

IN THE COURT OF APPEALS OF NORTH CAROLINA

No. COA14-1003

Filed: 1 September 2015

Buncombe County, Nos. 11 CRS 64670, 64673

STATE OF NORTH CAROLINA

v.

CHRISTOPHER ADAM TURBYFILL

Appeal by defendant from judgment entered 6 May 2014 by Judge Jeffrey P. Hunt in Buncombe County Superior Court. Heard in the Court of Appeals 3 February 2015.

*Attorney General Roy Cooper, by Assistant Attorney General Matthew L. Boyatt, for the State.*

*Mark Hayes for defendant-appellant.*

BRYANT, Judge.

The trial court did not abuse its discretion by allowing a witness who demonstrated specialized knowledge, experience, and training in blood alcohol physiology, pharmacology, and related research on retrograde extrapolation to be qualified and testify as an expert. Defendant cannot show plain error where, despite improper blood alcohol level testimony, there was sufficient independent competent evidence of defendant's impairment to support the jury verdict.

At about 10:15pm on 21 December 2011, Officers Jonathan Collins and Lucas Lovelace of the Asheville Police Department responded to a single vehicle accident on a public road where they found twenty year-old defendant Christopher Turbyfill near

STATE V TURBYFILL

*Opinion of the Court*

his Ford F-150 truck which had rolled over on its side. Officer Lovelace approached defendant who was beside his truck crying and appeared to be upset, saying he was going to lose his job. As he spoke with defendant, Officer Lovelace noticed that defendant slurred his words, that his eyes were blood shot, that he was unsteady on his feet and had an odor of alcohol on his breath. Defendant admitted he had been drinking alcohol—a twenty-four ounce Smirnoff, and had taken prescription drugs Xanax and Hydrocodone earlier that day. After defendant was checked by medics and determined not to be injured, Officer Lovelace administered standard field sobriety tests. Those tests included: horizontal gaze nystagmus [HGN]; walk-and-turn; and one-legged stand.

At trial, Officer Lovelace was qualified by the trial court as an expert in administration of the HGN test. He testified without objection, that he observed six of six clues of intoxication as to defendant, and that “[m]ost of the time four clues would show a BAC [blood alcohol concentration] of point one.” Further, Officer Lovelace elaborated that “[t]he onset of nystagmus prior to forty-five degrees, anything prior to forty-five degrees is a point one or greater BAC.” Officer Lovelace also observed six of eight clues of intoxication as defendant took the walk-and-turn test, and one indicator of intoxication during the one-legged stand test. Based on defendant’s performance on the tests and other signs of impairment Officer Lovelace formed the “opinion that the defendant had consumed a sufficient quantity of

STATE V TURBYFILL

*Opinion of the Court*

impairing substance that his mental and physical faculties were appreciably impaired.” Defendant was placed under arrest and asked to perform a breathalyzer test on which he registered a BAC of .07 less than two hours after the accident.

Anthony Burnette, a field technician in the Forensic Test of Alcohol Branch of the North Carolina Department of Health and Human Services was tendered as an expert witness. Following extensive voir dire, the trial court qualified Burnette as an expert in blood alcohol physiology, pharmacology, and related research on retrograde extrapolation. Burnette testified that he used retrograde extrapolation to determine defendant’s BAC at the time of the vehicle crash. Burnette stated that, using an alcohol elimination rate of .0165 per hour, in the 1.83 hours between the time defendant crashed his truck and the time he took the breathalyzer test, defendant’s body had eliminated .030 grams of alcohol. Accordingly, it was Burnette’s opinion that defendant’s BAC at the time of the accident was .10.

Defendant was convicted by a jury of Driving after Consuming Alcohol under twenty-one years and Driving While Impaired. Defendant was sentenced as a Level 5 DWI offender and given a term of 45 days suspended, placed on probation for 24 months and ordered to serve eleven days active confinement. From this judgment defendant appeals.

STATE V TURBYFILL

*Opinion of the Court*

On appeal, defendant argues that the trial court erred by (I) allowing Anthony Burnette to testify as an expert witness and (II) committed plain error by allowing Officer Lovelace to testify as to defendant's blood alcohol level.

*I*

Defendant argues that Burnette failed to demonstrate sufficient knowledge of scientific and mathematical principles to qualify as an expert in blood alcohol physiology, pharmacology, and related research on retrograde extrapolation, and as a result the trial court abused its discretion in allowing his expert opinion testimony. We disagree.

“We review a trial court's ruling regarding the admission of expert testimony for abuse of discretion.” *Pope v. Bridge Broom, Inc.*, \_\_\_ N.C. App. \_\_\_, \_\_\_, 770 S.E.2d 702, 707 (2015) (citation omitted). “Abuse of discretion results where the Court's ruling is manifestly unsupported by reason or is so arbitrary that it could not have been the result of a reasoned decision.” *State v. Hennis*, 323 N.C. 279, 285, 372 S.E.2d 523, 527 (1988) (citation omitted). Accordingly, “the trial judge is afforded wide latitude of discretion when making a determination about the admissibility of expert testimony.” *State v. Bullard*, 312 N.C. 129, 140, 322 S.E.2d 370, 376 (1984).

Rule 702 of the North Carolina General Statutes governs testimony by experts and states, in pertinent part,

[i]f scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to

STATE V TURBYFILL

*Opinion of the Court*

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 all of the following apply:

- (1) The testimony is based upon sufficient facts or data.
- (2) The testimony is the product of reliable principles and methods.
- (3) The witness has applied the principles and methods reliably to the facts of the case.

N.C. Gen. Stat. § 8C-1, Rule 702(a) (2013).

Rule 702 was amended effective 1 October 2011. See 2011 N.C. Sess. Laws 283 § 1.3. While our Supreme Court has not yet addressed the amendment to Rule 702, our Court of Appeals has done so and recently noted that “[o]ur Rule 702 was amended to mirror the Federal Rule 702, which itself ‘ “was amended to conform to the standard outlined in *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993) ].’ ”” *Pope*, \_\_\_ N.C. App. \_\_\_, \_\_\_, 770 S.E.2d 702, 707 (2015) (citing *State v. McGrady*, \_\_\_ N.C. App. \_\_\_, \_\_\_, 753 S.E.2d 361, 365 (quoting Committee Counsel Bill Patterson, 2011–2012 General Assembly, House Bill 542: Tort Reform for Citizens and Business 2–3 n. 3 (8 June 2011)), *disc. review allowed*, 367 N.C. 505, 758 S.E.2d 864 (2014)).

Defendant asserts that the amendment to Rule 702 “has increased the scrutiny that judges must impose on purported experts.” Defendant challenges the reliability

STATE V TURBYFILL

*Opinion of the Court*

of Burnette’s testimony and urges this Court to determine that Burnette did not meet the requirements for qualification as an expert under the more rigorous standard of *Daubert*. Defendant would have us find that Burnette was not qualified to testify as an expert and give opinion testimony on retrograde extrapolation. We disagree with defendant’s assertions. While reasonable minds might agree that the gatekeeper function of the trial court in determining whether to allow expert testimony is perhaps now more clearly defined, it appears that the application of the principles in amended Rule 702, consistent with *Daubert*, would not significantly change the trial court’s analysis.<sup>1</sup>

Federal courts traditionally grant “a great deal of discretion” to the trial court in determining the admissibility of expert testimony under *Daubert*. *McGrady*, \_\_\_

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<sup>1</sup> Prior to the 2011 amendment of Rule 702, our Supreme Court’s guidance on the admissibility of expert testimony was provided in *Howerton v. Arai Helmet, Ltd.*, 358 N.C. 440, 597 S.E.2d 674 (2004).

“It is well-established that trial courts must decide preliminary questions concerning the qualifications of experts to testify or the admissibility of expert testimony.” *Howerton v. Arai Helmet, Ltd.*, 358 N.C. 440, 458, 597 S.E.2d 674, 686 (2004) (citing N.C.G.S. § 8C–1, Rule 104(a) (2003)). In *Howerton*, our Supreme Court set out a three step inquiry governing the admissibility of expert testimony:

- (1) Is the expert's proffered method of proof sufficiently reliable as an area for expert testimony? [*State v. Goode*, 341 N.C. 513, 527–29, 461 S.E.2d 631, 639–40 (1995)].
- (2) Is the witness testifying at trial qualified as an expert in that area of testimony? *Id.* at 529, 461 S.E.2d at 640.
- (3) Is the expert's testimony relevant? *Id.* at 529, 461 S.E.2d at 641.

*State v. Green*, 209 N.C. App. 669, 673, 707 S.E.2d 715, 718 (2011).

STATE V TURBYFILL

*Opinion of the Court*

N.C. App. at \_\_\_, 753 S.E.2d at 369. “*Daubert* clearly contemplates the vesting of significant discretion in the [trial] court with regard to the decision to admit expert scientific testimony.” *Id.* (quoting *Maryland Cas. Co. v. Therm-O-Disc, Inc.*, 137 F.3d 780 (4th Cir. 1998)). Therefore, to sustain a successful challenge to a trial court’s ruling allowing expert testimony, a defendant must show that the trial court’s ruling was so arbitrary, so lacking in reason as to constitute an abuse of its discretion. *See Hennis*, 323 N.C. at 285, 372 S.E.2d at 527.

Consistent with the application of Federal Rule 702 in federal courts, under North Carolina’s amended Rule 702, trial courts must conduct a three-part inquiry concerning the admissibility of expert testimony:

Parsing the language of the Rule, it is evident that a proposed expert’s opinion is admissible, at the discretion of the trial court, if the opinion satisfies three requirements. First, the witness must be qualified by “knowledge, skill, experience, training, or education.” Fed. R. Evid. 702. Second, the testimony must be relevant, meaning that it “will assist the trier of fact to understand the evidence or to determine a fact in issue.” *Id.* Third, the testimony must be reliable. *Id.*

*Pope*, \_\_\_ N.C. App. at \_\_\_, 770 S.E.2d at 708.

Rule 702 guides the trial court by providing general standards to assess reliability: whether the testimony is based upon “sufficient facts or data,” whether the testimony is the “product of reliable principles and methods,” and whether the expert “has applied the principles and methods reliably to the facts of the case.” Fed.R.Evid. 702. In addition, *Daubert* provides a nonexclusive checklist for trial courts to consult in

STATE V TURBYFILL

*Opinion of the Court*

evaluating the reliability of expert testimony. The test of reliability is “flexible,” and the *Daubert* factors do not constitute a “definitive checklist or test,” but may be tailored to the facts of a particular case. *Kumho [Tire Co. v. Carmichael]*, 526 U.S. 137, 150, 119 S.Ct. 1167, 1175, 143 L.Ed.2d 238, 251 (1999).

*Id.* at \_\_\_, 770 S.E.2d at 708.

In the instant case defendant does not challenge the science of retrograde extrapolation. In his brief to this court defendant readily acknowledges “[i]t is undisputed that, generally speaking, courts accept as scientifically valid the proposition that unknown blood levels can be extrapolated using known data,” and that “blood alcohol extrapolation, generally speaking, is a viable scientific field.” Instead, defendant challenges the reliability of Burnette’s testimony and the results based thereon, and urges this court to determine that he was not qualified to testify as an expert and give opinion testimony on retrograde extrapolation. Because defendant does not directly contend on appeal that the requirements of 702(a)(1)<sup>2</sup> and (a)(2)<sup>3</sup> have not been met, we primarily review defendant’s challenges as they regard Rule 702(a)(3)—whether “the witness has applied the principles and methods reliably to the facts of the case.” N.C.G.S. § 8C-1, Rule 702(a)(3). “Although this case is [one of the few times] our appellate courts have discussed the application of the *Daubert* standard adopted by our amended Rule 702, federal courts and other state

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<sup>2</sup> “The testimony is based upon sufficient facts or data.” N.C. R. Evid. 702(a)(1).

<sup>3</sup> “The testimony is the product of reliable principles and methods.” N.C. R. Evid. 702(a)(2).



STATE V TURBYFILL

*Opinion of the Court*

courts, of course, have been applying the *Daubert* analysis for more than two decades.” *Pope*, \_\_\_ N.C. App. at \_\_\_, 770 S.E.2d at 709.

In the instant case, Anthony Burnette was called to testify about retrograde extrapolation of BAC. Burnette has been employed as a field technician for the North Carolina Department of Health and Human Services in the “Forensic Test for Alcohol Branch” since 2005. Prior to that, Burnett had been a police officer and has held a chemical analyst certification since 1995. Burnett testified that to maintain his certification as a chemical analyst, he studied the pharmacology of alcohol and how alcohol is distributed through the body, and he has been recertified every two years. “Basically I am responsible for training law-enforcement officers and to certify them to be chemical analysts, and that is to perform the breath test on the Intox EC/IR II.” Since 2006, Burnett has been an instructor/training officer in standardized field sobriety covering the pharmacology of alcohol, pharmacokinetics, and the effects of alcohol on the brain and body. Burnette also uses his training in blood alcohol, pharmacology, and physiology to train officers in the western part of the state to correctly perform breathalyzer tests.

Burnett is a co-author of the pharmacology section of the current chemical analyst training-manual for law-enforcement officers in North Carolina. Burnett testified that he had attended approximately ten workshops with Paul Glover, “a research scientist with our branch with regard to pharmacology of alcohol, retrograde

STATE V TURBYFILL

*Opinion of the Court*

extrapolation.” Burnett testified that he had assisted in over 130 cases involving blood alcohol, pharmacology, and related research in retrograde extrapolation and had testified as an expert on retrograde extrapolation twenty-eight times. Based on those qualifications, the Court accepted Burnette as an expert in blood alcohol physiology, pharmacology, and related research and allowed him to give his opinion on retrograde extrapolation.

On appeal, defendant challenges the reliability of Burnett’s testimony first, on the basis that Burnett did not know if he could sufficiently answer the question “to what degree [was] [the theory of blood alcohol level extrapolation] accepted in the scientific community?” and second, on the basis that Burnett used the term “midpoint” and “average” interchangeably.

At trial, Burnette described retrograde extrapolation and its manner of acceptance in the scientific community as follows:

A Retrograde extrapolation is basically where we know that alcohol eliminates from the body in predictable rates, and extrapolation is where we have a test at one point in time.

...

Q Have there been scientific studies in regard to retrograde extrapolation?

A Yes there have.

...

STATE V TURBYFILL

*Opinion of the Court*

Q Is there an accepted rate at which alcohol leaves the body?

A Yes.

Q What is that rate?

A .0165 per hour.

Q And how has science arrived at that being an accepted rate?

A The .0165 per hour originally came from a study that Dr. Ellis at the University of North Carolina had done years ago is where the .0165 has come from.

Q And have there been subsequent studies done in regards to that elimination rate?

A Yes. I have a reference list of publications. It's attached to a worksheet that I would have provided the DA's office with that has three and a partial pages [sic] of published reports involved in elimination rates.

...

Q And, Mr. Burnette, is that retrograde extrapolation, is that a product of reliable principles?

A Yes.

Q Has it been tested and shown to be a reliable method?

A Yes.

Q And when you perform a retrograde extrapolation in regards to a defendant, what information do you need?

STATE V TURBYFILL

*Opinion of the Court*

A The time of an early event and then the time of a later event, which would be the time that the test was performed.

Q And if you have that information, you have sufficient facts to perform a retrograde extrapolation?

A Yes.

Q And in the course of this case did you perform a retrograde extrapolation?

A Yes, I did.

Q And did you use the same method and principles that have been done through those studies?

A Yes.

Q Did you deviate in any way from those studies?

A No.

Q Did you use the accepted principle of retrograde extrapolation in regards to this defendant?

A Yes.

Q And is that what's reflected on the document that's been introduced as State's Exhibit 4?

A Yes. <sup>[4]</sup>

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<sup>4</sup> State's Exhibit 4, the form Burnette provided to the trial court during voir dire showing the calculation of defendant's retrograde blood alcohol extrapolation, included a statement of "Principles and Methods." In pertinent part, the statement provides the following:

In looking at drinking drivers[,] we see an average rate for males of 0.018 BAC per hour, for females it is 0.020 BAC per hour. Chronic abusers are at a rate of about 0.03 BAC per hour. When considering

STATE V TURBYFILL

*Opinion of the Court*

Burnette's testimony confirmed that blood alcohol extrapolation is a scientifically valid field, which principles have been tested, subjected to peer review and publication, and undisputedly accepted in the scientific community and in our courts. This portion of defendant's challenge is overruled.

As to defendant's second challenge to the reliability of Burnette's testimony, defendant points to Burnette's use of the terms midpoint and average as synonymous. Defendant acknowledges that BAC extrapolation can provide reliable and useful results, but nevertheless contends that the State's expert "omitted numerous factors which any layman would recognize as critical to a credible conclusion" and "demonstrated a gross misunderstanding of basic science and math." Defendant cross-examined Burnette on this concern.

Q The [alcohol elimination] rate you used, you used a couple of different terms to talk about that rate. You used "average" and "mid-point," and I guess I'd like to understand is there a distinction there?

A I think they're synonymous.

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individuals with little or no experience with alcohol we see a rate of about 0.015 per hour. Because it's been accepted by the North Carolina Court of Appeals as a reasonable rate, we use 0.0165 BAC per hour for everyone if we've not been able to calculate their actual rate. . . . By determining the elapsed time between the end of driving and the alcohol test and then multiplying that times the rate of elimination we can calculate the amount that the BAC decreased since the end of driving. By adding that value to the reported value we can calculate the BAC at the end of driving. The [thirty-nine] references that support these principles and methods are attached.

STATE V TURBYFILL

*Opinion of the Court*

...

Q I'm doing an average the way I learned to do an average in sixth grade: add two numbers together and divide; correct?

A Yes.

Q And so even in that limited context an average is something different than a mid-point; correct?

A In that context, yes.

Q So in your scientific analysis here is there something different that's happening that makes a mid-point and an average the same?

A Yeah, . . . [i]t's a bunch of people whose numbers are in close proximity to each other . . . .

Q What is the range from the lowest to the highest?

A From a [.]01 to a .06 is the lowest and highest rates I've ever seen in a study.

...

Q And so when we're applying an average rate we are not saying anything in particular about how [defendant] was; just multiplying by an average?

A That is correct.

Q And that's different than a mid-point that half the people are above it and half below it?

...

That means half eliminate it faster and half more slowly?

STATE V TURBYFILL

*Opinion of the Court*

A Than [.]0165, yes.

Burnette testified that the alcohol elimination rate he used had been arrived at as a result of a study performed at the University of North Carolina. Burnett provided the trial court with a list of some thirty-nine articles, studies, or experiments ranging mostly between 1993 and 2008 regarding blood alcohol research. Burnette also provided the court with North Carolina cases in which this Court upheld the use of retrograde extrapolation to establish blood alcohol content: *State v. Catoe*, 78 N.C. App. 167, 336 S.E.2d 691 (1985); *State v. Taylor*, 165 N.C. App. 750, 600 S.E.2d 483 (2004); *State v. Fuller*, 176 N.C. App. 104, 626 S.E.2d 655 (2006); *State v. Teate*, 180 N.C. App. 601, 638 S.E.2d 29 (2006); and *State v. Davis*, 142 N.C. App. 81, 542 S.E.2d 236 (2001).

In *State v. Taylor*, 165 N.C. App. 750, 600 S.E.2d 483 (2004), this Court acknowledged the testimony of Paul Glover, “a research scientist and training specialist with the [F]orensic [T]ests for [A]lcohol [B]ranch of the North Carolina Department of Health and Human Services, [who] testified as an expert in breath and blood alcohol testing, blood alcohol physiology and pharmacology, and the effect of drugs on human performance and behavior.” *Id.* at 752, 600 S.E.2d at 485.

Glover admitted that elimination rates vary “depending on a person's experience with alcohol” but stated that “there are elimination rates that have been published for over 65 years that have gained acceptance in the scientific community” which make extrapolation possible. Glover

STATE V TURBYFILL

*Opinion of the Court*

elaborated on how rates can vary and then stated that a “very conservative rate” is used for calculations in North Carolina. Glover described the 0.0165 rate as a conservative rate which tends to “favor the final result because it's going to give you a smaller number.” When asked why he used this conservative rate, Glover responded, “because we don't know absolutely a person's alcohol history necessarily.” This testimony established that the elimination rate used by Glover was not defendant's actual rate but rather an average rate.

*Id.* at 755, 600 S.E.2d at 487. This case, although decided in accordance with *Howerton*, 358 N.C. 440, 597 S.E.2d 674, shows that the conservative alcohol elimination rate of 0.0165 has been reliably used in North Carolina for decades.

*Taylor* establishes a key point in the debate between an expert's qualification and his application of his expertise and resulting opinion. An expert can be qualified but his application of a formula should be tailored to the facts of the case. *Taylor* can be read to forecast a future objection to the particularization of the “average” of the formula to the facts of a case such as this one. However, our review of the record does not support such an objection by defendant. To be admissible under the heightened *Daubert* standard the reviewing judge must not only rule that the expert is qualified but that his math is correct as well. Here, no specific objection to the application of the formula's math was made and no other expert was proffered at *voir dire* to contest the math or the application of the “average.” As a result, defendant in fact merely invokes an objection to the expert's qualification, not his reliability.



Thus, despite defendant's contention and obvious concern as to the midpoint and average terminology used, defendant presents no specific argument to explain how the use of the terms average and midpoint in this manner should have disqualified Burnette as an expert concerning his application of the formula. We accept that Burnette's testimony, by defendant's standards, does not reach the level of scrutiny under *Daubert* that defendant himself would require of an expert prior to qualification; however, we also acknowledge that the ultimate determination is made by the trial court. Herein, we hold that because the calculations themselves were based on well-recognized and accepted scientific formula and applicable methodology, the terminology (mis)used by the expert, while perhaps troubling from the standpoint of basic mathematical concepts, was not critical to his qualification. On this record, the specialized knowledge, skill, experience and training in the field of expertise demonstrated by Burnette, was sufficient for the trial court to allow his testimony in the form of an expert opinion. The trial court's ruling to qualify Burnett as an expert in blood alcohol physiology, pharmacology, and related research on retrograde extrapolation was not a manifest abuse of discretion.

Finally, it appears the trial court reviewed the five non-exclusive *Daubert* factors suggested for use by trial courts in assessing the reliability of scientific testimony. These factors include:

- 1) whether the expert's scientific technique or theory can be, or has been, tested; 2) whether the technique or theory

STATE V TURBYFILL

*Opinion of the Court*

has been subject to peer review and publication; 3) the known or potential rate of error of the technique or theory when applied; 4) the existence and maintenance of standards and controls; and 5) whether the technique or theory has been generally accepted in the scientific community.

*Id.* at \_\_\_, 770 S.E.2d at 708 (citing *United States v. Beverly*, 369 F.3d 516, 528 (6th Cir. 2004)). The record supports a determination: that the techniques or theory has been generally accepted in the scientific community (factor #5); that it has been tested (factor #1); that it has been subjected to peer review and publication (factor #2); and that it is subject to standards and controls (factor #4). Only factor #3, the error rate, could be deemed to have been the subject of a successful cross examination by defendant. Nevertheless, as the list is “non-exclusive”, it was not necessary for the trial court to determine that all factors existed in order to adequately assess the testimony’s reliability. It is sufficient that the record supports the trial court’s assessment of the factors. We reiterate that the test of reliability is flexible and the *Daubert* factors “do not constitute a ‘definitive checklist or test,’ but may be tailored to the facts of a particular case.” *Kumho Tire Co.*, 526 U.S. at 150, 143 L.Ed.2d at 251.

“[O]nce the trial court makes a preliminary determination that the scientific or technical area underlying a qualified expert's opinion is sufficiently reliable (and, of course, relevant), any lingering questions or controversy concerning the quality of the expert's conclusions go to the weight of the testimony rather than its

STATE V TURBYFILL

*Opinion of the Court*

admissibility.” *Taylor*, 165 N.C. App. at 756, 600 S.E.2d at 488 (quoting *Howerton*, 358 N.C. at 460–61, 597 S.E.2d at 687). Most of defendant’s contentions, although strongly stated, are arguments that go to the weight to be given the testimony, not its admissibility. Based on the testimony of the expert as set forth in the record in the instant case, defendant is unable to show an abuse of discretion by the trial court in allowing the testimony of the expert witness, Burnette. Accordingly, defendant’s argument is overruled.

*II*

Next, defendant argues that the trial court committed plain error in allowing Officer Lovelace to testify to defendant’s blood alcohol level. We disagree.

We apply the plain error standard of review where, as here, defendant fails to object to testimony at trial, which leaves the alleged error unpreserved for review on appeal, yet requests this court to grant plain error review. Such requires defendant to bear the heavier burden of showing that the error rises to the level of plain error. *State v. Melvin*, 364 N.C. 589, 593-94 (2010) (citation omitted).

For error to constitute plain error, a defendant must demonstrate that a fundamental error occurred at trial. To show that an error was fundamental, a defendant must establish prejudice—that, after examination of the entire record, the error had a probable impact on the jury’s finding that the defendant was guilty.

*State v. Lawrence*, 365 N.C. 506, 518, 723 S.E.2d 326, 334 (2012) (citations omitted).

Pursuant to Rule 702(a1) of our Rules of Evidence,

STATE V TURBYFILL

*Opinion of the Court*

[a] witness, qualified under subsection (a) [of Rule 702] and with proper foundation, may give expert testimony *solely on the issue of impairment and not on the issue of specific alcohol concentration level relating to the following:*

- (1) The results of a Horizontal Gaze Nystagmus (HGN) Test when the test is administered by a person who has successfully completed training in HGN.

N.C.G.S. § 8C-1, 702(a1)(1) (emphasis added).

At trial, Officer Lucas Lovelace testified to his involvement in the investigation of a motor vehicle accident occurring on 21 December 2011. Officer Lovelace observed a Ford F-150 pickup truck resting on its side and defendant “outside the vehicle, emotional, crying, upset.”

I could tell that he was a little unsteady on his feet, slurring his words, had bloodshot eyes. I could smell an odor of an alcoholic beverage from his breath. . . . He stated that he’d had one -- I think a twenty-four-ounce Smirnoff, and also taken a prescription Xanax and hydrocodone for his hip that he’d had surgery on.

Officer Lovelace asked defendant to submit to a series of field sobriety tests. At trial, Officer Lovelace was accepted as an expert on the horizontal gaze nystagmus (HGN) test, a test requiring a subject to follow a stimulus with his or her eyes from side to side on a horizontal plane. Officer Lovelace testified that during the course of the HGN test defendant exhibited six “clues” of impairment: “a lack of smooth pursuit in both eyes”; an involuntary jerking, or sustained nystagmus, in both eyes when defendant moved his eyes to the maximum deviation point of the test; and “the onset

STATE V TURBYFILL

*Opinion of the Court*

of nystagmus prior to forty-five degrees.” Officer Lovelace testified that the onset of any nystagmus prior to forty-five degrees is a point one or greater BAC.” Officer Lovelace further testified that “[m]ost of the time four clues would show a BAC of point one.” Defendant exhibited six clues: three for each eye.

Officer Lovelace’s testimony appears to have violated Rule 702(a1) on the issue of defendant’s specific alcohol concentration level as it related to the results of the Horizontal Gaze Nystagmus (HGN) Test defendant performed. However, we do not believe that, given an examination of the entire record, the error had a probable impact on the jury’s finding that the defendant was guilty of Driving While Impaired or Driving After Consuming Being Less Than 21. *See Lawrence*, 365 N.C. at 518, 723 S.E.2d at 334. Based on defendant’s admission to drinking alcohol and consuming impairing substances prior to his one-vehicle crash, testimony by witnesses to physical signs of defendant’s appreciable impairment as well as expert testimony based on retrograde extrapolation that at the time of his accident defendant’s BAC was 0.10, the jury heard significant competent evidence to allow it to reach its guilty verdict as to Driving While Impaired and Driving after consuming alcohol under 21 years old, absent the testimony of BAC level based on HGN test results offered by Officer Lovelace. Accordingly, defendant’s argument is overruled.

STATE V TURBYFILL

*Opinion of the Court*

We find no error in the trial court's proper exercise of its discretion to allow the expert testimony of Anthony Burnette, and no plain error as a result of the BAC level testimony of Officer Lovelace.

NO ERROR; NO PLAIN ERROR.

Judges STROUD and HUNTER, Robert N., Jr., concur.