# PROGRAMMERS AND FORENSIC ANALYSES: ACCUSERS UNDER THE CONFRONTATION CLAUSE

KAREN NEVILLE[1]

ABSTRACT

*Recent Supreme Court cases involving the Confrontation Clause have strengthened defendants' right to face their accusers.* Bullcoming v. New Mexico *explored the question of whether the testimony of the technician who performs a forensic analysis may be substituted by that of another analyst, and the Court held that producing a surrogate witness who was not sufficiently involved in the analysis violates the confrontation right.*

*The presumption of infallible technology is fading, and courts may soon realize programmers have greater influence over the ultimate outcome of forensic tests than do the technicians who rely on such analytical tools. The confrontation right, so bolstered by recent cases, may encompass defendants' right to demand testimony from the programmers of machines performing forensic analyses. The* Bullcoming *decision is certain to affect whether the right to confront the programmer will be recognized.*

## INTRODUCTION

¶1 *Crawford v. Washington*[2] opened the door to bolstering defendants' right to confront their accusers under the Sixth Amendment's Confrontation Clause, which states, "In all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him."[3] In line with *Crawford*'s heightened requirements for testimonial evidence, the Court extended this right to certain forensic analyses in *Melendez-Diaz v. Massachusetts*.[4] While *Melendez-Diaz* strengthens defendants' right of confrontation, the

[1] Duke University School of Law, J.D. expected, 2012; Arizona State University Walter Cronkite School of Journalism and Mass Communication, B.A., 2007, in Journalism and Mass Communication. I would like to thank Professor Lisa K. Griffin for sparking my interest in the intersection of forensics and the confrontation right.

[2] Crawford v. Washington, 541 U.S. 36 (2004).

[3] U.S. CONST. amend. VI, § 1.

[4] Melendez-Diaz v. Massachusetts, 129 S. Ct. 2527 (2009).

Court's decision in *Bullcoming v. New Mexico*[5] will be the most authoritative precedent for determining whether the Court will recognize the specific right to confront the programmer of the equipment utilized in forensic analysis.

¶2 There is an informal presumption that accuracy in forensic testing lies only in the hands of the technicians. This presumption is puzzling considering the history of reliability determinations for different methods used in forensic testing.[6] Additionally, analysts often perform the tests by following prescribed steps, but are unaware of the scientific principles that make the test useful.[7] At trial, analysts' ignorance of the science behind the analysis stonewalls defense attorneys who attempt to probe deeper for the reasons behind the procedures followed.[8] Because cross-examination cannot delve deeply into the methodology by which forensic analysis is performed, the accountability of technicians is diminished, thereby allowing crime labs performing these analyses to potentially conceal mistakes and even commit fraud.[9] Not only does the work of programmers have a more significant impact on the outcome of the tests than that of the technicians, but also requiring programmers to testify will serve as an effective check on the analysts and the labs in which they work. A vigorous cross-examination of programmers can shed light on the assumptions on which technicians rely and reveal the strengths and weaknesses of the methods used. Exposing programmers to examination will reduce both opportunities for crime labs to manipulate statements and inaccuracies reported at trials.

¶3 Part I of this iBrief explores recent Confrontation Clause cases, showing the breadth and depth of protection offered to criminal defendants under the Sixth Amendment. Part II provides details on forensic analysis and how the Confrontation Clause reaches relevant

---

[5] 131 S. Ct. 2705 (2011).

[6] Color tests for identifying drugs bred controversy in the 1980s, followed by the similarly unreliable crystal tests in the 1990s. Analysts then used thin-layer chromatography and eventually gas chromatography. These two tests can be useful, but have limitations. Additionally, the subjective interpretation needed for infrared spectroscopy to produce accurate results has lead to the use of two techniques. Today, gas chromatography is coupled with mass spectrometry in an attempt to produce a more reliable method of identifying drugs. James M. Shellow, *The End of a Confidence Game: A Possible Defense to the Impossible Drug Prosecution*, THE CHAMPION, Aug.–Sept. 2000, at 22, 24–26.

[7] *Id.* at 26–27.

[8] *Id.*

[9] Frederic Whitehurst, *Forensic Crime Labs: Scrutinizing Results, Audits & Accreditation – Part I*, THE CHAMPION, Apr. 2004, at 6, *available at* http://www.nacdl.org/public.nsf/0/4eb94b6092ae8d4a85256e760071ad9e?OpenDocument.

processes. Part III will discuss how the decision in *Bullcoming* will affect the admissibility of forensic evidence.

## I. *CRAWFORD* AND *MELENDEZ-DIAZ*: IMPACT ON THE CONFRONTATION CLAUSE'S APPLICATION

¶4 *Crawford v. Washington* reinvented the modern Confrontation Clause, and *Melendez-Diaz v. Massachusetts* subsequently strengthened defendants' rights.

### *A.* Crawford v. Washington

¶5 In *Crawford v. Washington*,[10] Michael Crawford was accused of stabbing Kenneth Lee.[11] Soon after the attack, the police interviewed Crawford and his wife, Sylvia Crawford, who was present during the stabbing.[12] In her interview with police, Mrs. Crawford admitted that she did not see Lee with a weapon.[13] However, at trial, Mr. Crawford claimed he only stabbed Lee in self-defense.[14] Mr. Crawford invoked the marital privilege to prevent his wife from testifying, but the prosecution introduced her statement to police to weaken Mr. Crawford's self-defense claim.[15] Mr. Crawford argued that admission of her statement violated his rights under the Sixth Amendment.[16] The court relied on *Ohio v. Roberts*,[17] which held that an unavailable declarant's statement is admissible and does not violate Mr. Crawford's rights if the statement bears "indicia of reliability" such as conveying "particularized guarantees of trustworthiness."[18] The court admitted the statement and Mr. Crawford was convicted.[19] Mr. Crawford appealed the conviction, alleging the admission of her statement violated his right under the Confrontation Clause of the Sixth Amendment to confront his accuser.[20]

¶6 The Supreme Court determined that the issue of admissibility of statements from absent declarants turned on whether the statements were

---

[10] Crawford v. Washington, 541 U.S. 36 (2004).
[11] *Id.* at 38.
[12] *Id.* at 38–39.
[13] *Id.* at 39–40.
[14] *Id.* at 40.
[15] *Id.*
[16] *Id.* at 36.
[17] 448 U.S. 56 (1980).
[18] A statement can also bear indicia of reliability if is "firmly rooted" in an established hearsay exception. *Crawford*, 541 U.S. at 36 (citing *Ohio*, 448 U.S. at 68).
[19] *Id.* at 41.
[20] The State Supreme Court upheld the conviction on the theory that the statement was reliable because it was similar to Mr. Crawford's statement on the key issue of whether the victim brandished a weapon. *Id.* at 36, 38.

testimonial or nontestimonial.[21] The Court held the admission of Mrs. Crawford's statement violated her husband's right to confront his accuser because her statement was "testimonial."[22] A testimonial statement is "typically a solemn declaration or affirmation made for the purpose of establishing or proving some fact."[23] To the chagrin of the legal community, the Court provided this brief and arguably vague definition without shedding much light on the process by which a statement is determined to be testimonial.[24]

¶7 The Court's interpretation of the Confrontation Clause arguably reduces the risk that the State will engage in statement manipulation.[25] In order to satisfy the requirements, the State must use a witness' live, in-court testimony, or, if the witness is unavailable, the defense must have had a previous opportunity to perform an effective cross-examination.[26]

### *B.* Melendez-Diaz v. Massachusetts

¶8 In 2009, the Court further refined[27] the testimonial/ nontestimonial distinction and consequently raised the bar for admitting forensic analytical evidence in *Melendez-Diaz v. Massachusetts*.[28] The dispute focused on the admissibility of certificates[29] confirming that a substance found in the defendant's plastic bags was cocaine.[30]

---

[21] *Id.* at 68.
[22] *Id.* at 52.
[23] *Id.* at 52 (internal quotation marks omitted). Examples of testimonial statements include *ex parte* testimony at a grand jury hearing, statements made in response to police interrogations and statements made by declarants in circumstances that show they appreciated the risk that their words would likely be used as evidence. *Id.* at 51–52.
[24] *Id.* at 68 n.10.
[25] *See id.* at 67–68 (recognizing requirements on the State's presentation of evidence that tend to reduce unfair activity).
[26] *Id.* at 59.
[27] The Court also refined the distinction between testimonial and nontestimonial statements in *Davis v. Washington*. The Court held that

> statements are nontestimonial when made in the course of police interrogation under circumstances objectively indicating that the primary purpose of 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.

Davis v. Washington, 547 U.S. 813, 813–14 (2006).
[28] Melendez-Diaz v. Massachusetts, 129 S. Ct. 2527 (2009).
[29] "Melendez-Diaz was charged with distributing cocaine and with trafficking in cocaine in an amount between 14 and 28 grams. . . . [The prosecution] also

¶9 Although the documents were labeled as "certificates," the Court concluded the documents were "quite plainly affidavits"[31] and "there [was] little doubt that the documents . . . fall within the 'core class of testimonial statements.'"[32] However, not all documents revealing forensic analyses are testimonial.[33] The Court held the distinction depends on whether documents were prepared for use in litigation.[34] Documents that are prepared for some other reason generally are not testimonial, even if the individuals preparing the materials knew they could be used in litigation.[35] For example, if a doctor performs a drug test in the course of treatment, those results are not testimonial.[36]

¶10 This trend of narrowing the category of admissible statements provides an interpretation of the Confrontation Clause that tends to strengthen defendants' rights while imposing a significant burden on the prosecution, as it did in *Crawford*.[37]

## II. OVERVIEW OF FORENSIC ANALYSIS

¶11 Technological advances in the field of forensic analysis have yielded invaluable tools for investigators and attorneys. Courts generally admit evidence produced by established testing methods with the blind faith that such evidence is reliable.[38] Additionally, courts allow the admission of these materials if the technician is present, but do not explicitly require the testimony of a programmer.[39] Yet, the Court in *Crawford* stated: "Dispensing with confrontation because testimony is obviously reliable is akin to dispensing with jury trial because a

---

submitted three 'certificates of analysis' showing the results of the forensic analysis performed on the seized substances. The certificates reported the weight of the seized bags and stated that the bags '[h]a[ve] been examined with the following results: The substance was found to contain: Cocaine.'" *Id*. at 2530–31 (internal citation omitted).

[30] *Id.* at 2529.

[31] *Id.* at 2532.

[32] *Id.*

[33] *Id.* at 2532 n.1.

[34] *Id.* at 2532.

[35] Daniel J. Capra, *Prof. Daniel Capra on Admissibility of Records and Certificates in Criminal Cases After* Melendez-Diaz, 2009 EMERGING ISSUES 4017 (2009).

[36] *Id.*

[37] *Melendez-Diaz*, 129 S. Ct. at 2540; *See* Crawford v. Washington, 541 U.S. 36 (2004) (recognizing the testimony at issue was inadmissible without witness unavailability and a prior opportunity for cross examination).

[38] Whitehurst, *supra* note 9, at 6.

[39] *Melendez-Diaz*, 129 S. Ct at 2531 n.1.

defendant is obviously guilty. This is not what the Sixth Amendment prescribes."[40]

### *A.* Examples of analytical methods and their shortcomings

¶12 One of the most common methods of analyzing blood alcohol content percentages and identifying drugs is gas chromatography.[41] A suspect is brought to a hospital for a blood drawing. Next, the blood sample is sent to a lab for analysis by a technician who inserts the sample into the gas chromatograph[42] and interprets the subsequent chromatogram.[43] A chromatogram will present a graph or series of bands showing the separation of components in the sample. Coupled with gas chromatography, analysts use mass spectrometry[44] to identify drugs.[45] Gas chromatography is primarily useful for separating substances, but not for identifying them without the use of mass spectrometry.[46]

¶13 A common problem with this combinative method is that most analysts rely on manuals to interpret the data, but these manuals do not always contain accurate spectra.[47] The analysts generally are not well-versed in the scientific principles under which the test operates, so they are unaware that subsequent testimony on their results has the potential to be inaccurate. Programmers, on the other hand, have the education and experience of developing the test, which allow them to defend methods and recognize shortcomings.[48]

¶14 Before gas chromatography, prosecutors relied on other tests based on flawed science, the use of which defendants were unable to challenge because analysts were unfamiliar with the related science.[49]

---

[40] *Crawford*, 541 U.S. at 62.
[41] DONALD H. NICHOLS & FLEM K. WHITED III, DRINKING/DRIVING LITIGATION: CIVIL AND CRIMINAL 1 (2d ed. 2009).
[42] For more information on the process of gas chromatography, see *Gas Chromatography*, WAKE FOREST UNIV., http://www.wfu.edu/chem/courses/organic/GC/index.html (last visited Feb. 16, 2011).
[43] Shellow, *supra* note 6, at 24.
[44] For more information on the process of mass spectrometry, *see* Jim Clark, *The Mass Spectrometer*, CHEMGUIDE, http://www.chemguide.co.uk/analysis/masspec/howitworks.html (last visited Feb. 16, 2011).
[45] Shellow, *supra* note 6, at 24.
[46] *Id.*
[47] *Id.*
[48] *Id.*; Whitehurst, *supra* note 9, at 6; *Forensic Misadventures*, FORENSIC SOLUTIONS, LLC, http://www.corpus-delicti.com/forensic_mis.html (last visited Nov. 1, 2010).
[49] Shellow, *supra* note 6, at 24.

Color tests were one form of forensic analysis that identified drugs and were easy for juries to understand.[50] Unfortunately, these tests were used for years before it was revealed that they produced false positives 20 to 30 percent of the time.[51] In order to remedy the unreliability of color tests, forensic scientists used another type, crystal tests, to confirm the results of color tests.[52] Much like color tests, these tests also turned out to be an unreliable method of identifying drugs.[53]

### *B*. Fraud and mistakes in forensic analysis

> "If you have an examiner who is not qualified, they are like clerks or technicians at best. They are not scientists. They are not Ph.D.s. Sometimes they have only a high-school diploma."
>
> – Douglas J. Wood, Maryland defense attorney.[54]

¶15 In *Crawford*, the Court interpreted the Confrontation Clause to protect defendants from instances of statement manipulation by the State.[55] However, allowing the admission of forensic tests results through the testimony of the analyst leaves room for cover-ups and mistakes.[56]

¶16 Despite the presumption of reliability of forensic analysis,[57] many crime labs are guilty of inaccuracies, mistakes, and fraud.[58] In one instance of fraud, a crime lab in Houston created results without actually running any tests.[59] In other cases, analysts have admitted to skewing

---

[50] A color test, also known as a spot test, is the method of adding a chemically reactive compound to the sample and using the resulting color as a means of determining the presence of drugs. *Id.*

[51] *Id.*; 2 P. C. GIANNELLI & E. J. IMWINKELRIED, SCIENTIFIC EVIDENCE § 23-2 (2010).

[52] A crystal test is the method of dissolving a sample into a chemical compound and using the characteristics of the resulting crystals as a means of determining the presence of drugs. Shellow, *supra* note 6, at 24.

[53] *Id.*; GIANNELLI & IMWINKELREID, *supra* note 51.

[54] Timothy W. Maier, *Federal Judge Slams Fingerprint 'Science': A Ruling by an Eminent Jurist has Opened the Door for Defense Attorneys to Challenge the Practice of Accepting Fingerprint-Expert Testimony as Infallible*, INSIGHT ON THE NEWS, (Mar. 18, 2002) http://findarticles.com/p/articles/mi_m1571/is_10_18/ai_84019094/ (last visited Nov. 1, 2010).

[55] *Crawford*, 541 U.S. at 67–68.

[56] *Forensic Fraud Archive*, FORENSIC SOLUTIONS, LLC, http://www.corpus-delicti.com/forensic_fraud.html (last visited Nov. 1, 2010) [hereinafter *Forensic Fraud*].

[57] Whitehurst, *supra* note 9, at 6.

[58] *Forensic Fraud*, *supra* note 56.

[59] Roma Khanna & Steve McVicker, *Crime Lab Faked Results in 4 Cases, Probe Finds*, HOUS. CHRON., June 1, 2005,

results in favor of the prosecution[60] or withholding exculpatory results from the defense.[61] These instances are not meant to insinuate that analysts are generally unqualified or unethical, but simply challenge the assumption that analysts are neutral parties operating infallible equipment and producing reliable results.

¶17 Testimony from technicians should be subject to the same level of scrutiny as that of law enforcement agents to prevent statement manipulation. One way to increase the reliability of technicians' testimony is to require programmers to testify. Programmers understand the principles behind the lab processes and are able to identify anomalies,[62] which could prevent the admission of fabricated or poorly interpreted results. Programmers' testimony will also prevent the "telephone game" problem that can arise when interpretation guidelines pass through several parties before reaching the analyst. At trial, analysts verify the accuracy of their interpretations simply by affirming they followed the guidelines. If programmers testify, they can verify not only the accuracy of the guidelines utilized by the lab, but also the methodology behind the guidelines' creation.

### *C.* Human elements of forensic analysis

¶18 There are two human elements to forensic analysis: the person who programs the device and the person who runs the test.[63] The first human element, the programmer, will be able to relate the kinds and causes of common errors, and reveal weaknesses and limitations of which technicians would be unaware.[64] The programmer decides where

---

http://www.chron.com/disp/story.mpl/metropolitan/3206160.html (last visited Nov. 1, 2010).

[60] Laurie Cohen et al., *Strand of Evidence: FBI Crime-Lab Work Emerges as New Issue In Famed Murder Case – Jeffrey MacDonald's Lawyer Alleges Fraud by Agent With History of Problems – Mystery of the Blond Fibers*, WALL ST. J., Apr. 16, 1997, at A1.

[61] Steve Mills et al., *When Labs Falter, Defendants Pay; Bias Toward Prosecution Cited in Illinois Cases*, CHI. TRIB., Oct. 20, 2004, at C1.

[62] Shellow, *supra* note 6, at 24.

[63] Although this author has separated the human elements of the forensic analysis into two groups, the dissent in *Melendez-Diaz* pinpoints four groups of people that play a role in forensic analysis: The person who prepares the sample and performs the rest, the person who interprets the results, the person who oversees the procedure and protocols for the testing, and the person who maintains the equipment on which the test is performs. While all of these people are important to the processes of forensic analyses, they can be grouped together as all of their duties arise after the machine has been programmed.

[64] A good illustration of the disconnect between a technician and a programmer, albeit outside of the realm of forensic analysis, is the story of Clint Eugene Curtis. After leaving his job at Yang Enterprises, Curtis claimed that he was

to draw lines in a test's design so that positive test results are distinguishable from those that are negative. This decision makes the programmer the "true accuser"—not the machine merely following the protocols he created.

¶19 Once reliability is established with the programmer, the next step is assessing the reliability of the second human element. Analysts can testify to whether they followed procedures with proper care. The analysts will also be able to establish the chain of custody for the evidence tested, in addition to relaying the outcome of the test and what those results indicate.

¶20 The Fourth Circuit explored the issue of the technician's influence on test results in *United States v. Washington*.[65] The dispute centered on the admission of test results showing Washington had drugs in his system when he was operating a vehicle.[66] An expert unrelated to the chromatograph testing process introduced the evidence.[67] Washington objected to admitting the test results without the responsible technician's testimony as a violation of the Confrontation Clause.[68] Here, the court held that (1) raw data was not an out-of-court statement by the technician, (2) the data was not hearsay (and thus not subject to the Confrontation Clause), and (3) the data was not testimonial.[69]

¶21 The *Washington* court assessed the accusatory power of data generated by machines.[70] The court held that the machine's printout was the only source of relevant information—the machine was not a person, and the data itself was not a statement.[71] The technician's determination that drugs and alcohol were present in the blood was based entirely on the printout, so there was no need for the technician to testify unless

---

approached by his superiors about creating a program for voting machines. This program would allow the installer to alter the election results and escape detection. Although his claims have yet to be confirmed, his story shows the difference in control and power that programmers have over their machines. Trevor Aaronsen, *Pulp Nonfiction: A Whistle Blower Alleges that U.S. Rep. Tom Feeney Might Have Rigged the Election in South Florida*, BROWARD-PALM BEACH NEW TIMES, Feb. 10, 2005, http://www.browardpalmbeach.com/2005-02-10/news/pulp-nonfiction/

[65] 498 F.3d 225 (4th Cir. 2007).

[66] *Id.* at 227.

[67] *Id.*

[68] *Id.* at 229.

[69] *Id.* The subsequent *Melendez-Diaz* decision casts doubt on the testimonial determination. *See Melendez-Diaz*, 129 S. Ct. at 2532.

[70] *Washington*, 498 F.3d 230.

[71] *Id.*

there was an issue with the chain of custody or authentication.[72] The court reiterated that the machine's processes generated the data,[73] ignoring the concept of a machine acting as the agent of the programmer. Under the court's reasoning, it would appear that machines spontaneously develop independent of human intervention—the court did not recognize that every minute step is created by a human's programming.

## III. *BULLCOMING* RAISES THE BAR FOR ADMITTING FORENSIC EVIDENCE

¶22 *Bullcoming v. New Mexico*[74] explores the issue of whether a forensic technician must offer testimony with regard to the tests he performs or if the testimony of a supervisor who did not perform the analysis, but is aware of the procedure, can suffice.[75]

¶23 The New Mexico Supreme Court, in *State v. Bullcoming*,[76] emphasized the minimal impact technicians have on test results, stating the technician's testimony is not necessary because "the analyst who prepared the report was a mere scrivener who simply transcribed the results generated by a gas chromatograph machine."[77] The court concluded the "true 'accuser' was the gas chromatograph machine" because it analyzed the sample and printed out the result.[78]

¶24 In *Bullcoming v. New Mexico*, the Supreme Court reversed the state court's holding and concluded that the defendant has a right to confront the technician who performed the forensic analysis.[79] Surrogate testimony does not meet the requirements of the Sixth Amendment.[80] By raising the bar in the admissibility of forensic analysis in this way, the Court is likely to recognize a defendants' right to face the programmer.[81]

---

[72] *Id.* at 229.
[73] *Id.* at 229–30.
[74] 131 S. Ct. 2705 (2011).
[75] Donald Bullcoming was arrested for driving while intoxicated after he rear-ended another vehicle and failed sobriety tests. Bullcoming refused a breathalyzer test, so the police used a search warrant to take a blood sample. The police sent the blood sample to a lab to test it for Bullcoming's blood alcohol content. State v. Bullcoming, 226 P.3d 1, 4–5 (N.M. 2010).
[76] *Id*.
[77] *Id.* at 4.
[78] *Id.* at 9.
[79] *Bullcoming*, 131 S. Ct. 2705, 2716 (2011).
[80] *Id.* at 2715.
[81] The Court noted the necessity of interpreting results and that human error could occur at each step of testing for blood alcohol content.[81] By focusing on the potential for error, one may conclude the analyst's role is more influential

¶25 The petitioner's reply brief in *Bullcoming* distills the problem of excluding a key participant in the forensic analysis:

> It is clear from the testimony of [the testifying analyst] that she had no part in conducting any testing of the substance, nor did she conduct any independent analysis of *the substance.* She merely reviewed the reported findings of [the nontestifying analyst], and testified that if [that analyst] followed procedures, and if [that analyst] did not make any mistakes, and if [that analyst] did not deliberately falsify or alter the findings, then [the testifying analyst] "would have come to the same conclusion that she did." As the Supreme Court clearly established in *Melendez-Diaz,* it is precisely these "ifs" that need to be explored upon cross-examination to test the reliability of the evidence.[82]

In this excerpt, the term "analyst" could be replaced with "programmer" without altering its truth. The courts assume that programmers are flawless, but it is the ever-present possibility that they are less than perfect which justifies the defendant's right to confront them.

¶26 One practical consideration of requiring programmers to testify is that it would place a significant burden on the prosecution. Difficulties would arise when the programmer lives abroad, when the prosecution is unable to determine exactly who programmed the analytical tool, and when the programmer simply cannot be found. Also, there may be a question as to who should testify when several people worked together to program the machine. In any case, the *Bullcoming* Court affirmed[83] a holding in *Melendez-Diaz*: preserving the confrontation right is so imperative that even a significant burden will not deny the Sixth Amendment's protection.[84]

## CONCLUSION

¶27 While improvements in the technology behind forensic analyses have proven to be invaluable in prosecutions, the reliability of results should be verified in court, not presumed. A key to assessing the reliability of these methods is the requirement of programmer testimony. Both the programmer and the technician perform their respective duties

---

than that of the programmer, and therefore, it will be less likely that the Court will recognize the need for examining programmers.

[82] Reply Brief of Petitioner at 5, Bullcoming v. New Mexico, No. 09-10876 (U.S. Aug. 21, 2010) (quoting State v. Brewington, 693 S.E.2d 182, 190 (N.C. Ct. App. 2010)).

[83] Only Justice Scalia joined in the section of Justice Ginsburg's majority opinion where this holding is discussed.

[84] *Bullcoming*, 131 S. Ct. at 2717–18 (quoting *Melendez-Diaz*, 129 S. Ct. at 2540).

to produce the test results. In many situations, the programmer sets the baseline against which samples are compared, and defendants have a right to confront the programmer whose discretion created, in part, the grounds for accusation. If defendants in criminal cases are allowed to exercise this right, this will not only satisfy the Confrontation Clause, but will increase transparency in the field of forensic analysis. With any luck, this increased transparency will encourage higher levels of care in crime labs and deter analysts from fabricating or skewing data. Following the Court's trend in bolstering defendants' rights under the Confrontation Clause, particularly under *Bullcoming*, it is likely that the Court would recognize the right to examine the programmer.