Using the NAS and PCAST Reports

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ASSISTANT APPELLATE DEFENDER

"Miller cites to case law from other jurisdictions as well as to reports from the National Research Council and the President's Council of Advisors on Science and Technology, arguing that those cases and reports support the broad proposition that ballistics identification is 'not reliable' and that federal courts have begun limiting 'the nature and scope of permissible ballistics opinion testimony under Rule 702.' But Miller made these same arguments, relying on this same general information, to the trial court. … Because the trial court's ruling was ***a reasoned decision, not an arbitrary one****, we are bound to conclude that the trial court did not abuse its discretion by overruling Miller's challenge to this expert testimony."*

- *STATE V. MILLER*, 275 N.C. APP. 843, 849 (2020).

Pretrial Motions

Challenge under 702(a)(2)

2. Ms. Waller's testimony is not the product of reliable principles and methods.

According to the Durham Police Department Forensic Services Division Friction Ridge Examination Manual, the Durham Police Department employs the "ACE-V" method for Friction Ridge Examination. Fingerprint examiners in the United States have used the "ACE-V" method for more than fifty years, with surprisingly little change in the basic methodology. *See* National Research Council of the National Academy of Sciences, Committee on Identifying the Needs of the Forensic Science Community, *Strengthening Forensic Science in the United States: A Path Forward* 137 (2009) [hereinafter "NAS Report (2009)"]; National Institute of Standards and

State v. Moore, COA20-53

In support of the motion, the Defendant shows the following:

1. On February 18, 2009, the National Academy of Sciences published a watershed report, concluding that no forensic method, with the exception of DNA analysis, has "rigorously shown to have the capacity to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source." National Research Council, National Academy of Science, Strengthening Forensic Science in the United States: A Path Forward, [hereinafter 2009 NAS Report], S-5. The report is unequivocal: there is no existing research that demonstrates that latent fingerprint identification is valid.

2. The Supreme Court of North Carolina in State v. Ward, 364 N.C. 133 (2010) took note that "the field of forensic science has come under acute scrutiny on a nationwide basis" and recognized the 2009 National Academy of Sciences Report as a "landmark report." Id. at 141 (holding that a methodology of identifying pills by visual inspection was not sufficiently reliable to identify the substances at issue).

State v. Watlington, COA13-925

A challenge with a defense expert

NOW COMES, Adina Schwartz, and being first duly sworn, deposes and says:

1. I am a Professor in the Department of Law, Police Science and Criminal Justice Administration at John Jay College of Criminal Justice and in the Criminal Justice Ph.D Program of the Graduate Center, City University of New York (CUNY). John Jay College is the only liberal arts college in the United States devoted to criminal justice, and the CUNY Criminal Justice Ph.D. Program is the only Criminal Justice Ph.D. program in the country that has a forensic science track. As a faculty member at John Jay College, I teach many current and future law enforcement agents and significant numbers of current and future forensic scientists and forensic computing investigators. My duties include teaching evidence law to undergraduates and Criminal Justice Masters students and cyber-surveillance law to Forensic Computing and Criminal Justice Masters students at John Jay College. I teach a course, "Science, Experts and Evidence in the Criminal Justice System," for students in the forensic science track of the CUNY Criminal Justice Ph.D. Program.

State v. Adams, COA10-1363

Challenge under 702(a)(3)

3. Ms. Waller's testimony is not valid as applied.

Even if ACE-V were somehow a foundationally valid method in principle, the state would be unable to meet its burden to demonstrate that ACE-V is reliable as applied by this examiner in this case – that is, that the examiner is capable of reliably applying the method, that the examiner did actually reliably apply the method, and that the examiner's particular assertions are scientifically valid. The PCAST Report indicated that

> "From a scientific standpoint, validity as applied requires that an expert: (1) has undergone appropriate proficiency testing to ensure that he or she is capable of analyzing the full range of latent fingerprints encountered in casework and reports the results of the proficiency testing; (2) discloses whether he or she documented the features in the latent print in writing before comparing it to the known print; (3) provides a written analysis explaining the selection and comparison of the features; (4) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion; and (5)

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Voir Dire Examination

PCAST REPORT

Q. You are familiar, are you not, with what is referred to as the PCAST report from 2016?

A. Yes, sir, I am.

Q. And that was a -- that is a report on forensic science in criminal courts, and scientific validity of some feature-comparison methods?

A. Yes, that's --

Q. Basically?

A. -- accurate.

ERROR RATES

Q. So the error rates that they cite, 1 in 66, with a 95 percent confidence limit of 1 in 46, you think that's wrong?

A. Yes, I do.

Cross Examination

Excerpt from Cross of Firearm Examiner – NAS Report

Q. Now, you're familiar with the National Academy of Science report, aren't you?

Q. Okay. And that -- you're familiar with the section of it called -- entitled -- the section of it, Tool Marks and Firearm Identification, aren't you? A. Yes.

Q. And -- and what that report said was that even with training and experience and modern techniques and what have you, that you still have -- you, as an examiner, still has to make -- have to make a subjective decision; right? A. Yes, that is correct. Subjectivity is a part of our examination process. In other words, I'm using objective measurements and observations to formulate ultimately a subjective opinion that's based on my training and experience, about my analysis.

Excerpt from Cross of Firearm Examiner - PCAST

Q. Now, let's talk about, going back to error rates and those types of issues, you're familiar with a report common referred to as the PCAST report; are you not? A. Yes, I am.

Q. And they did a study of the -- they did a review of the validity of various types of scientific testing and scientific analysis of evidence; isn't that right? A. Yes, they did.

Q. Okay. And whether it was-- and they did it not just firearms -- they did firearms in addition to several other disciplines; is that right? A. Yes, that's correct.

Q. You've -- at least you've read the firearms section of that report; is that right? A. I have, yes.

Q. And isn't it true that they found that firearms analysis falls short of the criteria for -- currently falls short of criteria for foundational validity?

Appellate Decisions

State v. Adams

No. COA10-1363, 2011 N.C. App. LEXIS 1004 (May 17, 2011)(unpublished)

"North Carolina precedent has upheld the admission of testimony based on similar ballistic techniques. … And while the federal courts employ a different standard in evaluating the admissibility of expert testimony, we note that federal decisions overwhelmingly accept toolmark evidence as reliable. … We conclude that precedent, in conjunction with the trial court's factual findings, demonstrate the trial court did not abuse its discretion in allowing agent Starosta-Desmond to testify."

State v. Watlington

234 N.C. App. 601, 605 (2014)

"At trial, Defendant moved to exclude Oxendine's testimony. Defendant's attorney engaged in the following relevant colloquy with the trial court: MR. CHAMPION: Your Honor, at this time I'd like to renew my motion that I had filed back before the first trial in this action, involving these cases, in which I objected to the scientific basis or reliability of fingerprint testimony."

"Although Defendant may have handed some materials to the trial court regarding 'the reliability of fingerprint testimony,' Defendant did not directly challenge the reliability of fingerprint testimony in general, or more particularly, the reliability of the methods used by Oxendine. Defendant challenged Oxendine's qualifications to testify as an expert in fingerprint analysis, and the trial court made a ruling only on that challenge."

State v. Miller

275 N.C. App. 843, 849-50 (2020)

“When asked about the error rate for this type of ballistics identification, Clardy testified that ‘my error rate is zero percent,’ but that there is no established error rate for the field as a whole. Miller questioned Clardy about the President’s Council of Advisors on Science and Technology report that criticized the scientific validity of firearms examination. Clardy responded that she disagreed with elements of the report and asserted that the report should be viewed with caution because it was created by academics rather than firearms examiners.”

“The court’s determination that Clardy’s testimony satisfied Rule 702’s three-prong test, despite some evidence from Miller challenging the reliability of this type of expert testimony, was not arbitrary; it was a reasoned decision.”

Zachary's Concurring and Dissenting Opinion

- Clardy testified, "both on voir dire examination and on cross examination before the jury, that there is **no established error rate** for the field as a whole, but that **her *personal* error rate was 'zero percent.'** She also testified that firearms can leave **'unique' toolmarks** similar to fingerprints."
- She testified, "without 'any doubt[ ]' as to her opinion."
- "[F]or the expert to offer her opinion to this level of certainty—without any basis for doing so—risks misleading the jurors as to the appropriate weight and confidence to accord the expert's testimony or the weight to a declared match."
- "[T]he trial court's gatekeeping authority included the power to determine the appropriate scope of the firearm-identification expert's opinion, most notably with regard to the degree of certitude that the witness was permitted to express."
- Zachary also wrote *Wardrett* which rejected the defendant's challenge to another firearm examiner's testimony because it was "impermissibly absolute in its unqualified nature" and "exceeded the permissible scope of forensic ballistics testimony." *State v. Wardrett*, COA18-434, 2019 N.C. App. LEXIS 149 (Jan. 17, 2019) (unpublished)

State v. Moore

2021-NCCOA-336 (unpublished)

"This Court overruled this argument, holding '[o]nce the trial court determines the expert meets the minimum qualifications to qualify as such, deviations from guidelines go to the weight of the expert's testimony, not [its] admissibility.' *Id*. at *3. This language was later adopted by this Court in *State v. Hunt*, 249 N.C. App. 428, 435, 790 S.E.2d 874, 880 (2016). Here, as in *Hudson*, a challenge to ACE-V methodology goes towards the weight of the expert's testimony, not to its admissibility. *Hudson*, 2012 WL 379936 at *2. Defendant's argument is overruled."

Note: *Hunt* came out about 3 months after McGrady and the discussion of weight of the expert testimony occurred when discussing if there should have been an instruction on the lesser included offenses not in the portion of the opinion discussing the admissibility of the expert's testimony.

Refuting the State's Arguments

Precedent!!

"Our previous cases are still good law if they do not conflict with the *Daubert* standard." *State v. McGrady*, 368 N.C. 880, 888 (2016).

"The validity of latent fingerprint analysis as a method of identification in criminal trials in North Carolina is well established by precedent. … We are not prepared to throw out decades of precedent based upon a single report." *State v. Leonard*, No. COA12-570, 2013 N.C. App. LEXIS 20 (January 15, 2013) (unpublished).

"False or misleading forensic evidence was a contributing factor in **24% of all wrongful convictions nationally**, according to the National Registry of Exonerations, which tracks both DNA and non-DNA based exonerations."

Old Rule v. New Rule

HOWERTON V. ARAI HELMET, LTD., 358 N.C. 440, 459 (2004)

"Initially, the trial court should look to precedent for guidance in determining whether the theoretical or technical methodology underlying an expert's opinion is reliable."

STATE V. MCGRADY, 368 N.C. 880, 888 (2016)

"In the context of scientific testimony, *Daubert* articulated five factors from a nonexhaustive list that can have a bearing on reliability: (1) whether a theory or technique can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the theory or technique's known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; and (5) whether the theory or technique has achieved general acceptance in its field." (cleaned up)

State v. McPhaul

256 N.C. App. 303 (2017), *review improvidently allowed*, 371 N.C. 467 (2018)

- There was no challenge in *McPhaul* to the general admissibility of fingerprint identifications, it was a questions of application of methods to the evidence in the case.
- She could not say what points were found on the prints, or what features were relied upon, what process were followed, or what the duration of the examination was.
- The examiner testified that fingerprints on the car and on the pizza and chicken boxes all were "identified" as coming from McPhaul and that her conclusion was "that the impressions made belonged to Mr. McPhaul."
- It was abuse of discretion for trial court to allow state's expert to testify – an expert witness must be able to explain *not only* the abstract methodology underlying the witness's opinion, *but also* that the witness reliably applied that methodology to the facts of the case.

Goes to Weight!

See Moore, *Hudson*, *Hunt*

But "It is the trial court's role to decide preliminary questions concerning the admissibility of expert testimony." *State v. Koiyan*, 270 N.C. App. 792, 795 (2020).

And the proponent of evidence bears the burden of proving it is admissible. *State v. Ward*, 364 N.C. 133, 140 (2010); *Crocker v. Roethling*, 363 N.C. 140, 146 (2009); *see also* Jessica Smith, *North Carolina Superior Court Judges' Benchbook Criminal Evidence: Expert Testimony* 21 (UNC School of Government 2017) (available at https://benchbook.sog.unc.edu/).

"[S]ome courts appear to be abdicating their charge under the Federal Rules of Evidence and *Daubert* and its progeny to make the hard call on admissibility. The end result … is to relegate to the jury the very decisions Rule 702 contemplates to be beyond jury consideration."

Thomas D. Schroeder, Chief Judge for Middle District of North Carolina; Member, Advisory Comm. on Fed. Rules of Evid.; and Chair, Subcommittee on Rule 702.

Hon. Thomas D. Schroeder, *Toward A More Apparent Approach to Considering The Admission of Expert Testimony,* 95 Notre Dame L. Rev. 2039, 2042 (May 2020).

Daubert requires more rigorous gatekeeping

- "We hold that the 2011 amendment adopts the federal standard for the admission of expert witnesses articulated in the *Daubert* line of cases. The General Assembly amended North Carolina's rule in 2011 in virtually the same way that the corresponding federal rule was amended in 2000. It follows that the meaning of North Carolina's Rule 702(a) now mirrors that of the amended federal rule." *State v. McGrady*, 368 N.C. 880 (2016)
- After *McGrady*, trial courts "must now perform a **more rigorous gatekeeping function** when determining the admissibility of opinion testimony by expert witnesses than was the case under the prior version of Rule 702." *State v. Daughtridge*, 789 S.E.2d 667, 675 (2016) (emphasis added).

State v. Corbett

269 N.C. App. 509 (2020), *aff'd*, 2021-NCSC-18 (2021)

- "When asked about the routine protocol and procedures used in conducting bloodstain pattern analysis, James testified, consistent with his treatise, that the stains should be subject to presumptive, confirmatory, and DNA testing—in that order—*before* an analysis of the spatter is conducted." But he didn't do that here. "James acknowledged that he could not testify to a scientific certainty that these stains were, indeed, blood."
- "James also testified that in conducting an analysis of bloodstained clothing, it is the 'best practice' for an analyst to view a photograph of the person wearing the blood-spattered clothes." But he didn't do that either.
- "Notwithstanding James's expertise in bloodstain pattern analysis, noncompliance with the reliability standards and protocol prescribed in one's own treatise is inherently suspect, particularly when the treatise propounds that 'proper scientific approach and legal requirements dictate that such an identification be established to a scientific certainty before it can be presented in court.'"
- "James's testimony regarding the untested stains on Tom's boxer shorts and Molly's pajama pants was based upon insufficient facts and data, and accordingly, could not have been the product of reliable principles and methods applied reliably to the facts of this case. *Id.* § 8C-1, Rule 702(a)(3). Therefore, the trial court abused its discretion by admitting this testimony."
- "In this case, James's testimony had the powerful effect of bolstering the State's claim that Jason was struck after and while he was down and defenseless. However, given that James's testimony failed to assist the jury in determining whether this was, in fact, the case, the testimony could only serve to unduly influence the jury to reach a conclusion that it was fully capable of reaching on its own. Given this undue influence … 'it appears reasonably possible that the jury would have reached a different verdict without the challenged evidence.'"

State v. Piland

263 N.C. App. 323 (2018)

"Defendant argues that the testimony contains a serious defect as the expert witness 'did not identify, describe, or justify the procedure she employed to determine whether the pills contained a controlled substance.' Specifically, '[s]he did not identify the test she performed, describe how she performed it, or explain[] why she considered it reliable.' Thus, Defendant asserts that the trial court did not properly exercise its gatekeeping function which amounts to plain error. **We agree that the failure to consider the methods of analysis employed was an abuse of discretion**, but this does not amount to plain error in this case."

"Here, it was error for the trial court not to properly exercise its gatekeeping function of requiring the expert to testify to the methodology of her chemical analysis. However, the error does not amount to plain error because the expert testified that she performed a 'chemical analysis' and as to the results of that chemical analysis. Her testimony stating that she conducted a chemical analysis and that the result was hydrocodone does not amount to 'baseless speculation,' and therefore her testimony was not so prejudicial that justice could not have been done."

How you respond:

- We are now a *Daubert* state.
- Precedent alone cannot show sufficient facts and data.
- Precedent cannot make the analyst reliable.
- Precedent cannot make the analyst's application of the method reliable.
- Precedent is only one factor to the considered.
- Court must act as a gatekeeper.

Preserved vs. Unpreserved Error

"We can envision few, if any, cases in which an appellate court would venture to superimpose a *Daubert* ruling on a cold, poorly developed record when neither the parties nor the . . . court has had a meaningful opportunity to mull the question." *State v. Hunt*, 250 N.C. App. 238, 247 (2016)

McPhaul, Corbett addressed a preserved error – had to show a reasonable possibility of a different outcome

Koiyan analyzed for plain error – had to show a probable impact on the outcome