TRIAL COURT CAUSE NOS. F08-24702; F08-24703; F08-45280: F08-24699; F08-24752;

STATE OF TEXAS

v.

NGUYEN, THAI-AN HUU

IN THE 283RD CRIMINAL

DISTRICT COURT

DALLAS COUNTY, TEXAS

PRELIMINARY AFFIDAVIT OF DAVID J. LAMAGNA IN SUPPORT OF DEFENDANT'S DAUBERT MOTION

SECTION I

I, DAVID J. LAMAGNA, the Principal of American Forensic Technologies LLC, being first duly sworn, declare:

I am the Founder and Manager of American Forensic Technologies LLC, a forensic consulting company, which provides a variety of forensic services in various forensic disciplines such as shooting and crime scene reconstruction, firearm identification, fingerprint identification and bloodstain pattern analysis.

I have been retained by Attorneys Bruce Anton, and Ward Maedgen to provide forensic and investigative services in the case of State of Texas v. Nguyen, Thai-An Huu. My investigation and analysis in this case will result in a completed firearm examination and identification analysis. My indexed and bound curriculum vitae with all supporting documentation will be furnished as *Exhibit A*, within twenty (20) days after the filing of this affidavit. It is currently

being revised and reformatted to enable indexing of the supporting documentation.

I am a Fifty-Five-year-old (55) Forensic Scientist/Engineer and Investigator with training, education and experience in numerous areas of forensic science, engineering and investigation. I have also worked as a part-time law enforcement officer in Massachusetts on assignment for certain state agencies as a police constable, and I am currently a licensed private investigator in several states. I have worked within the law enforcement community for more than twenty (20) years.

I have completed approximately 1000 hours of professional law enforcement training as a certified law enforcement firearms, defensive tactics, chemical munitions, and other weapon systems instructor, and as a certified factory law enforcement armorer, in person, at several widely recognized law enforcement training academies.

I have completed approximately 700 hours of professional law enforcement training in person at the Metro Dade Police Training Unit in Miami Florida, in such subject matters as Crime Scene Investigations and Crime Scene Reconstruction, Shooting Reconstruction, Homicide Investigations, Bloodstain Pattern Analysis, Fingerprint Technology, Fingerprint Examination and Identification, Physical Evidence, Forensic Photography, Police-Medical Investigation of Death, Use of Deadly Force Investigations, Officer Survival Instructor Techniques, etc.

I have completed several hours of training in DNA Profiling at DNA Diagnostics Corp. of Columbia, Maryland. I have also received training in palm

print classification, and other forensic disciplines through the International Association for Identification (IAI). I am a certified computer technician, with specialized certifications in A+, Network+, and MCP, which I received through training, and testing at the Intense School computer-training academy in Ft. Lauderdale, Florida. I have also received training in computer-aided design (CAD), computer-aided engineering (CAE), and computer-aided manufacturing (CAM) both at the University of Massachusetts-Lowell, and at Structural Dynamics Research Corporation (SDRC) of Milford, Ohio. I am also a certified medical investigator, and a certified homeland security specialist through the American College of Forensic Examiners.

I have a formal scientific education, including a Bachelor of Science degree in Plastics Engineering, which is a sub-discipline of Chemical Engineering, with an emphasis on engineering mechanics, engineering dynamics, strengths of materials, process and design engineering, polymer science, chemistry and engineering mathematics. I also hold a Master's of Science degree in Materials Science, which is also a subdiscipline of Chemical Engineering, with an emphasis on ceramics, metals, cermets (ceramic-metal alloys), synthetic polymers, bioprocess engineering, etc., Additional emphasis was focused on learning research, and development techniques, as Materials Science is a graduate M.Sc. level engineering degree program. In addition, I have completed more course credit hours than are required for a Doctor of Science degree in Engineering. I minored in Biology and Biotechnology respectively. I also worked as a teaching assistant at the beginning of my tenure at graduate school, teaching undergraduate students laboratory procedures.

I have also received specialized training in surface metrology (microscopic measurement of surface features such as toolmarks), and tribology (science of wear and friction) as part of my overall training as an engineer.

I have been a member of several professional organizations including but not limited to the National Society of Professional Engineers as a M.Sc. level engineer; the American Society of Biomechanics as an engineer with specialized training in biomechanics and kinesiology; the Microscopy Society of America as a trained microscopist; the International Association of Bloodstain Pattern Analysts as a trained and certified bloodstain pattern analyst; the American Society for Law Enforcement Training (ASLET) as a trained and certified law enforcement instructor possessing approximately 2-3 times the number of hours of professional law enforcement training than the average municipal and/or highway patrolman receives in total at the typical police academy; The American College of Forensic Examiners as a Diplomate in their Engineering and Technology section; the International Association for Identification (IAI) as a trained fingerprint and firearm examiner; and other professional organizations over the years.

I have been previously qualified as an expert and have testified in various areas of forensic science including: crime scene reconstruction, fingerprint identification and technology, firearm identification, ballistics and trajectory analysis, bloodstain pattern analysis, accident reconstruction, and DNA Profiling as related to crime scene and physical evidence issues.

Prior to working in the law enforcement field, I was employed in industry for approximately fourteen (14) years as an engineer in one capacity or another

within the chemical, plastics, medical device, consumer goods, firearms, and metal working industries in general. At that time I became intimately familiar with the various manufacturing processes used in the manufacture of firearms, cartridge cases, etc. I have also held a federal firearms license in the past, primarily for the purposes of technical consultation. I have in fact been involved directly or indirectly in the firearm industry since 1982.

I have received training, and experience throughout the last 33 years of my professional life as an engineer in the specification, and measurement of machined surface finishes (i.e., toolmark analysis). This type of training is mandatory for any engineer that may be involved in the design and manufacture of high precision molds, dies, cutting tools, etc. used in the plastics and metal forming industries, and the subsequent manufacture of critical parts used in the medical, optical, aerospace, and similar fields. I have worked as an independent design engineer on several different projects, and I currently hold a patent for a Time-Temperature Gage.

It is very important for the reader to note that this is a preliminary affidavit only. I am in the process of obtaining a Jennings/Bryco 9mm semi-automatic pistol, which I will use for my own independent examination and testing. My supplemental affidavit will include the results of this testing, and more detailed information concerning the underlying science of toolmark and firearm identification.

SECTION II

NGUYEN CASE SUMMARY

It is my understanding from my review of the documentation that has been presented to me by defense counsel in this case, and oral representations made by said counsel that the prosecution in this case is alleging that Mr. Thai-An Huu Nguyen was shooting randomly at motorists in Garland, Mesquite, Richardson, and Plano, Texas during a three-day time period, in what may have resulted in six different distinct shooting incidents on or about the end of the month of June or beginning of July 2008. I am also aware of the fact that buccal swabs were taken from Mr. Nguyen, per a court order, for development of his DNA profile for comparison to any DNA profile that may have been developed from the recovered firearm evidence in this case. It is my understanding that the DNA testing in this case did not provide results that could link the firearm evidence to Mr. Nguyen. However, I have not yet been provided with any relevant lab reports concerning this testing.

I also understand that an effort was made to develop latent fingerprints on the surfaces of the firearm evidence in question, and that this too did not provide any results that could link the firearm evidence in question to Mr. Nguyen. In fact, I believe that a single latent fingerprint was developed on a cartridge case surface utilizing the cyanoacrylate fuming method, but that only level one ridge detail was developed, which is not acceptable in and by itself for "identification" purposes. I also understand that a photograph was taken of the developed ridge detail. Yet, I have not yet been provided with a copy of this photograph to date.

I also understand that certain police detectives allege Mr. Nguyen to have "confessed" to these shootings after interrogation. Yet, from my review of transcripts of these interrogations, Mr. Nguyen did not appear to be able to provide a high level of accuracy in describing all of the shooting incidents that he is alleged to be responsible for. For example, he denies ever shooting at white or Caucasian people. Yet, apparently at least one white person may have been shot at during the aforementioned alleged three-day shooting spree. It is also my understanding that there have been some issues with alleged eye-witnesses identifying license plate numbers, green lighting that is allege to have surrounded the rear license plate of the vehicle driven by Mr. Nguyen, etc. Apparently the alleged confession by Mr. Nguyen has been suppressed due to coercive interview, and interrogations techniques employed by the police detectives that interviewed, and interrogated Mr. Nguyen.

Finally, the firearm examiner for the prosecution, Susan Allen is alleged to have informed police personnel that were involved in the field investigation of this case that as a result of her firearm examination she was able to "match" all of the firearm evidence recovered at the shooting scenes, or that the markings (i.e., toolmarks) were "identical" for all shooting incidents. This evidence, and the manner in which it has been, and is typically reported is the reason defense counsel hired me to work on this case. An understanding of the history, and development of forensic firearm examination and identification is essential in understanding why twirling, and "eye-balling" firearm evidence under an two-dimensional (2D) optical comparison microscope until some sort of coarse alignment of toolmark striae is found, particularly without regards to spatial

orientation, is a scientifically irresponsible method of so-called firearm identification.

SECTION III

HISTORY AND DEVELOPMENT OF FORENSIC FIREARM IDENTIFICATION

The first firearms evidence identification may be traced back to England in 1835 when the unique markings on a bullet taken from a victim were matched with a bullet mold belonging to the suspect. The bullet mold surfaces apparently contained some sort of identifiable toolmarks. Apparently, when confronted with the damning evidence, the suspect confessed to the crime.

It is believed that the first court case involving firearms evidence took place in 1902 when a specific gun was "proven" to be the murder weapon. The expert in the case, Oliver Wendell Holmes, had read about firearm identification, and had a gunsmith test-fire the alleged murder weapon into a wad of cotton wool. A magnifying glass was used to "match" the bullet from the victim with the test bullet.

Calvin Goddard, physician and ex-army officer, acquired data from all known gun manufacturers in order to develop a comprehensive database. With his partner, Charles Waite, he catalogued the results of test-firings from every type of handgun made by 12 manufacturers. Waite also invented the comparison microscope. With this instrument, two bullets could be laid adjacent to one another for comparative examination. A comparison microscope is nothing more than two relatively low powered compound microscope joined by

an ocular unit. *See Exhibit B.* The same results can be obtained today with a stereomicroscope, and imaging software. *See Exhibit C.* It is important to note that wide field stereomicroscopes were, and still are used for field examinations. *See Exhibit D.*

In 1925 Goddard wrote an article for the *Army Ordnance* titled "Forensic Ballistics" in which he described the use of the comparison microscope regarding firearms investigations. He is generally credited with the conception of the term "forensic ballistics", though he later admitted it to be an inadequate name for the science.

In 1935, Julian S. Hatcher, a career military ordnance officer, wrote his seminal treatise entitled: *Textbook of Firearms Investigation, Identification, and Evidence.* This textbook was an effort by Julian S. Hatcher to codify the general methods and practices that were in common use in the field of forensic firearm identification by the 1930's. He produced an updated version of this textbook in 1957. These two textbooks are still used today as the basis and standards for performing a forensic firearm examination, and subsequent "identification" by responsible firearm examiners. It is also important to note that Julian S. Hatcher was not a patrolman turned "scientist" or other type of non-technical layperson. He was in fact an Army ordnance officer. He did in fact consider the need to report the findings of any forensic firearm examination in statistical terms as early as his 1935 textbook publication on the subject matter. He also made efforts in his 1957-updated edition to introduce what were then current metrological (metrology is the science of measurement) practices that were being employed by the engineering community in this country during the 1950's. For example, he

introduces the use of an instrument he refers to as the Striagraph, which is simply a customized stylus profilometer to actually measure bullet striae. To understand what a stylus profilometer is one need remember, if they are old enough to do so, the use of a phonograph or record player that was in common use until the development of CD/DVD players. Back then the stylus, which was located at the end of a "Tone Arm", and mounted in the "Stereo Cartridge" that was placed on the edge of a record/album, and was used to "read" the irregular surfaces contained within the grooves of what were then records pressed from a Polyvinyl Chloride (PVC) material onto a master mold or die of the original musical recording.

Likewise, the technology involved in the use of laser scanning microscopes or white light interferometers to measure toolmarks is quite similar to modern day CD/DVD players. Modern day CD/DVD players generally use a laser bean to measure the irregular surfaces burned into the side or sides of a CD or DVD, and then the electronics built into the CD/DVD player system convert these measured irregular surface features into music or video images complete with audio recording. This is the type of technology (laser or white light surface scanning technology) that has been in common use within the engineering community in this country since about 1980. This is the technology that I have been personally promoting for use in the field of forensic firearm examination, and identification since about the last quarter of 1993.

It is important to note that aside from the development of the failed Integrated Ballistics Identification System (IBIS), the field of forensic firearm identification has not progressed beyond the technology of 1935. In fact, in many

cases the practices and methods employed by many firearm examiners in the field today have actually declined below the level of acceptable practices as described in Julian S. Hatcher's 1935 and 1957 textbooks on the subject matter.

For example, the optical comparison microscope is still being used today for so-called firearm identifications, even though it is one hundred (100) year old or more technology. Furthermore, the average Association of Firearm and Toolmark Examiners (AFTE) member firearm examiner for example, does not understand the need for the proper spatial alignment of extractor, ejector, and firing pin impressions found on a spent cartridge case before initiating a microscopic examination of such evidence. Yet, Julian S. Hatcher made a point of instructing would be firearm examiners in his 1935 textbook of the absolute need for proper spatial alignment of cartridge cases for example, before beginning a firearm examination. Most, if not all AFTE would be firearm examiners that I have ever interacted with simply twirl spent cartridge cases in any direction, including altering focal planes by manipulating the microscope staging, until they find some coarse correlation of toolmark striae. Then they simply declare that they have made a "match" or "positive identification", etc. This is the type of scientifically irresponsible examination techniques that both the National Research Council, and the National Academies of Sciences have criticized in the recent past. *See Exhibits E and F.*

SECTION IV

GENERAL PRINCIPLES OF FIREARM IDENTIFICATION

The expert opinion and evidence, which the State of Texas introduced to connect the spent casings and bullets found at the respective crime scenes to a particular firearm in this case: a striker fired Jennings/Bryco 9mm semi-automatic pistol, is technically known as "toolmark identification." Toolmark identification is a sub-discipline of surface metrology, and forensic firearm identification is a sub-discipline of toolmark identification.

"Toolmarks" refers to marks left on the surfaces of gun parts by the processes by which firearms have been traditionally manufactured at machining centers using rough castings, forgings or sheet metal stampings, which were then finished by hand-filing and fitting of the individual part into the individual firearm. When a firearm is discharged, it may leave on the bullet and cartridge case certain marks, which are divided, into three categories. First and most commonly, are "**class characteristics**," marks that all cutting tools of a given type will leave. Subclass characteristics also fall under this category, which are present in only some toolmarks and are created by the manufacturing of batch lots of cutting tools with similarities in appearance, size or surface finish distinguishing them from other tools of the same type. The toolmarks produced by tools in the same batch have matching microscopic characteristics, which distinguish them from toolmarks created by tooling of the same type.
The second category is called **individual characteristics** of the firearm. If a particular firearm had a broken firing pin nose, or clearly unique machine

toolmarks on the breech face of the pistol slide, it would leave certain toolmark transfers on the primer that perhaps no other firearm would leave. The third category of markings is known as **accidental** characteristics. These are marks that can be left by an individual firearm on particular shots but may or may not be reproduced on other shots. These marks are of no help in attempting to identify either the make of firearm from which a cartridge was shot or the particular firearm at issue.

Historically, the most important marks in the second category used to make an individual identification of the firearm were, first, the grooves on the surface of the bullet parallel to and containing rifling marks, and second, ridges, grooves and striations impressed into the metal surfaces of the primer and case head, on the head of the cartridge case. Historically, the latter ridges, grooves, and striations were relatively irregular because the firing pin and breech face, which would collide with the cartridge case and the primer, in a process known as axial thrust, and the case walls which would expand into the gun barrel chamber in a process known as hoop stress, after the loaded cartridge case was discharged, were finished in the manufacturing process by hand-filing and fitting of parts. That hand-done tool work was, therefore, somewhat unique to each part created. Even then, identity of the firearm used was difficult because there is great variation in the degree to which different cartridges will take impression of marks on the firing pin and breech face, and chamber markings.

In this particular case, the firearm examiner for the prosecution is unable to define which toolmark striae found on the various spent cartridge cases, and bullets are class, subclass, or individual characteristics, as no such mathematical

definitions of said toolmark characteristics exists to date. She has also up to this point in time been unable to produce photomicrographs that show proper spatial alignment of ejector, extractor, and firing pin impressions on the recovered spent cartridge cases she has imaged, and the proper spatial alignment of land and groove impressions found on the recovered spent bullets in this case. Let alone actually perform a basic statistical analysis by counting consecutively matching striae (CMS), on each piece of recovered evidence, and then compare it to her test firings, and then dividing this number by the possible number of CMS found on her test firings, and then multiplying the resultant number by 100 in order to obtain a basic percentage figure of consecutively matching striae. *See Biasotti Study. Attached as Exhibit G.*

SECTION V

TECHNOLOGICAL ADVANCEMENT OF FORENSIC FIREARM IDENTIFICATION METHODS AND PROCEDURES

Practices and methods currently employed in the field of forensic firearm identification in the early part of the 21st Century date back to 1835. There have been no real technological developments employed in this field since that time, with the exception of the comparison microscope, now outdated by the failed IBIS system, and modern imaging software and digital camera. *Again, see Exhibit C.* It should be noted here that IBIS or the Integrated Ballistics Identification System has been adopted as the platform for the NIBIN or National Integrated Ballistics Identification Network. The use of modern software and

digital microscope camera does away with the need to purchase a comparison microscope. Any wide field optical microscope with an attached digital camera and imaging software will provide the same information as an optical comparison microscope.

The failed IBIS system is still a good concept, which needs to be more thoroughly developed, and implemented properly. The current IBIS system consists of off the shelf components that were put together as a unit to be operated by the software developed by Forensic Technology, Inc. This system consists primarily of a digital camera, microscope, CRT display, PC computer, software, a grayscale laser printer that had been previously approved for use in the AFIS system (Automated Fingerprint Identification System), and sheet metal stands/shelves to hold the described hardware. There is really nothing unique about the IBIS system other than the software, which has proven to be unreliable in performing its original intended role.

There were initial attempts at utilizing color quantitative image analysis software in the development stages of the original Drugfire system, the predecessor to the IBIS system. But this proved to be more of a technological feat than could be achieved with the present limitations of the current 2D image analysis software. The IBIS system is attempting to use quantitative image analysis software to analyze, compare, identify, and rank grayscale two-dimensional (2D) images. The inherent problem with this concept is that toolmark transfers actually possess three-dimensional (3D) features. The 2D quantitative image analysis software cannot really filter out shadows, glare, etc., which are caused by reflecting broad beam white light off of metallic surfaces.

An example of the failure of the IBIS system is the fact that as the database increases in size, its accuracy and precision decreases. The opposite should be true if this system were actually capable of the level of discernment that it had been initially credited with. Quite simply, as a database of unique items, ever increasing in size, the accuracy and precision of the database searches should also increase proportionally, since there are a greater number of unique items to choose from. In other words, the greater the variation in the database, the easier it should be for the computer to repeatedly select the "matching" evidence.

Firearm examiners for the prosecution should be providing the firearm examiners for the defense with both color photomicrographs from their own examinations, and a complete set of all grayscale photomicrographs from the IBIS results in any court case, as a routine part of discovery, and as part of their sole responsibility of the "burden of proof". It is possible for the higher resolution grayscale images that are viewed on the CRT to be copied onto a CD.

The reality is that the 3D features that all toolmark transfers possess should be measured three-dimensionally. The measurement of 3D surface features has been a highly organized and sophisticated engineering practice for several decades now. Lasers scanning microscopes, and white light interferometers have been used to accurately, and precisely measure 3D surface features successfully for several decades now. This technology has been explored in the past for use in the field of forensic firearm identification, but has been discarded in favor of the failed IBIS 2D quantitative image analysis system currently in use. I know from speaking with the former manager of UBM Corporation's USA division, Bernard Amstutz, a German company that

manufactured 3D measurement equipment in the 1990's, that this 3D technology was initially rejected, I believe by the FBI, because it required a much higher level of technical education, and understanding than the 2D system now in use.

SECTION VI

REVIEW OF CURRENT METHODS AND PRACTICES BY THE NRC AND NAS

Recently, the National Institute of Justice of the U.S. Department of Justice asked the National Research Council to assess the feasibility of a national database that would contain images of toolmarks from all new and imported guns; about 4.5 million new guns are sold in the U.S. each year, including about 2 million handguns. They concluded that the proposed national database was in fact not feasible at this point in time for reasons I have already stated above. They also went on to state that: "The report notes that the fundamental assumption underlying forensic firearms identification - that every gun leaves microscopic marks on bullets and cartridge cases that are unique to that weapon and remain the same over repeated firings - has not yet been fully demonstrated scientifically. "More research would be needed to prove that firearms identification rests on firmer scientific footing".

This committee also stated that: "Claims of certainty about 'matches' is without firm grounding". Furthermore, the NRC committee stated that, "The report does not assess the admissibility of firearm toolmark evidence in legal proceedings, since making such a determination was not part of the committee's charge". However, it cautions that the statement commonly made by firearms

examiners that "matches" of ballistic evidence identify a particular source gun "to the exclusion of all other firearms" should be avoided. There is currently no statistical justification for such a statement, and it is inconsistent with the element of subjectivity inherent in any firearms examiner's assessment of a match." The report also stated that microstamping, and 3D measurements should be explored further. *See Exhibits E and F.*

It should be noted here that an earlier (2003) attempt was made to have the methods and practices currently employed in the field of forensic firearm identification, and the other more traditional forensic disciplines, reviewed by the US National Academies. This planned program never took place because the sponsors of this study, the DoD and NIJ informed the academics involved that they would only fund this proposed program if they could control the dissemination of the results of this proposed program. The academics involved refused such censorship. This 2003 event was a pitiful example of the politicization of science in America today. *See Exhibit H.*

The NRC and NAS committees were comprised of several well-respected scientists, which did not have the same political agenda as members of the Association of Firearm and Toolmark Examiners (AFTE). I view the results of their study as an unbiased opinion of real scientists. Unfortunately, science has become more politicized in this country, particularly when it involves nontechnical lay people in government agencies. One plus one should always equal two, here on the surface of planet Earth. Unfortunately, this is not always the case when politics are involved.

It should be noted that I am not a proponent of microstamping, as the same inherent problems that exist with the transfer and identification of all unique toolmarks, will also exist with microstamping. I am, however, a proponent of making 3D measurements of all toolmark transfers found on ammunition components. This type of 3D measurement is already being performed successfully in other real scientific disciplines, and has been performed in forensic firearm examinations in an effort to introduce it into the field of forensic firearm identification. *See Exhibit I.* There is no reason why it cannot be applied successfully in the field of forensic firearm identification. Once again, I have been promoting this technology in this field since about 1993. *See Exhibits J and K.*

Until a reliable, accurate, and precise means of measuring the 3D surface features of toolmark transfers found on the surfaces of ammunition components has been developed, all testimony regarding forensic firearm identification should be limited to an accurate description of what the firearm examiner has observed as a result of his/her scientifically responsible examination procedures (i.e., proper spatial alignment, etc.). All statements of a subjective or speculative nature, and statements of an absolute or positive identification, should never been allowed in as testimony of an expert, as they are scientifically irresponsible, and unsupported by any valid scientific method or practice.

Furthermore, at least three levels of photomicrographs should be required. Any qualified microscopist is trained to take photomicrographs through the full range of magnification during any microscopic examination. Higher magnification photomicrographs should be required of the side-by-side comparison images, and higher magnification should be used in the overall, perspective, and close-up

photomicrographs to the limit of losing image detail. Finally, basic measurements should be provided that demonstrate the approximate spatial relationships of the ejector, extractor, and firing pin impressions on any spent cartridge case. A datum point should be selected when comparing spent bullets, so that the majority of striae are aligned for all of the land and groove impressions found on the spent projectile. The measurement of spatial relationships of bullet striae should also be made. Again, as stated previously, Julian S. Hatcher was utilizing a stylus profilometer, which he refered to as the Striagraph, to measure bullet striae in 1957!!! These procedures are nothing more than basic science, or really basic metrological practices when using primitive methods of examination. Finally, the process of counting consecutively matching striae or CMS should be employed as the final result of any firearm examiner's forensic firearm examination and "identification".

Once 3D measurements of toolmark transfers become common in this field, testimony of any firearm examiner will be limited to a more scientifically responsible reporting of the measurements actually taken, a statistical analysis and report, and a probabilistic scaling much like DNA profiling.

SECTION VII

INDEPENDENT FORENSIC EXAMINATION BY DEFENSE EXPERT NEEDED

I need to be able to take possession of the evidence in question as soon as possible to be able to complete my own forensic firearm examination in this case. I have already made arrangements to utilize a variety of laboratory

equipment to image and measure toolmark striae, etc. that is present on the evidence in this case. The laboratory equipment that I plan on utilizing will include, but not necessarily be limited to a scanning electron microscope (in common use since 1960), a white light interferometer (in common use since 1980), an optical 3D microscope, traditional 2D optical microscopes and associated imaging software, etc.

It is my understanding that the prosecutor in this case has objected to this independent examination for a variety of reasons. Some of them being:

a) The firearm evidence could be altered. This concern indicates that the prosecutor does not have a very good understanding of how toolmark transfers are created in the first place, and how easy it is for a skilled engineer that is also a trained microscopist to identify altered toolmark transfers. Furthermore, her own firearm examiner has documented the firearm evidence by taking some photomicrographs of the firearm evidence, and assigned/engraved a type of serial number to each piece of firearm evidence, and had asked me during my first visit to Dallas why I did not just have the evidence shipped to me to avoid an otherwise unnecessary trip. *See Exhibits L1 and L2.* Furthermore, it is the responsibility of the first firearm examiner that is initially handling firearm evidence recovered at crime scenes to document and catalog by photographic methods, all of the evidence that is ever recovered, and to start a chain of custody document. This should have been done in this case.

b) The prosecutor is not going to present the firearm evidence as being a "match", but that it correlates at some level. The problem with this type of testimony is that she will still be misleading the jury with photomicrographs that lack any perspective, or measured features as being in effect a "match". The only acceptable testimony from the prosecutor's firearm examiner would be in terms of consecutively matching striae or a CMS analysis that is supported by the proper levels of magnification, associated photomicrographs, and basic calculations.

c) It is going to cost the taxpayer too much money. Quite honestly, if the prosecution in this case, and other prosecutors from other jurisdictions knew how to properly investigate, document, and present in court forensic evidence to begin with, there would be far less reasons for bringing a Daubert challenge in any case being prosecuted in any jurisdiction in the first place. Virtually billions of dollars are spent or misspent in prosecuting criminal cases in this country, and yet the defense team usually receives about one to three percent of the budget set aside for law enforcement agencies, and prosecutor offices. Once the proper law enforcement agencies employ properly qualified scientists to do the work of real scientists, and prosecutors learn how to properly prepare and present criminal prosecutions there will be far less legitimate Daubert challenges brought by defense counsel. However, politics is once again the focus of such activities because in reality municipal and state patrol agencies were never really intended to provide the broad level of law enforcement activities that many of these agencies now claim as their expertise. In depth criminal investigations should be

performed by the elected county sheriffs or other elected law enforcement officials, and special agents of state level bureaus of investigation. Municipal and highway patrol agencies should stick with doing what they were generally trained to do at the police academy. That is traffic and security patrols, not criminal forensic investigations.

d) "Nobody is doing it this way". This sounds like the title to a short story in Vogue magazine. I am not concerned about making a "fashion statement"; I am only concerned about presenting valid science in criminal or civil court cases as a forensic scientist/engineer. The attempt at reversing the issues surrounding the Daubert challenge being brought by the defense by stating that the use of state of the art technology by the defense, in contrast to 100-year-old technology being utilized by the prosecution, is an obvious attempt at diversion away from the inadequacies of the prosecution's case. My understanding of the Daubert standard is as follows:

1) Empirical testing: the theory or technique must be falsifiable, refutable, and testable.
2) Subjected to peer review and publication.
3) Known or potential error rate.
4) The existence and maintenance of standards and controls concerning its operation.
5) Degree to which the theory and technique is generally accepted by a relevant scientific community.

The prosecution has been unable to provide us with a known or potential error

rate in this case, as no measurements of any kind have been taken of the evidence in question. There are no standards and controls of any kind in this forensic discipline. You basically "know it when you see it", or "there is enough there for me to make a positive ID", or "I hold myself to a higher standard than using the CMS method", etc. The real relevant scientific community has not generally accepted the theory and techniques employed in this forensic discipline, as is evidenced by both the recent NRC and NAS criticisms of the current methods and practices employed in this field. Members of the AFTE are generally nontechnical lay people that have undergone a very basic apprenticeship program, and are then taught to memorize a standard speech to present in court that is handed done from one nontechnical lay person to another. I have never met a qualified engineer that was a member of the AFTE, marine, and locomotive engineers notwithstanding. The prosecution in this case is presenting junk science in the courtroom simply because it has always been this way, and she does not know what else to do, as she lacks the training, education, and experience to know better.

I will need to take possession of this evidence by January 3rd, 2011, and I should have completed my own independent examination by January 12th or 13th, 2011. It should be noted that I have taken possession of a greater number of individual pieces of forensic firearm evidence in federal RICO murder cases involving numerous gang bangers for weeks at a time, without any loss or alteration to said evidence. Furthermore, I have been working in the law enforcement field for the last twenty (20) years of my life, and I take any suggestion of altered evidence as a personal insult, even though the prosecutor

should realize that it is extremely difficult to alter toolmark transfers on firearm evidence, especially if it has been properly documented initially by the first firearm examiner handling the evidence in question.

I do have tentative dates scheduled with different laboratories to perform my independent examination in this case, and I need to confirm or alter these dates very soon. Furthermore, the equipment that I am planning on using for my examination is not generally considered portable, and some of the companies involved are donating free lab time for my examination involving real 3D measurements of toolmarks.

I declare under penalty of perjury under the laws of the State of New Hampshire that the foregoing is true and correct and that this Declaration was executed on this ____ day of December 2010.

David J. Lamagna - B.Sc., M.Sc., C.M.I.
Forensic Scientist/ Engineer
Licensed Private Investigator