

THE FORENSIC REVIEW: A FRONTLINE EDITION

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A Message from the Lab Director

Hello all!

Greetings from the WVSPFL! We trust that 2022 has been successful and that 2023 will be even better! We have been quite busy here at the laboratory, working to complete our 2022 goals and objectives while planning the year ahead! In this newsletter, you will read that our JusticeTrax Portal is active statewide, allowing law enforcement and certain officers of the court access to case reports and on-line inquiry of the status of submitted cases. You will also learn about a new method for the quantitation of methamphetamine. You will find information regarding testimony capabilities of our laboratory experts and read our special spotlight on our laboratory staff who have also served in our armed forces. Please enjoy this edition of our newsletter and don't hesitate to contact us with any questions or concerns.

Sincerely,

Sheri Lemons

Lab.director@wvsp.gov



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Special points of interest

- Learn about the new Justice-Trax portal for law enforcement agencies and prosecuting attorneys!
- Getting a lawyer's perspective on every expert's favorite phrase "Reasonable Degree of Scientific Certainty"
- The Seized Drugs Section has a new service for Methamphetamine Quantitation that should be available early 2023.
- A Salute to Service

A Salute to Our Laboratory Veterans



David Miller

Years of Service: 1997-2005

Branch: USAF, Air National Guard
130 Security Forces Squadron
Charleston, WV

Rank: E-5, Staff Sgt.

Favorite Duty: I'm not sure I had a clear favorite duty, but several stand out as memorable. In 2001, there was heavy flooding in southern West Virginia. Our unit was paired with local law enforcement to prevent looting, distribute supplies, and help with cleanup in the area around Welch, Coalwood, and War, West Virginia. I enjoyed being on the base pistol team, shooting in National Match and combat pistol and rifle

competitions against global competitors. I'm also proud to have served 10 months of active duty in 2002 following September 11, 2001.

What led you to serve? I joined the Air National Guard out of a sense of duty and responsibility to our State and Country.



Kent Cochran

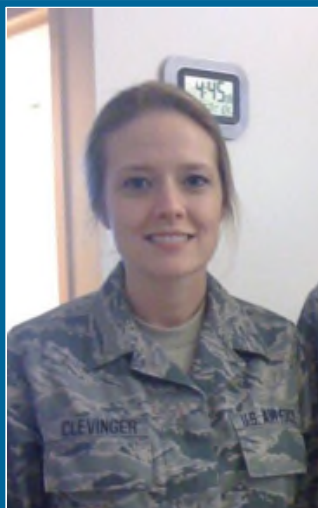
Years of Service: 1989-1995

Branch: Air National Guard

Rank: Staff Sgt.

Favorite Duty: I was an equipment operator for most of my time in service, but usually the biggest piece of equipment I got to run over the normal course of business was a lawn-mower or chain saw. So nothing too exciting about that. But once I switched to liquid fuel technician, I got to help maintain the fuel farm (storage) for the C-130s. Got to be outside a lot greasing pump fittings and inspecting pipelines. I like being outdoors.

What led you to serve? Family tradition, and a way to help pay for school.



Melissa Clevinger

Years of Service: 2005-2011

Branch: United States Air Force / West Virginia Air National Guard

Rank: E-5, Staff Sgt.

Favorite Duty: Being a member of the West Virginia's CERFP (Chemical, Biological, Radiological, Nuclear and High-Yield Explosive Enhanced Response Force Package) providing the triage and medical treatment during state and national disasters.

What led you to serve? I've always been a patriotic person and grew up in a military home/family. My maternal grandfather served in the Navy and my dad served in the Marine Corps and then in the WV Air National Guard. Serving in the US military in any capacity is an honor and a privilege that fewer than 1% of people get to do. I felt that volunteering was something very small that I could do for our great nation and its citizens, and to pay tribute to the men and women who paved the way before me, defending our great nation and protecting our freedom.



Volunteers from the West Virginia State Police Forensic Laboratory assisted the Mountaineer Food Bank with packing food boxes for veterans. The Mountaineer Food Bank set a goal of 400 and they packed 500 boxes!

Introducing JusticeTrax LIMS-plus Portal: Access Your Case Information Online!

Written by: Staci Taylor, CER Section Supervisor / LIMS Administrator



The West Virginia State Police Forensic Laboratory now offers a website where prosecuting attorneys and law enforcement officers can access case status and download reports! The website is an extension of our Laboratory Information Management System (LIMS), JusticeTrax LIMS-plus, and has been live since July 2022. We initially went live with a small group of users but have since been expanding throughout the State.

Need to check the status of testing on a specific case? An agency with access to the JusticeTrax LIMS-plus Portal website can log in and ensure that the evidence was received, whether it has been assigned to a scientist, and whether testing has been completed. Need an additional copy of a report? Log into the Portal website and download a PDF version of the report! Please note that reports will only be available for download once they have completed the appropriate review process within the Laboratory. Preliminary reports will not be available.

What are the steps to gaining access to the Portal website? The head of your agency (Chief, Sheriff, etc.) will be required to select an Agency Administrator for your agency and complete a Memorandum of Understanding (MOU) with the Laboratory for the use of the website. The Agency Administrator will be responsible for creating and deactivating accounts within your agency. Once the MOU is received by the Laboratory and signed by the Laboratory Director, a LIMS Administrator within the Laboratory will create the Agency Administrator's account. The LIMS Administrator will then contact that individual and provide login information as well as instructions on the use of the website.

Does your agency need access to the Portal website? If so, send an email to LIMS@wvsp.gov to begin the process!

REASONABLE DEGREE OF SCIENTIFIC CERTAINTY: THE UNDEFINED AND UNNECESSARY BOLSTER OF AN EXPERT'S OPINION

Written by: Keith Randolph, WVSP Legal Division—Attorney

“If you thought . . . that science was certain, well that’s just an error on your part” – Nobel prize winning physicist, Richard Feynman.



Richard Feynman was arguably the greatest scientist of the 20th century. Who would want to argue with Feynman by placing any degree of certainty to science? A lawyer, that is who. We do it anytime we proffer the testimony of a forensic witness to a “reasonable degree of scientific certainty.”

I have worked in the field of criminal justice since 1994, and I have heard the term used many times. In fact, I have proffered that very testimony, yet I never stopped to ask the meaning of the phrase “reasonable degree of scientific certainty.” I used it because I observed other seasoned prosecutors use it. I began thinking of the phrase differently last year when Sheri Lemons and Meredith Chambers (director and assistant director of the West Virginia State Police Forensic Laboratory, respectively) approached me to prepare a presentation on the topic of “reasonable degree of scientific certainty.” What emerged from that research caused me concern for its continued use in the criminal justice system.

REASONABLE DEGREE OF SCIENTIFIC CERTAINTY: HISTORICAL BACKGROUND

The first known use of the phrase came from a civil action at the appellate level in the State of Illinois in 1935. Essentially, an expert on boats testified in the case as to the cause of a capsized boat to a “reasonable degree of scientific certainty.”

¹ *Herbst v. Levy*, 279 Ill.App. 353 (1935).

Reasonable Degree of Scientific Certainty, Continued

In 1960, the phrase emerged in a criminal case in Wisconsin. In that case while referencing a shotgun wad recovered at a crime scene, the expert from the crime lab testified that in “his opinion, to a reasonable scientific certainty, that the wads were 16 gauge.”

Then, in 1969, a federal court addressed under what circumstances an expert witness’s testimony should be admitted at trial. In that case, the court stated that “[i]f the witness, based upon his background skill, possesses extraordinary training to aid laymen in determining facts and if he bases his answer upon what he believes to be reasonable scientific or engineering certainty, generally the evidence should be admitted” There you have it, a seemingly new standard of admissibility in federal court. Unfortunately, the standard of admissibility arrived without any meaning or definition.

In 1889, the West Virginia Supreme Court of Appeals attempted to define the term “reasonable certainty.” Although not specific to a scientific expert’s testimony, the court stated “[b]y reasonable certainty is not meant a mathematical certainty; but what is meant is that the evidence adduced must leave the court satisfied and convinced as to the terms of the agreement, and it must be so definite as to guide the court safely into carrying it into execution.” What a mess of a definition.



Then, in 1985, the West Virginia Supreme Court of Appeals made what appears to be a very progressive ruling on the phrase. In *State v. Wyant*, the defendant was charged in Jackson County with the murder of an elderly woman. At trial, the State Police forensic serologist testified as to the presence of blood and human hairs on the item believed to be the murder weapon. However, the serologist further could not confirm the blood as human blood, and she testified that the hairs were consistent with the victim but failed to make a positive identification.

² *State v. John*, 11 Wis.2d 1 (1960).

³ *Twin City Plaza, Inc. v. Central Sur. & Ins. Corp.*, 409F.2d 1195 (8th Cir. 1969).

⁴ *Frame v. Frame*, 32 W.Va. 463 (1889).

⁵ *State v. Wyant*, 174 W.Va. 567 (1985).

Reasonable Degree of Scientific Certainty, Continued

The defense objected to the serologist's testimony because she could not offer her opinion to a "reasonable degree of certainty." The defendant was ultimately convicted of murder. The West Virginia Supreme Court of Appeals upheld the conviction despite the serologist's testimony. The Court found that testimony, or lack thereof, as to a "reasonable degree of certainty" did not affect the admissibility of the evidence. Instead, it is the jury that decides what weight to give to the testimony. Thus, West Virginia law does not require a forensic scientist in a criminal case to testify to a "reasonable degree of scientific certainty" for admissibility of the scientist's opinion.

So, what governs admissibility of a forensic scientist's testimony regarding his or her findings? The simple answer is Rule 702 of the West Virginia Rules of Evidence and case law arising from that rule. Rule 702(a) states "[i]f 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." It's as simple as that to introduce expert testimony.

WHAT PROBLEMS ARISE FROM TESTIFYING TO A "REASONABLE DEGREE OF SCIENTIFIC CERTAINTY?"

What issues may arise from the phrase "reasonable degree of scientific certainty?" First, there exists no formal definition or legal threshold of the phrase. Do we want a jury to wrestle with the phrase considering lawyers and scientists know not what it means? Second, the phrase lacks the probative value necessary to outweigh confusing the issues and misleading a jury. Third, even if asked what the phrase means, at least one study shows concerning results among experts.

⁶W. Va. R. Evid. 702(a).

Reasonable Degree of Scientific Certainty, Continued

Last problem first. A 2015 study conducted by Penn State College of Medicine involved the use of the phrase “reasonable medical certainty” by medical professionals in child abuse cases. A total of 294 people responded to the survey in which 95% had testified in court as an expert. Less than half acknowledged the receipt of training in the meaning of the phrase “reasonable medical certainty.” Those responding cited a range of less than 50% and up to 90% that a claim was true when using “reasonable degree of certainty” in his or her testimony. Even more concerning was the fact that almost 25% would change the threshold depending on the type of court (criminal, civil, or family).

Therein lies the basis for problems one and two. If the experts testifying have that much variety in the belief of his or her testimony, how is a judge or jury not misled by the opinion of the expert who testifies to a “reasonable degree of scientific certainty?”



CHANGE IS HAPPENING

The federal government has ditched the use of “reasonable scientific certainty.” In a 2016 memorandum, the Attorney General directed its forensic scientists to stop using the phrase in reports or while testifying. The same memorandum directed the U. S. Attorneys to stop using the phrase in the presentation of his or her questioning a forensic scientist.

In addition to the federal government, certain boards governing various disciplines within the forensic profession have proscriptions to the use of variations of the phrase “reasonable degree of scientific certainty.”

⁷ Anjelica Cappellino, Expert Institute, “Reasonable Degree of Certainty”: Understanding What the Phrase Entails. <https://www.expertinstitute.com/resources/insights/reasonable-degree-of-certainty-understanding-what-the-phrase-entails/>

⁸ U.S. Department of Justice, Office of the Attorney General, Memorandum for Heads of Department Components (Recommendations of the National Commission on Forensic Science), September 6, 2016, <https://www.justice.gov/opa/file/891366/download>.

Reasonable Degree of Scientific Certainty, Continued

The AAFS Standards Board in its Standard for Friction Ridge Examination Conclusions forbids the use of the word “certainty as an expression of accuracy.” It also forbids the use of the phrase “reasonable degree of scientific certainty” in describing a scientist’s confidence in his or her conclusion.

In its Guidelines for Opinions and Testimony in Forensic Toxicology, the AAFS Standards Board provides that a toxicologist “should not use words such as ‘scientific certainty’ or ‘reasonable degree of scientific certainty’, unless required by jurisdictional regulations.” Clearly, change is in the works.

As for the West Virginia State Police Forensic Laboratory, there exists a desire to achieve and maintain excellence, professionalism, and objectivity in the work product of its scientists. Thus, it should be of no surprise that the leadership in the forensic laboratory want to tackle the issue of its scientists testifying to a “reasonable degree of scientific certainty.” If around the system long enough, you may have noticed the elimination of the phrase “reasonable degree of scientific certainty” from forensic laboratory reports. Next will be elimination from testimony. That elimination will lead to a more accurate and less misleading piece of evidence for the judge or jury.

Don’t be fearful of the change – embrace it for the better of the system.

Being Crystal Clear About Our New Quantitation METHod Written by: Blake Kinder

The Seized Drug Section at the WVSP Forensic Laboratory recently developed a new procedure and validated a new instrument for methamphetamine quantitation.



Methamphetamine quantitation is important at the federal level because the United States Sentencing Commission (USSC) uses a Drug Quantity Table with different Base Offense Levels (Levels 6-38) and can consider the purity or actual amount of some controlled substances when determining the Base Offense Level.

THIS SERVICE WILL ONLY BE APPLICABLE TO FEDERAL CASES

Here are a few friendly reminders on how to take advantage of this service:

1. The officer will need to specify if purity/quantitation is needed at the time of submission on the Case Submission Form.
2. **The Case Submission Form requesting methamphetamine quantitation must be accompanied with a letter from the United States Attorney handling the case. The letter should be on official letterhead, indicating the laboratory case number and/or case number of the submitting agency, the suspect name, the items (UP TO FIVE) for which quantitative analysis is requested.**
3. The quantitation will only be performed once the sample has been confirmed to contain methamphetamine.

With this new procedure and instrument, the officer will now receive one report which contains the confirmation of methamphetamine and the purity information. The anticipated start date of this service will be early 2023!

FORENSIC LABORATORY

WEST VIRGINIA STATE POLICE

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Firearms/Toolmarks: firearms@wvsp.gov
NIBIN: nibin@wvsp.gov
Latent Prints: latent.prints@wvsp.gov
Toxicology: toxicology@wvsp.gov
Trace Evidence: trace@wvsp.gov
Request for sex crime kits and CODIS kits:
laboratory.kits@wvsp.gov

FEEDBACK

We always welcome feedback for the upcoming newsletter!

Have comments or suggestion?

Want to know how we do something?

Need to know how we recommend to collect a specific type of evidence?

Feel free to contact the editors and suggest topics and provide us with any comments or feedback.

Your Editors,
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Laboratory Mission and Goal

Mission:

It is the mission of the West Virginia State Police Forensic Laboratory to provide accurate and impartial forensic services to all criminal justice agencies operating in the State of West Virginia.

Goal:

The goal of the West Virginia State Police Forensic Laboratory is to generate accurate, impartial, and timely scientific examinations and opinions for the criminal justice system of the State in the interest of public safety.