) TFSC and TACLD work collaboratively to issue recommendations on best practices in training and education that become part of a collective statewide set of expectations without a mandate.

- TFSC should explore funding opportunities to cover costs. One example is to ask the Governor's Office to consider setting aside a small portion of the Coverdell funds (or other similar funding) to assist with training. The Governor's Office may be receptive to this approach, especially if it helps some of the smaller laboratories in more remote locations with limited access to training funds.

- The general consensus among representatives from the Legislature is that there will be no funding for a new training institute, so the TFSC, TACLD, DPS and others will need to be creative about using existing resources for this purpose.

- Currently, training funds administered by the Court of Criminal Appeals do not include forensic scientists among the constituency served. The TFSC should work with the Court to determine whether this could be changed.

II. CERTIFICATION OF FORENSIC EXAMINERS

Crime laboratory accreditation primarily addresses the management systems, technical methods and quality of the work of a laboratory.[16] Unlike the broad approach taken by accreditation, certification is designed to ensure the competency of individual examiners.[17] Certification is a discipline-specific process, and varies widely from discipline to discipline. Unlike accreditation, certification is currently not required by Texas law. However, the NAS Report, major accreditation bodies, and the American Academy of Forensic Sciences all support the concept of certification. This roundtable discussed the potential benefits, drawbacks and costs of certification for Texas crime laboratories.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in the area of certification of forensic examiners in Texas:

- Texas has already taken a leadership role by conditioning the admission of evidence in criminal actions upon the accreditation of the examining laboratory, and by creating the TFSC. Stakeholders acknowledged that mandatory certification is inevitable nationwide, though the form it will take (national vs. state regulation, etc.) is unclear at this time.

- This reality provides another opportunity for Texas to lead in developing appropriate certification requirements and training opportunities. Participants noted that some of the current certification examinations offered in certain disciplines are lacking in substance and do not provide the level of questioning that would ensure the competency of an examiner.

- Certification provides a strong perception that the certified individual has integrity, is competent and provides a quality work product, but there needs to be more rigor built into the certification process than just the examination, such as continuing education.

- Certain disciplines have done a better job establishing minimum competency (*e.g.*, DNA) than others, which have no minimum standards.

- In Texas, we have large forensic science agencies and laboratories already invested in encouraging certification for examiners. Some agencies provide financial incentives for certification or fee reimbursements for successfully completed examinations. Others incorporate certification as part of their advancement process and career path. The inevitability of

[16] NAS Report at 7-12.
[17] *Id.* at 7-13.

certification is recognized, particularly among larger forensic science service providers.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in the area of certification of examiners in Texas:

- Some stakeholders felt that examiners would bear much of the cost of certification, and though it makes sense to require certification for new examiners, some felt more experienced senior examiners whose testimony has been admitted for years should not be required to bear the same burden.

- Stakeholders noted that there is no standardization across certification programs. Some programs are so weak that it seems anyone could pay a fee and receive a certification. There is no clarity regarding what kind of knowledge is being tested, with some questions being so esoteric or antiquated that they lack value.

- Participants noted that proficiency testing also lacks consistency. For example, proficiency testing in DNA is very specific. One must take the examination two times a year in certain time increments. Other disciplines only require an examination every two years.

- Many laboratories cannot afford to remove examiners from benchwork to allow the time required for examination preparation.

- Certification is not the perfect solution; it does not guarantee one will always avoid mistakes, and it does not guarantee an examiner's ability to communicate the most important information effectively to a trier of fact.

- Participants observed a disconnect between when an individual is released for independent casework and when the same individual can qualify to sit for certification in some disciplines (*e.g.*, DNA). If the purpose of certification is to provide assurances of integrity and competency to the public and trier of fact, why should an examiner be qualified to conduct independent case work yet not be qualified to sit for the certification examination?

- Many stakeholders felt without a mandate or incentive, most examiners will not independently become certified.

C. Action Items and Opportunities for Collaboration

Stakeholders identified the following potential action items and opportunities for collaboration in the area of certification of examiners in Texas:

- TACLD and the TFSC should conduct a survey to assess how many analysts exist in the various disciplines. How many are certified? Who certifies them? Which are the most appropriate certification bodies? What would the cost of certification per examiner be?

- Existing national SWGs can help in determining core competencies for certification. What is the level of education, training and core competency required per discipline? Certification examinations should have all o built in.

- Action items are dependent upon collaboration between TFSC, DPS and TACLD. DPS has recognized, vetted and acknowledged certain accrediting bodies. Perhaps DPS could conduct the same type of vetting for certification bodies.

- Analysts already take written competency exams to qualify as examiners. The core competency exams of laboratories throughout Texas could be collected, and the TFSC could assemble a test bank to ensure that questions represent baseline knowledge considered appropriate by stakeholders in the particular discipline.

- Continuing education is critical to ensure that analysts maintain their core competencies. Certification and further continuing education should be built into career path for examiners.

- Some stakeholders felt that the forensic science community should encourage accrediting bodies to incorporate some level of certification in their requirements. A minimum basic certification could be established and built upon.

- Most stakeholders felt that certification should be mandated by the legislature to achieve the highest rate of compliance. The Legislature and Governor's Office should consider allocating funds in support of certification, or using some of the Coverdell or similar federal funds to assist.

III. QUALITY AND TIMELINESS OF LABORATORY SERVICES

Improving the quality and timeliness of laboratory services is an ongoing challenge for laboratories in Texas, regardless of whether they are funded by the state, federal or local governments, or take a fee-for-service approach to funding. This roundtable discussed strategies for improvement with a specific focus on the ways in which timeliness impacts quality of service.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in the area of quality and timeliness of service in Texas crime laboratories:

- Participants did not express many significant concerns regarding the quality of forensic services, except to the extent quality of service was affected by timeliness (or lack thereof). Participants noted that this does not necessarily mean that there are no quality issues in Texas laboratories but rather that the more looming concern is timeliness.

- During large group discussion, participants noted that many of the more significant quality concerns are in forensic disciplines in smaller laboratories exempt from accreditation, such as latent print analysis.

- Some stakeholders expressed appreciation for gains that have been made by laboratories in reducing turnaround times.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in the area of quality and timeliness of services in Texas crime laboratories:

- Many stakeholders are not satisfied with current turnaround times, though there is no commonly accepted definition of what a reasonable turnaround time is in a given discipline. There did not appear to be any consistent metric for what kind of turnaround time would trigger dissatisfaction.

- Stakeholders wondered whether it is possible or desirable to establish a definition of "turnaround time" and/or to have a single set of statewide turnaround time goals/metrics per discipline.

- Participants noted many factors contributing to poor turnaround times, including: training burdens for small laboratories, legislative mandates, (e.g., SB-1636), no refusal blood alcohol weekends, overly broad discovery requests, the "accreditation burden" and the cumbersome administrative requirements for hiring new examiners in many laboratories. This alone

can result in months passing before new examiners are hired, further increasing turnaround times.

C. Action Items and Opportunities for Collaboration

Stakeholders identified the following potential action items and opportunities for collaboration in the area of quality and timeliness of service in Texas crime laboratories:

- Laboratories need more funding to reduce their turnaround times. One suggestion was to try to allocate fines from non-indigent defendants, though there was significant disagreement around this issue.

- The TFSC could encourage establishment of a statewide database showing the status of criminal cases and the forensic testing requested (*i.e.*, un-submitted, closed case, lab reports released, etc.). Often, the lack of communication between lawyers and scientists adversely impacts turnaround times because analysts are working closed cases when they could be moving on to other assignments.

- Many forensic scientists expressed a desire to be permitted to testify via videoconference to save transportation and wait time outside courtrooms.

- Because many analysts face backlogs, they spend a significant amount of their time discussing why cases are not completed from a process standpoint. Management should work on case acceptance policies (*e.g.*, for processing large numbers of samples) and other process flow methods to minimize the amount of time analysts spend discussing backlogs and responding to questions regarding backlogs.

- One suggestion was to develop statewide "centers of excellence" for particular forensic disciplines, so that all toxicology work would be done at one location, all DNA work at another, although there was not a consensus on this issue.

- Another suggestion was to develop a thorough business case for the value of crime laboratory work. TFSC/TACLD/DPS could partner with a business school to make a case for enhanced crime laboratory support. The case could include subjects like: the cost of incarceration while cases are pending; definition of key terms (such as turnaround time); examination of backlogs; identification of key efficiency and quality metrics; relative cost of public and private labs; fee-for-service pluses and minuses; process mapping and improvement; advantages/disadvantages of privatization, etc.

- TFSC/TACLD/DPS should consider leading a coordinated statewide process mapping and improvement initiative to identify optimal methods

for crime laboratory workflow on a statewide basis. Process mapping and improvement could include automation efforts to streamline test efficiencies. (The Foresight Project was mentioned as a resource as the organization has completed similar initiatives.)

IV. CONSISTENCY & QUALITY OF LAB REPORTING & TESTIMONY

Most members of the forensic science community agree that the terminology used in reporting and testifying about the results of forensic analysis should be standardized to the extent possible.[18] Forensic scientists use many different terms to describe findings, conclusions, and degrees of association between evidence and people or objects.[19] The use of terminology may have a major impact on how a trier of fact perceives and evaluates evidence.[20] This roundtable discussed strategies for improving quality and consistency of reporting and analysis in Texas.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in the area of lab reporting and testimony in Texas:

- There are a number of stakeholders already engaged in mock trial training programs, including some crime laboratories and especially TDCAA. Staff attorneys conduct regular training and could be used as a resource to further enhance the mock trial programs of crime laboratories.

- New ISO-based accreditation standards are more rigorous; they are the main reason labs are moving forward with measured reporting standards and testimony tracking. These requirements will help ensure all laboratories are improving reporting and tracking testimony. Currently, about 1/3 of Texas laboratories are ISO-accredited but more labs are moving in that direction annually.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in the area of lab reporting and testimony in Texas:

- Some accrediting bodies (other than ASCLD-LAB) do not have standardized reporting practices. Participants felt this should be included as part of the accreditation process.

[18] *See* NAS Report Exec. Summ.
[19] *Id.*
[20] *Id.*

- Members of the defense community and judges are currently not involved in testimony monitoring or mock trials in crime laboratories. All participants thought it would be advantageous to involve those two constituencies in the process.

- Scientists expressed concern that they do not have enough contact with both prosecution and defense. Similarly on the defense side, attorneys expressed concern regarding their lack of access to laboratories. There was not a perception that laboratories were unwilling to communicate with defense counsel, but rather that they are required to go through a series of steps to ensure that they are releasing information to someone with the legal right to access the case. If some of that communication could be streamlined, it would help increase transparency.

C. Action Items and Opportunities for Collaboration

Stakeholders identified the following potential action items and opportunities for collaboration in the area of lab reporting and testimony in Texas:

- TFSC should create a Texas Working Group to evaluate and recommend consistent and uniform terminology for use in laboratory reporting. There are already national SWGs in the process of developing report-writing standards. Having our own TWGs would allow us to implement change more efficiently, achieve buy-in from Texas laboratories and participation from other stakeholders in Texas. Stakeholders noted that each discipline is different; perhaps we would need TWGs for each one of them. Judges, law enforcement, attorneys and scientists should all be represented.

- TWGs could also help develop standards, involving everyone in the process of standard-setting instead of mandating standards (either from inside the state or from the federal government). Stakeholders could consider asking the legislature to budget money for standards development in forensic science.

- TWGS could help develop a standard including a model report and model litigation package (with underlying information and cover sheet itemization) at a minimum. This would help scientists and lawyers transition toward a more consistent statewide approach. Roll-out of the models could include training for lawyers about the scope and content of the reports so they have a better understanding of what information they should be looking for and why.

- Many suggested that certain key information about a crime laboratory's work should be posted online. This should include information such as: (1) copy of policies and procedures; (2) SOPs; and (3) calibration records. It would also be helpful to develop online protected access to case

documentation and raw data for individual criminal cases. If a laboratory has a LIMS system, it could provide information to courts or to prosecutors who can in turn authorize transmission to defense counsel.

- Mock trial training should be expanded to include more scientists, judges, and attorneys (both defense and prosecution). This would be mutually beneficial to everyone because counsel and judges could learn about scientific concepts at the same time that scientists are learning about trial examination.

V. PSEUDO/JUNK SCIENCE

Many forensic science disciplines were not developed in laboratories, but rather to meet the practical investigative needs of law enforcement. As the NAS Report notes, though some techniques used in forensic science are built on sold bases of theory and research (*e.g.*, DNA, forensic pathology, toxicology, chemical analysis, digital and multimedia, etc.) others were developed on the basis of observation, experience and reasoning.[21] This does not mean that such disciplines are invalid, but it does raise questions about the ability of judges to make scientific determinations regarding admissibility, especially in the less scientifically grounded disciplines. Recent cases in Texas involving dog scent lineups and other questionable "scientific" techniques have raised awareness of the potential for pseudo/junk science to materially impact the outcomes of criminal cases. This roundtable discussed strategies for addressing the issue proactively.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in the area of pseudo/junk science:

- Due to the nature of the subject, it was difficult for participants to identify any real strengths in this area. However, participants felt it was important to identify what the term means. Pseudo/junk-science was generally defined as "science" introduced as evidence with a lack of adequate underlying research, poor documentation of testing, no repeatable results, no manner of replicating testing, little or insufficient peer review, and an "individualized" approach to analysis. The category also includes cases in which scientific principles are overstated in testimony beyond the bounds of scientific integrity, resulting in communication of materially misleading information to a trier of fact.

- Participants noted in the wake of the NAS Report, even unaccredited, established disciplines have been questioned as pseudo/junk science despite

[21] NAS Report 5-1.

their history of admission in many courts. Some examples include questioned documents, bite mark analysis, latent print examination, etc.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in the area of pseudo/junk science:

- Many participants are concerned there is no disciplinary mechanism to identify practitioners of pseudo/junk science and prevent them from testifying in court. Unlike the State Bar or the Medical Board, there is no central repository identifying problematic cases.

- Stakeholders wrestled with the question of who should decide when something is pseudo/junk science. Traditionally, admissibility determinations have been made by the courts and should continue to be made by the courts. However, judges are not always in the best position to make broad-based scientific determinations, and judges tend to err on the side of including evidence. Participants agreed that the Legislature operates too slowly to make any concrete determinations on what should be considered pseudo/junk science.

- There are many limitations in the current adversarial process that make it challenging to identify possible pseudo/junk science. First, defense lawyers are not always competent enough to raise the issues. Second, judges are sometimes reluctant to exclude evidence, and they make poor calls on reliance and reliability. Third, there can be legal precedents in appellate court decisions directly impacting a lower court's ability to act in pseudo/junk science cases.

C. Action Items and Opportunities for Collaboration

Stakeholders identified the following potential action items and opportunities for collaboration in the area of pseudo/junk science:

- The TFSC should consider creating a standing committee including TDCAA, TCDLA and various scientists to review issues related to pseudo/junk science and highlight concerns as they are raised.

- Forensic scientists agreed that for cases in which allegedly outdated or invalid science was admitted and a person was convicted, they would be more than willing to review their own analysis if asked by counsel seeking in good faith to ensure the integrity and reliability of the evidence. This continuous examination and review process is a core component of the scientific method, and it exists in tension with the legal system's need to achieve definitive outcomes in criminal cases. Most stakeholders agreed

that the Legislature should consider the impact of *Ex Parte Robbins* and determine whether something can or should be done to address cases in which a conviction was based on outdated or invalid scientific principles.

- Stakeholders envision a bigger role for the TFSC in alerting the community about information in changing forensic science and related technology. The TFSC should provide these resources to attorneys and to the court system through its website.

- The TFSC should highlight legitimate forensic disciplines and contrast them with examples of junk science (including factual scenarios) so the public understands the factual scenarios in which pseudo/junk science can result in a flawed conviction.

- The Texas Bar, TCDLA and TDCAA should encourage better lawyering and more open communication regarding forensic science, and defense attorneys should be more aggressive about seeking better funding for experts.

VI. INDEPENDENCE OF CRIME LABORATORIES & COGNITIVE BIAS

The NAS Report recommended that public forensic science laboratories be "independent of or autonomous within law enforcement agencies."[22] On the subject of cognitive bias, the report observed that "few forensic science methods have developed adequate measures of the accuracy of inferences made by forensic scientists."[23] This roundtable discussed strategies for improving independence and transparency in Texas crime laboratories as well as for reducing the potential risks associated with cognitive bias.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in Texas in the area of independence and cognitive bias:

- Many laboratories in Texas already have a strong organizational culture rooted in science. There is also a clear trend toward more transparency in forensic laboratories. However, participants noted that the culture of transparency and scientific integrity is not universal.

- Stakeholders acknowledged one of the reasons behind the "independence" recommendation in the NAS Report is to achieve budgetary independence so that a department does not have to choose, for example, between having officers on the street or running the laboratory. A good example of

[22] NAS Report 6-1.
[23] *Id.*

budgetary independence within a law enforcement organization is DPS; the funds allocated to the crime laboratory are not fungible and therefore cannot be diverted to other DPS priorities.

- Some laboratories have evidence intake procedures that provide a buffer between scientists and investigators so there is less contact between the officers and the scientists. This is a good strategy for managing risk associated with cognitive bias in forensics.

- Many laboratories are increasingly moving toward additional verification in laboratory testing. More review is required now than under prior accreditation systems. Most scientists feel this is a positive trend in the quality assurance process.

- One "best practice" used to reduce cognitive bias was to institute a process for evaluating a piece of evidence to determine if sufficient information is available for analysis before beginning any comparison with an exemplar.

- Independent laboratories (separate from police) have been successful in and outside of Texas. Examples include the Southwestern Institute of Forensic Sciences, the Bexar County crime laboratory, and the Arkansas state model.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in Texas in the area of independence and cognitive bias:

- Some laboratories still feel they are a competing budgetary priority within the parent law enforcement agency.

- Some analysts receive pressure from law enforcement investigators to achieve a certain result. This does not happen as frequently now as it once did, but it still happens occasionally.

- There appears to be a lack of transparency between some labs and defense counsel; some agencies make it very complicated and cumbersome to provide access regarding forensic analysis to the defense.

- It is challenging to strike a balance between regulating the flow of information to the analyst for the purpose of preventing cognitive bias and ensuring the analyst has the contextual information he or she needs to understand what the evidence is. Contextual information can be important to the analysis in many circumstances.

- The fact that many laboratories are housed within law enforcement creates a public perception that laboratories and law enforcement are "on one team" in the adversarial system. It is a problem and a challenge to convince the public that the law enforcement affiliation does not influence the conduct and forensic analysis of examiners.

- Participants identified a need to expand discovery in a way that makes sense for all parties; the defense bar needs to be educated about what they really need to be asking for in discovery requests to laboratories.

- Stakeholders noted that even if laboratories were removed from law enforcement, establishing physical/budgetary independence alone does not change the fact that the customer base will always be predominantly law enforcement. So the risk of a biased relationship is still there; structural removal from law enforcement is not a panacea and does not necessarily guarantee independence.

C. Action Items and Opportunities for Collaboration

Stakeholders identified the following action items and opportunities for collaboration in Texas in the area of independence and cognitive bias:

- More and better training would be helpful. Training should increase analyst awareness regarding the risk of bias, using case studies to show how results have gone off-track due to cognitive bias (*e.g.,* FBI Brandon Mayfield latent print analysis and similar cases).

- Stakeholders should develop more and better training to directly address forensic science testimony and to ensure results are accurately communicated in the context of adversarial question and answer process.

- Laboratories should consider exploring protocols to appropriately regulate the flow of information to protect against cognitive bias. This should include limiting extraneous information that could risk impacting the scientific interpretation, especially when subjective elements are involved.

- Laboratories should consider developing protocols for identifying close/hard cases where the risk of cognitive bias is greater, and providing extra safeguards. Some laboratories already have a system in place to ensure certain protocols kick in when needed; their methods could be shared with other laboratories to increase consistency across the system.

- Laboratories should ensure documentation of interaction with investigators that is necessary to provide the information analysts need, while protecting against extraneous information that could impact the integrity of the results.

VII. RESEARCH AND RELIABILITY OF METHODS

The NAS Report recommended that research be conducted to address issues of accuracy, reliability and validity in the different forensic science disciplines. The Report suggested the National Institute of Forensic Science competitively fund peer-reviewed research in certain areas. However, actual funding for research projects has yet to materialize for most disciplines. This roundtable discussed potential strategies for funding research and reliability studies in Texas.

A. Strengths and Success Stories

Stakeholders identified the following strengths and success stories in Texas in the area of research and reliability of methods:

- United States Customs and Border Patrol ("CBP") partners with two Texas universities—Texas A&M and Lamar. CBP provides a venue in its laboratory for Ph.D. candidates at those institutions to test research; in return the CBP gains co-authorship of any emerging research publication.

- Another example is the University of North Texas Health Science Center, which brings academia into the forensic laboratory. University professors use the laboratory to conduct their research. The dual advantage of this approach is that the professor publishes his or her research while the laboratory gains the benefit of the research project.

- FEPAC accredited programs are required to maintain this type of relationship to ensure scientific relevance. For example, the forensic science program at Sam Houston State University maintains strong academic-industrial partnerships through internships, research and external funding.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in Texas in the area of research and reliability of methods:

- Student academic research is a positive step, but to do the kind of fundamental research needed, academic researchers must be involved. Universities do not tend to fund the kind of practical research needed in various forensic science disciplines because the money is not available to do this type of research absent a crisis. Validating the underlying science in the comparison disciplines requires a university environment and dedicated academics.

- Validation of new techniques at the laboratory level is a different issue, but even there the financial support is lacking. Most laboratories consider themselves fortunate if they have a Quality Assurance/Quality Control manager who is able to conduct validation on new technology or instrumentation.

- The NAS Report recommended significant research but left the funding to the federal government. There certainly has not been a noticeable increase in research funding felt at the state or local level.

- As previously stated, Texas is fortunate to have four FEPAC-accredited forensic science programs. These accredited programs maintain rigorous standards and their graduates are prepared to enter forensic laboratories upon completion of their studies. However, there are some forensic science programs that do not meet FEPAC standards, and typically their graduates are not qualified to begin work in forensic laboratories after graduation without significant additional education and training.

- One challenge is whether there really is an incentive to conduct the research recommended in the NAS Report. The results may have an adverse impact, especially if the scientific underpinnings of forensic disciplines are revealed as flawed. On the other hand, if the research results support the scientific methods already employed, the only positive result would be to validate what is already routinely admitted in court. Nonetheless, the consensus among the group was that the research is justified, important to the integrity of forensic science, and should be conducted.

C. Action Items and Opportunities for Strategic Collaboration

Stakeholders identified the following action items and opportunities for collaboration in Texas in the area of research and reliability of methods:

- Establish a designated research liaison at the TFSC who would: (1) work with crime laboratories to assess their research needs and identify key areas; and (2) consult with existing research programs at various universities in Texas to determine if any of them would be interested in launching collaborative research projects to fulfill those needs.

- Laboratories could begin offering internships to students in exchange for research projects that would be done at the university level. The group felt much of the validation research would be well suited for an interdisciplinary approach, combining hard sciences (such as Chemistry) with other disciplines such as Engineering, Statistics and Social Sciences (specifically with respect to the cognitive research needed in pattern disciplines such as firearms/toolmarks, latent print, blood spatter, etc.)

- Ideally, each large laboratory would have a section dedicated to research and validation. However, participants recognize this highly impractical in the current financial environment.

- In the absence of research groups in individual laboratories (a solution determined to be highly impractical by participants) the TFSC could work to establish a statewide research institute/consortium that could offer assistance with validation studies, research needs and perhaps even support external audits of crime laboratories. This could be either a new entity or a collaborative effort among existing programs.

- The group also suggested statewide discipline-specific working groups including practitioners and university researchers. The purpose would be to establish guidelines, define common terminology and develop relationships between labs and universities that could eventually develop into collaborative research projects.

VIII. ETHICAL DILEMMAS IN FORENSIC SCIENCE

ASCLD-LAB, the largest accreditation body in the United States and the entity responsible for accrediting the vast majority of Texas crime laboratories, relies upon a professional responsibility document entitled *Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists*. The principles cover various topics such as professionalism, competency and proficiency, and clear communication. This roundtable focused on ways in which forensic scientists and other stakeholders in Texas can foster an environment of ethically responsible scientific analysis, reporting and testimony.

A. <u>Strengths and Success Stories</u>

Stakeholders acknowledged that lawyers, forensic scientists, law enforcement and judges must adhere to a common set of ethical standards to ensure the reliability of evidence in Texas criminal courts. Participants also recognized a number of strengths in Texas that contribute to the reliability of evidence. They include:

- The Texas Legislature's decision in 2003 to condition the admission of evidence in criminal actions upon the accreditation of the examining laboratory (House Bill 3703, 78th Legislative Session). Though accreditation is not an absolute safeguard against errors in forensic analysis, it provides a baseline level of confidence and an expectation that all accredited laboratories comply with certain ethical and quality standards, including procedures for addressing non-conformances when they arise.

- The increasingly proactive approach taken by crime laboratories in Texas to: (1) identify any potential problems as they arise; (2) immediately conduct an internal investigation to determine the issue's scope; (3) self-disclose the problem to the Commission, DPS and the appropriate accrediting body.

- The efforts of TDCAA and TCDLA to enhance forensic science-related training opportunities and to alert prosecutors and defense counsel when a forensic science-related issue is raised.[24]

- The work of the Texas Forensic Science Commission in conducting comprehensive investigations of accredited crime laboratories when issues are raised either through public complaints or voluntary self-disclosures.

- The work of the Innocence Project and Conviction Integrity Units to ensure wrongful convictions are addressed and to highlight situations in which forensic science evidence was a contributing factor in the conviction.

B. Key Issues and Challenges

Stakeholders identified the following key issues and challenges in the area of ethical dilemmas:

- The adversarial process limits the ability of forensic scientists to share information freely with prosecutors and defense counsel. Scientists are often not contacted by counsel until the last minute before trial. Scientists expressed a strong desire for greater pre-trial preparation.

- Lawyers typically have weak backgrounds in science and may not fully understand the implications and limitations of a particular forensic test. Lawyers who practice in criminal courts need far better scientific training, and examiners need to be more proactive and assertive when explaining the constraints, limitations and assumptions of their testing.

- Scientists expressed frustration about being "directed too much" during testimony, which leads them to feel less confident that the court and/or jury

[24] Examples of proactive responses in this area include but are not limited to: (1) El Paso District Attorney alerting defense counsel immediately regarding concerns identified in the controlled substance division of the El Paso Police Department Crime Laboratory; (2) TDCAA alerting its membership regarding a significant controlled substance testing issue at the Houston DPS lab, and advising members on the best approach to notify potentially affected defendants and their counsel; and (3) Travis County District Attorney notifying defense counsel regarding allegations in the controlled substance division of the Austin Police Department's crime laboratory, and maintaining ongoing contact with the Commission to ensure any potential *Brady* issues are identified and disclosed in a timely manner.

heard the appropriate analytical explanation for a particular test or test result.

- Scientists and defense counsel expressed a desire for better communication. Scientists would like to be able to share more background information with defense counsel so they better understand and can credibly use scientific information. They would also like to assist defense counsel in understanding the scope of information maintained by the laboratory, narrowing the scope of discovery requests and providing information that is really necessary to protect the rights of clients.

- Scientists and attorneys expressed a desire for greater uniformity in reporting across Texas (language needs to better communicate scientific results, limitations, assumptions, etc.). Attorneys on both sides often do not understand enough to be able to spot key issues in forensic reporting.

C. Action Items and Opportunities for Strategic Collaboration

Stakeholders identified the following action items and opportunities for strategic collaboration:

- Greater interdisciplinary education, including discussions between scientists, defense counsel, prosecutors and judges. Education should be conducted in a safe environment where stakeholders can ask whatever questions they may have. Participants felt a coordinated educational approach would identify stakeholder needs and reduce the likelihood of "bad evidence" being introduced.

- More extensive pre-trial preparation: TCDLA and TDCAA could take a role in encouraging this.

- Defense counsel and prosecutors should consider being more open to the input of scientists. Forensic reports should "telegraph weaknesses and strengths in the analysis" so prosecutors and defense counsel may have a more realistic and open discussion of evidence in the case.

- Different counties across Texas should adopt the same forensic terminology so everyone understands the scientific concepts better and the criminal justice system can achieve greater internal consistency.

- Attorneys should work with the forensic science community to ensure they are kept up-to-date on changes in science, which would help stakeholders reach consensus more easily on the question of whether a particular case requires subsequent review. Not all participants agreed on the appropriate way to address convictions subsequently determined to have been based on outdated or invalid scientific principles, but all agreed that better

- The TFSC should maintain a repository including neutral scientific publications about major changes in scientific understanding in the various forensic disciplines for educational purposes.

EXHIBIT E

SUMMARY OF RESULTS:
TEXAS FORENSIC SCIENCE COMMISSION
SURVEY OF CRIME LABORATORIES 2013

I. BACKGROUND

In February 2013, the Texas Forensic Science Commission ("Commission" or "TFSC") sent the attached survey questions to all members of the Texas Association of Crime Laboratory Directors ("TACLD") with a request that members complete and return the survey on behalf of their respective crime laboratories. The idea for the survey emerged from roundtables sponsored by the TFSC in June 2012 during which stakeholders discussed examiner certification and collaborative research ideas. The survey questions distributed to members of the TACLD are attached to this document as an appendix.

The purpose of the survey was to identify the issues Texas laboratories face with respect to individual examiner certification, and to assess the extent to which laboratories are engaged in collaborative partnerships with academic institutions in and outside Texas. The Commission intends for the survey results to provide helpful background for the July 11, 2013 roundtables focused on examiner certification.

II. RESPONSE RATE

The Commission received a **high response rate for the survey (23 labs out of 29, or 79%)**, including responses from the following laboratories: Austin Police Department Crime Laboratory, Bexar County Crime Laboratory, Houston Police Department Crime Laboratory, Department of Public Safety (including all 13 regional laboratories), Fort Worth Police Department Crime Laboratory, Integrated Forensics Laboratory, Jefferson County Regional Crime Laboratory, Pasadena Police Department Crime Laboratory, the Southwestern Institute for Forensic Sciences (Dallas), the Tarrant County Medical Examiner's Crime Laboratory and the Tarrant County Toxicology Laboratory.

The Commission would like to express its gratitude to these laboratories for taking the time to complete and return the survey.

III. SURVEY ANALYSIS

A. Forensic Disciplines, Number of Examiners and Other Fundamentals (Questions 1-5)

The 23 laboratories provide services in the following disciplines: DNA/Forensic Biology; Toxicology (includes Blood Alcohol and Breath Alcohol), Controlled Substances, Firearms and/or Tool Marks, Latent Prints; Crime Scene; Trace Evidence; Questioned Documents (DPS only); Digital Evidence (DPS only); AFIS (DPS only).

The total number of full-time equivalent (FTE) examiners reported by the 23 laboratories was 497.5, distributed among the following disciplines:

Discipline	Number of FTE's
Forensic Biology/DNA	167
Toxicology	43
Controlled Substances (Drug Chemistry)	128.5
Firearms/Toolmarks	50.5
Trace Evidence	26.5
Latent Prints	28.5 (not all labs reported a total for latents)
Crime Scene	37 (APD only; other labs did not report crime scene)
Questioned Documents/Digital Evidence	8 (DPS only)
AFIS	8.5 (DPS only)

Note: In cases where reported data includes half (0.5) of a full-time equivalent (FTE) the half may be attributed to analysts who split their time between forensic disciplines and/or between a particular forensic discipline and administrative duties.

As a combined group, the 23 laboratories reported a **total of 16 dedicated Quality Assurance/Quality Control staff, for an average of .70 QA/QC FTE per laboratory**. Most laboratories had no more than 1 dedicated QA/QC staff person, with DPS having 6 total for the entire 13-laboratory system. Some laboratory directors perform the dual role of director and QA/QC manager. We did not count scenarios in which the director serves in a dual role as QA/QC manager in the total number, as the question was designed to identify dedicated QA/QC staff.

Every lab except one **(22 of 23 labs) reported they *do not have sufficient examiners* to maintain a 30-day turnaround time on cases.**

When asked how many additional examiners would be needed to achieve a 30-day turnaround time, the average for all respondents was 4.5 FTE examiners per laboratory. Some smaller city and county laboratories would only need 2 or 3 additional examiners to achieve a 30-day turnaround time, while other larger city, regional and statewide laboratories would need a significantly higher number.

B. Status of Certification (Questions 6-17)

Of the 497.5 FTEs covered by the survey, **63 examiners (approximately 12%) are certified**. Not all laboratories reported the breakdown of certified examiners by discipline. **However, all reported certifications fell into the following disciplines: forensic biology/DNA, toxicology, controlled substance, firearms/tool marks, trace evidence, and latent prints.**

The national certifying bodies through which Texas examiners have received certification include the following:

American Board of Criminalistics	(5 labs plus the DPS system)
Association of Firearm and Tool Mark Examiners	(4 labs plus the DPS system)
International Association for Identification	(3 labs plus the DPS system)
American Board of Forensic Toxicology	(2 labs)
American Society for Quality	(1 lab)

Of the 23 responsive labs, 18 labs (including the DPS labs) offer some form of incentive method to encourage certification of examiners. Only five laboratories do not offer incentives, either due to restrictions placed on the laboratory by their funding sources (a factor especially apparent in county-funded labs) or because the laboratory is relatively small and has not yet made a major push toward certification.

Among the laboratories that offer incentive programs, most—but not all—reimburse individual examiners for the sitting fee if the examiner successfully passes the exam. About half provide some time for study. Many include certification as a factor in determining whether an examiner should be promoted, and the promotion may include a salary increase. Only two labs pay bonuses for passing the exam. One provides a $150 bi-weekly pay incentive, while another pays a $2,000 flat bonus for passing the exam. Only one laboratory reported paying for travel expenses.

When asked how much each director believes it costs the laboratory to certify an examiner, responses varied widely. Five directors have never calculated the costs. Four believe it costs between $400-$700 in exam fees and reimbursements, not counting time away from the bench provided for study and the possibility of a raise through promotion. One of the two labs that pay a bonus for certification calculated $3,915 per examiner in bonuses annually. Another lab estimates $10,000 per examiner counting bonuses paid and time "away from the bench" for examination study, travel, and sitting for the exam.

When asked how much time the laboratory spends per examiner on activities related to certification, most directors have not calculated actual hours. One lab estimated "at least ten hours per week" when the lab's certification study group is running. Another estimated "at least one week per year" per examiner. Two laboratories stated the only time spent is the time allotted to take the exam itself.

When asked whether the laboratories intend to require certification of examiners, 16 of the 23 (including the DPS system) responded in the affirmative, indicating that they are actively moving in that direction. The remaining 7 labs said they do not intend to require certification unless it is mandated by the state or federal government.

When asked "why" or "why not" as a follow-up to the question on whether directors intend to require certification of examiners, a sample of responses included the following (these responses are paraphrased):

- We are in favor of a state solution to certification so Texas can be the leader.

- Certification should be required by the state. That would give us leverage to obtain local funding.

- Statewide group should identify critical components of certification and develop a plan to achieve meaningful certification examination and consistency across disciplines.

- We expect certification will be mandated and are starting to plan for it now.

- Imposing a certification requirement absent a mandate would limit our recruitment options.

- Mandating certification creates a false threshold of compliance.

- We have both time and funding limitations in our laboratory that make certification difficult.

- Certification in its current form is simply proof of test-taking skills, not evidence of competence or integrity.

- We believe our current internal training adequately evaluates and verifies competence on an ongoing basis.

- In theory, certification is a good idea. However, the practical demands of casework, LIMS migration, and ISO accreditation (among other items) restrict our available time. Also, our travel and training budget has been cut.

- Every examiner should be certified but we cannot force individuals to spend their own money and time absent a mandate. Our county does not allow the lab to pay for any expenses related to certification.

- In its current form, certification cannot be a substitute for effective training and competency assessment, especially prior to release to independent casework.

When asked what additional resources would make certification of examiners more feasible, directors raised the following suggestions (these are also paraphrased):

- Webinar-based modular study program and/or free exam preparation courses.

- Funds for application fees, professional development and ongoing certification.

- More local training opportunities specifically designed for certification.

- Additional personnel and funding.

- Would place more emphasis on certification for our examiners if available certification programs were more consistent across disciplines and providers.

- Money to support training, CE or prep courses, and additional personnel in at least two sections to meet turnaround times.

- Assistance with cost of training and exams.

In sum, most Texas laboratories recognize the inevitability and desirability of certification *in theory*, but **the following practical issues need to be addressed before laboratories would be willing to move forward on certification as a cohesive group:**

1. Determining which existing certification bodies are *sufficiently rigorous*.

2. Addressing the *discrepancy* in certification *from discipline to discipline*.

3. Providing *greater access* to exam preparation material at *low or no cost*.

4. Providing *resources to help incentivize* examiners to study for and take certification exams in the absence of a mandate.

5. Addressing *laboratory staffing needs* to make time available for certification-related activities.

C. Academic Research/Collaboration (Questions 18-24)

Only 2 of the 23 labs are engaged in collaborative research efforts with any academic institutions in Texas at the current time. One laboratory has engaged in research in the past, but is not currently active. Sam Houston State University, the University of Texas at Austin, Lamar University and the University of Texas Southwestern are some of the institutions with which Texas laboratories have engaged in collaborative research.

Examples of research areas engaged in by laboratories (with or without academic collaboration) include: (1) sexual assault-related prosecution including backlog reduction; (2) validation of new kits and instruments issued by DNA manufacturers; (3) assistance with forensic chemistry program (various projects) and course development; (4) synthetics (marihuana and cannabinoids); (5) method modification and validation; and (6) stability of numerous designer cathinones in various biological matrices.

Every laboratory except one indicated that it would like to engage in more research activity with academic institutions if the opportunity were available. If given the opportunity, preferred areas of research would include:

1. Clarification of guidelines for identifying THC vs. marihuana.

2. Latent prints (reliability and scientific methodology).

3. Firearms.

4. **Designer drugs, methods for testing synthetic cannabinoid compounds** *(Many laboratories specified synthetics as an area for research)*.

5. Methods for automation of forensic DNA testing.

6. Research on reducing turnaround times and backlogs by utilizing newly developed procedures.

7. Subclass carryover per different manufacturing techniques in firearms.

8. Effect on alcohol content of storage conditions and/or blood tubes.

9. Alternative methods for semen detection and confirmation.

When asked whether laboratories would accept research interns if they were made available, the majority of laboratories said they would accept interns, as long as they come from reputable academic programs and have a strong scientific foundation. A few labs noted that space and funds for consumables are an issue when accepting interns. A few also noted that limitations on staff time make it difficult to provide oversight for interns. One laboratory noted the importance of training laboratory personnel on the research processes used by academic programs before partnerships begin.

Texas is fortunate to have four forensic science graduate programs accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC). Two are housed at the University of North Texas Health Science Center, one at Texas A&M University and one at Sam Houston State University. Based on the above survey results, there is certainly room for growth in Texas academic/laboratory partnerships.

* * * * * *

For questions regarding this summary, please contact Leigh Tomlin Heidenreich or Lynn Robitaille Garcia at (512) 936-0770.

APPENDIX
SURVEY QUESTIONS FOR TEXAS LAB DIRECTORS

1. In which disciplines does your laboratory provide service?

2. Approximately how many full-time examiners do you have in each discipline (examiners with more than 50% of time assigned to the discipline)?

3. How many dedicated QA/QC staff does your laboratory have?

4. Do you have sufficient examiners to maintain a 30 day turnaround time (or less) on cases?

5. How many additional examiners would you need to achieve a 30 day turnaround time?

6. How many of your FTE's are certified?

7. In which disciplines?

8. Which certifying bodies have your examiners used to become certified?

9. Do you use any incentive methods (exam fee reimbursement, promotions, time for study etc.) to encourage certification?

10. If yes, what are those methods?

11. How much do you believe it costs the laboratory to certify each examiner?

12. How much time would you estimate the laboratory spends per examiner on activities related to certification?

13. Have you evaluated the cost of certification per examiner?

14. What do you believe the cost would be per examiner?

15. Do you intend to require certification for your examiners?

16. Why or why not?

17. What additional resources, if any, would make certification of all examiners in your laboratory more feasible?

18. Do you currently engage in collaborative research efforts with any academic institutions?

19. If yes, which institutions?

20. What areas of research are you engaged in?

21. Would you like to have the ability to conduct more research?

22. What would your top research priorities be if funding were not an issue?

23. Would you accept research interns if they were made available to you? What factors might impact your decision on whether to accept interns?

24. Is there anything else you would like to add regarding certification of examiners or the potential for research partnerships with academic institutions?

25. May we have a copy of your laboratory's organizational chart?

EXHIBIT F

TEXAS CRIMINAL JUSTICE INTEGRITY UNIT
TEXAS FORENSIC SCIENCE COMMISSION
STAKEHOLDER ROUNDTABLES
JULY 11, 2013

Below is a list of roundtable attendees. If you would like to receive contact information for a specific person, please email Leigh Tomlin at tomlin@shsu.edu or Lynn Garcia at lynn.garcia@shsu.edu.

1. Alpert, Richard	TFSC/Tarrant Co. District Attorney
2. Baccus-Lobel, Shirley	Law Offices of Shirley Baccus-Lobel
3. Barrera, Rick	Houston Forensic Science Local Government Corp.
4. Bassett, Sam	TCDLA
5. Bethke, Jim	TCJIU/Commission on Indigent Defense
6. Blackburn, Jeff	IPOT/State Bar Committee on Indigent Defense
7. Calderon, Nathan	DPS Crime Lab
8. Colfax, Edwin	TCJIU/Commission on Indigent Defense
9. Collins, Darrell	Brazoria Co. District Attorney
10. Di Maio, Vincent	TFSC Presiding Officer
11. Diepraam, Warren	Montgomery Co. District Attorney
12. Ehlers, Scott	Harris Co. Public Defender
13. Eisenberg, Art	TFSC/UNT Health Science Center
14. Everett, Ron	Dallas PD Crime Lab
15. Fallon, Tim	Bexar Co. Crime Lab
16. Fout, Drew	DPS Crime Lab
17. Garcia, Lynn	TFSC
18. Gibbens, Bill	TACLD President/Austin PD Crime Lab
19. Gill, Bob	Tarrant Co. District Attorney
20. Grant, Deandra	TCDLA
21. Guy, Carson	CCA/TCJIU
22. Hawkins, Renee	DPS Crime Lab
23. Hervey, Barbara	CCA/TCJIU
24. Hilbig, Greg	DPS Crime Lab
25. Hon, Lee	Polk Co. District Attorney
26. Johnson, Linda	Jefferson Co. Regional Crime Lab
27. Johnson, Pat	DPS Crime Lab
28. Kahn, Roger	Harris Co. Institute of Forensic Sciences
29. Keaton, Ralph	ASCLD-LAB
30. Kerrigan, Sarah	TFSC/Sam Houston State University
31. Laurin, Jennifer	University of Texas Law School
32. Leben, Deborah	IAI/U.S. Secret Service Crime Lab
33. McDonald, Stacy	Southwestern Institute of Forensic Science
34. Melson, Ken	U.S. Postal Service/OIG

35. Miller, James	Houston PD Crime Lab
36. Molina, Gary	DPS Crime Lab
37. Nazareno, Emerald	State Fire Marshal Lab
38. Neal, John	Travis Co. District Attorney
39. Ohanian, Lucy	Colorado Public Defender
40. Potts, Devin	Innocence Project
41. Reimer, Norman	FBI Task Force on Hair Microscopy/NACDL
42. Renken, Julie	Washington Co. District Attorney
43. Rios, Irma	Houston PD Crime Lab
44. Roady, Jack	Galveston Co. DA
45. Rose, Brian	Harris Co. District Attorney
46. Rutherford, Katie	Harris Co. Institute of Forensic Sciences
47. Sanders, Derek	Pasadena PD Crime Lab
48. Sims, Rashad	Drug Enforcement Agency Southwestern Lab - Dallas
49. Slayton, David	Office of Court Administration
50. Sliter, Tim	Southwestern Institute of Forensic Sciences
51. Smith, David	Brazoria Co. District Attorney
52. Smith, Zoe	DPS Crime Lab
53. Stevens, Nate	Integrated Forensics Laboratory
54. Stobaugh, Dale	DPS Crime Lab
55. Tanner, Lisa	Texas Attorney General
56. Taylor, Chris	ABC/U.S. Army Criminal Investigation Laboratory
57. Thompson, Robert	AFTE/NIST
58. Thomspon, Sandra	Houston Forensic Science LGC
59. Todd, Elizabeth	Southwestern Institute of Forensic Sciences
60. Udashen, Gary	TCJIU/IPOT/TCDLA
61. Van Dorn, Paul	Brazoria Co. Sheriff's Crime Lab
62. Vilbas, Nick	IPOT
63. Walker, Jerry	Drug Enforcement Agency Southwestern Lab - Dallas
64. Weeks, David	Walker Co. District Attorney
65. Westing, Christian	NMS Labs (Pennsylvania)
66. Wilson, Doug	Colorado Public Defender

FREQUENTLY USED ACRONYMS

AAFS	American Academy of Forensic Sciences
ABC	American Board of Criminalistics
ABFT	American Board of Forensic Toxicology
ASCLD-LAB	Association of Crime Laboratory Directors—Laboratory Accreditation Board
AFTE	Association of Firearm and Tool Mark Examiners
CCA	Court of Criminal Appeals (Texas)
IAI	International Association for Identification
IPOT	Innocence Project of Texas
IWG	Interagency Working Group (National)
NIST	National Institute of Standards and Technology
SOFS	Subcommittee on Forensic Science (White House)
SOFT	Society of Forensic Toxicologists
TACLD	Texas Association of Crime Lab Directors
TCDLA	Texas Criminal Defense Lawyers Association
TDCAA	Texas District and County Attorneys Association
TCJIU	Texas Criminal Justice Integrity Unit
TFSC	Texas Forensic Science Commission