

REAL SCIENCE - *continued from Page 1*

The most critical aspect of science is the communication and discussion of results and how those results can be used responsibly. Consequently, the institutionalized judicial tendency to curtail open discourse and set remarkably oppressive limits on what can be said or discussed in the courtroom or depositions is tantamount to a virtual prohibition of science.

The only thing practiced in the courtroom is law. Science is not welcome here.

True, the opinions of experts admitted into trial, whenever possible, should be based on valid science. But the notion that *forensic* science is a disappointing substitute for the “real thing” is born of a misunderstanding of both justice and science.

There is no such thing as *real science* or *fake science* nor is there any spectrum in between. There is only science, a systematic way of learning about phenomenon in the world and using that knowledge to answer questions or solve problems.

This, in fact, is a predominant theme in a National Academy of Sciences publication that is conveniently ignored but that *Crime Lab Report* has repeatedly urged forensic science and legal professionals alike to consider.

On Being a Scientist was published in its 3rd edition in 2009.

What is so remarkable about this short book is that it reinforces a fundamental principle—that science is a very accommodating, flexible, and welcoming institution, the advancement of which is fueled by good-old fashioned communication, collaboration, and debate.

If, for some reason, a scientific endeavor fails to answer the relevant questions or solve the pressing problems of the day, then it must advance.

For years, an unrelenting chorus of legal scholars have lamented that forensic science is an imposter posing as a real science. Latent print comparison, for instance, is not a “real science” because it cannot produce a known rate of error. Toolmark examiners are not real scientists either because, it seems, their work is entirely subjective and not based on quantifiable data.

What if, for a moment, we suspended the rhetoric speculating what kind of science our criminal justice system demands, strip away the adversarialism, and looked clearly at what forensic scientists are asked to do to support the administration of justice?

What could we learn? Quite a bit.

**“The only thing practiced in the courtroom is law.
Science is not welcome here.”**

The charge of every forensic scientist in the United States is to support ongoing criminal investigations while meeting the demands of federal and state rules of evidence. Perhaps the most noteworthy document that outlines these rules is The Federal Rules of Evidence, which is codified as federal law. Rule 702 is the rule most critical to the practice of forensic science because it specifically governs a court’s use of *Testimony by Expert Witnesses*:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

The discerning reader should notice how simple and elegant Rule 702 really is and how accommodating it is to parties in our criminal justice system to use the testimony of experts to better understand the matters under consideration. The words chemistry, physics, biology, calculus or any other labels prescribing what kinds of science should be used in courts of law are not present and for good reason.

According to the American Bar Association, what we know as the Federal Rules of Evidence were developed under the watch of an entity called the Judicial Conference of the United States and approved by the Supreme Court. The rules were first submitted to congress on November 20, 1972 by Chief Justice Warren E. Burger. They were formally passed into law on January 2, 1975 with President Gerald Ford’s signature.

The Judicial Conference of the United States is an administrative body chaired by the Chief Justice of the United States. Its stated purpose is to “make policy with regard to the administration of the U.S. courts.”

Conference membership is comprised of the chief judges from each federal judicial circuit, the Chief Judge of the Court of International Trade, and one district judge from each regional judicial circuit.

In the courtroom, the ultimate standard for admitting expert opinions is that those opinions “assist the trier of fact to understand the evidence or to determine a fact in issue.”

It is fair, of course, to draw attention to Rule 702’s reference to “reliable principles and methods” and suggest that this is, in fact, a sort of evidentiary definition of “real science” embodied within the standard.

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RAPID DNA - continued from Page 1

vocative question at a meeting of leading DNA experts from Latin America and Spain. Imagine, he asked, being told 10 years ago about a new technology called the smart phone. This new smart phone will do it all – phone calls, text messages, send and receive emails, surf the internet, provide your driving directions using GPS, make credit card payments, and even track your fitness workouts. The skepticism of such a bold vision is natural and understandable—as it was for the smart phone many years ago, and as it is for Rapid DNA technology today.

Now, in 2014, we are able to introduce Rapid DNA technology to the forensic, military, and intelligence communities. After many years of brilliant design, intelligent engineering, unified support from federal government agencies, and a healthy dose of courage by those trying to pave the way for a revolutionary technology, Rapid DNA technology is here.

The comparisons to the smart phone become more evident as the technology functionality is described: “generates STR profiles in less than 90 minutes, no laboratory needed, designed for use by non-technical personnel, same quality profiles as the forensic lab you use today”.

If you are a booking sergeant at a county jail, imagine the day when you are able to collect a buccal swab from an arrestee along with all of the other required biometrics (fingerprints, palm prints, mug shot, etc.) and have a clear message in 4 hours about whether that individual matches any unsolved profiles in the CODIS system. And, that same sample is used to both search the national database as well as enroll the arrestee in the system. Or, perhaps you are a laboratory director continually trying to do more with less, stretching your human capital to the maximum with countless hours of overtime. And suddenly, there is a technology that removes the need to process buccal samples from convicted offenders or arrestees for enrollment into CODIS. It allows you to divert your valuable resources towards processing the recently submitted rape kits or the other high priority cases that are deflating morale and spiking your backlogs.

But let’s think about this. Can this new technology conform to strict accreditation standards and the FBI’s Quality Assurance Standards? Is this even possible in light of some recent quality assurance breaches across the country, which include dry-labbing, stealing evidence, and incorrect conclusions made by trained forensic scientists?

The answer is yes, it is possible. As with any new technology of this sort, the proper laws, policies, procedures, and checks and balances must be in place. This is precisely where the whole of the international forensic science community, including DNA experts and Quality Assurance Managers must work diligently to design safe, sustainable implementation models for Rapid DNA technology.

Rapid DNA represents the ideal opportunity for the State CODIS Administrators, DNA Technical Leaders, Quality Assurance Managers, Laboratory Directors, and Law Enforcement Executives to work collaboratively towards the design and implementation of this technology for their states and jurisdictions.

The State CODIS Administrators will have the lead role in identifying samples within their State DNA Index System (SDIS) which are single-source, unsolved, and prime candidates for rapid searching - these samples have been coined “Rapidly-enabled” by the FBI. Under strong leadership and with the support of talented software programmers, the existing CODIS profiles can be sorted and managed in a manner that maximizes the true power of Rapid DNA.

Similarly, DNA Technical Leaders will need to understand this new technology like never before. For example, the types of processing occurring in the microfluidic environment must be considered within the context of the laboratory’s current methods. DNA technical leaders are obligated to thoroughly read and scrutinize the validation testing completed by the vendors. Additionally, reviewing the existing Quality Assurance Standards and voicing their opinions about changes or new standards will be a critical part of their role in the successful implementation of this technology.

Quality Assurance Managers, who, in my opinion, perform the most grueling job in a forensic laboratory today, must take care to assess all levels of documentation to ensure conformance to accreditation standards. Careful consideration of ISO:IEC 17025:2005 requirements such as *Control of Records* (4.13) and *Test and Calibration Methods* and *Method Validation* (5.4) will be critical to creating an effective yet compliant implementation model. Given that there are expected levels of quality and service from accredited laboratories; it is their job to ensure these expectations are met when integrating technology as new and powerful as Rapid DNA.

And then there are the Laboratory Directors who bear the lion’s share of responsibility for all operations within their laboratories. They too must know about Rapid DNA technology and exercise their influence its implementation. All labs are not the same – they don’t have the same needs, resource levels, backlogs, or existing processes. Considering this, the application of Rapid DNA needs to make sense for each individual lab.

Lastly, and arguably most importantly, law enforcement executives must set a realistic vision for the ultimate use of Rapid DNA in booking stations. Once the scientific experts have reviewed the technology and approved it for use with CODIS, law enforcement will be challenged to integrate it in the most responsible manner across each jurisdiction. This integration and adoption must aim to both improve efficiency and public safety. The proper implementation of a “disruptive technology” like Rapid DNA is best done with collaboration and effective communication.

Thomas Callaghan, Senior Scientist at the FBI and head of the FBI’s Rapid DNA Program Office, gave a presentation at the ASCLD Symposium in Arizona this past May. He described in detail the multi-year plan to integrate STR profiles generated at booking stations into the National DNA Index System (NDIS), while ensuring privacy, security, and full compatibility with the existing 10 Million profiles residing in CODIS, the world’s largest criminal DNA database. A new rung of the CODIS infrastructure ladder will be added and called RDIS, Rapid DNA Index System. The blueprint has been presented – it is critical for labs to be ready, both physically and mentally.

Rapid DNA technology is here – it is easy to use and can be operated by technical and non-technical personnel alike. It generates high quality, reliable, and reproducible STR profiles in less than 90 minutes. It’s akin to the first smart phone – an amazing engineering feat that is sure to positively “disrupt” the current way of doing business.*****

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This sentiment, however, would reveal a pervasive misunderstanding of science that plagues our criminal justice system today. Science is defined not by its reliability or even the competence of its practitioners, but by the system in which facts and information are gathered and considered.

Even the most respected sciences can be grossly inaccurate or confusing at times, evidenced by the inability of geologists to predict earthquakes or of meteorologists to predict where a distant hurricane will make landfall in a week's time.

Meteorologists were not skewered in the press and dismissed as charlatans when hurricane Katrina destroyed much of New Orleans in 2005.

Geologists weren't hung in effigy in 2010 when an impoverished Haiti was struck by a magnitude 7.0 earthquake, killing over 100,000 people.

This is explainable. Geology and meteorology do not function within adversarial systems where one party's interests are inherently advanced by manufacturing the discredit of legitimate scientific enterprises even without evidence of malpractice.

We acknowledge also, however, that no geologist ever attempted to predict the Haitian earthquake, just as no meteorologist attempted to predict where Katrina would make landfall until the data and observations of those watching the storm allowed such a prediction to be made.

Self-restraint is an important attribute of competent scientists.

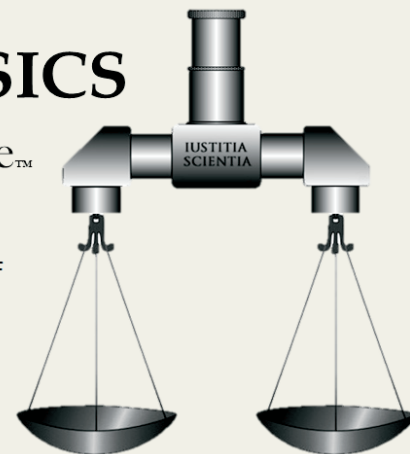
When everyone does their jobs well and responsibly, science can be trusted even in the face of its inherent limitations.

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At the heart of all science, including forensic science, is a simple requirement—that the degree of an expert's certainty be reasonable given the facts and data available to justify it. Results and conclusions must be based on all of the information available and considered within the proper context.

So is it wrong to seek or even demand a higher level of scientific validity for forensic science? Of course not. Forensic science professionals themselves have been doing it for decades and with much success.

Science demands progress. But in science, an opportunity to improve is celebrated. Among unregulated legal activists today, it's characterized as an injustice—which itself, ironically, is an injustice of its own sort.

Everything that science has to offer and all of the knowledge and insight that a competent scientific expert can bring to bear on the most complex legal problems can never be fully leveraged without the trier of fact being privy to meaningful conversation and discussions that go untainted by legal maneuvering.

Conversely, if we accept our criminal justice system as it is, and resign ourselves to the fact that it simply cannot permit the exchange of ideas and information that defines the practice of science, then we are compelled to also accept *forensic* science as being very different from what most people perceive as "real science."

Until forensic scientists are *allowed* to practice science and all that it entails, even in the courtroom, then it's best to stop pretending that they are somehow falling short of meeting expectations.

Anyone who wants criminal justice to be more scientific should start by taking it up with the Supreme Court of the United States.*****

Does our criminal justice system prevent 'real science'?

10 Second Survey
By Crime Lab Report

crimelabreport.questionpro.com

Results will be published in our next issue.

On Second Thought . . .

Media activism in Texas distorted facts about hair evidence

BY CRIME LAB REPORT

Originally Published by *Crime Lab Report* on November 7, 2013.

Since the inception of *Crime Lab Report*, its editors have strived to bring readers a balanced look at some of the issues facing the profession of forensic science - to provide a voice from within the crime lab community to counter some of the unfair criticisms directed at forensic science by a variety of criminal justice reform activists, most of whom typically emerge from the criminal defense community.

Despite our best intentions, we realize that not everyone agrees with everything we write. That's okay. Our opinions are just that, opinions based on our collective years of experience in the field and countless hours of research to ensure the information we present is as factually and contextually accurate as possible.

In today's information age, it's never been easier for journalists to conduct research. For this reason, we can't help but wonder about the real motivation of some within the news media when writing stories about forensic science. In too many instances, journalists assume the role of activist, leading reasonable people to question what distinguishes journalism versus activism.

This was precisely the subject of a June 30th article by *New York Times* columnist David Carr. "In a refracted media world where information comes from everywhere, the line between two 'isms'- journalism and activism - is becoming difficult to discern," Carr wrote. "Journalists are responsible for following the truth wherever it may guide them. But I do think that activism - which is admittedly accompanied by the kind of determination that can prompt discovery - can also impair vision. If an agenda is in play and momentum is at work, cracks may go unexplored."

Shortly after *Crime Lab Report* published our "In Search of the Holy Grail" editorial, the Texas Forensic Science Commission announced that they would conduct their own inquiry to identify cases where hair comparison testimony may have led to wrongful convictions, similar to the one being conducted by the U. S. Department of Justice.

Following that announcement, Fort Worth Star Telegram reporter, Yamil Berard, informed readers that more than 70 exonerations nationwide

were due to a practice "now considered junk science in which a strand of hair is examined under a microscope to identify the people who were at a crime scene."

Berard also stated that "it has been established in recent years that it is impossible to "match" a hair under the microscope to a specific person."

As anyone even remotely familiar with forensic hair examination knows, it has never been possible to identify someone based on the microscopic comparison of hair samples. So why would Ms. Berard want readers to believe it was some recent discovery?

One only has to read further into her article to see why.

Berard delved into the November 1989 murder of Allen Hilzendager, the owner of a liquor store in the east Texas town of Point Blank. According to press reports, someone entered the store and asked for a bottle of liquor. When Hilzendager turned to retrieve the bottle, he was shot three times - in the back, shoulder, and abdomen. He died at the scene.

A pair of witnesses located across the highway from the store told police they saw a pickup with two men approach the store at about 6:30 pm. The truck's passenger entered the store, and shortly after, the shots rang out. The suspect was then seen walking behind the counter before quickly exiting the store. The man got back into the truck and the pair sped away. The description of the man leaving the store given by witnesses indicated he had a pot-belly and was wearing a gray jogging shirt. Law enforcement determined that the assailant netted about \$900 in the robbery.

Investigators soon arrested Timothy Jordan and Kerry Dixon and charged them with the murder after witnesses stated Dixon's Ford pickup appeared to be the one they saw at the scene of the murder. Jordan, Dixon and a third man, Claude Jones, were also implicated in another robbery in a Houston suburb. Jones, however, had left Texas and was not arrested until three weeks later after a bank robbery in Florida.

Enter Timothy Jordan's girlfriend, Terry Hardin, who told police that she was with Jordan, Dixon and Jones on the day of the murder. She described Claude Jones as having a pot belly and wearing a gray sweatshirt jacket. She also stated that Jones and Dixon left between five and six in the evening in Dixon's pickup and the pair did not return until 9:30 pm.

Investigators determined the Taurus .357 magnum revolver used in the murder was purchased by Terry Hardin at a Wal-Mart store at Jordan's request, since he was a convicted felon. She also told investigators that Jordan and Dixon took the weapon out for target practice at a cemetery. Following his arrest, Dixon led San Jacinto County Sheriff Lacy Rogers to a location along the Trinity River where the murder weapon was recovered. Bullets recovered from a tree at the cemetery and from the victim, along with the alleged murder weapon, were sent to the Houston Police Crime Lab. A firearms examiner testified that the bullets from the tree and victim were fired from the Taurus revolver, with the serial number corresponding to the sales record at Wal-Mart.

According to court documents, Jordan testified that Dixon told him that Jones entered the store and fired the three shots that killed Hilzendager.

Despite the collective totality of these facts, reporter Yamil Berard chose to focus her article on the hair comparison testimony.

According to Berard, "the key evidence against Jones, the man executed in the murder of the liquor store owner in San Jacinto County, was a small hair found near the victim's body. A chemist on the case originally said the sample hair was too small to identify. But at trial he apparently changed his mind and testified that the hair could belong only to Jones."

With just a few mouse clicks, we located court documents that had an excerpt from the Texas Department of Public Safety hair analyst's responses after being asked to describe the science of hair comparison:

Then we take a hair that we want-that we're worried about and we compare that hair to this per-

son's hair. If that hair falls within the range of the characteristics that that person has, then that could be that person's hair or it could be another person that has hair with similar characteristics. Technology has not advanced where we can tell you that this hair came from that person. Can't do that. We can tell you that this hair matches this person in all characteristics and could be his.

Q. *Okay. What you basically explained to us are the limitations of hair comparison there.*

A. *Yes sir. You can't identify this hair as coming from a person.*

The analyst then went on to describe the comparison conducted with a fragment of hair recovered from the store with samples from the victim, Jones, Dixon and law enforcement officials who entered the store the night of the murder:

A. *One of the hairs recovered at the crime scene is a fragment about an inch long of human head hair. That human head hair fragment, I can distinguish everybody's hair from that except (Jones's) hair. Therefore it is my opinion that the hair fragment came from (Jones) or another individual who has hair like his. I can tell you that it does not match any of the other people's hair that is submitted.*

On cross-examination, the defense questioned the analyst further:

Q. *Now, there apparently-there is one hair that was provided to you from the crime scene that you have examined which you have determined possibly could have come from the defendant, is that correct?*

A. *Yes, sir.*

Q. *You are not telling the jury for certain that it came from the defendant, are you?*

A. *No, sir.*

Q. *Let me ask you one more time your conclusion in this case. In your report, you stated it was your opinion that the hair fragment could have come from the suspect or from another individual with similar hair.*

A. *Yes, sir.*

Court documents also stated that the analyst testified that some of the known head hair samples from Jones did not match the questioned hair fragment, and that it was possible that Hilzendager may have had hair that was not included in the known sample that possessed microscopic characteristics that were similar to the hair fragment

from the store.

In 2010, the *Texas Observer* and the New York based Innocence Project were successful in their quest to have the hair fragment subjected to DNA testing. The *Observer's* Dave Mann reported that the DNA results showed the hair fragment belonged to the victim, Allen Hilzendager. Mann also stated "the results of DNA testing not only undermine the evidence that convicted Jones, but raise the possibility that Texas executed an innocent man."

Innocence Project co-founder Barry Scheck was quoted as saying "the DNA results prove that testimony about the hair sample on which this entire case rests was just wrong. Unreliable forensic science and a completely inadequate post-conviction review process cost Claude Jones his life."

Those opposed to the death penalty can make compelling arguments that there was insufficient evidence to send Claude Jones to death row. Perhaps a twenty-year or life sentence would have been more appropriate. But to say that a fragment of hair was the only evidence that implicated Jones for the murder is irresponsible.

Furthermore, to imply that the DNA test results on this case exonerated Claude Jones is ludicrous.

It has long been established that there are limitations to the microscopic comparison of hairs. But to call it junk science is grossly unfair given that the analyst clearly stated the limitations of the science. Our only criticism in this case is the decision to conduct a microscopic comparison using a hair fragment. Most trace analysts would decline to do so because of the problems inherent with having a shortage of comparable characteristics.

For those who may still be sympathetic with Claude Jones's plight, you may be interested to know that he was a career criminal. Before he was arrested for the murder of Allen Hilzendager, he had eleven prior convictions in Texas for murder, armed robbery, assault, and burglary. In Kansas, he received a life sentence for murder, robbery and assault in 1976. While in prison there, he was convicted of killing a fellow inmate by throwing gasoline on him and setting him on fire. Incredibly, he was released on parole in 1984.

Jones told the family of Allen Hilzendager moments before he was wheeled into the Texas execution chamber "I hope this can bring some closure to y'all. I'm sorry for your loss."

Anti-death penalty activists, and the journalists who sympathize with them, lose credibility when they omit key facts. But as David Carr observed, "activists can and often do reveal the truth, but the

primary objective remains winning the argument."

If forensic scientists behaved like this, our criminal justice system as we know it would collapse.*****

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Crime Lab Report is committed to serving the forensic laboratory sciences by furnishing its professionals with knowledge and perspective on the many issues and challenges facing them to today. Free to all ISO/IEC 17025 accredited laboratories based in the United States, we will send bulk shipments of multiple print copies of *Crime Lab Report* for your staff to enjoy. We will estimate the number of copies to send you each quarter and will adjust the number depending on the needs of the laboratory. Just get in touch with us and let us know if you need more.

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Jurisdiction

Congress looking to fund rape kit testing

The Washington Post reported on June 16 that a request by President Obama to fund the testing of rape kits around the country is being given serious consideration by congress. A \$52.2 million bill for Justice funding is expected to pass.

Although in excess of \$1.2 billion has been allocated to resolve the problem of rape kit stockpiles, congress is looking to see that funding directly targets the rape kits. A June 28th editorial by the *New York Times* urged congress to take the problem seriously and fund it appropriately.

Officials dealing directly with stockpiled rape kits have acknowledged in the past that the phenomenon is complex and not just about money. Communication among agencies within jurisdictions is critical to evaluating criminal evidence.

Death certificates delayed in Mass.

The Boston Globe has reported on yet another tragic situation emerging in Massachusetts.

The number of pending death certificates reportedly skyrocketed from 58 in 2011 to nearly 950 in 2013, causing a variety of problems for citizens of the commonwealth.

According to a report by the Associated Press, the delays are making it considerably more difficult for grieving family members to “settle estates and process insurance claims.”

The medical examiner reportedly has 10 doctors on staff to conduct approximately 2,500 autopsies each year. A 2007 study suggested that 17 doctors were needed at a minimum.

Houston tech resigns amid case review

The Associated Press is reporting that a Houston DNA laboratory scientist has resigned after accusations of malpractice.

It is not yet clear what specific misconduct is being alleged, but reports indicate that the scientist admitted to colleagues that he produced erroneous results.

Herald-Dispatch “Gets It”

A July editorial by the *Herald-Dispatch* was refreshingly candid about how to deal with West-Virginia’s backlog problem.

“It is time for West Virginia to invest in providing police and prosecutors with the information and analysis they need in a reasonable time frame.”

Delaware takes swift action in medical examiner drug scandal

JULY 18 2014 BY JAY JARVIS

Another scandal related to the mishandling of drug evidence has come to light, this time at the Delaware Office of Chief Medical Examiner (OCME).

The problem surfaced during a January 2014 trial when a case investigator discovered that sixty-seven 30mg oxycodone tablets had mysteriously morphed into ten 50 mg metoprolol tablets. The defendant in the case was afforded the opportunity to plead guilty to a lesser charge, which he accepted.

The next day, the problem was brought to the attention of the OCME’s Deputy Director who conducted an investigation limited to the review of all cases that the same Controlled Substances Unit (CSU) chemist had opened on the same day as the case in question. It was initially believed that evidence from a different case was inadvertently exchanged with an oxycodone case, despite a CSU policy stating that evidence from only one case can be opened at any given time. The investigation could not account for the discrepancy.

Instances of missing oxycodone in other cases were subsequently discovered.

On February 20, 2014, the Delaware State Police (DSP) and the Delaware Department of Justice (DDOJ) launched a formal investigation with two areas of focus: the criminal investigation into the theft of drugs, plus an audit of all drug evidence submitted to the OCME. All CSU operations were suspended, including employee access to the drug vault. A separate keyed lock was placed on the drug vault door, to which only state police investigators had access.

The Delaware OCME was established in 1970 as a part of the Department of Health and Social Services (DHSS) for the State of Delaware. The Forensic Sciences Laboratory was, by statute, established within the OCME to perform death investigations utilizing the forensic disciplines of histology, toxicology, controlled substances, DNA, and arson. The State Police also operates a small laboratory that provides forensic analysis of blood and breath alcohol, hairs and fibers and questioned documents. Latent prints and firearms are also tested but are housed in separate divisions within the state police.

The OCME is overseen by a Chief Medical Examiner and a management team comprised of a Deputy Director, a Deputy Chief Medical Examiner, a DNA Technical Leader, a Chief Toxicologist, and a Controlled Substances Laboratory Manager.

The preliminary investigative report obtained by *Crime Lab Report* delineated a multitude of issues related to security, evidence management and employee qualifications.

For instance, an electronic key fob system used to track who accesses each door, including the date and time for the most recent entries. A laptop computer used to program the key fobs, however, was not kept in a secured area. In addition, the laptop’s Windows 95 operating software had a “glitch” attributed to Y2K that did not allow accurate dates and times to be recorded. The issue was reportedly well known to OCME staff yet no action was taken to correct it.

Investigators also discovered that access permissions were not changed when employees moved to different assignments within OCME. Incredibly, investigators learned of an employee who retired in 2008 yet still had possession of a key and key fob as recently as February 2014.

When the DSP secured the drug vault on February 20, the OCME’s own records indicated that approximately 8,568 pieces of evidence were being stored within the vault. But the DSP audit found 9,273 items. Interviews with employees revealed that smaller envelopes were prone to falling between shelves and even small quantities of drugs were sometimes found on the floor of the vault. Investiga-

Ralph “Bud” Keaton – A forensic pioneer still among us

A conversation with one of the most important figures in the history of forensic science

JANUARY 22 2014

Since the early 1980s when Ralph Keaton became the national face of forensic science accreditation, countless new scientists have entered the profession and gone on to enjoy productive, rewarding careers. Of this we are certain. What remains unclear, however, is just how many forensic science professionals realize that a real, living, breathing pioneer of forensic science is still among us – still caring deeply for the profession he helped revolutionize.

Keaton is proof that we don’t have to look back to the early 1900s, an era when some of the most prolific advancements in forensic science were made, to find a historical figure of significance. Keaton is such a person, although you would not get that impression from speaking with him.

He is soft-spoken, humble, and polite – a gracious southern gentleman to say the least. He is also quick to recognize the innovativeness and persistence of many past crime laboratory directors who dared to think about accreditation in forensic science and introduce layers of accountability that had never before existed. As Keaton explained to us, it didn’t come easy. It was a small group of disruptive innovators who gave rise to forensic science accreditation and gave Keaton the opportunity to lead the forensic laboratory community towards a greater commitment to quality. Keaton knows who those people are, and his appreciation for their sacrifice is evident in his words.

Without question, though, the impact Ralph “Bud” Keaton had on the forensic laboratory sciences is nothing short of historic.

Admittedly, when we learned that Keaton, known affectionately as “Bud” to his friends and closest colleagues, was retiring from his post as executive director of the American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB), we were not entirely surprised. We knew that Bud’s passion for his work was unquestionably intact; but we also knew that he had grandchildren to spoil and family to spend time with in these later years of his life.

Knowing that this great pioneer of forensic science is still among us, we asked Bud if he would spend some time with us reminiscing about his life in forensic science. He agreed, and for that we are grateful.

CLR: Bud, a lot of our readers only know Ralph Keaton as the face of ASCLD/LAB and know little about how you got started in forensic science. Tell us about your education and training leading up to your career in forensic science and some of the positions you’ve held.

RBK: Well, back in the fall of 1963 I was enrolled at NC State University in Electrical Engineering. I had the opportunity to visit with Chief Chemist William S. Best at the one-room NC State Bureau of Investigation (SBI) Crime Laboratory in Raleigh, NC. I was very excited about what I learned on that visit and asked “what do I need to do to work in a crime lab?” I was told to take all the Biological Science and Chemistry coursework that I could take and then come back. After doing a course catalogue search, I figured out that a degree in Food Science offered the best opportunity to take a high concentration in both Biological Sciences and Chemistry, so I changed my major to Food Science with no intent of becoming a Food Scientist.

In the fall of 1965, I went back to the SBI, again talked with Mr. Best, and advised him that I was still very excited about the possibility of working in a crime lab. In December 1965, I was employed on a half-time basis as a trainee in the Chemistry Laboratory, while I completed my final year of college. I spent the year observing and conducting testing under the supervision of one or more of the three (3) chemists in the laboratory. I received training in



Ralph “Bud” Keaton is a historical figure of great significance to forensic science. He is among us now, available to share his wisdom and insight.

screening of biological specimens such as blood and semen stains, ABO typing, blood alcohol analysis using the Kozelka-Hines steam distillation method, fire debris analysis using steam distillation recovery, and analysis of bootleg liquor for alcohol and lead content.

Upon graduation in January 1967, I began working full-time for the NC SBI Crime laboratory as a chemical analyst and as a sworn Special Agent. The first casework assigned to me was blood alcohol analysis. I was taught to mouth pipet the blood for steam distillation to recover the alcohol and determined the alcohol content by titration.

Within a year after my employment, there began to be an increase in the number and types of drugs being submitted to the laboratory. The era of marijuana and the psychedelic drugs was just beginning in North Carolina. As a result, I soon began training in the analysis of controlled substances. Because of very limited instrumentation, I was trained to identify many drugs by microcrystal habit and thin-layer chromatography.

In 1969, I was appointed as Chief Chemist for the laboratory. At that time, the functions which became the Biology section, the Trace Evidence Section and the Controlled Substances and Toxicology Section were all under the Chemistry Laboratory. A few years later, the laboratory was reorganized and I became the Deputy Assistant Director with technical oversight for the laboratory.

The last several years of my career were spent in management. I retired from the NC SBI on July 1, 1995.

CLR: What was the state of forensic science prior to the advent of accreditation?

RBK: There were significantly fewer crime laboratories when I started my career, as evidenced by the fact that the FBI only identified approximately 50 crime labs when they held the first meeting (1973) in Quantico which led to the creation of ASCLD. Not only were there a limited number of crime laboratories but crime laboratories were very poorly funded and operated with very limited staffing and equipment, and usually in inadequate facilities.

Because of the inadequate funding, staffing, facilities and equipment, the first edition of the ASCLD/LAB Accreditation Manual had standards focused on budgets, work space, lighting, plumbing and ventilation.

In the early 60s there was limited communication between laboratories. Many of the regional forensic science organizations did not exist at that time and the AAFS was the primary organization for sharing information between laboratories. One of the primary rea-

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sons for the FBI bringing laboratory directors together in 1973 was to open channels of communication between laboratories.

CLR: What was the catalyst that led to the development of a crime laboratory accreditation program?

RBK: During the same time period that ASCLD was being formed, a national voluntary proficiency testing program was initiated and carried out by the Forensic Science Foundation with funding from the Law Enforcement Assistance Administration (LEAA). The reported results of this voluntary proficiency testing soon made front page headlines in all of the major newspapers around the country. The results reported from the voluntary testing implied that there were serious concerns about the quality of work performed in the nation's crime laboratories.

The newly formed ASCLD recognized that action must be taken to establish standards of operation for crime laboratories and to take appropriate steps to restore public confidence in the work performed by the nation's crime laboratories.

One of the early committees appointed by ASCLD was the Committee on Laboratory Evaluation and Standards. Members of that committee were Tony Longhetti, Jack Cadman, George Ishii, Carlos Rabren, Travis Owen and me. The committee was chaired by George Ishii, Tony Longhetti and Jack Cadman at various times. For approximately four years, the committee considered and worked on various programs that could be used to evaluate and improve the quality of laboratory operations. The committee considered individual certification, a self-assessment program for laboratories to evaluate themselves and an accreditation program based on external peer review as a possible means of achieving the goal. After considering all the options, it was unanimously agreed within the committee that an accreditation program based upon established standards and external peer evaluation was the right way to go.

CLR: How did most lab directors feel about accreditation at the beginning?

RBK: While many lab directors recognized the need for a process to regain public confidence in the work of crime laboratories, many were skeptical of the idea of having to operate according to standards set by someone outside of their respective laboratories and especially to the idea of having someone outside of their respective laboratories to come in and inspect their operations.

It took yearly presentations to the membership of ASCLD for approximately four years before a majority of the membership finally agreed to a strictly voluntary accreditation program.

CLR: Who were some of the people who were proponents of accreditation in the early days?

RBK: I recognize that when you start calling names, you will always overlook someone that should have been included. Some of the early proponents of accreditation, that I remember, were Tony Longhetti from San Bernardino, CA, George Ishii from the state of Washington, Jack Cadman from Orange County, CA, Doug Lucas from the Centre of Forensic Sciences in Toronto and Bruce VanderKolk of the Illinois State Police.

CLR: What were the biggest challenges or obstacles faced when developing the accreditation program?

RBK: The two biggest challenges in developing the accreditation program were the infrequency with which the committee was able to meet and the need to get buy-in from the membership of ASCLD. Due to budgetary restrictions, the committee usually met twice a year (during the annual ASCLD meeting and generally at the AAFS meeting). Every year, the committee gave a status report to the membership of ASCLD and received feedback on the direction that we were going. Early in the history of ASCLD, a significant num-

ber of the ASCLD members were not scientists but were police administrators assigned to the laboratory. Many of those police administrators did not want people from other agencies coming into their labs to monitor the work of their laboratories.

CLR: Describe the events leading up to you becoming an employee of ASCLD/LAB.

RBK: I was privileged to be a member of the Committee on Evaluation and Standards that produced the original accreditation program that the ASCLD membership eventually adopted. The first Board of Directors for the accreditation program, which was initially an ASCLD committee, were the members of the committee on Evaluation and Standards. Carlos Rabren from Alabama was the first Chair of the Board. When Carlos stepped down from the Board, I was asked to be the next Chair. I later stepped down as Chair but continued to serve on the Board until after the Delegate Assembly of ASCLD/LAB was formed in 1984. After stepping off of the Board, I served as both an inspector and as a Team Captain. In approximately 1992, I was elected to another term on the ASCLD/LAB Board of Directors.

In the fall of 1994, Board Chair Paul Ferrara made a presentation to the ASCLD/LAB Delegate Assembly in which he justified the need for a part-time Executive Secretary to handle the paperwork and day-to-day communications of the accreditation program. The Delegate Assembly agreed that the time had come to have an office and someone to handle paperwork and daily communications.

In May 1995, Chair Ferrara sent out an announcement of the new position and a request for applications. I submitted an application and at approximately the same time I submitted my retirement notification to the NC State Bureau of Investigation effective July 1, 1995. Within a week of my retirement, I received a call from Paul Ferrara offering me the job.

I accepted the offer effective September 1, 1995 and agreed to provide office space in my home and furnished my own computer. ASCLD/LAB provided a business phone which used the same primary number that is used today.

In January 2000, the business of ASCLD/LAB had grown to the extent that, not only was I working full-time but I needed administrative help and a bookkeeper. Space was rented at the current Technology Drive facility and Tara Dolin was hired as an administrative assistant. Shortly thereafter, Amy Chalk was hired as a financial bookkeeper for ASCLD/LAB.

CLR: How has accreditation changed forensic science?

RBK: Accreditation has dramatically altered the way business is conducted in crime laboratories in the United States. If not for the proactive approach of the accreditation process, the legal system may have eventually forced many changes that were brought about by the accreditation process. A few of the basic changes that were brought into routine practice as a result of accreditation are: ensuring the integrity of evidence through proper seals, identification of evidence and tracking of evidence through a chain of custody; documented training programs for all forensic analysts; competency and proficiency testing of all personnel; quality systems and quality managers; and documented and validated technical procedures. When I began working in the crime laboratory, I was taught to not put too much in my notes because the defense would use the notes to question me. We never signed for custody of evidence or were concerned to make sure that it was under anyone's custody or control.

CLR: What are some of the misconceptions about forensic science accreditation?

RBK: One common misconception is that, once a laboratory is accredited, the laboratory should never make a mistake or have any issues to

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address. While that is a noble goal, it is not realistic as long as we have humans working in the laboratories. What should be expected is that an accredited laboratory makes minimal mistakes and has in place a quality system that will quickly detect mistakes that are made and have a procedure for initiating corrective actions to correct the mistakes that may be made.

A second misconception is that accreditation is the goal and the end of a process. In reality, accreditation is the beginning of a new way of doing business. It is a way of always conducting the work of the laboratory such that all of the laboratory's work is in conformance with the laboratory's documented quality system.

CLR: What are some of the factors that led to your decision to leave ASCLD/LAB?

RBK: I would not describe my decision as a decision to leave ASCLD/LAB but a decision to move into another phase of my life. In 2007, I had heart bypass surgery and in 2008, my wife had breast cancer surgery. These events made it very clear that every day is a gift and that there may be limited time to accomplish other important things. A second factor was the knowledge that John Neuner was extremely well prepared to replace me and to lead ASCLD/LAB in the right direction.

CLR: What do you see in the future for crime laboratory accreditation?

RBK: Accreditation is here to stay and will eventually become mandated for every forensic laboratory. My concern is that there is a movement for federal entities to take more control of setting standards and removing it from the control of the accreditation programs. I believe that the current system has served forensic science very well and do not believe that federal control is in the best interest of our criminal justice system.

CLR: What are some of your future plans?

RBK: I have not made any grandiose plans. I would like to have more involvement with my grandkids and their activities, spend more time on hobbies such as gardening, woodwork and occasionally fishing. I plan to have more voluntary community involvement in good causes such as the Boy Scouts. I would like to stay closely involved with ASCLD/LAB in any way that I can serve as a volunteer. Linda and I will probably do a very limited amount of travel within the United States to places of interest.

CLR: Can you help us close our conversation by telling us what ASCLD/LAB and forensic science accreditation have meant to you personally? You've sacrificed a lot of yourself for both.

RBK: I have been extremely fortunate and greatly honored to have been a small part of the ASCLD/LAB Accreditation Program. It is my sincere belief that accreditation has done more to improve the quality of forensic services in the United States, throughout the full spectrum of forensic science, than any other program or effort.

I am grateful to the hundreds of individual volunteers that have contributed so much to the development and evolution of the ASCLD/LAB Accreditation Program. It is truly the result of very important contributions from so many people that have been committed to the process over a long period of time. No single individual can take the credit for the program which has evolved and which continues to evolve. It can truly be considered the accreditation program of the people dedicated to quality forensic science.

I am grateful to all of the individuals who have freely given their time over the years to serve as inspectors, assessors, committee members, Board officers and Board members. I have made many lifelong friends for whom I have the greatest respect and appreciation. *****

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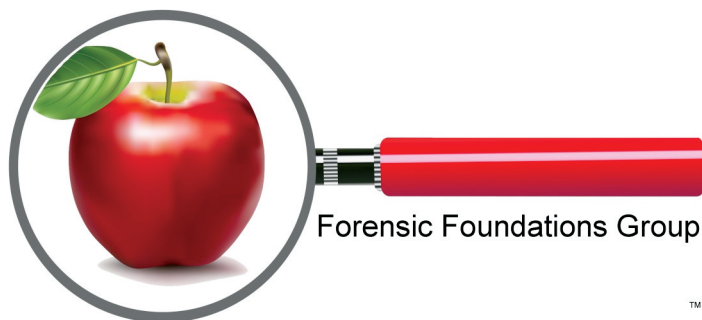
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Letters and Comments

Bias in Forensic Science

Dear Editors:

Thank you for the thoughtful discussion of bias in forensic science. It was well done but suffered from a few shortcomings.

1. There should be more discussion of the types of bias that forensic scientists face in the analysis of evidence (cognitive, confirmational, situational). It is not just bias, but these particular types of bias which are so pernicious.

2. I think that part of your discussion needs some clarification: Among the weightiest implications of proposals advanced by those wanting to eliminate sources of inappropriate bias from forensic science is the prospect that forensic science professionals should be prohibited from receiving investigative information prior to analysis. The intent of such a policy would be to protect scientists from any preconceived notions that may lure them into justifying the hunches of investigators rather than testing them objectively under the protections of the scientific method.

If this logic made any sense, we would feel obligated, in the interest of science, to invite our readers to stop telling their doctors about symptoms they are experiencing during an illness, especially any family history of diseases or disorders. We would also suggest not speaking to your automotive mechanic when taking your car in for service.

The issue is not whether a forensic scientist should get investigative information prior to analysis, it is what types of information they should get. I would argue that a fingerprint examiner should not be given information that sensitizes her towards on suspect or another so her focus won't be on one particular set of fingerprints. In the case of verification of results of an analysis, it should be blind.

One examiner should not know what results and conclusions were reached by another examiner who analyzed the evidence previously. Techniques such as "sequential unmasking" or evidentiary "lineups" should be explored to minimize cognitive bias. Thus it is important to limit the types of information that an examiner has which is likely to cause bias.

*Jay A. Siegel, Ph.D.
Consultant in Forensic Science
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Media Activism

The following comments were responses to our November 7, 2013 article, "Media activism in Texas distorted facts about hair evidence." We have included the original article on page 5.

To the editors of the Crime Lab Report:

I recently became aware of your piece on the Claude Jones case. In the piece, you take several quotes out of context to imply that my reporting on the Jones case wasn't accurate and was led by some sense of activism.

In my story, I never claimed that the 2010 DNA test proved Jones' innocence. On the contrary, we were very careful to report that Jones may have done the crime. I also never wrote that the hair was the only evidence that convicted Jones. I reported on the eye witnesses testimony and that Jones' accomplice claimed Jones committed the murder. I also reported that the DPS expert didn't say the hair definitely came from Jones. But the hair was critical corroborating evidence that placed Jones at the scene, and that without the hair evidence, Jones may not have received the death penalty.

Here's what I wrote in full context:

"Witnesses who saw the crime from across the street couldn't positively identify which man they saw leave the store. The third accomplice, Timothy Jordan, would testify that Jones confessed to the shooting. (Jordan later recanted his testimony, claiming police told him what to say in exchange for a lesser charge. Jordan, Dixon and Jones had committed a string of robberies, though the liquor store heist was the only one that involved murder. Jordan was sent to prison for 10 years. Dixon was given a 60-year sentence.)

"But Jordan's testimony wasn't enough to convict Jones of murder. In Texas, accomplice testimony can't be the sole basis for a conviction; it must be corroborated by independent evidence.

"At Jones' 1990 trial in rural San Jacinto County, prosecutors offered only one piece of corroborating evidence, the strand of hair recovered from the liquor store counter.

"Stephen Robertson, a forensic expert hired by the Department of Public Safety, examined the hair under a microscope, an inaccurate visual analysis that was common at the time. Robertson compared the hair with samples taken from 15 people who entered the store the day of the murder. He testified at trial that he believed the hair matched Jones. But he conceded, "Technology has not advanced where we can tell you that this hair came from that person," he told the jury, according to court records. "Can't be done."

I also wrote about Jones' criminal history, which included setting another inmate on fire. You can

see the full report here:

<http://www.texasobserver.org/texas-observer-exclusive-dna-tests-undermine-evidence-in-texas-execution/>

But instead of an accurate portrayal of my reporting, you used selective quotes to question my journalistic credibility.

I also find it bizarre that you would assume I'm uniformly opposed to the death penalty - a false assumption. But either way, my personal beliefs on capital punishment had little to do with my reporting on the Jones case. The Observer got involved because we felt the public had right to know if the system was working. We felt that if evidence existed that could confirm or debunk evidence in a death penalty case, then it should be tested.

I appreciate the work y'all do in the important field of forensic science. But in this instance, I feel it was misleading. My reporting on the Claude Jones case was fair and factual.

11/7/2013

*David Mann
Texas Observer*

Dear Editors:

Thanks for the reference to Jon Gould's work. Jon is a former fellow here at the Center, but I have overlooked his contribution to this debate. I will contract him immediately.

Of course, very few convictions are due solely to the forensic evidence. I am not aware of cases where forensic evidence is the only evidence presented by the prosecutor, and attributing responsibility for a conviction across various types of evidence is difficult indeed. Nevertheless, it is useful to under the context in which the forensic science evidence was introduced.

Lastly, I am puzzled why in this case summary (and often in previous summaries as well) you conclude by recounting the defendant's previous criminal history and other nonforensic evidence that was consistent with the guilt of the defendant. I am sure that we both agree that even a person with an extensive criminal past deserves forensic expert testimony that is consistent with the accepted standards of the profession. I am sure we also agree that forensic science testimony that does not meet accepted standards of the profession cannot be rehabilitated by nonforensic evidence suggestive of guilt.

11/7/2013

*Joe S. Cecil, Ph.D., J.D.
Division of Research
Federal Judicial Center*

DELAWARE - *continued from Page 7*

tors were told that managers would remove evidence from the drug vault without properly recording it. Even worse, a former employee said he remembered seeing drug evidence in the lab manager's personal office. Another CSU employee admitted that when small unlabeled marijuana and heroin packets were found in the pockets of their lab coat and inside a drawer in their work bench, the evidence was simply disposed of without notifying a supervisor.

Improper handling of evidence was not limited to drugs submitted by law enforcement agencies. OCME's own forensic investigators frequently secure prescription drugs from death scenes, which are stored in the drug vault. By policy, these drugs are to be destroyed after 90 days. During the evidence audit, DSP investigators found medications from death cases dating back to 2012, and one of the bags appeared to have been torn open. An OCME employee conceded that there was no method to log and track evidence secured in death investigation cases and therefore no way to determine when evidence should be destroyed.

Due to a backlog of cases, the CSU instituted a policy in 2012 to only conduct an analysis of evidence when it was necessary for court purposes. Therefore, a substantial amount of drug evidence submitted to the OCME is not tested. One employee informed investigators that a laboratory manager stated that all drug evidence needed to be retained for three years. But as space in the drug vault became limited, the retention policy changed to two years, then one year. Despite this, investigators found evidence from as far back as 1989 during the evidence audit.

Investigation also questioned the OCME hiring process. Prospective employees were required to submit fingerprints for criminal history checks but no background investigations were conducted. This limited screening process allowed one individual who was suspected of theft from a former employer to be hired in 2008 and given security access. The employee was soon moved to a position within the evidence control unit. In 2010, another person suspected of theft at a previous job was hired into the evidence control unit.

The report also noted several instances of OCME employees performing tasks well beyond their training and qualifications. In 2013, a new management position was created to oversee CSU and evidence control operations. This position was filled from within the existing ranks of OCME by a manager that the report said had previously "demonstrated management deficiencies." One CSU chemist was allowed to perform analyses despite having failed internal proficiency tests.

Investigators also found data entry errors in the forensic laboratory information management system (FLIMS) related to the wrong officer or agency that submitted the evidence. The report concluded that many of the data entry mistakes were made "by employees assigned to perform tasks beyond the scope of their employment."

A second investigative report, commissioned by DHSS, was released by the California security firm Andrews International in early July. The 27 page report began with a scathing indictment of the management of the OCME "based largely on the fact that authority for management and supervision of Forensic Science Services was ignored or delegated to the Deputy Director who has no forensic science training or leadership experience. Noteworthy is the ongoing toxic environment demonstrated at the executive management level within the OCME. The senior management team does not function as a team. They do not communicate with each other and there is open animosity between the members."

Regular readers of *Crime Lab Report* will remember that in October 2012 we addressed the issue of mismanaged crime laboratories. Our March 2013 editorial dealt with the mismanagement of the Massachusetts Department of Health Laboratory and the scandal that resulted. It's tempting to draw parallels between the Delaware scandal and the problems in Massachusetts, since both laboratories were part of the state department of health and suffered from gross mismanagement. In fact the news media in Delaware did the same thing.

But there is one big difference: the forensic chemistry unit at the Massachusetts lab was not accredited.

The Delaware OCME has been accredited by Forensic Quality Services since June 15, 2012. The laboratory's certificate of accreditation is valid until June 15, 2016.

The Andrews International report was critical of Forensic Quality Services, even suggesting that the laboratory "should seek accreditation through the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) and the American Board of Forensic Toxicology (ABFT)."

Crime Lab Report contacted the ANSI-ASQ National Accreditation Board, the parent company of FQS, and asked for their comments about the Andrews report. In a two page letter, Vice President Keith Greenaway stated that the Andrews report "missed the root cause of the real issue...that there was criminal activity by several members" of the OCME staff. Greenaway also stated it was clear that the consultants who authored the report

were "ignorant to the fact that ISO/IEC 17025 is a science-based standard used to facilitate the global acceptance of test results. Because of their lack of knowledge regarding accreditation and ISO/IEC 17025 they fall back on placing unsubstantiated claims about accreditation and FQS. Unfortunately this is all too common in the forensic industry when criminal activity occurs within an accredited laboratory. Previous criminal incidents that occurred at other accredited forensic laboratories accredited by ASCLD/LAB also resulted in the final reports inappropriately attacking the accreditation by ASCLD/LAB. Attacking accreditation related to criminal activity that occurred at forensic laboratories demonstrates a fundamental lack of knowledge of ISO and of the accreditation process, including the intended use of laboratory accreditation."

Greenaway also pointed out that comments in the Andrews report related to audit findings and the resulting corrective actions being open well past deadlines implied that these were from an FQS assessment, when in fact they were from an internal audit conducted by the OCME.

If there is one thing that has come out of the growing number of documented failures in accredited laboratories is the simple fact that the lack of management oversight and commitment to quality will trump accreditation standards. Accreditation is not, nor has it ever been, a destination or one-time achievement. It is a continuous process of improvement.

But if the management does not demonstrate a commitment to quality, don't expect the rest of the staff buy in.

In May, Delaware State Prosecutor Kathleen Jennings spoke during a hearing called by the chair of the Senate Public Safety and Homeland Security Committee to learn more about the problems at the OCME. "It's not rocket science that this would happen if someone isn't there supervising what is going on," Jennings said. "It's inevitable that bad things happen in a culture like that."

But apparently it has not always been that way.

Dr. Ali Z. Hameli, the previous Chief Medical Examiner and founder of the Delaware OCME, told the *Delaware News Journal* that he made sure that only one person, the chief chemist, had access to the drug evidence room, thereby establishing strict security. "I didn't even have a key," Hameli said.

Lawmakers in The First State acted swiftly, drawing up legislation to reorganize the OCME into a new Division of Forensic Science within the De-

DELAWARE - *continued from Page 13*

partment of Safety and Homeland Security. The bill created a new division director to head the newly structured agency and called for the establishment of a Forensic Science Commission consisting of eight members: the Secretary of the Department of Health and Social Service, the Secretary of the Department of Safety and Homeland Security, the Attorney General, or the Attorney General's designee, the Public Defender or the Public Defender's designee, a member of the Delaware State Senate appointed by the President Pro Tempore, a member of the Delaware House of Representatives appointed by the Speaker, a member appointed by the Delaware Police Chiefs Council, and a member, appointed by the Governor, who has expertise in forensic science.

Predictably, the bill had its critics.

Organizations with a stake in the proposed changes included the National Association of Medical Examiners (NAME), the Innocence Project and the National Trial Lawyers, who warned that placing the new agency in the Department of Public Safety and Homeland Security would open the lab to the appearance of a conflict of interest and possible pressure to meet the expectations of police and prosecutors.

Dr. Gregory Davis, president of NAME, said in a letter to legislators the bill "creates an untenable structural conflict of interest, impairs independent medicolegal death investigation, interferes with the public health role of the Medical Examiner," and makes it more difficult to recruit "competent professional talent."

House Speaker Pete Schwartzkopf responded to critics, stating the OCME had "absolutely no oversight. We have a guy in control who wasn't overseeing anything except for trying to make more money for himself. These cops risk their lives going undercover, making buys from really badass people only to have it screwed up by a bunch of clowns up there who should be in jail."

The criticism apparently fell on deaf ears and the bill won overwhelming approval, by an 18-2 vote in the Senate, followed by a 35-4 vote in the House. Delaware Governor Jack Markell signed the bill the same day it was approved by the House.

"This legislation will help us create a structure for forensic science that can support the criminal justice community in a way that is expert, timely, professionally independent, and accountable," the Governor Markell said.

Representative Mike Barbieri, who chairs the House Health and Human Development Committee and was a co-sponsor of the bill, said "this legislation creates a new framework for the important jobs done by the medical examiner, with a much improved level of oversight and accountability."

As a result of the investigation, CSU Laboratory Manager Farnam Daneshgar was indicted by a grand jury for possession of marijuana and drug paraphernalia and two counts of falsifying records. The investigative report also states that Daneshgar left the OCME in 1990 after allegations he was "dry labbing" testing results. Incredibly, Daneshgar was re-hired in 2006 and the report claims that employees believed he has engaged in "dry labbing" since his return.

James Woodson was indicted by a grand jury for trafficking cocaine, theft of a controlled substance, tampering with physical evidence, official misconduct, and unlawful dissemination of criminal history record information.

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Dr. Richard Callery, the Chief Medical Examiner, was terminated July 4 following the release of the report from Andrews International. In a letter sent to Callery, DHSS Secretary Rita Landgraf and Homeland Security Secretary Lewis Schiliro wrote "As a result of the significant extent of your misconduct, the state has sustained incalculable damage and incurred tremendous loss. Even if the position was not abolished, though, in light of the information discovered during the investigation, it is clear that you are not able and/or willing to perform the duties and responsibilities required of the Division of Forensic Sciences Chief Medical Examiner."

While the investigation is ongoing and additional findings may result, a total of 51 pieces of potentially compromised evidence from 46 cases were identified in the preliminary report. The State Police had four of their top investigators assigned to the investigation, and at times, as many as twenty sworn officers pulled from their regular duties. Thirteen DDOJ employees also participated, as well as officers from police agencies all across the state who had to verify evidence package contents.

Sadly, the impact on Delaware's criminal justice system is just beginning to be felt. At the time the preliminary report was released, 200 drug cases were dismissed and 60 sentences reduced. Thousands of appeals to prior convictions are expected. With the closure of the CSU, the state had already submitted over 400 pieces of evidence to a private lab at a cost of well over \$100,000.00.

Like we said in October 2012, "preventing crime lab troubles is not rocket science."

As the states who have failed to do so have found, cleaning up the mess certainly is.*****

For the Andrews report on the DE OCME: <http://dhss.delaware.gov/dhss/admin/files/andrews-international.pdf>
To read the full comments from FQS-I, please visit <http://crimelabreport.com/comments>

Laboratory Performance

Physicists seek to cut helium costs

JUNE 24 2014 BY PETER GWYNNE

The American Physical Society (APS) has kick-started a pilot programme that is designed to provide helium at affordable prices for US academic researchers who need only small amounts of the element. The APS plan will involve the Defense Logistics Agency (DLA) negotiating the cost for helium with suppliers for researchers who are funded by government grants. The DLA already buys helium on behalf of the Department of Defense, of which it is a part.

Physicists routinely use helium to cool lab experiments and it is needed in large quantities to cool the superconducting magnets in particle accelerators. Helium also cools the magnets in magnetic-resonance-imaging machines and plays a critical role in the manufacture of microchips and optical fibres. Shortages of helium have become regular occurrences in recent years after uses for the gas have expanded.

While big laboratories and national labs can negotiate a good price for helium from suppliers, owing to the vast quantities that they need, smaller users – such as single principal investigators buying 100 litres at a time – find that suppliers can charge higher prices. “[Smaller buyers] don’t have the same purchasing power,” says Mark Elsesser, a policy analyst at the APS who will serve as a liaison between researchers and the DLA.

Indeed, researchers at Pennsylvania State University pay \$7.50 per litre of liquid helium – almost half what Rutgers University in New Jersey pays. “The hope from this programme is that some universities in a poor position to negotiate with particular vendors will have access to helium,” says Moses Chan, a low-temperature physicist at Penn State. On top of this, users at the end of suppliers’ delivery routes might receive only 75 or 80 litres in a 100 litre Dewar flask, owing to evaporation.

The more the merrier

The plan between the APS and the DLA originated after APS members warned the society about their problems obtaining liquid helium at an affordable price. After hearing a presentation on the issue by Chan in March, two representatives from the DLA offered to help, and the programme was then set up. The American Chemical Society came on board the following month, helping to improve the programme’s reach. “We’re looking for a diverse set of users in geography and supply demands,” Elsesser says. “Chemists have a much more regular schedule of delivery.”

The team is now looking for research groups to participate in the programme and is publicizing it via newsletters, journal articles and webinars, as well as a dedicated page on the APS’s website that will offer information about the programme. “Starting with a pilot programme allows us to evaluate how it works, its potential benefits, and which type of academic user is a good fit for it,” says Elsesser. “Then we’ll look at where users are located, where supply needs are and other issues.” The consortium expects to review the helium-purchasing plan in December 2015. If successful, a full-scale roll-out should start in 2016.

About the author

Peter Gwynne is Physics World’s North America correspondent. Article printed with permission from Physics World. www.physicsworld.com.

Perspectives on Quality

Learning from the assessors who evaluate our laboratories

Bob Stacey has been a staff assessor for *ASCLD/LAB* for the last six years and has conducted assessments in about fifty laboratories. Prior to working for *ASCLD/LAB*, he was a volunteer assessor and team captain for approximately fifteen laboratory assessments. Bob also served on the *ASCLD/LAB* Board of Directors, including one year as Chair. While conducting assessments over the years, Bob has noticed that there are three specific areas to which laboratories with robust quality systems pay close attention:

Corrective action

High-performance laboratories do a thorough job of determining the root cause of problems and develop appropriate remediation plans. Most remediation plans involve some remedial training of staff. Bob explains that “corrective actions should not be punitive but an opportunity for improvement, and laboratories that have this mindset perform better than the others.”

Internal audits

Laboratories in the *ASCLD/LAB International* program are required to conduct internal audits on an annual basis. Bob says nonconformance to this requirement is the most common he finds— incomplete audits or audits that are missing some of the required elements. An internal audit should cover the laboratory’s own management system, as well as all the requirements of ISO-IEC 17025 and the *ASCLD/LAB* Supplemental Requirements. Supplemental requirements are those that make the ISO-IEC 17025 requirements more applicable to forensic testing laboratories.

Laboratories must audit all requirements and not just sit at a desk and check off a box and say “yes we do that” but actually go and look at records and documents to demonstrate that they are actually in compliance with their own management system and the *ASCLD/LAB* program.

Bob explains that in the early years, many labs simply viewed internal audits as something they had to do and did it in the most expeditious manner possible. “But now I see internal audits being conducted by lab personnel who have had formal auditor training,” he says. “They know the proper way to conduct an internal audit, and from my perspective, an *internal* audit should reveal more nonconformities than one conducted by an *external* group.”

“We only see a snapshot of the laboratory, and if we observe six or eight nonconformities and the internal audit only resulted in one or two, it tells me they are not taking their internal audits seriously.”

Bob says that laboratories know their system better than anyone else and should be able to conduct a much more comprehensive audit than an external group. “It just stands to reason that an internal audit should be more robust.” A robust internal audit provides many opportunities for improvement.

Management reviews

The management review is a critical task required by ISO-IEC 17025. Required elements must be included in any review conducted. There should be comprehensive notes taken during the review and comprehensive action plans to include follow up activities during the course of the year. “When these actions are a part of the annual review, it indicates to me that the management is serious about having a quality laboratory.”

HR Management in Forensic Science

The new discrimination in the 21st century workplace

By John M. Collins Jr. MA, SPHR

Financial fraud is a national epidemic, which is why the U.S. Securities and Exchange Commission (SEC) is increasingly eager to award damages to persons who take the risk of exposing the criminal or the incompetent.

These awards, however, have relevance beyond the financial districts. They are making waves across the entire public sector as well.

When we think of a protected class of employee, we tend to picture females, minorities, religious devotees, persons with disabilities or different national origins, and older workers to name a few. It is generally well-known that these individuals are entitled to certain protections under the law, and when those laws are broken, it is regarded as illegal discrimination.

There is another protected class, however, that is too often ignored. In that class are employees who have come forward to expose what they believe is potential misconduct, incompetence, or dereliction of duty.

Notice the choice of wording here. . . “what they *believe* is potential misconduct. . .” An official confirmation of misconduct is not necessary for a whistle-blowing employee to have certain rights or protections under the law. If it is later found that the complaint was patently frivolous or based on gross misjudgment, then the misjudgment itself can be handled as a competency issue. But under no circumstance can the act of bringing attention to improper behavior be punished or result in hardship to the employee.

Any punitive effects or hardships are considered retaliation, which is not tolerated in litigation. This can be as obvious as a demotion or as subtle as the cold shoulder.

Many forensic science laboratories are operated within law enforcement agencies, and law enforcement culture places a high premium on loyalty and conformance. In such a culture, whistle-blowers are more likely to be viewed as weak or “breaking the code.” They may be marginalized or denied opportunities for promotion, all of which can be tantamount to retaliation for whistle-blowing - the illegal discrimination of the 21st century.

This year, 2014, marks the 50th anniversary of the Civil Rights Act of 1964. Signed by President Lyndon Johnson, the landmark legislation outlawed discrimination based on race, color, religion, sex, or national origin.

Johnson also signed the Age Discrimination in Employment Act, which prohibited discrimination in employment matters against persons over the age of 40. Other legislation followed that broadened and clarified what were to be known as *protected classes*.

With everything that we have witnessed in the last two decades related to financial, corporate, and tax fraud, our government institutions are recognizing the importance and value of people who are willing to risk their own well-being to stop illegal behavior. We are seeing in actual litigation the treatment of whistle-blowers as a sort of protected class not unlike those

“An official confirmation of misconduct is not necessary for a whistle-blowing employee to have certain rights or protections under the law.”

codified by congress in 1964.

Also trending is the type of discrimination witnessed in contemporary labor disputes involving discrimination. Thankfully, overt discrimination and harassment are subsiding in the workplace. More frequently than years past, however, illegal discrimination is subtle and subconscious, reflecting personal biases and prejudices. Offenders are often surprised by the complaints against them because they did not see their misconduct as a problem.

But it's a huge problem for employers, especially when the offender is a person of rank or elevated authority. Supervisors must understand exactly what illegal discrimination is, whether it is brought upon a person based on their minority status or their being recognized as a whistle-blower.

All of the following examples of behavior are potentially illegal if it can be demonstrated that they were in retaliation against a protect class or protected activity such as whistle-blowing:

- Denying a promotion
- Denying a pay increase
- Removing someone from an email distribution list
- No longer saying “good morning” to an employee or coworker
- Not inviting someone to an after-work social gathering
- Not inviting someone to a meeting that is relevant to their work
- Being rude or condescending
- Displaying outright hostility or abusiveness
- Intimidation or coercion
- Not “going to bat” for someone as you would for someone else
- Turning away from an employee or colleague who attempts small talk

Ideally, good behavior will happen in an organization not because of the law but because it is the right thing to do. Employees who bring forward potentially bad news are not the enemy. They may be right, they may be wrong. It doesn't matter. What matters is that every organization pay close attention to employees who, for whatever reason, decide to blow the whistle on what they see as being improper. Regardless of the validity of the complaint, the cost of ignoring or dismissing it can be devastating.

John M. Collins Jr. is the founder and president of the Forensic Foundations Group, specializing in human resource management and occupational competency in the forensic laboratory sciences. For more information please visit www.forensicfoundations.com.