

[J-36-2013]
IN THE SUPREME COURT OF PENNSYLVANIA
MIDDLE DISTRICT

CASTILLE, C.J., SAYLOR, EAKIN, BAER, TODD, McCAFFERY, JJ.

COMMONWEALTH OF PENNSYLVANIA,	:	No. 75 MAP 2012
	:	
Appellee	:	Appeal from the order of the Superior
	:	Court, dated February 16, 2012, at No.
	:	315 MDA 2011, reversing the order of the
v.	:	York County Court of Common Pleas,
	:	Criminal Division, entered January 13,
	:	2011, at No. CP-67-CR-0007492-2009
GEORGE WILLIAM YOHE, II,	:	
	:	39 A.3d 381
Appellant	:	
	:	ARGUED: May 7, 2013

OPINION

MR. JUSTICE BAER

DECIDED: October 30, 2013

George William Yohe, II, (Appellant) appeals from the Superior Court order that reversed the trial court's order awarding a new trial on the ground that his constitutional right of confrontation was violated. We agree with the Superior Court that Appellant's constitutional right of confrontation was not violated at trial because the testifying witness was not a "surrogate witness," as Appellant argues. Rather, as discussed below, the witness was the author of the testimonial statement offered into evidence and, therefore, was an appropriate witness under the Confrontation Clause. Accordingly, Appellant's confrontation rights were protected by this testimony, and we affirm.

On August 19, 2009, Officer Scott George performed a traffic stop of Appellant's vehicle because of its faulty license plate and brake lights. During the course of the stop, the officer observed signs of alcohol consumption, and arrested Appellant for Driving Under the Influence of alcohol (DUI).¹ Officer George transported Appellant to Memorial Hospital where a phlebotomist drew a blood sample and prepared it for shipment to National Medical Services Labs (NMS Labs) for chemical analysis.

NMS Labs received Appellant's blood sample on August 21, 2009. An employee examined it for proper seal, label, and volume, logged receipt of the sample, and placed it in a secured bin. It is the routine practice of NMS Labs to test blood samples for alcohol content by removing three small portions (referred to as "aliquots") from the blood sample and to conduct three distinct tests, using two testing methods, to determine alcohol content. One method of testing is gas chromatography, and the second is enzymatic assay, both of which determine the quantity of alcohol in the blood. It is the practice of NMS Labs routinely to test a blood sample for alcohol content twice using gas chromatography, and once using enzymatic assay.

In accord with this practice, NMS Labs conducted the three tests on Appellant's blood sample. First, NMS Labs' employee Megan Silcox retrieved the blood sample from storage, extracted an aliquot for testing, returned the balance of the sample to storage, and tested the aliquot for alcohol content using enzymatic assay. Next, another employee, Lisa Chacko, retrieved the blood sample from storage, extracted two more aliquots for testing, and returned the remaining sample to storage. She tested the aliquots for alcohol content twice, utilizing gas chromatography.

¹ See 75 Pa.C.S. § 3802.

Dr. Lee Blum is Assistant Laboratory Director and a toxicologist at NMS Labs. As Assistant Lab Director, he is responsible for the lab's quality assurance program and client service. As a forensic toxicologist, he is involved in reviewing analytical testing, report writing, and testifying at trials. In this role, he receives the raw data that resulted from the three blood tests, checks the demographic information on the testing data, evaluates the chain of custody, and verifies that the lab technicians performed the appropriate testing.

Turning to the results from the three tests NMS generally conducts, Dr. Blum's practice is to examine the results of the duplicate gas chromatography tests to determine if they validate each other by being within certain parameters, and, taking into account the appropriate margins of error, compare those test results to the results of the enzymatic assay test. If the test results are in accord, he will report the lower of the two gas chromatograph test results as the blood alcohol content (BAC) in accord with NMS Labs protocol.

After conducting this case review, Dr. Blum affixes his electronic signature to the Toxicology Report, which is a three page document summarizing the tests that were performed and the results therefrom, and certifies its contents. In addition to reporting the BAC, the Toxicology Report includes a certification that Dr. Blum "directly participated in the determination of the results by reviewing and certifying that the analytical data including internal standards and calculations utilized in reporting the results of this case are accurate and correct," and that Dr. Blum will be available to testify in court.

In this case, following laboratory procedure as outlined above, Dr. Blum reviewed Appellant's case file. The enzymatic assay test indicated Appellant's BAC was .175%, and the two gas chromatograph tests indicated it was .159% and .161%, respectively.

Dr. Blum analyzed the data in the case file and electronically signed the Toxicology Report indicating Appellant's BAC was .159%, the lower of the gas chromatograph results.

At Appellant's August 30, 2010, non-jury trial, the Commonwealth introduced into evidence the Toxicology Report indicating that Appellant's BAC was .159% through the expert testimony of Dr. Blum. Appellant objected to Dr. Blum's testimony regarding the Toxicology Report, and to the admission of the Toxicology Report, on the grounds that it violated his right to confrontation guaranteed by the 6th Amendment of the U.S. Constitution because the specific lab technicians who performed the testing of Appellant's blood sample were not called as witnesses.² The trial court overruled these objections.

Dr. Blum testified that, consistent with lab policy, on August 31, 2009, he reviewed Appellant's case file, which included the raw analytical data for the duplicate gas chromatography and enzymatic assay tests. He explained that the reason the lab employs tests on two types of machines is to ensure the accuracy of the result identified in the Toxicology Report: relying on two kinds of physical chemical analysis, performed by two different individuals, at two different times, confirms the verity of the test results.

With regard to Appellant's blood sample in particular, Dr. Blum testified that it was tested in duplicate through gas chromatography, producing values of .159% and .161%. The enzymatic assay produced a value of .175%. Dr. Blum considered these numbers to verify each other because they were within a certain percentage,³ recorded

² "In all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him. . . ." U.S. Const. amend. VI.

³ Dr. Blum testified that NMS Labs has "guidelines. . . of agreement on one test versus the other. If the enzymatic assay is within 20 percent of the headspace [gas chromatography] analysis, we feel that's agreeable, that they are likely the same (...continued)

the lowest of these results in the Toxicology Report, and signed the report. He testified to a reasonable degree of scientific certainty that Appellant's BAC was, as reflected in the Report, .159%.

On cross-examination, counsel questioned Dr. Blum about the chain of custody and the types of tubes used to contain Appellant's blood. Dr. Blum acknowledged that he did not observe either Ms. Silcox or Ms. Chacko take the aliquots from the blood sample or test the aliquots, and, indeed, did not personally handle the aliquots or the blood sample; rather, he reviewed all documentation in the file associated with the specimen.

After the Commonwealth rested its case, Appellant moved for judgment of acquittal, arguing that Dr. Blum's testimony was insufficient to satisfy the Confrontation Clause because he did not personally test Appellant's blood. The trial court denied the motion, and Appellant presented his defense. The trial ultimately court found Appellant guilty on August 30, 2010, of DUI.^{4, 5}

(continued...)

sample. We report the headspace [gas chromatography] result." Notes of Testimony, Aug. 30, 2010, at 50. He further explained the role of the margin of error as follows: "The two headspace [gas chromatograph] need to agree within a certain percentage. And the level of 159, it would have been within four percent with the agreement of those two values. But the variability of the assay itself, we use five percent variability, so plus or minus five percent." *Id.*

⁴ See 75 Pa.C.S. § 3802(b) (high rate of alcohol), which provides:

(b) High rate of alcohol.--An individual may not drive, operate or be in actual physical control of the movement of a vehicle after imbibing a sufficient amount of alcohol such that the alcohol concentration in the individual's blood or breath is at least 0.10% but less than 0.16% within two hours after the individual has driven, operated or been in actual physical control of the movement of the vehicle.

Following sentencing,⁶ Appellant filed a post-sentence motion reasserting his objection to the admission of Dr. Blum's testimony and the Toxicology Report on confrontation grounds, arguing that the Toxicology Report should not have been admitted without accompanying testimony by the toxicologists who performed the blood tests.⁷ On January 13, 2011, the trial court granted Appellant's post-sentence motion and granted a new trial, holding that the Toxicology Report was improperly admitted at trial because "an analyst who performed the tests did not testify." Trial Ct. Op, May 5, 2011, p. 1.

The trial court reached its conclusion by first finding that the Toxicology Report was a testimonial statement because it was compiled for the express purpose of being used at trial and was admitted into evidence. See Crawford v. Washington, 541 U.S. 36, 54 (2004) (defining testimonial statements as, *inter alia*, "ex parte in-court testimony or its functional equivalent," including affidavits "or similar pretrial statements that declarants would reasonably expect to be used prosecutorially. . ."). The trial court held, therefore, that the Toxicology Report was inadmissible without the testimony of the declarant. See id. (holding that a witness's testimony against a defendant is inadmissible unless the witness appears at trial or, if the witness is unavailable, the defendant had a prior opportunity for cross-examination).

(continued...)

⁵ The trial court found Appellant not guilty of DUI pursuant to 75 Pa.C.S. § 3802(a)(1) (general impairment).

⁶ The trial court sentenced Appellant to a term of incarceration of 48 hours to six months' imprisonment and a \$500 fine.

⁷ Because Appellant's motion referred to analysts in the singular and the plural, it is unclear whether he believed that both Ms. Silcox and Ms. Chacko had to testify, or if only Ms. Silcox should have testified (as she conducted the test that revealed the .159% value that was ultimately reported on the Toxicology Report).

Next, the trial court held that the declarant whose testimony was required at trial was the “analyst who actually performed the analysis on [Appellant’s] blood sample.” Trial Ct. Op., May 5, 2011, p 3. In this regard, the trial court relied on the United States Supreme Court’s decision in Melendez-Diaz v. Massachusetts, 557 U.S. 305 (2009) and the Superior Court case Commonwealth v. Barton-Martin, 5 A.3d 363 (Pa.Super. 2010). In Melendez-Diaz, the prosecution proffered “certificates of analysis” identifying material seized from the defendant as drugs, which were sworn to by the analysts who ran the tests, without offering any witnesses in support of the certificates. 557 U.S. at 308. The defendant objected, arguing that he had a constitutional right to confront the analysts, who should have been required to testify. Id. at 309. The Supreme Court determined that the certificates were affidavits prepared under circumstances leading a reasonable person to believe they would be used at trial, and, accordingly, were testimonial. Id. at 310. Consequently, the analysts who prepared the certificates were “witnesses” for purposes of the Sixth Amendment whom the defendant had a right to confront. Id. at 311. Because this right was not afforded, the certificates were deemed inadmissible. Id.

In Barton-Martin, the defendant objected to admission of a blood alcohol lab report without the testimony of the laboratory technician who performed the test and prepared the report. 5 A.3d at 365. The Commonwealth had presented the testimony of a witness who was the laboratory administrative director and custodian of records for the hospital where the analysis was performed. Id. at 366. Although the witness testified about lab procedures generally, she had not analyzed the defendant’s blood or the results of the blood tests. Id. The trial court admitted the report, but the Superior Court reversed, holding the blood alcohol report was the type of *ex parte* out-of-court statement that was inadmissible without an opportunity for confrontation pursuant to

Melendez-Diaz. Id. at 368. The court held that absent a showing that the laboratory technician who ran the test and authored the report was unavailable and the defendant had a prior opportunity for cross-examination, “the laboratory technician’s failure to testify in the Commonwealth’s case-in-chief violated [the defendant’s] Sixth Amendment right to confrontation.” Id. at 369. The testimony of the custodian of records, unconnected to the performance of the analysis at issue, did not satisfy the defendant’s constitutional rights. Id.

Considering Melendez-Diaz and Barton-Martin, the trial court here reasoned that Dr. Blum’s testimony was insufficient because he neither tested the aliquots nor observed the testing, and Appellant’s cross-examination of Dr. Blum was limited in ways that cross-examination of the analyst who performed the test would not have been: “While credibility of the analyst is certainly an issue, it is not the sole reason for requiring that he or she be subject to confrontation; the manner of testing requires some exercise of judgment, which presents a risk of error that could be addressed on cross-examination.” Trial Ct. Op., May 5, 2011, p. 3-4.

The Commonwealth appealed to the Superior Court, arguing that because Dr. Blum was the analyst who derived the numerical conclusion of Appellant’s BAC, his testimony regarding the Toxicology Report satisfied Appellant’s right of confrontation under the Sixth Amendment. Commonwealth v. Yohe, 39 A.3d 381 (Pa.Super. 2012). The Superior Court agreed, concluding that the trial court erred in determining Appellant was entitled to a new trial, and reversed. Id. The Superior Court observed that after Melendez-Diaz and subsequent to Appellant’s trial, the United States Supreme Court addressed a scenario similar to that presented in Barton-Martin in Bullcoming v. New Mexico, ___ U.S. ___, 131 S.Ct. 2705 (2011).

In Bullcoming, the defendant was charged with driving while intoxicated, and, at his subsequent trial, the laboratory report of his BAC was offered into evidence. Id. at 2709. The report was completed, signed, and certified by an analyst who was not called to testify. Id. at 2711-12. Instead, the prosecutor called as a witness another analyst from the same lab to testify generally about lab procedures and equipment. Id. at 2712. The Supreme Court initially, again, reiterated that “[a]n analyst’s certification prepared in connection with a criminal investigation or prosecution” is testimonial, and is therefore subject to the requirements of the Confrontation Clause, id. at 2713-14 (citing Melendez-Diaz, 557 U.S. at 318-21), and that an out-of-court testimonial statement “may not be introduced against the accused at trial unless the witness who made the statement is unavailable and the accused has had a prior opportunity to confront that witness.” Id. at 2713.

Because the trial court had “permitted the testimonial statement of one witness . . . to enter into evidence through the in-court testimony of a second person . . .,” the High Court reversed. Id. The Court specifically disapproved of such “surrogate testimony,” which could not have conveyed “what [the certifying analyst] knew or observed about the events his certification concerned, *i.e.*, the particular test and testing process he employed,” nor would it “expose any lapses or lies on the certifying analyst’s part.” Id. at 2715. The Court concluded that the reliability of the certifying analyst or the testing procedure conducted was irrelevant to the constitutional question:

. . . [T]he comparative reliability of an analyst's testimonial report drawn from machine-produced data does not overcome the Sixth Amendment bar. This Court settled in Crawford that the “obviou[s] reliab[ility]” of a testimonial statement does not dispense with the Confrontation Clause. Accordingly, the analysts who write reports that the prosecution introduces must be made available for confrontation even if they possess “the scientific acumen of Mme. Curie and the veracity of Mother Teresa.”

Id. (quoting Melendez–Diaz, 557 U.S. at 319, n. 6).

Considering this precedent, the Superior Court in this case held that the factual circumstances presented herein are distinct from the precedent discussed above because the testifying witness, Dr. Blum, reviewed the entire file, compared the results of three independent test printouts on three aliquots, certified the accuracy of the results, and signed the report. Yohe, 39 A.3d at 388. In this regard, the Superior Court agreed with the Commonwealth that even though he did not observe, prepare, or conduct the actual testing, “Dr. Blum was the ‘analyst’ or the person who reviewed the raw data from the machines and generated an expert report based on his review of the raw data that was generated. Therefore, Dr. Blum is the witness that [Appellant] had a right to confront.” Id. at 389.

On appeal, Appellant argues that this case is factually identical to Barton-Martin and Bullcoming because Dr. Blum did not personally handle Appellant’s blood sample, prepare the aliquots, or place the aliquots into the testing apparatuses. Although Barton-Martin is not binding on this Court, Appellant asserts that the Superior Court in that case reached a constitutionally mandated result by disapproving of the testimony of anyone other than the analyst who conducted the blood alcohol test. See Barton-Martin, 5 A.3d at 365 (“Because the Commonwealth did not summon at trial the analyst who prepared Appellant's lab report, we conclude that Appellant's rights under the Confrontation Clause were violated and that the lab report showing her blood-alcohol content was inadmissible.”). Similarly, Appellant argues that the Superior Court opinion in the case now before us is directly contrary to Bullcoming, which he interprets as requiring the analyst who ran the blood tests to be made available for confrontation.

131 S.Ct. at 2715 (“the analysts who write reports that the prosecution introduces must be made available for confrontation. . .”).

Appellant asserts that the distinguishing facts on which the Superior Court relied (Dr. Blum’s review of the test results and certification of the Toxicology Report) are factually incorrect. According to Appellant, Dr. Blum was a surrogate witness because he merely reviewed the testing results committed to paper by the analysts and vouched for their validity. Although Dr. Blum could answer questions about laboratory protocols, he could not, according to Appellant, answer questions related to how the data contained in the report was generated, or address how the samples were handled, the process of placing the samples in the machines, or the retrieval of the samples following testing.

Appellant argues that requiring the analyst who conducted the relevant testing to testify serves four fundamental purposes: it enables meaningful cross-examination of what the analyst has done; it guarantees that the analyst who generated the testimonial statements is questioned under oath and subject to the penalties of perjury; it allows the fact-finder to observe that witness’s demeanor and her responses to questions; and it ensures that the accuser face the accused. Appellant asserts that permitting the testimony of a surrogate witness renders it impossible to determine whether the analyst was fraudulent or incompetent. In this regard, Appellant asserts that conducting gas chromatography testing is a skill which the U.S. Supreme Court discussed in Bullcoming

as being dependent on good analytical practices and an analyst who is aware of what is being done and why. Bullcoming, 131 S.Ct. at 2711, n. 1.⁸

The Pennsylvania Association of Drunk Driving Defense Attorneys (PADDDA) has filed an *amicus curiae* brief on behalf of Appellant detailing forensic laboratory scandals that have resulted from falsified results, a lack of oversight, and the absence of quality controls, and which were not detected under the safeguards that had been in place. Considering these scandals, PADDDA posits that allowing defendants to cross-examine the person who conducted the lab test, rather than the supervisor who viewed the test results, will permit them adequately to defend themselves at trial and will operate as oversight of the lab. According to PADDDA, each of the numerous lab scandals it details in its brief ultimately came to light by cross-examination of the lab analyst by counsel for the accused. Similarly, the Pennsylvania Association of Criminal Defense Lawyers argues as *amicus* that a meaningful opportunity for cross-examination must be available in all trials involving laboratory test results, and defines the opportunity as meaningful only when the witness had an active role in the testing.

⁸ The Bullcoming Court found that in regard to gas chromatography, analyst error was not “so remote as to be negligible:”

Amici inform us, for example, that in neighboring Colorado, a single forensic laboratory produced at least 206 flawed blood-alcohol readings over a three-year span, prompting the dismissal of several criminal prosecutions. An analyst had used improper amounts of the internal standard, causing the chromatograph machine systematically to inflate BAC measurements. The analyst's error, a supervisor said, was “fairly complex.”

Bullcoming, 131 S.Ct. at 2711, n.1 (internal citations omitted).

The National Conference for DUI Defense Attorneys have also filed an *amicus curiae* brief in support of Appellant, detailing the process of gas chromatography, and articulating that it is highly technical, complicated, and vulnerable to the possibility of error or fraud, including the ability surreptitiously to manipulate the data, and arguing that this Court should therefore hold that only the opportunity to cross-examine the analyst who ran the test satisfies the Confrontation Clause.⁹

The Commonwealth responds that the testimonial statement in this case, in accord with Crawford, is, as the lower courts found, the Toxicology Report, which concludes that Appellant's blood alcohol content was .159%. The Commonwealth considers Dr. Blum to be the author and signatory of the testimonial statement, and, therefore, the requisite witness pursuant to the Confrontation Clause in accord with Melendez-Diaz, 557 U.S. 305, Bullcoming, 131 S.Ct. 2705, and Williams v. Illinois, ___ U.S. ___, 132 S.Ct 2221 (2012) (plurality). Williams, which was decided after the Superior Court decided Appellant's appeal and will be discussed below, is the third United States Supreme Court decision on the Confrontation Clause as it pertains to scientific reports. The Court was presented with an alleged Confrontation Clause violation based on the testimony of a state laboratory DNA expert who opined that the defendant's DNA matched a DNA profile created by Cellmark Laboratories, where the Cellmark report was not itself admitted into evidence. In a plurality opinion, a majority of

⁹ According to *amici*, an analyst can make an error during any one of several steps of gas chromatography, which they believes would not be uncovered by cross-examination of a surrogate witness, including preparing the sample, loading the machine, selecting the test parameters, and interpreting the results.

justices agreed that the expert's reference to the Cellmark report did not violate the Confrontation Clause.

The Commonwealth argues that in order to mischaracterize Dr. Blum as a surrogate witness, Appellant has distorted his role and testimony regarding the blood alcohol test results. Rather than a mere surrogate, the Commonwealth considers Dr. Blum to be the author of the Toxicology Report. He was, according to the Commonwealth, the assigned forensic toxicologist, who based his expert opinion on his review of the entire file, including the raw data contained in the test printouts, compared the results of the three tests, ensured that they supported each other, verified the correctness of the procedures as logged by the technicians, and certified and authored the Report. The Commonwealth further argues that the lab technicians in this case performed no analysis on the blood specimen; rather, they prepared it for insertion into a machine, which generated raw data that was placed into the file. In this respect, the Commonwealth distinguishes this case from the custodian of records disapproved of in Barton-Martin or the surrogate witness disapproved of in Bullcoming. The Commonwealth further argues that the "end-game" for Appellant and his *amici* is to require the Commonwealth to call every individual involved in the chain of custody of a lab sample as a witness in order to satisfy the Confrontation Clause.

In an *amicus curiae* brief filed on behalf of the Commonwealth, the Pennsylvania District Attorneys Association (PDAA) argues that expert opinion testimony such as Dr. Blum's, which relies on information provided by persons not in court, has never been held to violate the Confrontation Clause. See, e.g., Commonwealth v. Daniels, 390 A.2d 172 (Pa. 1978) (approving of the admission of expert opinion testimony based on

out-of-court sources of information and recognizing that “all expert opinion is based on ‘hearsay’ to some extent.”); Commonwealth v. Baumhammers, 960 A.2d 59, 95 n.28 (Pa. 2008) (holding, in the alternative, that expert opinion that relied on statements of persons who did not testify was not “testimonial” within the meaning of Crawford, and not violative of the Confrontation Clause).

The PDAA further argues that this case is factually distinguishable from Melendez-Diaz and Bullcoming, where either no expert testified at all, or the expert offered no independent opinion and merely introduced the out-of-court statement of someone else in the form of a sworn or certified report. The PDAA also asserts, as does the Commonwealth, that this Court should consider the plurality opinion in Williams to permit a testifying expert witness who is offering an opinion to consider an informal statement by a lab technician regarding test results, without running afoul of the Confrontation Clause.

The PDAA refutes Appellant’s argument that there were myriad questions about the blood tests that he was unable to direct to Dr. Blum by contending that, contrary to this argument, these questions would have been a fruitful ground for impeaching Dr. Blum had Appellant chosen to ask them. Further, if Appellant wanted the testimony of the lab technicians who ran the tests, the PDAA argues that he was free to subpoena them and solicit whatever answers he sought; but that their appearance or absence does not alter the fact that Dr. Blum was a competent witness to testify in support of the proffered report.

Appellant responds by presenting a “proposed workable rule” with regard to who must testify about the results of lab tests: if anyone alters or physically analyzes a

sample, runs the machine, or interprets the result, that person must appear to testify at trial for purposes of the Sixth Amendment. In proposing this rule, Appellant asserts that forensic science analysis is conducted in two basic ways: the “cradle to grave” system, where only one person handles and tests the sample; and the assembly line system, where multiple individuals perform discrete tasks. According to Appellant, six people were involved with the receipt, handling, preparation, and analysis of his blood sample. He suggests that the prosecutor could alleviate its burden to call all of these individuals (who would be required to testify under his proposed rule) by choosing a lab that utilizes the cradle to grave system, instead of one that, like NMS Labs, favors the assembly line system.

Whether the admission of the Toxicology Report violated Appellant’s rights under the Confrontation Clause is a question of law, for which our standard of review is *de novo* and our scope of review is plenary. See, e.g., Commonwealth v. Cannon, 22 A.3d 210 (Pa. 2011).

The Confrontation Clause of the Sixth Amendment, made applicable to the States *via* the Fourteenth Amendment, Pointer v. Texas, 380 U.S. 400, 403 (1965), provides that “[i]n all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him. . . .”¹⁰ In Crawford, 541 U.S. at 51, the Court held that the Sixth Amendment guarantees a defendant’s right to confront those “who ‘bear testimony’” against him, and defined “testimony” as “[a] solemn declaration or

¹⁰ Although Appellant has not premised his argument on Article I, Section 9 of the Pennsylvania Constitution, it similarly provides: “In all criminal prosecutions the accused hath a right . . . to be confronted with the witnesses against him. . . .”

affirmation made for the purpose of establishing or proving some fact.” The Confrontation Clause, the High Court explained, prohibits out-of-court testimonial statements by a witness unless the witness is unavailable and the defendant had a prior opportunity for cross-examination.¹¹ Id. at 53-56.

To further elucidate the distinction between testimonial and nontestimonial statements, the Court in Davis v. Washington, 547 U.S. 813 (2006), addressed two types of statements to police and held that whether a statement is testimonial depends on its “primary purpose:”

Statements are nontestimonial when made in the course of police interrogation under circumstances objectively indicating that the primary purpose of the interrogation is to enable police assistance to meet an ongoing emergency. They are testimonial when the circumstances objectively indicate that there is no such ongoing emergency, and that the primary purpose of the interrogation is to establish or prove past events potentially relevant to later criminal prosecution.

¹¹ The Court described the class of testimonial statements covered by the Confrontation Clause as follows:

Various formulations of this core class of “testimonial” statements exist: “*ex parte* in-court testimony or its functional equivalent—that is, material such as affidavits, custodial examinations, prior testimony that the defendant was unable to cross-examine, or similar pretrial statements that declarants would reasonably expect to be used prosecutorially;” “extrajudicial statements . . . contained in formalized testimonial materials, such as affidavits, depositions, prior testimony, or confessions;” “statements that were made under circumstances which would lead an objective witness reasonably to believe that the statement would be available for use at a later trial.”

Crawford, 541 U.S. at 51-52 (internal citations omitted).

Davis, 547 U.S. at 822.¹²

Although Crawford and Davis did not involve expert evidence, the Court subsequently decided a trio of cases directly bearing on application of the Confrontation Clause to expert testimony premised on scientific evidence. In Melendez-Diaz, the Court addressed the applicability of the primary purpose test to scientific reports, where the state courts had admitted into evidence affidavits reporting the results of forensic analysis identifying material seized from the defendant as cocaine, without any live testimony regarding the composition of the substance. These analysts' affidavits, entitled "certificates of analysis," were sworn before a notary public by analysts at the state laboratory as required by state law. 557 U.S. at 308. The Court had "little doubt that the documents at issue in this case fall within the 'core class of testimonial statements'" described in Crawford, because they were a "solemn declaration or affirmation made for the purpose of establishing or proving some fact." Id. at 310, (citing Crawford, 541 U.S. at 51).¹³ Additionally, the Court reasoned that the affidavits were made for "the *sole purpose*" of providing "*prima facie* evidence of the composition,

¹² The Court reiterated the primary purpose test in Michigan v. Bryant, ___ U.S. ___, 131 S.Ct. 1143 (2011), when it held that the primary purpose of statements made by the victim to police who found him mortally wounded in a parking lot was to enable police assistance to meet an ongoing emergency. Id. at 1150. Therefore, the victim's statements were not testimonial, and were admissible at trial in the absence of the victim's testimony without running afoul of the Confrontation Clause. Id.

¹³ In this regard, the Court explained that the fact in question, addressed by the certificates of analysis, was whether the substance found in the defendant's possession was, as the prosecution claimed, cocaine, which was the precise testimony the analysts would be expected to provide if they were called to testify at trial. Melendez-Diaz, 557 U.S. at 311.

quality, and the net weight of the analyzed substance.” Melendez-Diaz, 557 U.S. at 311 (emphasis in original; internal citation omitted).

Because “the analysts’ affidavits were testimonial statements, and the analysts were ‘witnesses’ for purposes of the Sixth Amendment,” the Court held that “[a]bsent a showing that the analysts were unavailable to testify at trial *and* that [the defendant] had a prior opportunity to cross-examine them, [the defendant] was entitled to ‘be confronted with’ the analysts at trial.” Id. The Court later described this holding as follows: “Absent stipulation, . . . the prosecution may not introduce [a forensic laboratory report stating that a substance was cocaine] without offering a live witness competent to testify to the truth of the statements made in the report.” Bullcoming, 131 S.Ct. at 2709 (citing Melendez-Diaz, 557 U.S. 305).

Observing that “[c]onfrontation is one means of assuring accurate forensic analysis,” and, indeed, the only means constitutionally guaranteed, the Court observed that “[f]orensic evidence is not uniquely immune from the risk of manipulation,” and that because many labs are administered by law enforcement agencies, “[a] forensic analyst responding to a request from a law enforcement official may feel pressure—or have an incentive—to alter the evidence in a manner favorable to the prosecution.” Melendez-Diaz, 557 U.S. at 318.¹⁴ The Court suggested that an incompetent or fraudulent analyst subject to cross-examination may reconsider his false testimony. Id. at 319 (“Like the eyewitness who has fabricated his account to the police, the analyst who provides false

¹⁴ Indeed, as the Court observed, “[o]ne study of cases in which exonerating evidence resulted in the overturning of criminal convictions concluded that invalid forensic testimony contributed to the convictions in 60% of the cases.” Melendez-Diaz 557 U.S. at 319 (citing Garrett & Neufeld, Invalid Forensic Science Testimony and Wrongful Convictions, 95 Va. L.Rev. 1, 14 (2009)).

results may, under oath in open court, reconsider his false testimony. . . . And, of course, the prospect of confrontation will deter fraudulent analysis in the first place.”).

To illustrate this point, the Court observed that the affidavits submitted at the defendant’s trial merely identified the analyzed substance as cocaine, and provided no information about “what tests the analysts performed, whether those tests were routine, and whether interpreting their results required the exercise of judgment or the use of skills that the analysts may not have possessed.” *Id.* at 320. Because “[a]t least some of that methodology [utilized by the laboratory in that case] requires the exercise of judgment and presents a risk of error that might be explored on cross-examination,” *id.*, the Court found “little reason to believe that confrontation will be useless in testing analysts’ honesty, proficiency, and methodology—the features that are commonly the focus in the cross-examination of experts.” *Id.* at 321.

In dissent, Justice Kennedy noted that the Majority’s holding was problematic in several respects, one of which resulted from the lack of an accepted definition of “analyst:”

Consider how many people play a role in a routine test for the presence of illegal drugs. One person prepares a sample of the drug, places it in a testing machine, and retrieves the machine’s printout—often, a graph showing the frequencies of radiation absorbed by the sample or the masses of the sample’s molecular fragments. A second person interprets the graph the machine prints out—perhaps by comparing that printout with published, standardized graphs of known drugs. Meanwhile, a third person—perhaps an independent contractor—has calibrated the machine and, having done so, has certified that the machine is in good working order. Finally, a fourth person—perhaps the laboratory’s director—certifies that his subordinates followed established procedures.

It is not at all evident which of these four persons is the analyst to be confronted under the rule the Court announces today.

Melendez-Diaz, 557 U.S. at 332 (Kennedy, J., dissenting) (internal citations omitted).

Responding to this point, the Majority stated “we do not hold, and it is not the case, that anyone whose testimony may be relevant in establishing the chain of custody, authenticity of the sample, or accuracy of the testing device, must appear in person as part of the prosecution's case.” Melendez-Diaz, 557 U.S. at 311, n.1.

Although Melendez-Diaz established that scientific reports are testimonial and are subject to the requirements of the Confrontation Clause, and provided that when such reports are admitted into evidence, “the analyst” must testify, 557 U.S. at 311, it was Bullcoming which took the Court a step closer to resolving who is, or, more precisely, who is not, an appropriate witness. Bullcoming presented a scenario in which the prosecution in a DUI case relied on a forensic laboratory report certifying the results of blood alcohol analysis generated by gas chromatography and signed by the lab analyst who performed the test. During the trial, which pre-dated Melendez-Diaz, the prosecution did not call the analyst who signed the certification, indicating that he had been placed on leave; instead, it called another analyst “who was familiar with the laboratory’s testing procedures, but had neither participated in nor observed the test on [the defendant’s] blood sample.” Bullcoming, 131 S.Ct. at 2709.

The question before the Court was “whether the Confrontation Clause permits the prosecution to introduce a forensic laboratory report containing a testimonial certification—made for the purpose of proving a particular fact—through the in-court testimony of a scientist who did not sign the certification or perform or observe the test reported in the certification.” Id. at 2710. The Court, in a five-to-four decision, held “that surrogate testimony of that order does not meet the constitutional requirement. The accused's right is to be confronted with the analyst who made the certification,

unless that analyst is unavailable at trial, and the accused had an opportunity, pretrial, to cross-examine that particular scientist.” Id.

In rejecting the admission of surrogate testimony, which the New Mexico Supreme Court had considered adequate to satisfy the Confrontation Clause in that case, the Court opined that such testimony could not operate as an exception to the Confrontation Clause. Id. at 2716 (“[T]he Clause does not tolerate dispensing with confrontation simply because the court believes that questioning one witness about another’s testimonial statements provides a fair enough opportunity for cross-examination.”). Nor could cross-examining the surrogate witness reveal what the analyst “knew or observed about the events his certification concerned, *i.e.*, the particular test and testing process he employed,” or “expose any lapses or lies” on the analyst’s part. Id. at 2715. Because the testifying analyst had no first-hand knowledge of the test that was conducted, or the reasons why the testing analyst was on leave, and because the state did not assert that the testifying analyst had any independent opinion concerning the defendant’s blood alcohol content, the witness was constitutionally inadequate. Id. at 2715-16.

In reaching this conclusion, the Majority considered that the analyst who tested the defendant’s blood indicated that the sample was received intact, that the forensic report number and the sample number corresponded, that he performed a particular test in accord with a precise protocol, that no circumstance or condition affected the integrity of the sample or the validity of the analysis, that “the statements in [the analyst’s portion of the report] are correct,” and that he had “followed the procedures set

out on the reverse of th[e] report.” Id. at 2710. The Supreme Court held that each of these representations were proper material for cross-examination. Id. at 2714.

The Court additionally rejected the state’s argument that the blood analysis report was not testimonial in character, and held instead that the report at issue in that case was testimonial despite the lack of an oath, which had attended the affidavits at issue in Melendez-Diaz, because it was created solely for evidentiary purposes and had sufficient formalities attending it. Bullcoming, 131 S.Ct. at 2717 (“Like the analysts in Melendez–Diaz, analyst Caylor tested the evidence and prepared a certificate concerning the result of his analysis. Like the Melendez–Diaz certificates, Caylor’s certificate is ‘formalized’ in a signed document, headed a ‘report.’) (internal citations omitted).

Justice Sotomayor authored a Concurring Opinion indicating her agreement with the Majority Opinion that the trial court erred by admitting the BAC report, and wrote separately, *inter alia*, “to emphasize the limited reach of the Court’s opinion.” Bullcoming, 131 S.Ct. at 2719 (Sotomayor, J., concurring in part). Because Justice Sotomayor was the fifth vote for the Majority Opinion, her Concurring Opinion limiting the reach of the Majority Opinion is of particular importance. She explained that Bullcoming “is not a case in which the person testifying is a supervisor, reviewer, or someone else with a personal, albeit limited, connection to the scientific test at issue,” Bullcoming, 131 S.Ct. at 2722 (Sotomayor, J., concurring); nor was this a case “in which an expert witness was asked for his independent opinion about underlying testimonial reports that were not themselves admitted into evidence.” Id. Finally, Justice Sotomayor noted that Bullcoming was not a case “in which the State introduced only

machine-generated results, such as a printout from a gas chromatograph.” Id. Rather, the state introduced, through the testimony of one analyst, the statements of the testing analyst, “which included his transcription of the blood alcohol concentration, apparently copied from a gas chromatograph printout, along with other statements about the procedures used in handling the blood sample.” Id.

Justice Kennedy, joined by three other Justices, authored a dissent which, *inter alia*, called into question the Majority’s approach as applied in the context of forensic and scientific testing that involves multiple participants. Bullcoming, 131 S.Ct. at 2725 (Kennedy, J., dissenting) (“It is not even clear which witnesses’ testimony could render a scientific report admissible under the Court’s approach.”).

Shortly after Bullcoming, the Supreme Court announced Williams, 132 S.Ct. 2221, a divided opinion in which the High Court attempted to refine further the primary purpose test in a factual scenario which Justice Sotomayor had specifically recognized was not encompassed in the Bullcoming holding. Bullcoming, 131 S.Ct. at 2722 (Sotomayor, J., concurring in part) (“[Bullcoming] is not a case in which an expert witness was asked for his independent opinion about underlying testimonial reports that were not themselves admitted into evidence.”).

The facts in Williams arose during a rape prosecution in which a state laboratory analyst testified as an expert witness that she obtained a DNA profile of the rapist from Cellmark Laboratories, an independent lab that tested semen from a vaginal swab taken from the victim. The expert testified that she compared the Cellmark report to the defendant’s recorded DNA profile, and concluded that they matched. Because the Cellmark report itself was not introduced into evidence, the defendant contended that

the expert's testimony relying on that report violated the Confrontation Clause as interpreted in Crawford. The prosecution argued that it was introducing the testifying expert's reference to the Cellmark report only to show the basis for her expert conclusions about the DNA profile match. Williams resulted in four opinions, none of which garnered a majority for its legal rationale.

The lead opinion supported by four Justices in Williams, which was authored by Justice Alito, applied the primary purpose test to hold that the disputed Cellmark report was not testimonial, and the expert's reliance on this report was a permissible and familiar instance of an expert relying on hypothetical facts not in evidence. Williams, 132 S.Ct. at 2228 (Opinion Announcing the Judgment of the Court (OAJC)) ("Out-of-court statements that are related by the expert solely for the purpose of explaining the assumptions on which that opinion rests are not offered for their truth and thus fall outside the scope of the Confrontation Clause."). The OAJC stated that an analyst creating a DNA profile may know that the result will affect a criminal case, but does not know the circumstances or the person accused, and is therefore unlike the "accusing" witness-analysts in Melendez-Diaz and Bullcoming. Id. at 2250-51.

In this regard, the OAJC explained that the DNA profile, like statements of many laboratory analysts, do not easily fit within the linguistic scope of the term "testimonial statement," and noted that in every post-Crawford case in which the Court found a Confrontation Clause violation, the statement at issue had the primary purpose of accusing a targeted individual; unlike the DNA report, which sought not to accuse the defendant in particular "but instead to generate objectively a profile of a then-unknown suspect's DNA from the semen he left in committing the crime." Id. at 2251. Under the

circumstances of Williams, according to the OAJC, “there was no ‘prospect of fabrication’ and no incentive to produce anything other than a scientifically sound and reliable profile.” Williams, 132 S.Ct at 2244 (citing Bryant, 131 S.Ct. at 1157).

Justice Thomas cast the fifth vote for the disposition but did not join the OAJC’s rationale. Instead of employing a primary purpose analysis, Justice Thomas maintained that Cellmark’s statements “lacked the requisite ‘formality and solemnity’ to be considered ‘testimonial,’ id. at 2255 (Thomas, J., concurring), and therefore were distinguishable from the laboratory reports the Court determined were testimonial in Melendez-Diaz and Bullcoming. Id. at 2260.¹⁵

Accordingly, the OAJC would permit the use of an informal statement prepared by someone with no accusatory purpose as the basis for in-court expert testimony, and Justice Thomas, who supplied the fifth vote to affirm, would hold that any informal statement is admissible without violating the Confrontation Clause solely because it was informal. Although the Commonwealth and its *amicus* rely on Williams as supporting their arguments, we view Williams with caution. When a fragmented Court decides a case and no single legal rationale explaining the results garners a majority, then “the holding of the Court may be viewed as that position taken by those Members who concurred in the judgments on the narrowest grounds.” Marks v. United States, 430

¹⁵ The four dissenting justices rejected the analysis of the OAJC and Justice Thomas, and opined instead that Confrontation Clause jurisprudence mandated that testimony against a defendant be subject to cross-examination, a requirement that fully applies to forensic evidence such as the Cellmark report at issue therein. Williams, 132 S.Ct. at 2264 (Kagan, J., dissenting) (“Forensic evidence is reliable only when properly produced, and the Confrontation Clause prescribes a particular method for determining whether that has happened.”).

U.S. 188, 193 (1977) (citing Gregg v. Georgia, 428 U.S. 153, 169 n.15 (1976) (opinion of Stewart, Powell, and Stevens, JJ.)).

The narrowest grounds for the Court's affirmance of the lower court in Williams, a disposition on which the lead opinion and Justice Thomas were in agreement, is their conclusion that the Cellmark report was not testimonial. It is irrelevant for our purposes to determine the narrowest commonality of their respective legal rationales for reaching this conclusion, because the lead opinion and Justice Thomas were also in agreement that the facts of Williams were distinct in this regard from the facts of Melendez-Diaz and Bullcoming. Specifically, in finding that the Cellmark report was not testimonial, the lead opinion synthesized Williams with Melendez-Diaz and Bullcoming as follows:

This conclusion [that the defendant's Sixth Amendment confrontation right was not violated] is entirely consistent with Bullcoming and Melendez-Diaz. In those cases, the forensic reports were introduced into evidence, and there is no question that this was done for the purpose of proving the truth of what they asserted: in Bullcoming that the defendant's blood alcohol level exceeded the legal limit and in Melendez-Diaz that the substance in question contained cocaine. Nothing comparable happened here.

Williams, 132 S.Ct. at 2240 (OAJC).

Justice Thomas similarly distinguished the facts of Williams from Melendez-Diaz and Bullcoming:

The Cellmark report is distinguishable from the laboratory reports that we determined were testimonial in Melendez-Diaz and in Bullcoming. In Melendez-Diaz, the reports in question were "sworn to before a notary public by [the] analysts" who tested a substance for cocaine. In Bullcoming, the report, though unsworn, included a "Certificate of Analyst" signed by the forensic analyst who tested the defendant's blood sample. The analyst "affirmed that '[t]he seal of th[e] sample was received intact and broken in the laboratory,' that 'the statements in [the analyst's block of the report] are correct,' and that he had 'followed the procedures set out on the reverse of th[e] report.' "

Id. at 2260 (Thomas, J., concurring). Accordingly, the lead opinion and concurring opinion regarded the Cellmark report as non-testimonial, and not analogous to the reports admitted in Melendez-Diaz and Bullcoming. As explained below, we view the Toxicology Report at issue in this case as similar to the scientific reports in Melendez-Diaz and Bullcoming, and, guided by these opinions, hold that it is likewise testimonial. We therefore find Williams distinguishable, and of little assistance in deciding the matter before us.

Starting with the premise that “if an out-of-court statement is testimonial in nature, it may not be introduced against the accused at trial unless the witness who made the statement is unavailable and the accused has had a prior opportunity to confront that witness,” Bullcoming, 131 S.Ct. at 2713, we consider whether the Toxicology Report is testimonial. Examining the facts of the testimonial statements considered in Melendez-Diaz and Bullcoming, we conclude that it is. The fact at issue at Appellant’s trial was whether he was driving while intoxicated; the Toxicology Report addressed this fact by identifying the alcohol content of his blood, serving the identical function of live, in-court testimony. See Melendez-Diaz, 557 U.S. at 311 (holding that where the fact in question was the content of the substance found on the defendant, the certificates of analysis identifying the substance as cocaine were testimonial statements). Moreover, the report was made under circumstances which would lead an objective witness reasonably to believe that the statement would be available for use at a later trial, see Crawford, 541 U.S. at 52, and was plainly created for an “evidentiary purpose.” Bullcoming, 131 S.Ct. at 2717 (a document created solely for an evidentiary

purpose, made in aid of a police investigation, is testimonial); Melendez-Diaz, 557 U.S. at 311 (forensic reports available for trial are testimonial statements).¹⁶

In all material respects, the Toxicology Report at issue herein resembles those in Melendez-Diaz and Bullcoming, because here, as in those cases, a law enforcement officer provided evidence to a laboratory for scientific testing, which produced a report concerning the result of this analysis formalized in a signed document. See Bullcoming, 131 S.Ct. at 2717; Melendez-Diaz, 557 U.S. at 310. In accord with Melendez-Diaz and Bullcoming, therefore, the Toxicology Report in the instant case is testimonial, and “the analysts were witnesses for purposes of the Sixth Amendment.” Before the Report could be introduced as evidence, Appellant was entitled “‘to be confronted with’ the analysts at trial.” Melendez-Diaz, 557 U.S. at 311. It is to this requirement we now turn.

Although Melendez-Diaz established that scientific reports are testimonial and are subject to the requirements of the Confrontation Clause, and provided that when such reports are admitted into evidence, “the analyst” must testify, 557 U.S. at 311, it left unresolved precisely who the analyst is or, in circumstances involving multiple analysts, which analyst or analysts must testify. Although Appellant had the right to confront “the analyst,” see Melendez-Diaz, 557 U.S. at 311, we acknowledge the concern raised by Justice Kennedy in dissent in Melendez-Diaz: “There is no accepted definition of analyst, and no established precedent to define that term.” Melendez-Diaz, 557 U.S. at 332 (Kennedy, J., dissenting). Certainly, the intrinsic difficulty in identifying

¹⁶ Cf. Commonwealth v. Dyarman, 73 A.3d 565, 570 (Pa. 2013) (holding that the calibration and accuracy certificates for the device used to test an individual’s BAC are nontestimonial because they were not prepared for the primary purpose of providing evidence in a criminal case and their admission into evidence did not violate the defendant’s Confrontation Clause rights).

who is the analyst and who must, therefore, testify, is illustrated by the facts of this case.

After Appellant's blood was drawn by the phlebotomist at the hospital, it was sent to NMS Labs, where an employee received the blood sample on August 21, 2009. Shortly thereafter, Ms. Silcox removed a small portion of the blood sample for an enzymatic assay test, and another NMS Labs employee placed the blood sample back into storage. In due course, Ms. Chacko removed the blood sample to extract two aliquots for the two gas chromatography tests, and another employee placed the sample back into storage. Yet another employee inventoried the sample. And, of course, Dr. Blum analyzed the data in the case file, determined the validity of the tests by comparing them to the others, decided which of the three tests results to report, certified the results, and signed the Toxicology Report.

Reflecting the number of people who handled Appellant's blood sample, when Appellant initially objected to Dr. Blum's testimony about the results of the blood tests, he argued that the phlebotomist from the hospital and the NMS Labs employee who logged receipt of the blood sample should both be made available to testify. After trial, his post-sentence motion was premised on the absence of these two individuals in addition to Ms. Chacko. In his brief to this Court, Appellant has focused on Ms. Chacko's absence, arguing she is the analyst who must testify. See, e.g., Appellant's Brief at 6 ("It is *she* [Ms. Chacko] who performed the actual blood analysis." (emphasis in original)). In his reply brief, Appellant proposes a "workable rule" which would require that "if anyone alters or physically analyzes a sample, runs the machine, or interprets the result, that person must appear to testify. . . ." Appellant's Reply Brief at 1.

Because it is not entirely clear from U.S. Supreme Court precedent which of the individuals involved in producing the Toxicology Report is the analyst for purposes of the Confrontation Clause, both parties herein present compelling arguments. In support of Appellant's argument that Ms. Chacko must testify is the Court's concern in Melendez-Diaz with errors and omissions in the testing process. 557 U.S. at 318-19 (suggesting that the person who interprets a machine's printout is an analyst and identifying "drylabbing," where a forensic analyst reports the results of tests that were never performed, as an example of a fraudulent analysis that may be uncovered during cross-examination). Additionally, in Bullcoming, the Court characterized the representations made by the testing analyst in the report as appropriate for cross-examination, and held that surrogate testimony was insufficient because cross-examining that witness would not reveal what the analyst knew or observed about the particular test and testing process he employed. 131 S.Ct. at 2714-15.

There is also, however, support for the Commonwealth's position that Dr. Blum is the analyst because he engaged in the critical analysis of the three numbers produced by three tests, run on two types of machines, by two different lab technicians, on different days; determined the facial validity of the tests by comparing the results; decided which result to report in the Toxicology Report; and signed his name to the report. See Bullcoming, 131 S.Ct. at 2715 ("the analysts who write reports that the prosecution introduces must be made available for confrontation. . .").

This is a circumstance that is factually distinct from either Melendez-Diaz, which involved no live testimony in support of the certificates of analysis, or Bullcoming, which involved the use of surrogate testimony by another analyst in the same lab with no

connection to the laboratory report, in that here, two lab technicians collaborated with and provided raw data on the three tests to the testifying expert, their supervisor, who examined this data and formed his own independent expert opinion, and expressed this opinion in both the Toxicology Report and his live, in-court testimony.

Indeed, the facts presented herein fall within one of the scenarios identified by Justice Sotomayor as being outside the “limited reach” of the Majority Opinion in Bullcoming: where the person testifying is a supervisor, reviewer, or someone with a personal but limited connection with the scientific test at issue. 131 S.Ct. at 2719 (Sotomayor, J., concurring in part) (“It would be a different case if, for example, a supervisor who observed an analyst conducting a test testified about the results or a report about such results.”). We will therefore review in more detail the particular facts presented to examine Dr. Blum’s role in reporting Appellant’s BAC in the Toxicology Report.

The Toxicology Report itself is a three-page document indicating on the first page the date it was issued, the requesting police department, Appellant’s name, the positive findings of a BAC of .159%, which represents approximately five drinks, testing codes, information about the specimen received, and a certification that the author will be available for court testimony. On the second page, the Report provides “detailed findings,” which include the types of tests that were conducted and the reported BAC of .159%. In a section for “reference comments,” the Report includes assumptions regarding how it reports the approximate number of drinks, and the certification by Dr. Blum that he “directly participated in the determination of the results by reviewing and certifying that the analytical data including internal standards and calculations utilized in

reporting the results in this case are accurate and correct.” Reproduced Record (R.R.) at 165. This section further provides that the specimen was tested for the presence of ethanol as follows: “Blood Alcohol Concentration (BAC) analysis performed by Enzymatic Assay and duplicate, internally standardized, Headspace Gas Chromatography (GC). The reported result is the lower of the two Headspace GC results.” Id. The third page includes Dr. Blum’s electronic signature. Ms. Chacko’s name does not appear on the Toxicology Report, nor does Ms. Silcox’s.

According to Dr. Blum’s trial testimony, he reviewed the case folder, verified the chain of custody information and examined the personal identification information. Additionally, he checked the testing that was performed and the data that resulted, evaluated the analytical data from the duplicate gas chromatography and the enzymatic assay, compared the results of the two gas chromatography tests, compared the result of the enzymatic assay test to the two gas chromatography tests, ensured that these numbers supported each other, and reported the lowest of the two gas chromatography test results as Appellant’s BAC.

With regard to the two gas chromatography tests and the enzymatic assay, Dr. Blum explained that the purpose of doing more than one type of test is to be certain about the results that are reported:

We have concerns certainly that we want to be certain about the results that we report. And the two different analyses allow us -- they are based on two different physical chemical properties, so it helps us to identify the presence of ethyl alcohol. It serves as confirmation not only of the testing procedures but confirmation of the specimen itself because it requires two different people to handle the specimen at two different times to be certain that the sample that we test is correct.

Notes of Testimony, 8/30/2010, p. 47.

Dr. Blum further explained that while the lab generally tests the blood sample using two different types of tests, the purpose of the enzymatic assay is to verify the results of the gas chromatography. Id. at 49 (“If the enzymatic assay is within 20 percent of the headspace [gas chromatography] analysis we feel that’s agreeable, that they are likely the same sample.”). Moreover, the two gas chromatography tests have to be within a certain percentage of each other. Id. at 50. As recounted by Dr. Blum, the lab’s practice is to report the lower of the two numbers resulting from the duplicate gas chromatography, which, in this case, was .159%. Dr. Blum reduced his findings to writing by electronically signing the Toxicology Report. Consistent with his conclusion in the Toxicology Report, he testified that Appellant’s BAC was .159%.

Based on these facts, we hold that Dr. Blum is the analyst who determined Appellant’s BAC. Although he relied on the raw data produced by the lab technicians and utilized this raw data in reaching an expert opinion premised on his evaluation of the case file, he is the only individual who engaged in the critical comparative analysis of the results of the gas chromatograph tests and the enzymatic assay and determined Appellant’s BAC. Dr. Blum was at the top of the inferential chain, and utilized the data that preceded his analysis in reaching his conclusion. He reached the conclusion in the Toxicology Report based on his analysis of the raw data, certified the results, and signed his name to them. As lab supervisor, moreover, Dr. Blum was generally familiar with standard procedures and able to identify any deviations from this procedure or any problems with the particular lab technician. Accordingly, Dr. Blum supervised Ms. Chacko and Ms. Silcox, evaluated and validated the entire record, decided which number to report as Appellant’s blood alcohol content, and signed his name to the

report. He was, therefore the certifying analyst who authored the Toxicology Report, and the analyst whom Appellant had a right to confront.

Although Dr. Blum did not handle Appellant's blood sample, prepare portions for testing, place the prepared portions in the machines, or retrieve the portions after testing, these facts are not dispositive, and do not account for Dr. Blum's involvement in utilizing the information provided by his subordinates, legitimately relying on their work and that of other employees in the lab who logged receipt of the sample, checked the integrity of the sample, ensured proper storage, and of the phlebotomist who drew Appellant's blood at the hospital. The Commonwealth complied with Melendez-Diaz by introducing the Toxicology Report with a witness competent to testify to the truth of the statements made in the report, and complied with Bullcoming by assuring Appellant's right to be confronted with the in-court testimony of the scientist who evaluated the raw data in the case file and signed the certification.

These facts distinguish this case from Bullcoming, where the Court specifically disapproved of the surrogate testimony offered in that case in part because the state did not assert that the witness had any independent opinion concerning the defendant's blood alcohol content. Bullcoming, 131 S.Ct. at 2716 (holding that surrogate testimony is unconstitutional when the surrogate played no role in the test). Rather, the testifying witness merely read the analyst's report into evidence and offered no independent opinion about the defendant's blood alcohol levels. In contrast, the facts herein, as discussed above, show that Dr. Blum was involved to a sufficient degree in analyzing Appellant's blood alcohol content and certifying the results of his analysis in the Toxicology Report. His analysis did not simply parrot another analyst, see Bullcoming;

rather, he was involved with reviewing all of the raw testing data, evaluating the results, measuring them against lab protocols to determine if the results supported each other, and writing and signing the report. Indeed, it was he who ultimately certified Appellant's BAC at .159%, and it was he who was cross-examined as to this conclusion. Dr. Blum therefore had direct involvement in reaching the reported BAC, and was not a "mere surrogate" who "played no role in producing the BAC report" Bullcoming, 131 S.Ct at 2722.

We hold, therefore that Dr. Blum's expert opinion was contained in the Toxicology Report and was the result of his independent verification of the chain of custody and his independent analysis of the three test results produced by two lab technicians running two types of tests at different times. We agree with the Commonwealth and the Superior Court that the testimonial document was the certified Toxicology Report prepared and signed by Dr. Blum, and that the Commonwealth met its obligation to present the analyst who signed the certificate to testify at trial, consistent with Bullcoming.

Our holding in this regard is consistent with other decisions that have held that the live, in-court testimony of an analyst who was involved in reaching a scientific conclusion was permissible under the Confrontation Clause even where other, non-testifying analysts provided data to the testifying analyst. See, e.g., Smith v. Florida, 28 So.3d 838 (Fla. 2010) (no Confrontation Clause violation in admission of DNA tests because supervisor evaluated raw test results, compared samples, made conclusions, and testified at trial); Leger v. Georgia, 732 S.E.2d 53 (Ga. 2012) (supervisor of DNA testing who selected what DNA to analyze, interpreted the data, and prepared the report

was the proper witness to testify for confrontation purposes and not the analysts who performed the tests); Rector v. Georgia, 681 S.E.2d 157 (Ga. 2009) (finding no Confrontation Clause violation where the state's toxicologist was not a mere conduit for another doctor's findings, having reviewed the data and testing procedures to determine the accuracy of the report); Grim v. Mississippi, 102 So.3d 1073 (Miss. 2012) (holding that "a supervisor, reviewer, or other analyst involved may testify in place of the primary analyst where that person was 'actively involved in the production of the report and had intimate knowledge of analyses even though [he or] she did not perform the tests first hand.'"); New Jersey v. Rehmann, 17 A.3d 278 (N.J.Super. 2011) (prosecution did not violate the Confrontation Clause by failing to call as a witness the individual who operated the gas chromatograph because the expert witness who testified authored the certification of the results and drew his own conclusions from the raw data provided by the gas chromatograph); United States v. Boyd, 686 F. Supp. 2d 382, 386 (S.D.N.Y. 2010) (" . . . where the defendant had ample opportunity to confront the Government witness who undertook the final, critical stage of the DNA analysis, and where that witness was personally familiar with each of the prior steps, testified that the analysis included safeguards to verify that errors would not result in a false positive, and demonstrated that the prior steps were essentially mechanical in nature, the Confrontation Clause is satisfied.").

Considering the Superior Court decision in Barton-Martin, which Appellant relies upon, we note that in addition to not binding this Court, Barton-Martin is factually distinguishable, not inconsistent with our opinion, and therefore does not persuade us to reach a different result. In Barton-Martin, the defendant objected to the in-court

testimony of the laboratory administrative director and custodian of records, and argued that he was entitled to confront, instead, the laboratory technician who performed the test and prepared the lab report. Barton-Martin, 5 A.3d 363. The trial court admitted the lab report as a business record. See Pa.R.E. 803(6). On appeal, the Superior Court reversed and held that absent a showing the laboratory technician who performed the test was unavailable and the defendant had a prior opportunity for cross-examination, the laboratory technician's failure to testify in the Commonwealth's case-in-chief violated the defendant's confrontation rights. The court held that a custodian of records did not satisfy the Confrontation Clause, and that it is the analyst's statements in the report that constitute the testimonial statement triggering the right of confrontation.

Here, in contrast, Dr. Blum did not testify as the custodian of records, nor was the lab report admitted as a business record. Instead, as explained above, Dr. Blum is the analyst whose statements in the Toxicology Report constitute the testimony triggering the right to confrontation. Accordingly, the nature of the witness and the legal rationale in Barton-Martin are dissimilar to this case.

In addition, in consideration of the lab scandals detailed by *amici* and their assertion that cross-examining the lab technician who ran a scientific test may cause errors to be revealed, we observe that if a defendant believes that such errors exist, or possibly exist, the defendant may subpoena the lab technician who ran the test, or, indeed, anyone else, as appropriate, to prove such impropriety. Our holding does not affect a defendant's ability in this regard. However, the remote potentiality of

misconduct should not serve as a basis to permit every defendant in every case to engage in a proverbial fishing expedition, when it is not constitutionally mandated.

Finally, we observe in closing that Appellant's preferred "cradle-to-grave" system of scientific and forensic testing, which involves fewer individuals than the alternative assembly line system, and possibly even only a single individual who handles and tests the specimen, would likely have the undesired consequence of making errors more likely. In contrast, using multiple lab technicians to run different tests with different samples on different days, using those test results to check the validity of other results, and having a third party scrutinize the entire process and render the testimonial conclusion on the laboratory's behalf, makes errors, omission, and fraud less likely, and reduces the likelihood that a single incompetent or dishonest analyst could influence scientific tests.

Accordingly, we affirm the order of the Superior Court, and hold that the testimony of the forensic toxicologist who analyzed the test results of Appellant's blood, determined the BAC by comparing these results, and authored the Toxicology Report, satisfied Appellant's right to confrontation.

Mr. Chief Justice Castille, Messrs. Justice Saylor and Eakin, Madame Justice Todd and Mr. Justice McCaffery join the opinion.