

**71<sup>st</sup> Annual Scientific Meeting  
American Academy of Forensic Sciences**

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Plenary Session Remarks  
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***Rededication to a Common Cause:  
The Search for Truth in the Name of Justice***

*(Remarks as Prepared for Delivery)*

Thank you for that introduction Jamie.

It's a great honor for me as a Fellow in the Jurisprudence Section to address this 71<sup>st</sup> Annual Scientific Meeting of the Academy — and a great pleasure for me as a federal employee to be away from Washington D.C. for a little while.

I want to thank my friend Sue Ballou for her leadership of the Academy this past year. Congratulations Sue for a job well done.

I want to thank the Plenary Committee for the inviting me to speak — and for sticking with over the last couple of weeks as they stared squarely into the face of a government shutdown and the possibility coming up one Plenary speaker short.

They didn't blink. Thank you Jamie and Ken.

But most of all, I want to thank the forensic scientists at this meeting, across this country, and around the world for the work you do every day to advance the cause of justice through the practice of science.

Thomas Huxley, the very quotable 19<sup>th</sup> century English biologist, once said: "*Learn what is true in order to do what is right.*"

To me, that simple sentence fully defines and describes both the call and the cause of the forensic scientist.

Most of you are from agencies with small budgets and big caseloads. You work in a cubicle, not the corner office. You're highly educated, but most of you will never be rich or famous. And despite the fact that you're scientists, the only thing that you will ever know to a reasonable degree of scientific certainty is that no matter what you say, somebody won't like the answer.

But your sacrifice comes with a reward that few share. You have the freedom to come to work every day without fear or favor, but with devotion to the facts, not the factions, in search for what is true, in order to do what is right.

So on behalf of the Attorney General, I want to thank each and every one of you for your devotion to truth through the practice of forensic science.

At the Department of Justice, our top priorities are to reduce violent crime, to increase public safety, and to work for true and just outcomes for all parties. The responsible use of reliable forensic evidence greatly advances those goals. You all know that very well. And so do I.

As some of you know, I'm a former prosecutor from Kansas City. For over 26 years, I worked on cases involving forensic evidence. And I've seen the incredible impact that it can have on the lives of so many people — helping to convict the guilty and clear the innocent.

In the days before DNA, I worked with a wide range of traditional forensic evidence, like latent prints, microscopic hair comparison, and firearms and tool marks. Time and again, I saw the great value that forensic science gave to law enforcement, prosecutors, defense attorneys, and finders of fact in our collective search for the truth.

One of my first trials as a prosecutor was the burglary of the Holy Rosary Catholic Convent in Kansas City, and the brutal rape of an elderly nun.

As you can imagine, it was a high-profile crime, and there was great pressure on the police to solve the case.

Investigators methodically processed the scene, taking pictures, dusting for prints, and collecting all the trace evidence they could find.

All of the evidence was sent to our local crime lab, then housed in a small and cramped building south of the courthouse.

Print lifts from the convent were examined and some were found to be suitable for comparison.

One latent print in particular, from the point of entry, was uploaded to an early version of our local AFIS system and a list of candidate matches came back.

Examiners pulled known print cards for these suspects and compared them to the print left behind at the point of entry — a bathroom window located on a second story deck of the convent.

I'll always remember the fingerprint expert's story about the exact moment when she realized what she'd found: A match between the print on the window and the known print of a suspect on the list. She told me that she was momentarily paralyzed by the significance of what she'd seen.

The suspect was soon arrested - and more forensic testing ensued.

3 hairs collected from the victim's bed sheet were found to be microscopically similar the suspect's known hair.

But for me, the most amazing piece of evidence was a single hair collected from the bottom of a sock found in the suspect's home. It was microscopically similar the victim's pubic hair standard.

Apparently the suspect had taken off his shoes to avoid making noise during the burglary. A pubic hair from the victim, probably on her bathroom floor at the point of entry, stuck to his sock and stayed in place as he put on his shoes to make his escape.

At the time I tried the case, the only available DNA technology was RFLP, and as some of you know, that system required a about a quarter-sized stain or sample to get a full profile.

To make matters worse, mitochondrial DNA testing was only under development at the time and was not widely used.

So, at the time of trial we didn't have any DNA evidence. But in light of what we did have, that didn't matter.

The Defendant, Jerry Owens, was convicted and sentenced to two consecutive life terms plus an additional 60 years in prison.

But both at trial and during the years that followed, Owens strongly and consistently maintained his innocence.

Ten years after his conviction, he convinced a large Kansas City law firm to take his case and file a motion for post-conviction DNA testing.

The court granted the motion and the evidence hairs were sent to a lab in California for Mitochondrial DNA testing.

Analysts developed a mitochondrial DNA profile from each hair; each profile was then compared to Owens; a report was written; the attorneys were notified; a conference call was calendared; and on that day science had the final say:

The verdict?

He was a perfect DNA match to each hair.

Post-conviction testing affirmed Owens' guilt. It also confirmed the relevance and reliability of the fingerprint and hair evidence offered at trial 10 years earlier.

This is not an uncommon result. It happens all the time. What *is* uncommon is the fact that you just heard about it.

How often do we hear reports about all of the planes that land *safely* at the airport each day? We only hear about the crashes. Then we hear about the same crashes over and over again — as if the exception is the rule.

In this field, the frequent focus on isolated failures has led to a carefully crafted, constantly reinforced, and patently false narrative that the forensic sky is falling. That's simply not true. Forensic science isn't failing, it's flourishing. And it continues to provide relevant and reliable answers to the legal system's most critical questions, just like those asked in the Owens case.

From a legal perspective, relevance and reliability are the gateways to admissibility. For evidence to pass through these gates, it must to be the product of scientific, technical, or other specialized knowledge that has good grounds, based on what is known. But fine distinctions between different types of knowledge aren't just hard to make — they're legally irrelevant.

On this point, the Supreme Court has said:

*"It would prove difficult, if not impossible, for judges to administer evidentiary rules [if the] gatekeeping [role] depended [on] a distinction between 'scientific' knowledge and 'technical' or 'other specialized' knowledge . . . and conceptual efforts to distinguish the two are unlikely to produce clear legal lines capable of application in particular cases."*

The Court also said: “*Rule 702 [didn’t] create[] a schematism that segregates expertise by type while mapping certain kinds of questions to certain kinds of experts. Life and the legal cases that it generates are too complex to warrant so definitive a match.*”

In other words, it’s the reliability of the knowledge — not its name or its nature — that is key to admissibility. But we humans — especially lawyers and scientists — have a compelling need to categorize, classify, and along the way oversimplify, as we pigeonhole people, professions, or principles of knowledge into separate bins or boxes with bright lines and barriers between them. But in reality, those lines aren’t bright, they’re often very blurred.

What’s legally important is not the type of knowledge in question, it’s whether or not that knowledge — however it’s defined or described — is reliable. That doesn’t diminish the importance of science. It’s proven to be our most reliable form of knowledge. But science, like other types of knowledge, is a continuum, it’s *not* a corridor.

The famous astronomer Carl Sagan once said that “*science is a way of thinking much more than it is a body of knowledge.*” His point highlights the fact that science is an inescapably human endeavor and has no existence apart from the humans who practice it.

Rigorous and validated observation, interpretation, and judgment are core components of good science. They’re also key components of good expert testimony in the legal system. The fact finder — whether a judge or a jury — needs that expertise to place forensic findings in their proper context. Those findings often corroborate and confirm other evidence, as they did in the Owens case. At other times, they exculpate or exonerate the accused – but in either case, they help us learn what is true, so that we can do what is right.

At the Department of Justice, getting it right is what we’re all about. We know the importance of research, clear standards, transparency, and professional accountability to both science and the law.

Since 2009, NIJ has awarded more than 227 million dollars to support over 500 forensic science research grants. Since the year 2000, that figure is over 2 billion dollars.

That funding has helped support exciting new advances in testing and technology. We'll soon see the widespread use of rapid DNA in crime labs and booking stations. Sophisticated software systems are now being used to resolve DNA mixtures. And more advanced DNA technologies like next generation sequencing will soon be ready to tackle some of our most challenging forensic samples.

Other technologies like 3-D imaging and the optical analysis of latent prints, toolmarks, and shoe mark features are now in advanced stages of research and development. These new tools — and many others — will soon be used to enhance both the capability and reliability of forensic testing.

Last year at this plenary session, the Deputy Attorney General announced approval and posting of Uniform Language for Testimony and Reports in the latent print discipline.

Since that time, the Department has approved 12 additional uniform language documents — with more on the way very soon — that describe the scope and limitations of the expert opinions that may be offered by our forensic examiners.

These documents work hand-in-glove with the Department's testimony monitoring program, and online access to our key quality assurance requirements, lab policies, and testing procedures.

As forensic technology advances, so does the work on national standards and best practices.

I want to recognize the enormous energy, efforts, and accomplishments of the Organization of Scientific Area Committees and our partners at NIST over the last 5 years.

OSAC is making steady progress with dozens of forensic standards and guidelines currently under construction and consideration. These standards, once approved, will form a strong foundation for our collective forensic thought and practice in the years to come.

This Academy, through its American Standards Board, also plays a critical role in this process, and we recognize your important contribution to creating quality national forensic standards.

But as standards continue to develop, it's important to remember that we can't let the perfect become the enemy of the good. Today's standards must reflect our best *current* knowledge — not our best *possible* knowledge — because forensic findings must address current and critical real world questions — those that need answers today — whether they're asked in Kansas City, Bakersfield, or right here in Baltimore.

To that point, Martin Fischer, a German-born physician and author once remarked, "Truth is rarely writ in ink; it lives in nature." We too need to remember that our forensic knowledge of nature can't be fully captured by pen and paper. It must be constantly pursued by those who seek the truth. Over time, as our knowledge advances, so too must the writings that reflect the current state of that pursuit.

But to me, the larger point is that less than perfect standards don't *defy* science, they actually *define* science. Scientific knowledge is never settled, is always contingent, and is constantly corrected, reexamined, and revised.

Along these same lines, I also think it's also important to remember that the *aspirational* may be *inspirational*, but it's not necessarily *operational*. We need to mind the distinction between



the constancy and consistency of a perfect world and the complexity, the differences, and the diversity that exists in the real world.

That means drafting forensic standards at the right level of generality to account for the real differences between people who use them, the places they work, and the problems they face. Standardized guidance must always be somewhat customized to fit the unique needs of different environments, instruments, and the individuals who follow it. A one-size-fits-all approach is neither realistic nor scientific.

But by the same token, the flexibility required by forensic diversity must always be consistent with sound science and technical truths. Our differences aren't an excuse to ignore or abandon core principles and best practices.

The key is to find — and then to mind — the right balance between the uniformity of a perfect world and operational flexibility needed in the real world of diverse forensic practice.

But that diversity isn't limited to forensic labs — just look at this Academy with its 11 sections, 7,000 members, and over 70 years of service.

We're more than our partner scientists who spend their days in a lab. We're a wide collection of people, professions, and priorities. We come from different backgrounds, we work in different fields, and we have sometimes very different points of about the best path forward. That diversity is a great strength. But diversity can also bring the risk of division.

Much of the current criticism of forensic science is fair, balanced, and constructive; but some of it is also strategic, dishonest, and destructive. And part of it is little more than agenda-driven advocacy in the guise of promoting scientific purity — a genre that I call “forensic science fiction.”

That further divides us, creating factions, suspicion, and dissension. People who should be working together instead go their separate ways and only speak to the like-minded, while they carefully curate their own preexisting beliefs and biases.

Some only speak to forensic scientists through written rebukes in published articles and op-ed hit-pieces, or by promoting and stoking what I call “junk journalism” — media stories full of partisan misinformation, straw-man arguments, and half-truths about forensic science.

We should all agree that there’s a much better path forward.

Diligence to the effort, dedication to the details, and devotion to the field mean that all of us, whatever our role in the system, must work together and rededicate ourselves to a common cause — as Huxley put it, *learning what is true in order to do what is right*. That’s a shared goal that should define us and unite us — not divide us.

To the stakeholders who want to make a real and lasting difference in this field, take the example of those who publish *with* forensic scientists, not *at* forensic scientists; who collaborate more, and excoriate less; and who truly partner with forensic scientists, rather than patronize them.

Now that’s not to say that fair, honest, and constructive criticism isn’t good. It’s not only good, it’s absolutely essential for knowledge to advance and for practice to improve.

We all have blind spots, biases, and beliefs that need to be challenged and refined or sometimes completely rejected and replaced. At the same time, it’s important to remember that the spirit, tone, and purpose of our comments can mean the difference between building a lasting bridge or a permanent barrier. Once trust is broken, it’s very hard to mend.

Let me take a moment to share a few thoughts with the forensic practitioners in the room.

Don't let criticism make you stop listening to the critiques.

Criticism can be many things. It can be painful, it can be annoying, it can be flat wrong, and completely unfair.

But open and honest criticism can also be the catalyst for conversation, constructive change, and continual advancement.

George Bernard Shaw once said, "*Every person who has mastered a profession is a skeptic concerning it.*"

Great science happens because great scientists are the biggest skeptics of their own work.

They're critical thinkers.

They're open to criticism.

And they have thick skin.

In fact, what good lawyers do in the courtroom is what good scientists do in the laboratory: they question, they criticize, and they cross-examine.

See, you're not that different from lawyers after all!

So don't get complacent about what you do or how you do it. If you have a policy, a procedure, or a method, always try to improve it, or even throw it out when something better comes along.

Don't ever let the fact that a method is *legally admissible* be the sole reason to say that it's *scientifically acceptable*.

Legal decisions must not lead to scientific satisfaction and professional stagnation.

Instead, always try to improve upon what you do and how you do it — to make it more rigorous, more robust, and more reliable.

The self-correcting nature of science is one of its greatest strengths; but great science doesn't happen without great scientists.

Always strive to be a great scientist first. Great practice follows great practitioners.

So in closing, as this meeting continues, challenge yourselves to consider different positions and different possibilities for the best path forward.

*Forensic science needs extraordinary scientists.*

Take a moment every morning and challenge yourself each day to inspire others, improve your skills, increase your knowledge, and advance your discipline.

Why is that so important?

*Because what you do is so important.*

What you do doesn't simply result in technical triumphs that make life a little bit easier, more convenient, or more amusing.

And it's not something that we can simply take for granted, incorporate into our daily lives, and forget about — because what you do is more notable and noble than any of that — you practice science for the cause of justice.

Winston Churchill once said, "*We make a living by what we get. We make a life by what we give.*"

What you give by your diligence to your disciplines, your dedication to the details, and your devotion to this field helps answer some of society's most serious and sobering questions:

Will someone's reputation will be spared or shattered?

Will someone go home or go to prison?

Will someone be cleared or be condemned?

Always remember that being a forensic scientist is a tremendous privilege, but it's also a tremendous responsibility.

On behalf of the Department of Justice, thank you all for the work you do, day in and day out, to *learn what is true, in order to do what is right* — advancing the cause of justice, through the principled practice of forensic science.

**THANK YOU.**