American Academy of Forensic Sciences
American Society of Crime Laboratory Directors
American Society of Crime Laboratory Directors, Laboratory Accreditation Board
International Association for Identification
Society of Forensic Toxicologists/ American Board of Forensic Toxicology
National Association of Medical Examiners

August 9, 2012

Halley Ross
Hearing Clerk, Senate Judiciary Committee
United States Senate
Committee on the Judiciary
Washington, DC 20510-6275

Subject: Hearing-"Improving Forensic Science in the Criminal Justice"

Dear Ms. Ross:

Please find attached answers to questions from Committee members resulting from the Justice hearing entitled "Improving Forensic Science in the Criminal Justice" on July 18, 2012.

Again, the Consortium of Forensic Science Organizations was honored to testify at the hearing and be a part of this very important process.

Should you have any questions or need additional information, I can be reached at [redacted] or [redacted]

Sincerely,

Jill L. Spriggs
Secretary
Consortium of Forensic Science Organizations
ASCLD President

Senator Al Franken Questions and Answers

1) How many public crime labs are there in the United States?

   There are approximately 400 public crime labs in the United States (Federal, State, and Local).

2) How many private crime labs are there in the United States?

   The number of private crime labs could not be found.

3) How many of the public crime labs are accredited?

   Approximately 332 public crime labs are accredited.

4) How many of the private crime labs are accredited?

   Approximately 44 private crime labs are accredited.

5) Of the public crime labs that are accredited, how many are accredited in accordance with the ISO/IEC 17025:2005 or a higher standard?

   Approximately 232 public crime labs are ISO accredited.

6) Of the private crime labs that are accredited, how many are accredited in accordance with the ISO/IEC 17025:2005 or a higher standard?

   Approximately 34 public crime labs are ISO accredited.

7) Why do you believe that ISO/IEC 17025:2005 is an appropriate accreditation standard?

   The ISO/IEC 17025: 2005 document used is comprised of over 400 standards. The ISO Standards are internationally recognized standards commonly used by many different entities such as pharmaceutical and environmental laboratories. Quality is paramount under ISO with an intensive focus on management and cradle to grave documentation. To become accredited under this standard each Laboratory needs to prepare a robust Quality Management System comprised of:

   - **Quality Manual**
   - **Procedure Manuals**
   - **Training Manuals**
   - **Laboratory Operations Manual**
   - **Technical and Corrective Action Procedures**
   - **Laboratory Information Management System Manual**
   - **Normative References**

- **Proficiency Testing**

ISO accreditation gives customers and stakeholders confidence in the casework performed, comprehensive documentation, constructive communication, improved record keeping, better transparency and consistency and a high accountability to an external international authority. In the end, crime laboratories will have a concise, efficient, streamlined crime lab system devoted to quality, increased accountability and faster responses to questions due to policies and documentation.

In addition, there are supplemental standards issued by the accreditation body that performs the assessment or audit. Not only are the crime labs assessed to the over 400 ISO standards but they are also assessed to the supplemental standards.

For more information, please see the following websites:

http://www.ascld-lab.org/

http://www.fqsforensics.org/

Senator Amy Klobuchar Questions and Answers

In your testimony, you mentioned that "(m)any of our crime laboratories are drowning in synthetic drug cases," and that the largest backlog in crime labs is in controlled substances. Please expand on that point. What issues are you seeing in the area of synthetic drugs?

Since 2010 crime laboratories have seen a marked increase in the number of controlled substances cases containing new synthetic drugs such as synthetic cannabinoids and "research chemicals" or "bath salts." Recently, laboratories have witnessed the largest increase of new drug substances than has been encountered in the past 20 years. Many samples encountered in the laboratory contain mixtures of these new substances.

Many of the synthetic drugs are similar in chemical structure. Differentiating closely related substances is difficult until reference materials become available. Additionally, many labs may require new instrumentation to aid in this differentiation and identification. In an effort to remain legal, as certain substances are controlled, they are modified to maintain their pharmacological activity, but to change the chemical structure enough to not fall into current legislation.

New synthetic drugs have increased the complexity of both analysis and reporting in controlled substances cases, which has negatively impacted case backlogs.

Backlogs of controlled substances have consisted of traditional drug cases such as marijuana, cocaine, heroin and methamphetamine, etc… In 2005, a Bureau of Justice Statistics (BJS) Survey highlighted that *"controlled substance identification accounted for about half of all requests backlogged at year end"*. Data from a 2009 BJS survey (recently released 8/2/2012) showed that requests for the controlled substance discipline was:

- **The most requested test by evidence submitters (e.g., law enforcement agencies).**
- **The most common forensic function performed by all publicly funded forensic crime labs.**
- **And had the second most backlogged type of request.**

These reports objectively support the argument that the problem of untested, traditional, drug evidence existed in many crime laboratories prior to 2009. However, what these reports do not illustrate is the recent phenomenon of "synthetic drugs" submissions.

In 2009, the synthetic drugs (e.g., Spice and Bath Salts, etc…) were not considered a major testing category by most crime laboratories. Indeed, a 2010 NFLIS (National Forensic Laboratory Information System) estimates that only 15 of these types of drugs were identified in the United States in 2009. However, this soon increased to 2977 submissions in 2010.

The State of Utah had a similar experience. The Utah Bureau of Forensic Services had no "synthetic" drug submissions in 2009, a few in 2010 but by the end of 2011, these types of drugs accounted for one fourth of all drug submissions to their crime laboratory system. Other crime laboratories around the country are experiencing a similar trend.

As stated in my testimony despite these challenges with synthetic drugs, as well as other tradition drugs, the federal funds for forensics do not reflect this ever-increasing problem. It is one of the reasons that we believe strongly that grant reform is needed and an analysis must be done of the needs of the forensic practitioners and then budgets must reflect those needs. In other words, a national strategy for forensics must be documented and addressed on a yearly basis.

Synthetic drugs have special challenges. The following is a list of issues that Utah and other laboratories have experienced:

<u>Issue #1 – Analog law/Current Federal Law</u>

Most Prosecutors are unwilling to prosecute cases where the active compound is not specifically listed within the law. Many of the "spice/bath salt" chemicals identified are not added to the controlled substance schedule for more than a year after the crime lab first begins to see them in submissions. Some of these new, identified compounds may not be considered analogs and do not fall into a class of substances that can be considered scheduled under the new law.

<u>Issue#2 – Binding Site Studies</u>

Even if a submission could be pursued under the analog act or the new federal law there is insufficient scientific studies to prosecute them under these laws. If the laws are to stay the same then a method of temporally scheduling them needs to be developed to put a stop to the illegal use of these compounds, until sufficient studies can be performed.

<u>Issue #3 – Changing Active Compounds</u>

By the time the "spice/bath salt" draws the attention of the legislature, the manufacturers and distributers change to another compound. Most of the compounds are simply a minor change to the structure of the molecule (e.g., change

hydrogen to a chlorine atom). Additionally, the "brands", marketed in convenience and smoke shop stores, typically change the compounds that are added to the plant material used in "spice", which are almost universally Damiana leaves mixed with some other plants. This means that criminal justice agencies can have no guarantee that a particular "brand" will contain a particular compound. Hence, every sample must be tested.

Issue #4 - Lack of Data for Identification

The manufacturers frequently change the compounds in their "spice/bath salt" products. This practice results in new, time-consuming "research projects" for crime laboratories which greatly increases the analysis and backlog time. Few current "synthetic drug" libraries exist that are useful and those that do are very expensive. Furthermore, the ones that are current come with the *"caveat"* that they should not be used for identification or used to confirm a standard which makes them less useful for most crime laboratory purposes.

Issue #5 – Lack of Good Quality Standards

There are very few providers of quality standards and those manufacturers will only begin producing standards when there is sufficient demand. Without good quality standards, laboratories will need more sophisticated and expensive identification methods (e.g., Nuclear Magnetic Resonance Spectroscopy) to supplement their current instrumentation.

Issue #6 – Lack of Color Tests or Testing Methods

Most accredited, public forensic crime labs follow the national SWGDRUG (Scientific Working Group for the Analysis of Seized Drugs) guidelines. Those guidelines recommend at least two (2) methods of testing which means laboratories need a reliable color test; however, one does not exist for most "spice/bath salt" compounds. The other option for laboratories is to invest in more diverse and expensive types of analytical equipment with both separation and identification capability (e.g., GC/MS, LC/MS, etc…).

Issue #7 – Lack of a Field Test

Crime laboratories are being inundated with these types of cases because there are no screening tests for officers to determine what substance they may have – similar to a quick field test kit for cocaine or methamphetamine. Left with no other choice prior to filing criminal charges, these cases are submitted to the crime laboratory. Because there are hundreds of possible substances that could be in these synthetic

drug products, the analysis time of each item of evidence is approximately double to triple the analysis time of a single bag of cocaine, for instance.

Senator Charles Grassley Questions and Answers

1) Can you please explain what a crime laboratory has to do to become accredited under current standards? Could new accreditation standards add anything to that?

ISO accreditation is important to the public and criminal justice system. It demonstrates a crime laboratory is performing at the highest standard of quality. Without ISO accreditation, the laboratory will not be able to apply for federal grants or participate in the Combined DNA Index System (CODIS). DNA cases will go unsolved and violent criminals will remain on the street.

ISO accreditation requires documentation and oversight, along with annual surveillance visits followed by a full assessment every five years.

The average time it takes for a crime laboratory to prepare for an ISO accreditation assessment/inspection is approximately three years. During this time, manuals are written and re-written to reflect all 400 standards under ISO 17025:2005. A crime laboratory must show six months of actual working experience and knowledge of its Quality Management System comprised of: Procedures Manuals, Training Manuals, and a Quality Manual. Of equal importance are the crime laboratories: testimony monitoring, equipment calibration, proficiency testing, corrective action plan, validation and report writing. After this is accomplished, a laboratory must apply for an assessment/inspection and receive a date in which the assessment/inspection team will arrive. Each assessment takes approximately one week to complete. A Lead Assessor/Inspector will lead the team of assessors/inspectors through the assessment process. For an average size crime laboratory of 30 employees, the total number of assessors inspecting the laboratory is approximately seven assessors. Assessors are trained individuals who are qualified and knowledgeable in the discipline they are inspecting. During the week long assessment, assessors will look at casework to determine if case notes support the conclusions, inspect equipment maintenance logs, view chain of custody records of casework, review proficiency test records, perform an assessment of the security of the laboratory and determine if the laboratory has a correction action plan in place. Most assessors/inspectors work twelve hour days to accomplish this task. Once the assessment is complete, the laboratory will receive Corrective Action Requests (CARs) and must follow up on any issues found before they can be accredited.

Not only are crime laboratories assessed to ISO standards but they are also assessed to supplemental standards issued by the accrediting body that performs the assessment or audit.

Although, the ISO standards themselves are not updated routinely, the supplemental standards are updated on a routine basis by the accrediting body. As I indicated in my testimony, both ISO and supplemental standards should evolve and advance as the science does.

2) Please describe current standards for certification of lab analysts-who sets them, what it takes to get certified, what continuing oversight exists. What more can be done regarding certification?

Currently there are several certification bodies. All certifications at the moment are a voluntary process for most states.

American Board of Criminalistics (ABC)

The American Board of Criminalistics was formed by a majority of forensic science associations such as ASCLD to establish a certification process. All ABC examinations are three hours in length and consist of 220 multiple choice questions. Questions are drawn from areas of law, safety, ethics and all disciplines in a crime laboratory. Once a general examination is passed, a Criminalist can go on to take a specialty examination such as drug analysis or molecular biology.

There are two types of ABC certification: Diplomate and Fellow. A Diplomate is awarded to individuals with a BS/BA in a natural science, two years of forensic lab or teaching experience and upon successful completion of an ABC examination. This designation is designed for people who no longer do casework such as lab directors, supervisors and educators. A Fellow is awarded to successful completion of any of the ABC examinations, successful performance on proficiency tests and a minimum of two years in a specialty area. The ABC Fellow certificate signifies that the analyst is qualified to conduct examinations in the specialty area.

The certification is valid for 5 years. One can be recertified by continued participation in the field of forensics sciences through training, casework, publishing, etc.

More information can be found at http://www.criminalistics.com/.

Association of Firearm and Tool Mark Examiners (AFTE)

The Association of Firearm and Tool Mark Examiners (AFTE) offers external certification examinations to qualified AFTE Members.

In 1998, AFTE worked in conjunction with Cooperative Personnel Services (CPS) to develop certification examinations in three different competency areas: firearm, gunshot residue, and tool mark evidence examination and identification. Each certification examination consists of a written examination and a practical

examination. The tests were reviewed by a panel of twelve subject matter experts to ensure relevance and clarity of the written portion of the test.

To qualify for the test, an individual must be a regular, distinguished or emeritus member of AFTE; have training and experience equivalent to the course of study described in the AFTE Training Manual; have 3 years of experience as a court qualified firearm and tool mark examiner with training and experience equating to 5 years of total experience in the discipline; and must possess an earned baccalaureate degree from an accredited academic institution with major course work in physical science, natural science, forensic science, criminalistics, criminal justice, police science, industrial technology or related fields of study.

An individual must be recertified every five years. To maintain certification, the participant is required to successfully complete a proficiency test annually in each area that they are certified. In addition to working in the forensic sciences, the applicant must have earned 100 Continuing Education Units (CEUs) for training received and 50 CEU's for training provided during the five years since becoming certified or being recertified.

In 2012, AFTE worked in conjunction with the National Forensic Science Technology Center (NFSTC) to develop the AFTE Certification On-Line written test.

Complete information about the AFTE Certification Examination can be found at:
http://www.afte.org/AssociationInfo/a_certification.htm

International Association of Identification (IAI)

IAI certifies examiners in various programs such as latent prints, footwear, crime scenes, bloodstain pattern examination, ten print fingerprint certification, etc.

The latent print certification is an extremely arduous process. The requirements for IAI Latent Print Certification is as follows:

A. Technical Training Required:

Minimum of 80 Hours of Certification Board approved training in latent print matters, along with criteria listed on the application form. It should be noted that for Certification, hours will be used to calculate figures and credits used to calculate recertification figures.

B. Basic Experience Required:

1. **Minimum of two (2) years full-time experience in the comparison and identification of latent print material and related matters.**
2. **If less than full-time experience for the given time period is possessed, times must be accumulated to reach an acceptable minimum.**

C. Education Requirements:

1. **A Bachelor's Degree plus two (2) years full-time experience as prescribed by the LPCB.**

   or

   a. **An Associate Degree (or documentation of 60 semester hours or 90 quarter hours of college credits) plus 3 years full-time experience as a latent print examiner equals the Bachelor's Degree requirement.**

      or

   b. **Four (4) years full-time experience as a latent print examiner required by Section C, 1 equals the Bachelor's Degree requirement.**
2. **Educational requirements are not applicable to re-certification.**

D. Examinations:

Certification shall be determined by testing. The certification test was developed and is maintained by the IAI Latent Print Certification Board. The applicants have 8 hours to complete parts 1, 2, and 3 of the test. All written tests are graded and recorded on a pass/fail basis as follows:

1. **Comparison of 15 latent prints with inked prints. The applicant must correctly identify a minimum of 12 of the latent prints without an erroneous identification.**
2. **Pattern Interpretation of 35 Inked Impressions. The applicant must correctly interpret a minimum of 32 prints.**
3. **True and false, multiple choice questions relative to the history of fingerprints, pattern interpretation and latent prints. Must successfully pass a written test with a minimum score 85%.**

E. Either oral board testing and/or presentation of a case for review to include latent print, inked print, charted enlargements and court qualifying questions and answers.

1. **If the applicant has already testified in a court of law as an expert, the applicant may submit a case for review, or may submit to the oral board testing.**
2. **If the applicant for certification indicated on the original application that he/she had previously testified in a court of law to a latent print identification, the letter will specify a 90 day time limit by which the applicant must submit to the Division Certification Committee a case for review and documentation of prior testimony.**
3. **The case for review shall include:**
   a. **A copy of the latent print**
   b. **A copy of the inked print**
   c. **Charted photographic enlargements of a and b, and include an explanation on how the conclusion is reached.**

d. Qualifying questions with answers to include the introduction and identification of the latent print.

4. Documentation of prior testimony may be one of the following or other similar documentation:
    a. Letter from judge in whose court he/she testified.
    b. Letter from prosecuting attorney of case in which he/she testified.
    c. Letter from defense attorney in case.
    d. Court transcript of his/her testimony.
    e. Letter from his/her immediate superior who has personal knowledge of applicant's prior testimony.
5. The Division Certification Committee will review the "Case for Review" and the documentation of prior testimony and if in order will forward same to the Secretary of the Latent Print Certification Board.
    a. a. If the applicant has not given testimony in a court of law as an expert, the applicant shall be required to undergo oral board testing as follows:
        1. If applicant on original application indicated that he/she had not previously furnished testimony, then a letter will be forwarded from the Secretary of the Latent Print Certification Board to the applicant, advising the applicant that he/she had achieved passing grades on the initial three portions of the test and is eligible for an oral board testing. The Chairman of the Division Certification Committee will be notified of the applicant passing the written test, no scores will be provided.
        2. The Chairperson of the Division Certification Committee will be requested to set a date within six months of passing of the written test for the oral board test and to advise the applicant and Secretary of the Latent Print Certification Board of the test date.
        3. The oral board test shall be administered by a minimum of two members of the Division Certification Committee and preferably by all three.
        4. The oral board should be approximately one hour in length and should include the following:
            a. A latent print and/or copy thereof.
            b. Inked print and/or copy thereof.
            c. Charted photographic enlargements depicting the identification.
            d. List of qualifying questions.
            e. Original notes, work sheets or report.

            (The above should be prepared and brought to the oral board test by the applicant and should be a hypothetical case as opposed to an actual case not yet adjudicated.)
6. The Division Certification Committee should put the applicant through a mock trial, as would be experienced in a regular court of law with judge, prosecutor and defense counsel.

a. The prosecutor should go through qualifying questions with the applicant responding, through the evidence testimony, and an explanation by the applicant of the charted enlargements depicting the latent print and inked print, and should then be cross examined by the defense.
b. The cross examination should proceed as dictated by the direct testimony and should include questions on the background of fingerprint identification, methodology and criteria used in effecting an identification, as well as questions relative to his/her background and experience.

7. A videotape recording shall be made of each applicant's mock trial proceeding and should include the date, name of the applicant and names of those participating in the oral board test.
    a. The videotape should be forwarded with comments of the Division Certification Committee as to the satisfactory or unsatisfactory participation by the applicant to the Secretary of the Latent Print Certification Board.
8. Anyone failing the test for any reason other than an erroneous identification must wait 6 months from the test date to reapply.
9. Anyone failing the test by making one or more erroneous identifications must wait 1 year before they can reapply to take the test.
10. Those reapplying must submit a new application with all attachments plus whatever fee may be in effect at that time.
11. An applicant failing any part of the test need only retake that part which he/she failed; unless an erroneous identification was made in which case the entire test must be retaken.

F. Recertification:
1. All applicants for recertification must accumulate 80 Continuing Education/Professional Development Credits since initial certification or recertification.
2. The certification program calls for recertification every five years. This is necessary to determine the activities of the examiner over the previous five years and provide for updating of records.
3. Applicants for recertification must prove continued competency by means of a comparison test. After approval of the Division Latent Print Certification Committee, the Secretary/designee of the Latent Print Certification Board will send the applicant a comparison test.
    a. Test will consist of five latent prints and five inked cards. The latent prints will all be identifiable with the inked prints provided.
    b. The applicant will have thirty days to complete the test and return it to the Secretary of the LPCB for grading. The applicant will provide a signed statement affirming that he/she took the test without assistance.
    c. All of the latent prints must be identified to pass the test.
    d. Failure to identify all of the latent prints will cause the suspension of their Certificate pending the applicant completing a new application for Certification and paying the applicable fee as stated on the IAI Website and taking the Certification test as stated. Failure to apply for testing prior to one year after the original expiration date of the Certificate will cause the suspension of the Certificate.

e. An erroneous identification will cause the suspension of their Certificate for one year. After one year the applicant may apply for Certification and be tested as stated.

G. Final Review:

1. The Secretary of the Latent Print Certification Board will review the application and all related material including all test material, case for review, documentation of prior testimony, tape of mock trial and recommendations of the Division Certification Committee. If everything is acceptable, a certificate and certification card will be issued to the applicant.
2. The entire Latent Print Certification Board will review the application and all related material in the event there is a technical concern about the application or test results.

Note: All information highlighted in yellow was taken directly from the IAI website.

Additional information can be found on the website for other areas of certification at http://www.theiai.org/certifications/

For all certifications, an evaluation of the education, training and continuing education of analysts should be performed by accrediting agencies during evaluation of forensic laboratories. Additional accreditation requirements should be in place to ensure analysts have the proper education, certification, and annual training hours.

3) Can you please explain the roles and responsibilities of the Scientific Working Groups that currently set standards for the various forensics science disciplines? What is missing from the SWG process now?

As I indicated in my testimony, the federal government took a leadership role in creating technical working groups consisting of federal, state and local forensic scientists, international members, academia and independent consultants. One of the most visible groups is the Scientific Working Group on DNA Analysis Methods or SWGDAM. The role of this group is to ensure the uniformity of DNA standards and improve processes within the forensic human DNA laboratory community.

Each discipline in forensic science also has a similar SWG group. For example, the Scientific Working Group for Seized Drugs or SWGDRUG and Scientific Working Group for Friction Ridge Analysis, Study and Technology or SWGFAST. For example, the mission of SWGDRUG is to recommend minimum standards for the forensic examination of seized drugs and to seek their international acceptance (http://www.swgdrug.org/index.htm). All eighteen SWG groups have the same interest at heart, which is to create a forum for increased quality in the discipline they represent. In other words, all SWG groups provide guidelines to the scientific community it represents by providing guidance on such topics of validation, report writing, education, training, proficiency testing, equipment calibration and interpretation of data.

However, these other disciplines within the field of forensic science have not enjoyed such robust and widespread federal support as the DNA analysis Scientific Working Group. SWGDAM is funded by the Federal Bureau of Investigation while the other SWG groups receive very little funding at all resulting in an orphan status as compared to SWGDAM. In addition, some SWG groups are not as organized in their approach of issued standards as SWGDAM. Guidance and leadership is needed to provide all SWGS with the necessary tools to become an effective and positive influence in the forensic community.

In addition, the SWGs need to be provided clear direction and expectations for the type of work product members are to produce. A criticism of the SWGs is that the work being produced is not in line with the type of work that needs to be produced to answer the criticisms of the forensic sciences (such as those in the NAS Report). Without clear direction, the SWGs will continue to produce work product that they see as relevant, which may not be in line with what is valued by those that are trying to evaluate the forensic disciplines but may be in line with the forensic community.

Additional information regarding funding for each SWG can be found at: http://www.nij.gov/topics/forensics/lab-operations/standards/scientific-working-groups.htm#notnijfunded

As an example- As stated on the website, the roles and responsibilities of the Scientific Working Group for Firearms and Toolmarks (SWGGUN) is "*...to develop a series of consensus guidelines for the firearm and toolmark discipline and to disseminate SWGGUN guidelines, studies, and other findings that may be of benefit to the forensic community.*" The objectives of the SWGGUN are also present on the website:

1. **Recommend and disseminate discipline guidelines for quality assurance and quality control.**
2. **Provide guidelines and not to mandate decisions of policy.**
3. **Discuss, share and exchange ideas regarding forensic analysis methods, protocols and research.**
4. **Bring together organizations and/or individuals actively pursuing relevant analysis methods for the purpose of exchanging and disseminating information.**
5. **Cooperate with other national and international organizations in developing relevant standards.**
6. **Monitor and disseminate research and technology related to the discipline.**

Currently, the SWGGUN does not set standards for the forensic science discipline of firearm and toolmark examination or have a direct mechanism to enforce its guidelines. A stable source of funding and administrative support would allow the SWGGUN to more effectively produce guidelines and resources.

The work product of the SWGGUN is valuable and relevant to the forensic firearm and tool mark community. With the presence of AFTE, the SWGGUN has taken the role of developing guidelines, responding to criticisms of the science, and developing tools (Admissibility Resource Kit) that are useful to those in the discipline. Further, in recent years SWGGUN has been active in educating the firearm and toolmark discipline by providing admissibility training to various agencies. The developed work product is intended for use by practitioners in the discipline, and as such, may not fulfill the needs of the federal government or the greater forensic science community.

4) Can you please describe in more detail the Australian NIFS and what features of its operations would be beneficial, if they could be transferred to the United States and our legal system?

As indicated in my testimony, the National Institute of Forensic Science (NIFS) is model the United States could subscribe in order to provide guidance and leadership to the forensic community.

NIFS was established with sign off by both Federal and State Governments so there is national buy in across government. It has established strong ties and interfaces with the forensic science community, end user groups (justice and policing) and academia with representation at the highest level of all of these stakeholders on the Board and/or its Advisory Forum.

NIFS works on a daily basis with Specialist Advisory Groups (SAGs) (8 of them) which cover the broad range of disciplines within the forensic sciences. It develops Annual Action Plans with the SAGs which identify and prioritize work plans to resolve pressing technical and scientific needs.

NIFS also works very closely with the Senior Managers of Australian and New Zealand Forensic Laboratories (SMANZFL), the ASCLD equivalent, on management/policy issues.

For both SMANZFL and the SAGs it acts as a body for knowledge and technology transfer through an annual workshop program.

NIFS is small, nimble and flexible. It has a coordinator and facilitator. Through its engagement at all levels across its stakeholder groups it has developed enormous good will which assists in obtaining national consensus. This has assisted in reaching national agreement on issues such as Standards, accreditation, certification, R&D and education and training.

Additional information can be found at the following website: http://www.nifs.com.au/home.html

5) Can you please describe the current state of research on the validity of fingerprinting?

In an August 2009 position statement regarding the NAS report, *Strengthening Forensic Science in the United States: A Path Forward,* SWGFAST maintained that a significant body of constructive scientific research has already been conducted that addresses some of the concerns expressed in the report.

Since that time additional research has been ongoing throughout the world which addresses the science of friction ridge identification. Some of that research has been published and/or reported on to the community, while some remains in progress. In November 2011, SWGFAST provided a 64 page response to a request from the Research, Development, Testing & Evaluation Inter-Agency Working Group of the National Science and Technology Council, Committee on Science, Subcommittee on Forensic Science asking for an annotated bibliography of the literature supporting the friction ridge sciences. This report (see attached/available at http://www.pdfdownload.org/pdf2html/pdf2html.php?url=http%3A%2F%2Fswgfast.org%2FResources%2F111117-ReplytoRDT%26E-FINAL.pdf&images=yes) was prepared on behalf of SWGFAST by a dedicated task force established at the University of Lausanne (Forensic Science Department of the Faculty of Law and Criminal Justice) under the direction of SWGFAST member Dr. Christophe Champod. Included within the report are publications covering the areas of: underlying fingerprint characteristics, minutiae sample sufficiency, fingerprint quality, fingerprint matching, type I and type II error, probability, analyst consideration, and end to end process reliability. I have also attached a copy of this for your review. (See Attachment #1)

Considering the current question, SWGFAST would bring particular attention to those publications highlighted in Appendix A which is a latent print *Daubert* direct reference list used by latent print examiners from the FBI Laboratory Division.

Since the issuance of the NAS report the National Institute of Justice has issued thirteen awards to address friction ridge research (see Appendix B, accessed August 7, 2012, http://www.nij.gov/topics/forensics/forensic-awards.htm#impressionaccessed). While many of the awards have yet to be fulfilled through publication of final reports the interest and support reveals a strong commitment to continued research in the field.

In addition, attached is a consensus document representing work from IAI members in 2006-2008, reference literature and international surveys to support this effort. Included in the summary are recommendations suggested by a cross section of the fingerprint community to include domestic and international representatives. As a result, a new resolution was approved by the membership. Both the report and resolution are attached. (See Attachments #2 and #3)

Again, the problem lies in the fact there is a lack of a national roadmap of what is needed and further-- once research is done there is no method by which to distribute it to the community and all stakeholders.

6) Can you please describe that study? What is the current state of research overall on the validity of firearms matching?

The research that has been performed to establish the validity of the forensic firearm and tool mark discipline has been compiled as part of the SWGGUN Admissibility Resource Kit (www.swggun.org). Numerous research projects have tested the fundamental propositions of the forensic firearm and tool mark discipline, resulting in the establishment and continued support of the AFTE Theory of Identification.

In response to questions posed by the Subcommittee on Forensic Science's Research, Development, Testing & Evaluation Interagency Working Group (RDT&E IWG), the SWGGUN compiled a list of annotated bibliographies of the foundational research performed in the forensic firearms and tool marks discipline. The list is 47 pages in length, and can be found on the SWGGUN website.

http://www.swggun.org/swg/index.php?option=com_content&view=article&id=51:swggun-responds-to-sofs-request&catid=13:other&Itemid=43

Much of the emerging research is focused on the development of instrumentation to map the topography of a tool mark, to capture the image of the tool mark using an advanced technology, or develop a statistical assessment as to the likelihood that two tool marks were produced using the same tool. By removing the examiner from the comparison process, much of this research is attempting to establish a more objective standard for association statements.