IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA	:	
	:	
	:	
v.	:	**CRIMINAL NUMBER 21-527**
	:	
	:	
ALAN WILLIAM BYERLY	:	

SENTENCING MEMORANDUM
OF DEFENDANT ALAN WILLIAM BYERLY

Alan Byerly makes no excuses for his conduct on the date of this offense. He is remorseful and has accepted full responsibility for his actions and has pled guilty pursuant to a written plea agreement. Specifically, after investigation and negotiation, the government has agreed to dismiss the most serious charge of Assault on an Officer with a Deadly Weapon (18 U.S.C. § 111(b)) and in return Mr. Byerly pled guilty to the charges of Assault on an Officer in violation of 18 U.S.C. § 111(a) (Count Two) and Striking another Person in violation of 18 U.S.C. § 113(a)(4) (Count Seven). The government also agreed to dismiss all other remaining charges as a result of his guilty plea. (Counts One, Three, Four, Five, Six, and Eight).

As in every January 6th case, the government has conducted a thorough investigation into Mr. Byerly's actions. That investigation has established that the police officer that is the victim in Count II did not require medical treatment, nor did the officer sustain injuries that caused the officer to miss work. The AP reporter that is the victim in Count Seven was not injured and advised the government that he did not wish to participate in the investigation of this matter.

The government's investigation confirmed that Mr. Byerly did not enter the United States Capitol, nor did he author or post any inflammatory social media or text messages either before or after January 6, 2021. The government's investigation also determined that Mr. Byerly was

not a member of an antigovernment militia.

Regarding the device Mr. Byerly brought with him to Washington, D.C., the government's investigation established Mr. Byerly purchased the device at a Cabela's Store for $24.99 and the packaging described it as a compact stun gun and flashlight. The government's investigation also determined that the device was considered "junk" by engineering experts who work on TASER weapons.

The defense retained electrical engineer Mark Kroll, Ph.D., to examine and test the device. Dr. Kroll is a recognized expert in the field of conducted electrical weapons, which deliver an electrical pulse to the body. Dr. Kroll has been retained and presented as an expert in federal court by Department of Justice prosecutors on numerous occasions to testify about the effects of conducted electrical weapons such as TASER's and stun guns. After a thorough review, Dr. Kroll concluded that Mr. Byerly's device could not cause deadly harm or for that matter any harm to an individual. Furthermore, shortly after purchasing the device, Mr. Byerly had accidentally activated it on himself and thus knew that it could not cause injury or even pain.

Mr. Byerly has been incarcerated since the day of his arrest in this matter – July 7, 2021 – a total of 15.5 months. He has remained misconduct-free during that entire time. During those 15.5 months he has lost his house and because of COVID-19 restrictions, as well as the distance between where he has been incarcerated and his hometown, he has had no in-person visits with any family or friends.

The defense and the government agree that the advisory guideline range is 37-46 months. The defense respectfully requests that this Court recognize and weigh the good that Mr. Byerly has done in his 55 years of life along with the mistakes he made on January 6th and vary below

the guidelines and impose a sentence sufficient – but not greater than necessary – given the nature of the offense and Mr. Byerly' personal history and characteristics. *United States v. Booker*, 543 U.S. 220 (2005).

I. PROCEDURAL HISTORY

On July 7, 2021, Alan Byerly was arrested at his home in Fleetwood, Pennsylvania and charged by Complaint and Warrant with participating in the riot at the United States Capitol on January 6, 2021. Specifically, the Complaint alleged that Mr. Byerly had assaulted a police officer with a deadly weapon, namely a TASER, in violation of 18 U.S.C. § 111(b). The Complaint also alleged that Mr. Byerly had assaulted an AP reporter in violation of 18 U.S.C. § 113(a)(4). The Complaint also contained several lesser included offenses.

On August 12, 2021, Mr. Byerly stipulated to pre-trial detention pending the resolution of this matter. As a result of this stipulation, Mr. Byerly has been held in continuous federal custody since the date of his arrest. He was initially held at Lehigh County Jail in Allentown, Pennsylvania for two weeks and thereafter at the CTF in Washington, D.C. During that entire time, he has had no write-ups and has remained misconduct-free. And during his 15-plus months at the CTF Mr. Byerly has been held in administrative segregation due to the nature of his offense. Furthermore, he has spent numerous weeks on lockdown due to COVID-19 outbreaks at the jail.

On August 20, 2021, a federal grand jury sitting in the District of Columbia returned an indictment against Mr. Byerly charging him with eight federal offenses. Specifically, these charges were: Count One (Civil Disorder in violation of 18 U.S.C. § 231(a)(3)); Count Two (Assaulting, Resisting, or Impeding Certain Officers Using a Deadly or Dangerous Weapon in

violation of 18 U.S.C § 111(a) and (b)); Count Three (Entering and Remaining in a Restricted Grounds Using and Carrying a Deadly or Dangerous Weapon in violation of 18 U.S.C. § 1752(a)(1) and (b)(1)(A)); Count Four (Disorderly and Disruptive Conduct in Restricted Grounds Using and Carrying a Deadly or Dangerous Weapon in violation of 18 U.S.C. § 1752(a)(2) and (b)(1)(A)); Count Five (Engaging in Physical Violence in Restricted Grounds Using and Carrying a Deadly or Dangerous Weapon in violation of 18 U.S.C. § 1752(a)(4) and (b)(1)(A)); Count Six (Act of Physical Violence on Capitol Grounds in violation of 40 U.S.C. § 5104(e)(2)(F)); Count Seven (Striking, Beating, and Wounding within the Territorial Jurisdiction of the United States in violation of 18 U.S.C. § 113(a)(4)); and Count Eight (Simple Assault within the Territorial Jurisdiction of the United States in violation of 18 U.S.C. § 113(a)(5)).

The original indictment described the deadly weapon possessed by Mr. Byerly as a TASER. *See* Indictment, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 18 at 2 (Aug. 20, 2021). Thereafter, the government filed two superseding indictments. *See* Indictment, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 24 (Oct. 19, 2021); Indictment, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 39 (March 23, 2022). In each of these superseding indictments the government continued to allege that the deadly or dangerous weapon that Mr. Byerly possessed was a TASER. *See* Doc. 24 at 2, Count Two; Doc. 39 at 2, Count Two.

On March 24, 2022 – the day after the Second Superseding Indictment was filed – the defense provided the government with the expert report from electrical engineer Dr. Mark Kroll. This report, detailed below in Section III.A.1, described the results of the testing Dr. Kroll had

done on the device the parties agree Mr. Byerly used on January 6th. Thereafter, the government agreed to the terms of a plea agreement wherein Mr. Byerly would plead guilty to Counts Two and Seven and the government would drop the more serious charge under 18 U.S.C. § 111(b) that alleged Mr. Byerly possessed a deadly or dangerous weapon. The government also agreed the device was not a TASER but rather was best described as a "stun gun" based on its packaging. *See* Statement of Offense, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 44 (July 25, 2022) at 3, ¶ 9; *id.* at 5 ¶ 13.

The parties also agreed that the applicable advisory guideline range was 37-46 months but that both parties could "seek a variance and suggest that the Court consider a sentence outside of the applicable Guidelines Range . . .." *See* Plea Agreement, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 43 at 5, ¶ 5 (July 25, 2022).

On July 25, 2022 Mr. Byerly appeared before this Court and in accordance with the plea agreement entered a guilty plea to Counts Two and Seven of the Second Superseding Indictment. As part of the written plea agreement between the government and the defense, Counts One, Three, Four, Five, Six, and Eight will be dismissed at the time of sentencing.

Sentencing in this matter is scheduled before this Court on October 21, 2022.

II. THE APPLICABLE SENTENCING GUIDELINES

As noted above, the defense and the government agree as to the advisory guideline range set forth in the Presentence Investigation Report for the offenses of conviction. Count Two is punishable by not more than eight years of incarceration and is considered a Class D felony. Count Seven is punishable by not more than one year incarceration and is considered a Class A misdemeanor. *See* 18 U.S.C. § 3559(a).

Specifically, as to Count Two, it is agreed that the Base Offense level is 14. *See* Presentence Investigation Report, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 48 at 10, ¶ 41 (Oct. 13, 2022). It is also agreed that the offense level is increased by four levels because a "dangerous weapon" was otherwise used. *Id.* at ¶ 42. The defense and the government agree that the offense level is increased six levels because the victims were government officers. *See* PSR, Doc. 48 at 10, ¶ 43. Therefore, it is agreed that the Adjusted Offense Level for Count Two is 24. *See id.* at ¶ 27.

Importantly, Mr. Byerly did not possess a deadly weapon that could actually harm or incapacitate anyone. Rather, as detailed below in Section III.B., the device he possessed qualifies as a "deadly weapon" under the Sentencing Guidelines *only* because the Commentary to the applicable guidelines greatly expands the definition of deadly weapon to include *anything* that is not capable of causing harm but "closely resembles such an instrument" or "was used in a manner that created the impression that the object was such an instrument". *See* U.S.S.G. § 1B1.1 cmt. n.1(E)(ii)(II). In other words, Mr. Byerly will receive the same four-level upward enhancement for possessing a fake weapon as would another individual who possessed a real weapon such as a loaded gun.

The defense and the government agree as to Count Seven that the Base Offense Level is 7. *See id.* at ¶ 47. It is also agreed that there are no offense specific increases under the guidelines applicable to Count Seven. *See id.* at ¶¶ 48-51.

Both the defense and the government agree that the Adjusted Offense Level is decreased by three levels because Mr. Byerly clearly demonstrated acceptance of responsibility for the offense and timely notified the authorities of the intention to enter a plea of guilty. *See id.* at 11,

¶¶ 58-59. Finally, it is agreed that the Total Offense Level for Counts Two and Seven is 21. *See id.* at ¶ 60.

The defense and the government agree that Mr. Byerly's criminal history score is zero. Therefore, his prior criminal history places him in Criminal History Category I. *See id.* at 14, ¶ 65.

The defense and the government agree that the advisory guideline range is 37 to 46 months. If the four-level enhancement for possession of a "deadly weapon" were not included, then the applicable guideline range would be 24 to 30 months.

It is the defense position that the Court could consider this disparity, in and of itself, as grounds supporting a variance. For this reason and for the additional reasons set forth herein the defense requests that this Court vary below this advisory range and impose a sentence that is sufficient but not greater than necessary.

III. A VARIANCE UNDER 18 U.S.C. § 3553(A)(1) ACCOUNTING FOR THE NATURE AND CIRCUMSTANCES OF THE OFFENSE IS EQUITABLE AND CONSISTENT WITH THE PLAIN, UNAMBIGUOUS LANGUAGE OF THE SENTENCING GUIDELINES BECAUSE THE DEVICE MR. BYERLY POSSESSED ON JANUARY 6 WAS NOT IN FACT A WEAPON THAT COULD CAUSE INJURY.

The parties have agreed that the four-level enhancement for "dangerous weapon" under U.S.S.G. § 2A2.2(B) applies. *See* Plea Agreement, *United States v. Byerly*, 1:21-CR-527-RDM, Doc. 43 at 3 (June 15, 2022). But the parties have also agreed that Mr. Byerly can argue for a variance. *See id.* at 5.

A variance is appropriate here because the device that Mr. Byerly used on January 6, 2021, could not harm anyone, as Mr. Byerly's expert electrical engineer as well as engineers consulted by the government agree. Indeed, the government's investigation has correctly

determined that Mr. Byerly's device was "junk."

Still, the four-level enhancement applies here, but only because the Commentary applicable to the enhancement greatly expands the normal meaning of a "dangerous weapon" to include any devices that are not dangerous or deadly but that are used in a manner that creates an impression that the device is dangerous or deadly. *See* U.S.S.G. § 1B1.1 cmt. n.1(E)(ii)(II). Once Mr. Byerly activated his device – which he bought for $24.99 at a Cabela's Store – it made a loud buzzing noise that caused the officers nearby to shout "TASER, TASER, TASER." Statement of Offense, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 44 at 4-5 (July 25, 2022).

Undoubtedly, Mr. Byerly's actions created a false impression that his harmless device was dangerous and the loud noise understandably instilled fear in the officers. This is a valid consideration when this Court analyzes the nature and circumstances of the offense. But a fair accounting for this factor should not result in the same four-level enhancement that a defendant with an actual dangerous weapon receives.

This "dangerous weapon" enhancement adds up to 16 months to Mr. Byerly's sentencing guideline range, increasing the range from 24-30 months to 37-46 months. Despite having a cheap piece of "junk" that could not harm anyone, Mr. Byerly could still get the same four-level enhancement as a January 6th defendant who assaulted a law enforcement officer with a loaded gun, a knife, chemical spray, or another actually dangerous weapon. A variance is appropriate to account for the actual nature of the weapon Mr. Byerly used on January 6, 2021, consistent with the unambiguous language in the controlling Sentencing Guideline.

A. Mr. Byerly's Device was Not in Fact Dangerous or Deadly.

1. Scientific testing by an electrical engineer, corroborated by relevant engineers with whom the Government consulted, shows Mr. Byerly's device was harmless.

The parties agree that Mr. Byerly had a Mace Brand "compact stun gun" at the Capitol on January 6th. They also agree that Mr. Byerly purchased the device at a Cabela's Store in Pennsylvania. The device, which was displayed on a shelf in the store's camping section, cost $24.99. *See* Attachment 1. The device looks like a flashlight and has an operable flashlight at one end. Indeed, one of the law enforcement officers who interviewed Mr. Byerly upon his arrest on July 7, 2021 described the device as resembling a flashlight. While the device's packaging says, "compact stun gun" and the body of the device says, "stun light," it is a stun gun in name only.

Counsel for Mr. Byerly retained electrical engineer Mark Kroll and asked him to purchase and conduct electrical testing on a Mace Brand "compact stun gun." Because the actual device Mr. Byerly had was not preserved by the government, Dr. Kroll tested two samples of the same device the parties agree Mr. Byerly used on January 6th.

Dr. Kroll is a biomedical scientist with a Ph.D. in electrical engineering. His primary specialty is the interaction of electricity and the body; he has spent most of his career researching the effect of electrical shocks on the human body. With over 380 issued United States' patents and numerous pending and international patents, Dr. Kroll currently holds the most patents on electrical medical devices of anyone in the world. He has published over 100 relevant papers and two books on conducted electrical weapons. Dr. Kroll has been qualified as an expert in numerous courts and has been retained by, and testified for, the Department of Justice on

multiple cases involving electrical weapons. *See* Expert Report and Curriculum Vitae of Mark Kroll, *United States v. Alan Byerly*, 1:21-CR-527-RDM, March 24, 2002, at 4 (Attachment 2) ("Kroll Report").

To measure the electrical output of the Mace Brand device, Dr. Kroll conducted multiple electrical tests on two samples of the device using accepted medical and scientific safety limits for electrical devices. Based on that testing, Dr. Kroll concluded that Mr. Byerly's device could not cause any muscle effects. *Id.* at 11. Dr. Kroll further found that "the MACE contacts are so close that they would only have a skin effect as the current would not be able to dive down deep enough to affect the muscles regardless of the amount of current." *Id.* Dr. Kroll also specifically tested the device using electrical standards for stun guns and found that the Mr. Byerly's device fell 98% short of the minimum output requirements of an actual stun gun. *Id.* at 12-13.

Dr. Kroll also compared the results of his testing to the claims Mace Brand makes in its advertising about the device, including the assertion that it produces an electrical shock up to 7.6 microcoulombs, and the assertion that the shock can cause physical and mental impacts. Dr. Kroll found that the advertising claims are exaggerated and demonstrably false. *Id.* at 14. Dr. Kroll found that the primary effects of Mr. Byerly's device are auditory and visual, which is consistent with the officers' response when Mr. Byerly turned on the device. *Id.*

Dr. Kroll ultimately concluded to a reasonable degree of scientific certainty that the device Mr. Byerly used on January 6, 2021, cannot be used in a manner likely to produce death or serious bodily injury. *Id.* This is because the device "cannot cause injury that involves a substantial risk of death, extreme physical pain, protracted and obvious disfigurement, or

protracted loss or impairment of the function of a bodily member, organ, or mental faculty." *Id.*

And Dr. Kroll is not giving this opinion in a vacuum. Rather, the government has corroborated Dr. Kroll's opinion. A government witness spoke with engineers at Axon, manufacturer of the TASER weapon. Those engineers "described the [Mace Brand] device as a low charge weapon that would not likely incapacitate anyone as the electrical charge could not override the central nervous system. The engineers also called the weapon 'junk.'" Interview of David Wright, FBI-302 (Feb. 18, 2022) (Attachment 3) ("FBI-302").

The government provided the defense with an interview summary from David Wright, a former police officer and gym owner who alleged without any scientific support that Mr. Byerly's device could cause severe pain and serious harm. *Id.* Without any testing, Mr. Wright accepted the manufacturers' debunked claim on the packaging that the device emits a shock of 7.6 microcoulombs and then based his claim of "pain" specifically on that. *Id.* at 1-2. Such an assertion lacks sufficient indicia of reliability under U.S.S.G. § 6A1.3(a). *See United States v. Harris*, 44 F.3d 1206, 1216 (3d Cir. 1995) (relying on U.S.S.G. § 6A1.3(a) and holding that Government witness' testimony that defendant's chemical spray could cause serious bodily injury lacked reliability because it was based on manufacturer's "promotional literature"). Still, Mr. Wright conceded that the device is "unlikely" to incapacitate anyone. *Id.*

This Court should resolve any dispute between the parties over "dangerous weapon" by crediting the opinion of Dr. Kroll, who tested the device electrically and whose opinion is corroborated by engineers contacted by the Government, over the unreliable claims of Mr. Wright, who is not an engineer and who relied on packaging assertions over actual testing and disregarded the opinions of relevant, independent engineers. Given the opinions of Dr. Kroll

and the TASER engineers, the device Mr. Byerly used on January 6th was not in fact a "dangerous weapon."

2. The Government's argument that Mr. Byerly's device was dangerous is legally and factually incorrect.

The government attempts to preempt Mr. Byerly's request for a variance by arguing that his device "meets the definition of a dangerous weapon." Government Sentencing Memorandum, *United States v. Alan Byerly*, 1:21-CR-527-RDM, Doc. 47 at 28 (October 9, 2022). The government's effort lacks any scientific basis, misreads the cases they cite, ignores their own witness's opinion, and mischaracterizes Mr. Byerly's argument.

Without any citation or support, the government asserts that Mr. Byerly's device is "dangerous" because it is "capable of inflicting serious bodily injury." *Id*. This argument ignores the electrical testing conducted by Dr. Kroll and his conclusion that, based on that testing, Mr. Byerly's device could not cause extreme physical pain or impairment in functioning. The Government's argument also ignores that their own counter witness, Mr. Wright, believes that Mr. Byerly's device "will not likely incapacitate a person." FBI-302 at 1 (Attachment 3). And this is the same witness who was told by TASER engineers that Mace Brand device Mr. Byerly used is "junk." *Id.* Given these opinions, the government's blanket assertion of dangerousness is meritless.

The government also asserts that courts have held that a stun gun is a dangerous weapon. But as detailed above, the device Mr. Byerly used was advertised as a stun gun but was not actually harmful. The three cases the government cites are distinguishable from Mr. Byerly's situation, primarily because the government cannot show that the weapons at issue in these cases are similar in their electrical power to the device Mr. Byerly used on January 6th.

The opinion in *United States v. Agron*, 921 F.2d 25 (2d Cir. 1990), is silent as to both the model of stun gun at issue and its electrical charge capabilities but the defendant did not dispute that what he possessed could temporarily incapacitate an individual. *Id.* at 26. The Second Circuit found that that incapacitation was a sufficient impairment to satisfy the Guidelines' "dangerous weapon" language. *Id.* By contrast, Mr. Byerly disputes that his device could cause anyone any harm.

The opinion in *United States v. Wallace*, 800 F.2d 1509 (9th Cir. 1986), also is silent as to both the model of stun gun at issue and its electrical charge capabilities but "evidence was introduced at trial indicating that stun guns may cause permanent injury to the eyes and that a single stun gun may incapacitate twenty to forty people at a time." *Id.* at 1513. By contrast, the government's witness believes that Mr. Byerly's device is unlikely to incapacitate anyone, an opinion shared by Dr. Kroll and the TASER engineers with whom Mr. Wright consulted.

And in *United States v. Quiver*, 805 F.3d 1269 (10th Cir. 2015), the court examined an actual TASER Brand model in drive-stun mode. The opinion does not describe the electrical capacity of the TASER in that mode but held that, in that mode, the weapon could cause "serious bodily injury," *id.* at 1272, which Mr. Byerly's device cannot. It is irrelevant that the TASER model in *Quiver* was found to be a dangerous weapon in drive-stun mode when assessing the non-dangerous device that Mr. Byerly had. Indeed, Axon engineers, who should be familiar with the TASER model at issue in *Quiver* because they work for the company that makes TASERS, did not tell government witness Mr. Wright that Mr. Byerly's device was like a TASER in drive-stun mode but rather told him that it was "junk." The Court should not rely on the government's apples-to-oranges comparisons from the cases they reference.

Like its witness Mr. Wright, the government also relies on the Mace Brand website and the warning label on the packaging describing the device Mr. Byerly had to assert it is dangerous. *See* Doc. 47 at 28-29 and Exhibit 12. But unlike Dr. Kroll, the government did not have anyone test the accuracy of the website and packaging claims. Dr. Kroll specifically debunked each claim, including that: the device can cause minor muscle contractions, spasms, a dazed mental state, loss of balance, loss of muscle control; and the device can deliver an electrical charge of 7.6 microcoulombs, on which Mr. Wright specifically relies for his assertion of pain and which exaggerates the actual charge by a factor of 10. *See* Kroll Report, at 9-11, 14 (Attachment 2).

Certainly, the manufacturer's packaging labels what Mr. Byerly had a "compact stun gun," *see* Attachment 1, but that label is not valid evidence of the device's actual dangerousness. The packaging and website claims that Mace Brand makes for purposes of boosting sales and insulating itself from potential legal liability should not control over the actual capacity of the device, which is negligible. In *United States v. Rene Perez*, 519 Fed. App'x 525 (11th Cir. 2013), the Government relied on the packaging warning label and brand name of the defendant's pepper spray to argue that it was a "dangerous weapon" for purposes of Guidelines enhancement. *Id.* at 528. The Eleventh Circuit rejected that argument, holding that "[n]either a brand name nor a warning label, alone or taken together, establish that a weapon is a 'dangerous weapon' under the Guidelines." In reaching that conclusion, the appellate court held that "a label created by the manufacturer of a substance is not particularly reliable evidence given its self-serving nature."

The Third Circuit reached a similar conclusion in *United States v. Harris*, where it relied on U.S.S.G. § 6A1.3(a) and held that the description of Mace spray in a manufacturer's "promotional literature" did not provide a reliable basis to support the district court's finding that the chemical spray at issue was a dangerous weapon because the manufacturer's claim of "extreme discomfort" was "self-serving." *Harris*, 44 F.3d at 1216.

The same holds true here. Under Guideline § 6A1.3(a), the Court should not credit the Mace Brand packaging and website because those self-serving materials lack "sufficient indicia of reliability to support [their] probable accuracy," particularly considering the scientific opinions of Dr. Kroll and the government's consulting engineers and the absence of any scientific testing by a government witness.

Finally, the government asserts that the defense "seemingly concedes" that Mr. Byerly's device is a dangerous weapon because counsel suggested in plea negotiations that Guideline § 2A2.4 should apply to Mr. Byerly's case. *See* Doc. 47 at 28. Mr. Byerly never conceded that the device was dangerous and merely suggested § 2A2.4 as a Guideline that would result in a lower offense level for Mr. Byerly. And the subpart cited by the government, § 2A2.4(b)(1)(B), specifically states "[*i*]*f* a dangerous weapon" was involved, which means that a finding needs to be made, not that a weapon is automatically dangerous. Further, the parties have agreed that Guideline § 2A2.2 is the controlling sentencing guideline. *See* Doc. 43 at 3. And applying § 2A2.2 here is consistent with what judges on this Court have found in other January 6th assault on law enforcement officer cases. *See*, *e.g.*, Sentencing Hearing Transcript, *United States v. Creek*, 1:21-CR-645-DLF, Doc. 61 at 11-12 (May 2, 2002) (concluding § 2A2.2 is relevant guideline and not § 2A2.4 and citing *United States v. Languerand*, 1:21-CR-353-JDB, and

United States v. Leffingwell, 1:21-CR-5-ABJ, as having reached similar conclusions).

B. Because the Commentary to the Text of Guideline § 2A2.2 Unduly Expands the Plain, Unambiguous Meaning of the Term "Dangerous Weapon," the Court Should Not Give Deference to the Commentary in Considering Mr. Byerly's Request for a Variance Based on the Harmless Nature of His "Junk" Device.

Although Mr. Byerly's device could not harm anyone, he is still subject to a four-level "dangerous weapon" enhancement only because the Commentary to the applicable Guideline, § 2A2.2(b)(2)(B), inconsistently expands the plain, unambiguous meaning of "dangerous weapon" to include objects that are not actually dangerous or deadly but that are used in a manner that creates an "impression" that the device is dangerous or deadly. *See* U.S.S.G. § 1B1.1 cmt. n.1(E)(ii)(II). In other words, under the Commentary, a fake dangerous weapon morphs into a real dangerous weapon. As a legal matter, that interpretation is entitled to no deference and supports the defense's argument for a variance.

Under *Stinson v. United States*, 508 U.S. 36 (1993), if Commentary is inconsistent with a Guideline, the Guideline prevails. *Id*. at 38, 40. Relying on this principle, in *United States v. Winstead,* 890 F.3d 1082 (D.C. Cir. 2018), the District of Columbia Circuit held that because the Commentary to Guideline § 4B1.1 impermissibly expanded the definitions of "controlled substance offense" and "crime of violence" to include attempt offenses, the Commentary was inconsistent with the Guideline and thus could not carry weight at sentencing. *Id.* at 1090-92. The Third Circuit and the Seventh Circuit have specifically agreed with *Winstead's* conclusion about disregarding Commentary that conflicts with the plain text of the Guidelines. *See United States v. Nasir*, 17 F.4th 459, 471–72 (3d Cir. 2021) (relying on *Winstead* to rule that Guideline § 4B1.2(b) does not include attempt crimes); *United States v. Havis*, 927 F.3d 382 (6th Cir. 2019)

(en banc) (applying *Winstead* to hold that definition of "controlled substance offenses" in Guideline § 2K2.1(a)(4) does not include attempt crimes contained only in the Commentary).

In *United States v. Davis*, 635 F.3d 1222 (D.C. Cir. 2011), the District of Columbia Court of Appeals relied on the Commentary to hold that it was proper to apply the enhancement for brandishing a "dangerous weapon" during a robbery under Guideline § 2B3.1 to a defendant who mimicked having a gun during a bank robbery. *Id.* at 1224-25. Because the *Davis* Court did not address the argument the controlled in *Winstead* about an inconsistency between the Commentary and the relevant Guideline, that ruling should be limited to the "dangerous weapon" enhancement as applied to robbery offenses, such as bank robberies in violation of 18 U.S.C. § 2113(a). *See United States v. Tate*, 999 F.3d 374, 381 (6th Cir. 2021) (limiting holding in bank robbery case where defendant pretended to have a gun to robbery offenses and noting that "[c]ases arising with respect to different facts or different laws could dictate a different result.").

And other Circuit Courts of Appeals recently have questioned the application of Commentary that broadens the ordinary meaning of unambiguous Guideline terms. *See United States v. Campbell*, 22 F.4th 438, 444-47 (4th Cir. 2022) (rejecting application of Commentary that is "plainly" inconsistent with the unambiguous text of the relevant Guideline) (relying on *Stinson* and *Kisor v. Wilkie*, 139 S.Ct. 2400, 2415 (2019)); (holding that the Commentary should only get deference if the plain language of the Guideline is "genuinely ambiguous.") (quoting *Kisor*, 139 S.Ct. at 2415); *United States v. Nasir*, 982 F.3d 144, 158-60 (3d Cir. 2020) (en banc); *United States v. Nasir*, 17 F.4th 459, 471-72 (3d Cir. 2021) (en banc) (same).

This plain-text approach is important because the Commentary to the Guidelines, unlike the Guidelines themselves, "never passes through the gauntlets of congressional review or notice

and comment," and thus the Commentary "has no independent legal force." *Havis*, 927 F.3d at (citing *Stinson*, 508 U.S. at 44-46). Because the Commentary has no independent legal force, "separation-of-powers concerns advise against any interpretation of the Commentary that expands the substantive law set forth in the guidelines themselves." *Nasir*, 982 F.3d 144, 159 (3d Cir. 2020); *accord Havis*, 927 F.3d at 386 (a court may not rely on a Commentary note that inconsistently expands the scope of the corresponding Guideline). Here, the plain language of Guideline § 2A2.2(b)(2)(B) is not genuinely ambiguous. Rather, the ordinary meaning of "dangerous" is "able or likely to cause harm or injury." "Dangerous." *Merriam-Webster.com Dictionary*, Merriam-Webster, https://www.merriam-webster.com/dictionary/dangerous. *See also* WEAPON, Black's Law Dictionary (11th ed. 2019) ("dangerous weapon. (17c) "An object or device that, because of the way it is used, is capable of causing serious bodily injury.").

The Commentary's definition of "dangerous weapon" to include an object that only can create an impression of dangerousness but that is incapable of causing harm or injury is a fictional dangerousness that is contrary to the commonsense definition of dangerous weapon. No reasonable person would define "dangerous" to include something that merely appears dangerous but is not capable of inflicting any harm or injury; indeed, an object not capable of causing injury is inconsistent with an object that is capable of inflicting injury.

Because an object that merely creates an "impression" of dangerousness does not make the object actually dangerous, the Commentary here – which is the only basis for the four-level enhancement here – results in an unusual impression that would expand the clear scope of Guideline § 2A2.2(b)(2)(B). But *Stinson* "requires that Commentary interpret the guidelines, not contradict or add to them." *Riccardi*, 989 F.3d at 493 (6th Cir. 2021) (Nalbadian, J.,

concurring in part and in the judgment); *accord Stinson*, 508 U.S. at 40, 43. The Commentary's incorporation of harmless objects is a broad expansion of "dangerous weapon" that conflicts with and extends well beyond the plain and unambiguous language of Guideline § 2A2.2(b)(2)(B). As such, the Commentary acts as an enhanced punishment rather than an assessment of dangerousness based on the nature and circumstances of Mr. Byerly' offense, which is contrary to *Stinson* and further support for a variance here. *See*, *e.g.*, *United States v. Kirilyuk*, 29 F.4th 1128, 1138 (9th Cir. 2022) (holding that because Commentary to the § 2B1.1 theft Guideline calculating loss as $500 per stolen credit card expands the meaning of "loss" and is "clearly inconsistent with the language of the Guideline," the Commentary "is not binding under *Stinson.*").

The government's argument that its 46-month sentence recommendation is justified under § 3553 because it is within the Guidelines approved by Congress only reinforces that no deference is due to the Commentary here. *See* Government Sentencing Memorandum, Doc. 47 at 37-38. The relevant Guideline approved by Congress plainly addresses actual "dangerous weapons" and not the fake "dangerous weapons" covered only by the Commentary lacking Congressional approval. If the Court were to apply the plain text of the Guidelines here and not the Commentary, Mr. Byerly's advisory guideline range would be 24 to 30 months. Under *Stinson* and the separation-of-powers concerns addressed above, this scenario in which there is a plain, unambiguous Guideline and an expansive, inconsistent Commentary requires application of the Guideline not the Commentary.

The Court should not defer to Commentary that "strays too far from the Guideline that it claims to interpret." *United States v. Perez*, 5 F.4th 390, 403 (3d Cir. 2021) (Bibas, J.,

concurring). Rather, Commentary that expands the reach of an otherwise clear Guideline deserves no deference. A variance is appropriate here to ensure that the overly broad definition of "dangerous weapon" in the Commentary does not trump the plain and unambiguous language of Guideline 2A2.2(b)(2)(B). Otherwise, Mr. Byerly will be sentenced with the same four-level enhancement that would add up to 16 months to his guideline range as January 6th defendants who used actual dangerous weapons. Such a sentence is not fair or equitable and the Court should not "impose such a massive impact on a defendant with no grounding in the guidelines themselves." *Winstead*, 890 F.3d at 1092.

IV. A VARIANCE IS WARRANTED UNDER 18 U.S.C. § 3553(A)(6) TO AVOID UNWARRANTED SENTENCING DISPARITIES BETWEEN MR. BYERLY AND OTHER JANUARY 6TH DEFENDANTS.

Imposing the 46-month sentence the government requests would result in unwarranted sentence disparity. A variance is equitable to avoid unwarranted sentencing disparities between Mr. Byerly and other similarly situated defendants. This includes January 6th defendants who have been convicted of more serious charges – with higher guidelines -- than Mr. Byerly, such as assault on law enforcement officers with an actual dangerous or deadly weapon under 18 U.S.C. § 111(b) or obstruction of an official proceeding 18 U.S.C. § 1512(c) – both of which are Class C felonies – but who have received sentences shorter or equal to the 46-month sentence the government requests here. This also includes January 6th defendants who were convicted of the same Class D felony as Mr. Byerly under 18 U.S.C. § 111(a).

A. January 6th Defendants who Have Been Convicted of More Serious Charges than Mr. Byerly Have Received Sentences Shorter than What the Government has Requested in Mr. Byerly's Case.

In the following cases, January 6th defendants convicted of more serious charges – with higher guidelines -- than Mr. Byerly have been sentenced *to less than* what the government recommends here:

(1) *United States v. Matthew Miller*, 1:21-CR-75-RDM

This Court imposed a 33-month sentence on Mr. Miller, a criminal history Category I defendant with a 41-to-51-month guideline range who pled guilty to a § 111(a)(1) assault on multiple law enforcement officers as well as a § 1512(c)(2) obstruction charge. While the Court is certainly familiar with the facts of Mr. Miller's conduct, it is still important to Mr. Byerly's variance argument based on § 3553(a)(6) argument that he recounts a few of the most relevant facts.

Mr. Miller committed an assault on law enforcement officers guarding the Capitol's Lower West Terrace tunnel. In sentencing Mr. Miller, the Court indicated that "there was [not] any portion of the assault on the Capitol that was as dangerous as the assault that took place on the tunnel on the Lower West Terrace, with the law enforcement officers in that space trying to protect the Capitol from attack." Transcript of Sentencing, *United States v. Miller*, 1:21-CR-75-RDM, Doc. 73 at 69 (May 23, 2022). These officers "were the only barrier between this mass of people, who were inflamed beyond belief, and the United States Capitol and the members [of Congress], including members who were a couple dozen feet away inside the Capitol building." *Id.* at 52.

Specifically, Mr. Miller threw batteries at police officers stationed in the Lower West Terrance tunnel and then discharged the contents of a fire extinguisher directly onto the officers. As a result, numerous officers started coughing and wheezing and gave up their positions (NT at 70); some of the officers had their skin and eyes burned from the fire extinguisher discharge. *Id.* at 73. Based on the "example" Mr. Miller "created," someone else then further assaulted officers with the fire extinguisher. *Id.* at 70.

And the Court found that Mr. Miller was a particularly active participant in creating the danger to the officers and Congress members because he chanted "one, two, three, heave-ho, heave-ho," *id.* at 73, to "coach[]," encourage and "inflame[]" "a mob of people [to] push[] back and forth to crush these officers who were in the tunnel." *Id.* at 51, 53.

(2) *United States v. Scott Fairlamb*, 1:21-CR-120-RCL

The court imposed a 41-month sentence on Mr. Fairlamb, a criminal history Category I defendant with a 41-to-51-month guideline range who pled guilty to § 111(a)(1) assault on a law enforcement officer as well as a § 1512(c)(2) obstruction charge. Mr. Fairlamb, a former Mixed Martial Arts fighter, shoved a Metropolitan Police Department officer defending the Capitol and then punched the officer's face shield. *See* Government's Sentencing Memorandum, *United States v. Fairlamb*, 1:21-CR-120, Doc. 50 at 1-2 (Nov. 3, 2021). After January 6th, Mr. Fairlamb, "filmed a chilling video threatening future violence, stating, "they pulled the pin on the grenade, and the blackout is coming. What a time to be a patriot," and, immediately after being visited by FBI agents on January 15, 2021, said that he would 'go again' to the U.S. Capitol." *Id.* at 2.

Mr. Fairlamb also incited the crowd to cause mayhem, hurled insults at law enforcement officers, and was one of the first people to enter the Capitol after the windows were smashed. *Id.* at 30.

(3) *United States v. Devlyn Thompson*, 1:21-CR-461-RCL

The court imposed a 46-month sentence on Mr. Thompson, a criminal history Category I defendant with a 46-to-57-month guideline range who pled guilty under 18 U.S.C. § 111(b). to assaulting a law enforcement officer with a baton, a dangerous weapon.

Mr. Thompson, like Mr. Miller, engaged in violence against officers defending the Lower West Terrace tunnel. Mr. Thompson assisted the mob by helping take riot shields from the law enforcement officers blocking the doorway to the Capitol, which "enable[ed] other members of the mob to assault the officers with greater effect." *See* Government's Sentencing Memorandum, *United States v. Thompson*, 21-cr-461-RCL, Doc. 30 at 18 (Dec. 13, 2021). Later, Mr. Thompson passed the stolen shields forward for rioters to use against the officers. *Id.* at 18-19. He also "joined in [an] effort by the mob to jointly push together against the front-line officers to force their way through the police," creating significant pressure on the front line. *Id.* at 21. Thompson also helped fellow rioters throw a large audio speaker toward the police line. *Id.* Finally, Thompson found a metal baton in the tunnel, made his way to the front of the tunnel where the police line was, and struck once at a law enforcement officer, hitting that officer in the hand. *Id.* at 23-26. Overall, for more than 13 minutes, "[Mr.] Thompson was in the tunnel zone and was actively assisting, aiding, and abetting the mob that was assaulting officers and trying to break through the police line to gain access to the Capitol Building" in what the government called the "Battle for the Lower West Terrace Doors." *Id.* at 12.

Here, the government cites this case as supporting its sentencing request, *see* Doc. 47 at 41, but Mr. Thompson's conduct on January 6th was far more egregious than Mr. Byerly's. First, Mr. Thompson was convicted of a § 111(b) assault because, unlike Mr. Byerly, he used an actual dangerous weapon, a metal baton. Second, the assault was in the Lower West Terrace tunnel, making it part of the most dangerous assault on the Capitol as this Court noted in *Miller*. Mr. Byerly was never in that tunnel. Third, the length of the criminal conduct is much longer in Mr. Thompson's case than in Mr. Byerly's case: Mr. Thompson attempted, "for more than 13 minutes, to violently enter the U.S. Capitol Building. . .." Government's Sentencing Memorandum, *United States v. Thompson*, 21-cr-461-RCL, Doc. 30 at 33. Mr. Byerly never tried to enter the Capitol. Fourth, "[Mr.] Thompson also helped other armed rioters assault officers over and over again, and he helped steal shields from officers and then help the rioters make use of those same shields." *Id.*

(4) *United States v. Nicholas Languerand*, 1:21-CR-353-JDB

The court imposed a 44-month sentence on Mr. Languerand, a criminal history Category I defendant with a 46-to-57-month guideline range who pled guilty under § 111(a) and (b) to assaulting multiple law enforcement officers with a deadly weapon.

Mr. Languerand, like Mr. Miller and Mr. Thompson, engaged in violence against officers defending the Lower West Terrace tunnel. He "put himself among the front ranks of the rioters" in the tunnel and, for over 10 minutes, repeatedly attacked officers in the tunnel by assaulting them with an assortment of dangerous weapons, including throwing a stolen police riot shield, pieces of wood, sticks, a large orange traffic bollard, a pepper spray container, and a heavy black audio speaker at officers. *See* Government's Sentencing Memorandum, *United States v.*

Languerand, 21-CR-353-JDB, Doc. 24 at 12-18 (January 19, 2022). Mr. Languerand admitted that "based on the size and weight of the orange bollard and the stick-like objects, and the speed and force with which they were thrown, they were capable of inflicting serious bodily injury," *id.* at 17, which makes them dangerous weapon. *Id.* at 34. He also had a history of violent and threatening conduct and bragged on social media about his January 6th conduct afterwards, posting to Instagram that "[his conduct at the Capitol"] felt good" and telling his Instagram followers that "Violence isn't always the answer but in the face of tyranny violence may be the only answer" and "Next time we come back with rifles." *Id.* at 2, 34-37.

The government cites this case as supporting its sentencing request, *see* Doc. 47 at 40-41, but this case also involves conduct far more egregious than Mr. Byerly's. First, Mr. Languerand was convicted of a § 111(b) assault because, unlike Mr. Byerly, he used multiple, actual dangerous weapons capable of causing serious bodily injury as he readily admitted. Second, the assault was in the Lower West Terrace tunnel, making it part of the most dangerous assault on the Capitol as this Court noted in *Miller*. Mr. Byerly was never in that tunnel. Third, the length of the criminal conduct is much longer in Mr. Languerand's case than in Mr. Byerly's case and involves repeated assaults on law enforcement officers with multiple dangerous weapons. Fourth, Mr. Languerand bragged on social media that he "was proud to in violence against law enforcement on January 6, and that he anticipated and welcomed further violence." *See* Government's Sentencing Memorandum, *United States v. Languerand*, 21-CR-353-JDB, Doc. 24 at 34-35. In contrast, Mr. Byerly did not author or post any inflammatory social media messages either before or after January 6th. Fifth, in the years right before January 6, 2021, Mr. Languerand "exhibited a distinct tendency towards threatening and violent conduct." *Id.* at 35

(quotation marks omitted). For Mr. Byerly, as the Probation Officer's Sentencing Recommendation notes, the current case "is his first arrest and criminal conviction in approximately 18 years." PSR, Doc. 48 at 12-13, ¶¶ 62-63.

The government also notes the 63-month sentence for a § 111(b) conviction imposed in *United States v. Robert Palmer*, 1:21-CR-328-TSC. *See* Government's Sentencing Memorandum, *United States v. Byerly*, Doc. 47 at 40. Mr. Palmer's case is easily distinguished from Mr. Byerly's case, as even the government's recounting of this January 6th case shows. First, Mr. Palmer "repeatedly assaulted police officers with a wooden plank and then sprayed officers with a fire extinguisher, which he later threw at them, while on the Lower West Terrace of the Capitol." *Id.* Like Messrs. Miller, Languerand, and Thompson – but unlike Mr. Byerly – Mr. Palmer assaulted officers defending the Lower West Terrace tunnel, making his conduct part of the most dangerous assault on the Capitol as this Court noted in *Miller*. In a separate incident, Mr. Palmer also assaulted officers on the Upper West Plaza with a four-to-five-foot-long pole that he threw at the officers like a spear. *See* Government's Sentencing Recommendation, *United States v. Palmer*, 1:21-CR-328-TSC, Doc. 30 at 17-18 (Dec. 10, 2021). Second, Mr. Palmer's "conduct after January 6 disqualified him from the reduction for acceptance of responsibility under § 3E1.1." Government's Sentencing Memorandum, *United States v. Byerly*, Doc. 47 at 40. Third, Mr. Palmer was convicted of § 111(b) assault because, unlike Mr. Byerly, he assaulted an officer with a wooden plank and a fire extinguisher, both of which he admitted were capable of inflicting serious bodily injury, which makes them actual dangerous weapons. *See* Government's Sentencing Recommendation, *United States v. Palmer*, 1:21-CR-328-TSC, Doc. 30 at 15-16 (Dec. 10, 2021); Transcript of Sentencing Hearing, *United*

States v. Palmer, 1:21-CR-328-TSC, Doc. 33 at 2-3 (Dec. 17, 2021).

B. Sentences for January 6th Defendants Convicted of § 111(a) Assault Support a Variance.

There are now several January 6th cases that involve a conviction under § 111(a) where the sentencing court imposed a sentence less than 37 months. These cases clearly support the defense argument for a variance. *See United States v. Mark Leffingwell*, 21-CR-5-ABJ (government requested 27 months incarceration and defendant received a sentence of 6 months incarceration); *United States v. Kevin Creek*, 21-CR-645-DLF (government requested 27 months incarceration and defendant received 27 months incarceration); *United States v. Ricky Willden,* 1:21-CR-423-RC (government requested 30 months and the defendant was sentenced to 24 months incarceration).

The government points this Court to three January 6th cases in which the defendants were convicted for § 111(a) assaults and received more than 37 months. *See* Government's Sentencing Memorandum, Doc. 47 at 38-40. Because these cases are significantly more aggravated than Mr. Byerly's case, they actually support his request for a variance.

(1) *United States v. Cody Mattice and James Mault*, 1:21-CR-657-BAH

Mr. Mault and Mr. Mattice received sentences of 44 months incarceration for convictions under 18 U.S.C. § 111(a). Their cases are significantly different from Mr. Byerly's case. First, both men possessed actual deadly and dangerous weapons – a bike rack and chemical spray – and the defense conceded that these items could in fact cause serious bodily injury. Furthermore, the government in its sentencing memorandum in those cases highlighted this very point when it distinguished their actions from other defendants convicted under § 111(a) who did not possess deadly weapons. *See* Government's Response to Defendants' Sentencing

Memorandum, *United States v. Mault and Mattice*, 1:21-CR-657-BAH, Doc. 64 at 7 (July 6, 2022). Additionally, both men bragged about and glorified the violence in text messages before, during, and after the riot. And most importantly these two defendants were leaders of the charge into the Lower West Terrace Tunnel, which was the scene of the worst violence, working their way through dense crowd and crawling over the heads of other rioters to reach the mouth of the tunnel. *See* Government's Sentencing Memorandum, *United States v. Cody Mattice and James Mault*, 1:21-CR-657, Doc. 60 at 20 (June 30, 2022)

(2) *United States v. Howard Richardson*, 1:21-CR-721-CKK

Mr. Richardson received a sentence of 46 months incarceration for a conviction under 18 U.S.C. § 111(a). This case is significantly different from Mr. Byerly's case. First, like Messrs. Mault and Mattice, Mr. Richardson did not dispute that he possessed and used an actual deadly weapon. And he used that deadly weapon (a long flagpole) to bludgeon an officer multiple times, only stopping when the pole broke. On January 6th, Mr. Richardson also was out on bail for illegal possession of a firearm. Then at his change of plea hearing while under oath Mr. Richardson on at least two occasions lied to the Court about his actions on January 6th. Further, after his change of plea hearing – but before his sentencing hearing – Mr. Richardson was arrested again, this time for aggravated assault. After that arrest, he lied to the local police about his conduct, which was captured on video. *Government's Sentencing Memorandum at pp.25-28; United States v. Richardson, 21-721 Doc. 35.*

(3) *United States v. Marshall Neefe*, 1:21-CR-567-RCL

Mr. Neefe received a sentence of 41 months for a violation of 18 U.S.C. § 1512(k). This case is not comparable to Mr. Byerly's case and in fact supports the defense request for a

variance. Mr. Neefe pled guilty to a more serious charge than Mr. Byerly. Section 1512(k) is a grade C felony punishable by up to 20 years in prison. Not surprisingly, Mr. Neefe's guidelines (41-51 months) were higher than Mr. Byerly's guidelines. Yet he received a sentence five months shorter than the sentence requested by the government here.

V. ALAN BYERLY HAS ACCEPTED FULL RESPONSIBILITY FOR HIS ACTIONS AND IS REMORSEFUL FOR HIS CONDUCT.

Alan Byerly is truly remorseful for his actions. He has pled guilty and accepted full responsibility for what he did. He knows that pleading guilty is the right thing to do given his actions and he offers this Court no excuse for what he did. He entered a plea of guilty to the assault on the AP Reporter (Count Seven) knowing that the victim had advised the government that he would not participate in this prosecution. Regardless, he pled guilty because he knew his actions were wrong.

Attached hereto are character letters that shed light on the type of individual Alan Byerly was and can be again upon his release. *See* Attachment 4. He is described as a respectful, kind-hearted, loyal, and caring man. He is the type of man that is there when your car breaks down or when you need something fixed in the house. He is a skilled carpenter by trade. He has always worked to provide for and support his four children. He takes pride in his family and is a caring and loving father, son, and nephew. He has not had any contact with the criminal justice system for 18 years; during that time, he worked and lived a productive life.

For the last 15.5 months he has been unable to see any of his family members, whom he misses dearly. Due to the pandemic, he has spent a significant portion of that time in stark conditions, often going weeks locked down in his cell with minimal time out of the cell. During that time, he lost his house and upon release will need to move in with his aunt. He has spent

endless hours reflecting on his actions and is determined to better himself in preparation for the day when he will return to his community and family and again be a productive member of society.

The government is correct that in the first few hours after Alan Byerly was initially detained, he minimized his actions on January 6th and denied having the "stun gun" device. He offers this Court no excuse for this conduct but does apologize for it and accepts full responsibility for it. As noted by the government in its Sentencing Memorandum he apologized to the law enforcement agents for lying to them. He also apologized for bringing the device to Washington.

It is important to note that during that same interview he fully admitted that he was present at the riot and truthfully admitted that he had disposed of the hat he wore on January 6th. He then voluntarily gave the agents a detailed and accurate description where in his house they could find and recover all the other clothing he wore on that day including his backpack. He also told them where the keys to his shed were located if they needed to search it. He also voluntarily gave the agents the passwords to all his password-protected computers. But to be certain, Alan offers this Court no excuse for the untruthful statements he made and accepts full responsibility for lying.

As he stands before this Court for sentencing Alan Byerly is 55 years old. He has been in custody now for over a year and three months. During that time, he has reflected on his ill-conceived actions and the mistakes that he made. He knows he cannot take back his actions on January 6, 2021. Yet he is determined to show his family and this Court that he can be a productive member of society again. He is committed to coming back into society a better

person emotionally and spiritually.

Simply put, if given the chance, Alan Byerly will do everything in his power not to disappoint the trust of this Court and show that he is someone who can be rehabilitated and again be a productive member of his community. For all the reasons set forth above, the defense respectfully requests that this Court vary below the advisory guideline range and impose a sentence that is fair and equitable.

Respectfully submitted,

/s/ James J. McHugh, Jr.
JAMES J. MCHUGH, JR.
Assistant Federal Defender
james_mchugh@fd.org

/s/ Hunter S. Labovitz
HUNTER S. LABOVITZ
Assistant Federal Defender
hunter_labovitz@fd.org

Federal Community Defender Office
for the Eastern District of Pennsylvania
601 Walnut Street, Suite 545 West
Philadelphia, PA 19106
(215) 928-1100

Counsel for Defendant Alan William Byerly

Dated: October 14, 2022

CERTIFICATE OF SERVICE

I, James J. McHugh, Jr., Assistant Federal Defender, Federal Community Defender Office for the Eastern District of Pennsylvania, hereby certify that on October 14, 2022, I filed *Defendant's Sentencing Memorandum* via the Court's Electronic Filing (ECF) system, which sent notification to Anita D. Eve, Assistant United States Attorney, Suite 1250, 615 Chestnut Street, Philadelphia, PA 19106, via her email address (Anita.Eve@usdoj.gov), and to Caroline Burrell, Assistant United States Attorney, 555 4th Street, NW, Washington, DC 20530, via her email address (Caroline.Burrell@usdoj.gov).

/s/ James J. McHugh, Jr.
JAMES J. MCHUGH, JR.
Assistant Federal Defender

Attachment 1


24.99
COMPACT STUN GUN/L
Mace
High Output
Stun Gun
High + Low Flashlight
Strobe Modes
USB Rechargeable
Power Cord
Belt Clip
Compact
STUN GUN
WARNING

Attachment 2

United States District Court
District of Columbia

United States of America Plaintiff, v. Alan William Byerly Defendants.	No. 1:21-CR-527

EXPERT REPORT OF MARK KROLL, PhD, FACC, FHRS, FIEEE, FAIMBE

This report summarizes my analysis and findings and includes a statement of my opinions. The report also includes data and other information considered by me in forming my opinions and sets out my qualifications (including my CV which is an integral part of this report).

Mark Kroll, PhD, FACC, FHRS, FAIMBE 24 March 2022

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Brief Summary of Qualifications

I am a Biomedical scientist with a primary specialty in bioelectricity or the interaction of electricity and the body. I hold a B.S. degree in Mathematics and a M.S. degree and a Ph.D. degree in Electrical Engineering from the University of Minnesota and a M.B.A. degree from the University of St. Thomas. I have invested most of my career researching and developing electrical devices to diagnose and treat disease. The primary focus is the effect of electrical shocks on the human body.*

This involves researching, lecturing, and publishing on electric shocks and their effects on the human body. It includes lectures throughout Europe, South America, and Asia (in 35 countries) as well as at many of the major universities and medical centers of the United States (U.S.). Usually, the typical audience member is a cardiologist, electrophysiologist, medical examiner, or forensic pathologist. With over 380 issued U. S. patents and numerous pending and international patents, I currently hold the most patents on electrical medical devices of anyone in the world. Over 1 million people have had devices with some of these patented features in their chest, monitoring every heartbeat. http://bme.umn.edu/people/adjunct/kroll.html.

In 2010 I was awarded the Career Achievement Award by the Engineering in Medicine and Biology Society (EMBS) of the Institute of Electrical and Electronics Engineers (IEEE) which is the most prestigious award given internationally in Biomedical Engineering.
http://tc-therapeutic-systems.embs.org/whatsnew/index.html

I am believed to be the only individual to receive the high "Fellow" honor from both Cardiology and Biomedical societies. To wit:

1997 Fellow, American College of Cardiology
2009 Fellow, Heart Rhythm Society
2011 Fellow, IEEE Engineering in Medicine and Biology Society
2013 Fellow, American Institute for Medical and Biological Engineering

I am the author of over 200 abstracts, papers, and book chapters and also the co-editor of 4 books including the only 2 scientific treatises on Conducted Electrical Weapons (CEW):

1. TASER® Conducted Electrical Weapons: Physiology, Pathology and Law. Springer-Kluwer 2009.
2. Atlas of Conducted Electrical Weapon Wounds and Forensic Analysis: Springer-Kluwer 2012.

*See current CV for further details and specifics. My curriculum vitae containing details of my relevant formal education, experience, and publications authored is attached and made an integral part of this report.

Directly relevant paper publications include over 100 papers, books, book chapters, indexed letters on CEWs and arrest-related death (ARD), and numerous scientific meeting abstracts. [1-110] For more details please see CV.

I have also made many presentations on CEWs to scientific, medical, pathology, as well as law enforcement, audiences. These include: 2007 American Academy of Forensic Science (AAFS) conference major presentation in San Antonio, Texas and the 2007 BEMS (Bio-electromagnetic Society) meeting Plenary Address in Kanazawa, Japan.

1. Major invited lecture at the 2006 NAME (National Association of Medical Examiners) conference in San Antonio, Texas.
2. Advanced Death Investigation Course of St. Louis University (2007) as faculty lecturer to full audience.
3. Faculty lecturer to full audience at Institute for the Prevention of In-Custody Death Conferences (2006 and 2007), Las Vegas, Nevada.
4. Chair of special session on TASER CEW at 2006 Cardiostim meeting in Nice, France.
5. Guest lecture to U.S. Military on CEW in 2006.
6. "Presenting Rhythm in Sudden Custodial Deaths After Use of TASER® Electronic Control Device," was presented at the 2008 scientific conference of the Heart Rhythm Society.
7. "Can Electrical-Conductive Weapons (TASER®) alter the functional integrity of pacemakers and defibrillators and cause rapid myocardial capture?" was presented at the 2008 scientific conference of the Heart Rhythm Society.
8. "Weight-Adjusted Meta-Analysis of Fibrillation Risk From TASER® Conducted Electrical Weapons" presented at the 2009 AAFS conference.
9. "Meta-Analysis of Fibrillation Risk From TASER® Conducted Electrical Weapons as a Function of Body Mass" presented at the 2009 scientific conference of the Heart Rhythm Society.
10. Oral presentation at the 2014 NAME (National Association of Medical Examiners) conference in Portland, Oregon.
11. Pathophysiological Aspects of Electroshock Weapons. University of Salzburg Electroshock Weapon Symposium. Salzburg, Austria. July 2015.
12. Real and Imagined Risk of Electrical Weapons. University of Salzburg Electroshock Weapon Symposium. Salzburg, Austria. Dec 2016.
13. The Science of Arrest-Related-Death. International Law Enforcement Educators and Trainers Association. Chicago, USA. April 2015.
14. Arrest-Related Death. United States Department of Justice, San Diego. Jun 2016.
15. Arrest-Related Deaths: Managing Your Medical Examiner. Lexipol WebCast 20 June 2019.
16. Defending Non-firearm Arrest-Related Death Cases. International Municipal Lawyers Association Conference. Washington, DC. 24 April 2020.
17. Science of Restraint-related Death. Office of Special Investigations Training Program. New York State Attorney General Division. March 25, 2021

In addition to the major addresses above, I have made lectures and presentations at the U.S. Department of Justice (2007), AAFS (2006), and BEMS (2006) regarding TASER CEWs.

I have deployed and discharged TASER CEWs numerous times and have personally experienced a TASER® X26 CEW probe deployment discharge to the center of my chest. I have also experienced an Obovov muscle stimulator output to my thigh.

Most Relevant Committees and Boards:

1. International Electrotechnical Commission (IEC) (Geneva, Switzerland) TC64 MT4 Committee. This committee is the top international authority for setting the international electrical safety limits for electrocution and other electrical dangers.
2. Axon Enterprise, Inc. (Axon né TASER), corporate and also Scientific and Medical Advisory Board.
3. ANSI (American National Standards Institute) standards committee on electrical weapons.

I have provided courtroom testimony in U.S., Australia, and Canada, along with being a retained expert in the United Kingdom and France. I also have significant research, publications, and testimony in the areas of resuscitation, ARDs (arrest-related death), prone restraint, and biomechanics. I have been retained by the United States Department of Justice for several cases involving electrical weapons. These cases involved criminal prosecution, Border Patrol, and the US Marshals.

Referral Question

I was retained by counsel for Alan Byerly to scientifically analyze the MACE® "Compact Stun Gun" (Black) Model #80534, which I understand was the device Mr. Byerly possessed at the U.S. Capitol on January 6, 2021. Specifically, counsel asked me to determine whether the MACE® "Compact Stun Gun" (Black) Model #80534 can be used in a manner likely to produce death or serious bodily injury. To answer the referral question, I purchased and conducted electrical testing on 2 units of the MACE® "Compact Stun Gun" (Black) Model #80534. These are labeled Unit #3 and Unit #4.* See Figure 1 and Figure 2.

Figure 1. MACE® "Compact Stun Gun" samples tested.

Figure 2. Back side of package.

* I also purchased 2 samples of the MACE® "Stun Gun" Model 80816 (Black), which I labeled Units #1 and #2 and which I also tested. Once I learned that Mr. Byerly did not possess a MACE® "Stun Gun" Model 80816 (Black) but only possessed a MACE® "Compact Stun Gun" (Black) Model #80534, I focused this report only on my analysis of the MACE® "Compact Stun Gun" (Black) Model #80534. Nonetheless, based upon my testing of Units #1 and #2, it is my opinion that MACE® "Stun Gun" Model 80816 (Black) cannot be used in a manner likely to produce death or serious bodily injury. The outputs of the 2 models are essentially identical.

Testing

Nerve Stimulator Compliance Testing

The outputs were tested according to the standard relied on by the US (Food and Drug Administration) under 21CFR882.5890.

This particular standard is the AAMI (American Association for Medical Instrumentation and ANSI (American National Standards Institute) standard NS4:2013 "Transcutaneous Electrical Nerve Stimulators."[111] With global harmonization, the FDA is also accepting the international standard, the IEC (International Electrotechnical Commission) standard 60601-2 (Nerve and Muscle Stimulators).[112]

AAMI/ANSI NS4:2013 §3.2.2.1 and IEC 60601-2 §201.12.4.104(a) both specify a load of 500 Ω so there was no conflict between the standards — for measuring the output — and thus this load was used for the output testing.

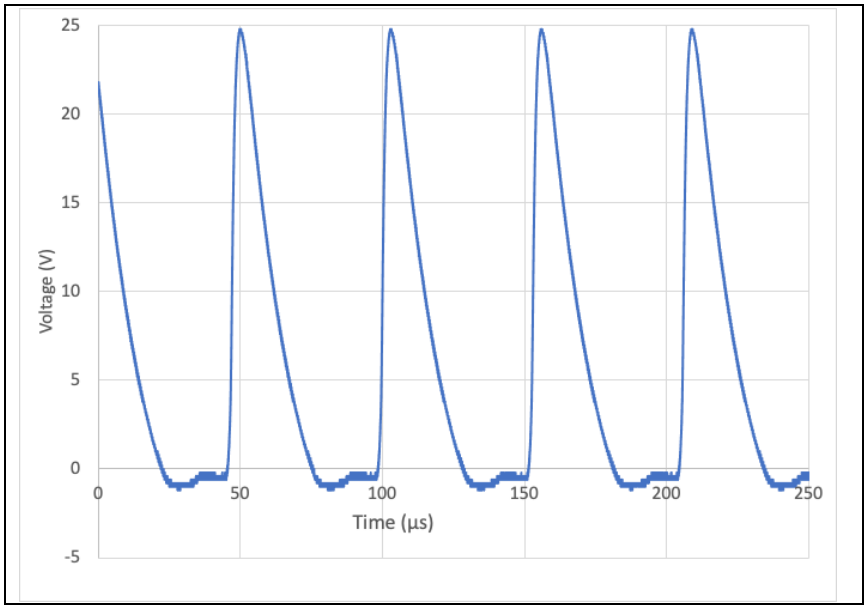

Figure 3. Output of Unit #3 over 250 microseconds.

The output of unit #3 is shown in Figure 3 with a peak voltage of 24.8 V. Unit #4 had a similar output but the peak voltage was slightly higher at 26.0 V. Single pulses from the 2 units are shown in Figure 4 and Figure 5. Test results are given in Table 1.

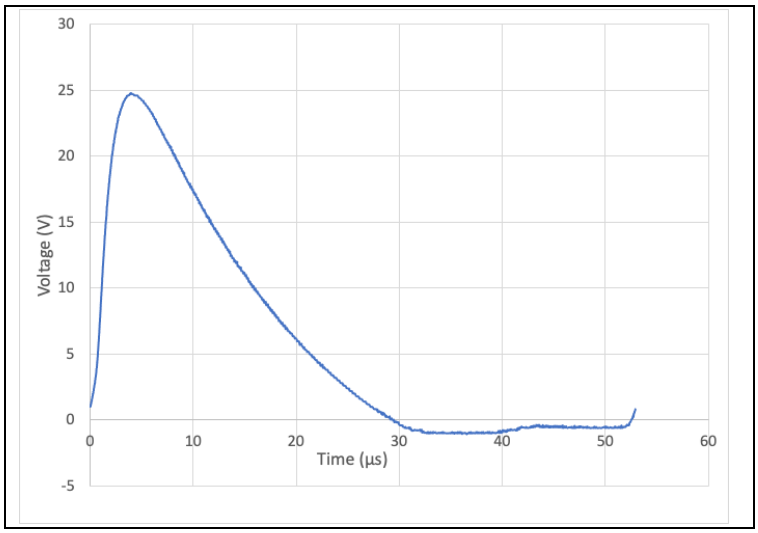

Figure 4. Single pulse from Unit #3.

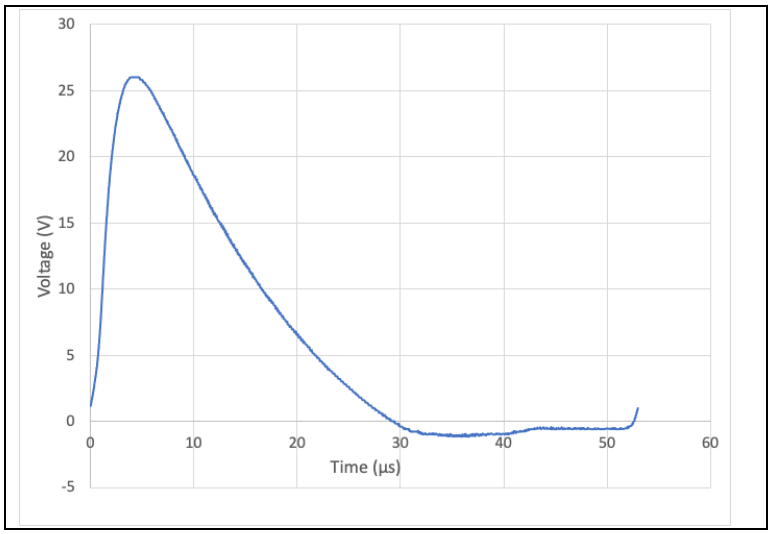

Figure 5. Single pulse from Unit #4.

Table 1. Device Outputs with 500 Ω Nerve Stimulator Load

Parameter	Unit #3	Unit #4
Charge (µC)	0.632	0.670
Energy (µJ)	11.24	12.62
Peak Voltage (V)	24.8	26.0
Average Voltage (V)	5.97	6.32
Average Power (W)	0.212	0.238
Pulse Duration (µs)	27.19	27.24
Normalized Charge (µC)	0.907	0.962
Period (µs)	52.97	53.01
Pulse Rate (PPS)	18 879	18 864

AAMI/ANSI NS4:2013 §3.2.2.2 allows a maximum of 75 µC per pulse and thus these units satisfy the upper safety limits by over 100 to 1.

Stun Gun Compliance Testing

ANSI CPLSO-17 (Electrical Characteristics of ECDs and CEWs) is the relevant standard for evaluating the outputs of a stun gun.[113] ANSI CPLSO-17 §A.1 states that the load shall be 600 Ω. The units were tested with 600 Ω loads and the results are presented in Table 2.

Table 2. Device Outputs with 600 Ω Stun-Gun Load

Parameter	Unit #3	Unit #4
Charge (μC)	0.787	0.799
Energy (μJ)	16.95	17.75
Peak Voltage (V)	29.6	30.4
Average Voltage (V)	7.38	7.58
Average Power (W)	0.318	0.336
Pulse Duration (μs)	27.94	27.60
Normalized Charge (μC)	1.125	1.144
Period (μs)	53.34	52.75
Pulse Rate (PPS)	18 747	18 954

ANSI CPLSO-17 §9.4 allows a maximum charge per pulse of 125 μC and thus the units tested satisfy the safety limit by a factor of over 150 to 1.

Effects Analysis

IEC (International Electrotechnical Commission) 60479 is the accepted international standard for predicting the effects an electric current. IEC 60479-2 §4.2.1 and §4.3.1 cover the ability to perceive high frequency electrical stimulation.[114] For stimulation frequencies of 10 kHz, the current is divided by a factor of 15 to predict the effects. The output frequency of these devices is about 19 kHz so we can use a factor of 28.5 to correct for the extremely high frequency.

Output voltage (peak-to-peak) ~ 25 V

Estimated current (peak-to-peak) = 50 mA = 25 V ÷ 500 Ω

Current (base-to-peak) = 25 mA

Current (RMS) ~ 17.7 mA = 25 mA ÷ √2

Sensed current = 0.62 mA = 17.7 mA ÷ 28.5 frequency correction factor

This is barely above the 0.5 mA perception threshold.

By IEC 60479-2 §4.3.2, the frequency correction factor — for muscle effects — is 5.2. Extrapolating to 19 kHz we have a correction factor of 9.9. Using the threshold of 10 mA (IEC 60479-1 §5.4) a current of this frequency would require 99 mA for muscle effects (let-go current for an adult male).[115] This is far in excess of the estimated 17.7 mA and thus we would not expect any muscle effects. In other words, there could be no stunning.

In addition, the MACE contacts are so close that they would only have a skin effect as the current would not be able to dive down deep enough to affect the muscles regardless of the amount of current.[18,31,116]

Findings

Comparison to Nerve Stimulator Standards.

AAMI/ANSI NS4:2013 is the relevant standard for evaluating the outputs of a nerve stimulator.[111] The testing results above are here compared to the requirements of the standard.

Charge Failure for a Nerve Stimulator

AAMI ANSI NS4:2013 §B.3.2.2.1 requires a minimum of 7 μC per pulse. The tested units fail the standard by 91.0% and 90.4% respectively.

Upper Safety Limit for a Nerve Stimulator

AAMI/ANSI NS4:2013 §3.2.2.2 allows a maximum of 75 μC per pulse and thus these units satisfy the upper safety limits by over 100 to 1.

Compliance with Safety for Ophthalmology Usage

IEC 60601-2 §201.12.104 allows a DC maximum of 10 mA @ 2 kΩ for use around the eye. This is equivalent to an average voltage of 20 V = 2k Ω * 10 mA. The average voltage of the units tested satisfy this requirement being 70% and 68% below the limit. Thus, these units could be used safely right around the eye.

Comparison to Stun Gun Standards.

ANSI CPLSO-17 (Electrical Characteristics of ECDs and CEWs) is the relevant standard for evaluating the outputs of a stun gun.[113] The testing results above are compared here to the requirements of the standard.

Raw Charge Failure for a Stun Gun

ANSI CPLSO-17 §9.3 requires a minimum of 40 μC for the minimum charge. The tested units failed the standard by 98%. In other words, the units delivered only 2% of the required minimum.

Normalized Charge Failure for a Stun Gun

ANSI CPLSO-17 §9.3 requires a minimum of 60 μC for the normalized charge. The normalized charges were calculated under ANSI CPLSO-17 §A.1. The tested units also failed this standard by 98%.

Upper Safety Limit for a Stun Gun

ANSI CPLSO-17 §9.4 allows a maximum charge per pulse of 125 μC and thus the units tested satisfy the safety limit by a factor of over 150 to 1.

Pulse Rate Failure for a Stun Gun

ANSI CPLSO-17 §9.2 requires the pulse rate to be less than 30 pulses per second (PPS). The units tested, exceed the pulse rate limit by factors of 625 and 632 respectively. One should not intuit that these higher rates make these units more effective. Human motor nerves are insensitive to sensing pulse rates far in excess of the normal physiological stimulation rate. In fact, pulse rates of 80 or 100 PPS are considered high frequency.[117,118] The astronomically high pulse rates of these units would tend to preclude muscle stimulation.

Comparison to Electrical Effects Standards.

IEC (International Electrotechnical Commission) 60479 is the accepted international standard for predicting the effects an electric current. According to 60479-1 and 2 the output of the MACE unit would be barely perceptible and could not cause any stunning effects.[114,115]

Conclusions

1. The MACE® "Compact Stun Gun" is *not* a stun gun.
2. The manufacturer advertises a shock of 7.6 C. This is an exaggeration of around 900% or 10 to 1.
3. The manufacturer makes several other advertising claims which are demonstrably and materially false:
    a. *A shock from the Mace Brand Flash Stun Gun of one second or less will cause pain and minor muscle contractions.*
    b. *Stunning the assailant for one to two seconds will cause spasms and a dazed mental state.*
    c. *Stunning an assailant for three to five second [sic] will cause loss of balance and muscle control.*
4. The MACE® "Compact Stun Gun" is best described as a "sparkler flashlight" since its effects are primarily auditory and visual and there is no stunning. To use a canine analogy, they are all bark and no bite.
5. Since these units put out almost no power or charge, they could be used safely right around the eye.
6. It is my opinion to a reasonable degree of scientific certainty that the MACE® "Stun Gun" Model 80534 cannot be used in a manner likely to produce death.
7. It is also my opinion to a reasonable degree of scientific certainty that the MACE® "Stun Gun" Model 80534 cannot be used in a manner likely to produce serious bodily injury because it cannot cause injury that involves a substantial risk of death, extreme physical pain, protracted and obvious disfigurement, or protracted loss or impairment of the function of a bodily member, organ, or mental faculty.

General Comments

Previous Testimony

I have testified as an expert at trial or by deposition within the preceding 4 years in:

1. Nevro v Boston Scientific re US #6895280, Wash. DC. US Patent Appeals Board. (Apr 2018) P
2. Nevro v Boston Scientific re US #7587241, Wash. DC. US Patent Appeals Board. (Apr 2018) P
3. Aguilar v Los Angeles. US District Court, Los Angeles, CA. (May 2018 & April 2019) D
4. Ramos v East Hartford. US District Court, Hartford, CT. (June 2018) D
5. Todero v Blackwell. US District Court, Indianapolis, IN (Sept 2018) D
6. Silva v Chung. US District Court, Honolulu. (May 2019) D
7. Wood v Entergy. Arkansas District Court, AR. (May 2019) P
8. Cardionet v Infobionics. US District Court, Boston, Massachusetts. (Sept 2019) D
9. Payne v Omaha. US Dept of Labor (Oct 2019) P
10. Timpa v Dillard. US District Court, Dallas, TX (Dec 2019) D
11. USA vs. Burton Ritchie. US District Court, Las Vegas, NV (Jan 2020) P
12. Starke v Astar. Florida District Court, St. John's County, FL (Apr 2020) D
13. Nevro v Boston Scientific re US #9162071, Wash. DC. US Patent Appeals Board. (May 2020) P
14. Nevro v Boston Scientific re US #8682447, Wash. DC. US Patent Appeals Board. (May 2020) P
15. Nevro v Boston Scientific re US #6381496, Wash. DC. US Patent Appeals Board. (July 2020) P
16. Loftis v American Electric Power. US District Court, Charleston, WV (Oct 2020) D
17. Valear v Q3. Colorado Dst Ct., Denver Cty, CO. (June and Oct 2021) D
18. Georgia v Howell, Scott, and Copeland. Georgia District Court, GA. (Oct 2021) D
19. Harris v Rambosk. US District Court, FL (Oct 2021) D
20. Dold v. Snohomish County. US District Court, WA (Jan 2022) D
21. Adkins v. Appalachian Power. US District Court, WV (Jan 2022) D

Right To Amend:

The opinions in this report are living opinions. Should additional discovery material be received, or additional research be completed, and then reviewed, these opinions may be altered or reinforced depending upon what information is obtained, reviewed, or studied. If new issues are opined, identified, or developed subsequent to submission of this report, I reserve the right to supplement, or further supplement, this report. *I especially reserve the right to amend my report after receiving new forensic evidence.*

Further Development:

Further, the opinions, which are expressed in this report, are listed to comply with current report requests. Each opinion may be further developed through research, investigation, during deposition or trial testimony.

Specific References:

Some of the opinions in this report may list specific references to some of the case specific documents reviewed or considered. These listings are not intended to be all-inclusive. I specifically reserve the right to supplement the support for each of the opinions in this report.

Opinion Methodology:

The enclosed opinions were developed using the disciplines of bioelectricity, electrophysiology, biomedical science, cardiovascular physiology, scientific methods, mathematics, and physics and are to a reasonable degree of professional and scientific certainty.

Additionally, the opinions provided in this case were developed using one or more qualitative and quantitative research methodologies, in addition to my education, training, experience, and literature review.

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CURRICULUM VITAE

TABLE OF CONTENTS:

BASIC INFORMATION:

NAME:	Mark W. Kroll, PhD, FACC, FHRS, FIEEE, FAIMBE
OFFICE:	Box 23
	Crystal Bay, MN 55323 USA
PHONE:	+1-805-428-1838
E-MAIL:	mark@kroll.name
CITIZENSHIP:	United States
MARITAL STATUS:	Married, 4 children
LANGUAGES:	Spanish (Good)
	German (Usable)
	French (Reading Only)
H-INDEX:	79 (Google Scholar)

ACADEMICS:

ACADEMIC DEGREES:

1975	B. Mathematics
1983	M.S. Electrical Engineering
1987	Ph.D. Electrical Engineering
1990	M.B.A.

MEDICAL AND BIOMEDICAL RECOGNITIONS:

1996: American College of Cardiology: Fellow

2009: Heart Rhythm Society: Fellow

2009: Engineering in Medicine and Biology Society: Fellow

2013: American Institute for Medical and Biological Engineering: Fellow

EDUCATION:

1967-1970	Minnetonka High School Minnetonka, Minnesota
1969	Michigan State University (National Science Foundation High School Honors Summer Program) East Lansing, Michigan
1970-1975	University of Minnesota Minneapolis, Minnesota
1975-1979	University of Minnesota Graduate School Minneapolis, Minnesota
1988-1990	University of St. Thomas Minneapolis, Minnesota

ACADEMIC AFFILIATIONS:

2006-Present	Adjunct Full Professor, Biomedical Engineering University of Minnesota, Minneapolis
2003-Present	Adjunct Full Professor, Biomedical Engineering California Polytechnic State University, San Luis Obispo. (There was a 2-year hiatus from 2010 to Feb 2012)
2002-2016	Faculty for Creativity and Innovation Program UCLA

PROFESSIONAL POSITIONS:

Research Aide (1970-1972)

Medtronic, Inc., Minneapolis, Minnesota

Teaching Assistant and Graduate Instructor (1973-1978)

Economics, Mathematics & Electrical Engineering Departments

University of Minnesota, Minneapolis, Minnesota

Vice President, Research & Development (1978-1985)

Intercomp Company, Plymouth, Minnesota

Vice President, Research & Development (1985-1991)

Cherne Medical, Inc., Edina, Minnesota

Vice President, Research (1991-1995)

Angeion Corp., Plymouth, Minnesota

Vice President, Tachycardia Business Unit (1995-1997)

St. Jude Medical, Inc., Los Angeles, California

Vice President, Research and Development for Daig subsidiary (1997-1999)
St. Jude Medical, Inc. Cardiac Rhythm Management Division

Senior Vice President, Technology and Design (1999-2000)
St. Jude Medical, Inc. Cardiac Rhythm Management Division

Senior Vice President, Chief Technology Officer (2001-August 2005) St. Jude Medical, Inc. Cardiac Rhythm Management Division

Principal, Mark Kroll & Associates, LLC (March 2006 to present)

HONORS AND AWARDS:

1969	National Science Foundation High School Honors Program
1970	Putnam Varsity Team (Intercollegiate Mathematics Competition) when Freshman
1971	Alfred P. Sloan Fellowship
1971	Ellerbe Scholastic Award for Institute of Technology
1992	Who's Who in Science and Engineering
1993	Who's Who in the Midwest
1996	Who's Who in the West
1998	Prolific Inventor, U.S. Patent and Trademark Office
1997	Who's Who in Medicine and Healthcare
2010	Career Achievement Award by Engineering in Medicine and Biology Society
2012	Outstanding Achievement Award: Distinguished Graduate, University of Minnesota.
2016	Mark Kroll Medical Innovation Day proclamation by Minnesota Governor.

FOR-PROFIT BOARDS:

Haemonetics (NYSE:HAE)

Axon Enterprises (NASD:AAXN)

Prostacare (private)

VivaQuant (private)

NON-PROFIT BOARDS & MAJOR COMMITTEES:

IEC (International Electrotechnical Commission) TC64 MT4 committee (responsible for the basic international electrical safety standard 60479 series).

ANSI (American National Standards Institute) CPLSO committee for high-voltage security systems.

IEC TC85 committee (responsible for electrical measurement standards).

Lake Minnetonka Conservation District board

EDITORIAL ROLES:

Europace: Regular Reviewer
EMBS Conference: Regular Reviewer
Heart Rhythm Journal: Ad Hoc Reviewer
J of Cardiovascular Electrophysiology: Ad Hoc Reviewer
IEEE Trans on Biomedical Engineering: Ad Hoc Reviewer
Journal American College of Cardiology: Ad Hoc Reviewer
Pacing and Clinical Electrophysiology: Regular Reviewer
J Occupational & Environmental Medicine: Ad Hoc Reviewer
Journal of Medical Science: Ad Hoc Reviewer
IEEE Trans Biomedical Circuits & Systems: Ad Hoc Reviewer
J of Interventional Cardiac Electrophysiology: Regular Reviewer
J of Forensic & Legal Medicine: "Outstanding" Reviewer
Nature Scientific Reports: Ad Hoc Reviewer
J American Medical Association: Ad Hoc Reviewer
British Medical J: Ad Hoc Reviewer
Science & Justice: Ad Hoc Reviewer

ISSUED U.S. PATENTS:

4,672,976	Heart Sound Sensor
4,672,977	Lung Sound Cancellation Method and Apparatus
4,714,121	Wheel Scale Assembly
4,744,369	Medical Current Limiting Circuit
4,763,660	Flexible and Disposable Electrode Belt Device
4,769,760	Terrain Biased Dynamic Multiple Threshold Synchronization Method and Apparatus
4,775,018	Load Cell Assembly
4,811,156	Medical Current Limiter
4,832,608	Electrode Belt Adapter
4,879,760	Optical Fiber Transmissive Signal Modulation System
4,890,630	Bio-Electric Noise Cancellation System
4,947,859	Bio-Acoustic Sound Sensor
4,956,877	Optical Fiber Reflective Signal Modulation System
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5,188,116	Electrocardiographic Method and Device
5,199,429	Implantable Defibrillator System with Switched Capacitors
5,241,960	Small Implantable Cardioverter Defibrillator System
5,257,634	Low Impedance Defibrillation Catheter

5,258,906	Medical Metering and Invoicing Method
5,265,623	Optimized Field Defibrillation Catheter
5,300,110	Dirk Based Defibrillation Electrode
5,306,291	Optimal Energy Steering
5,312,443	Arrhythmia Detection Criteria Process
5,314,448	Pulse Pre-Treatment Method of Defibrillation
5,325,870	Multiplexed Defibrillation Electrode Apparatus System
5,330,509	Far-Field Anti-Tachycardia Termination
5,334,219	Separated Capacitor Cardioversion
5,336,245	Electrogram Interrogation Apparatus Storage
5,342,399	Process for Defibrillation with Small Capacitor
5,351,687	Method and Apparatus for Non-invasively Determining a Patient's Susceptibility to Ventricular Arrhythmias
5,366,484	Narrow Pulse Cardioversion
5,366,485	Pulse Pretreatment Device
5,366,487	Pulse Correlation Detection Method
5,376,103	Improved Electrode System
5,383,907	System and Method for Delivering Multiple Closely Spaced Defibrillation Pulses
5,391,185	Atrial Cardioverter with Ventricular Protection

5,391,186	Method and Apparatus for Utilizing Short TAU Capacitors in an Implantable Cardioverter Defibrillator
5,405,363	Implantable Cardioverter Defibrillator Having a Smaller Displacement Volume
5,407,444	Cardioversion Method
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5,413,591	Current Truncated Waveform Defibrillator
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5,431,687	Impedance Timed Defibrillation System
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5,441,518	Implantable Cardioverter Defibrillator System Having Independently Controllable Electrode Discharge Pathway
5,447,521	Safety System for an Implantable Defibrillator
5,449,377	Overcharged Final Countershock for an Implantable Cardioverter Defibrillator and Method
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5,458,620	Interdependent Detection Parameter Method of Diagnosing Fibrillation
5,507,781	Implantable Defibrillator System with Capacitor Switching Circuitry
5,514,160	Implantable Defibrillator for Producing a Rectangular-Shaped Defibrillation Waveform
5,522,853	Method and Apparatus for Progressive Recruitment of Cardiac Fibrillation

5,527,346	Implantable Cardioverter Defibrillator Employing Polymer Thin Film Capacitors
5,531,764	Implantable Defibrillator System and Method Having Successive Changeable Defibrillation Waveforms
5,531,766	Implantable Cardioverter Defibrillator Pulse Generator Kite-Tail Electrode System
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5,836,973	Staged Energy Concentration for an Implantable Biomedical Device
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6,445,950	Implantable Cardioverter/Defibrillator Employing Shock Delivery Timing for Preventing Induced Fibrillation
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6,549,807	Implantable Cardioverter Defibrillator Having a Rechargeable, Fast-Charging Battery and Method Thereof
6,560,484	Method and Apparatus for Electrically Forcing Cardiac Output in an Arrhythmia Patient
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6,561,185	Altitude Adjustment Method and Apparatus
6,567,697	External Defibrillator with Electrical CPR Assist
6,578,499	Wind and Insect Resistant Picnic System
6,580,908	Generic Number Cellular Telephone
6,580,915	Aircraft Internal EMI Detection and Location
6,590,534	Electronic Car Locator
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6,694,188	Dynamic Control of Overdrive Pacing Based on Degree of Randomness Within Heart Rate
6,714,818	System and Method of Generating an Optimal Three-Step Defibrillation Waveform for Use in an Implantable Cardioverter/Defibrillator (ICD)
6,731,982	Anti-Tachycardia Pacing Methods and Devices
6,738,663	Implantable Device and Method for the Electrical Treatment of Cancer
6,744,152	Implantable Cardioverter Defibrillator with Switchable Power Source and Patient Warning System Cardiac Device
6,745,073	System and Method of Generating a Low-Pain Multi-Step Defibrillation Waveform for Use in an Implantable Cardioverter/Defibrillator (ICD)
6,748,261	Implantable Cardiac Stimulation Device for and Method of Monitoring Progression or Regression of Heart Disease by Monitoring Interchamber Conduction Delays
6,751,503	Methods and Systems for Treating Patients with Congestive Heart Failure (CHF)
6,754,531	Anti-Tachycardia Pacing Methods and Devices

6,760,625	Battery Monitoring System for an Implantable Medical Device
6,763,266	System and Method of Generating a Low-Pain Multi-Step Defibrillation Waveform for Use in an Implantable Cardioverter/Defibrillator (ICD)
6,766,194	Dynamic Control of Overdrive Pacing Based on Degree of Randomness Within Heart Rate
6,766,196	Anti-Tachycardia Pacing Methods and Devices
6,772,007	System and Method of Generating a Low-Pain Multi-Step Defibrillation Waveform for Use in an Implantable Cardioverter/Defibrillator (ICD)
6,775,571	Dynamic Control of Overdrive Pacing Based on Degree of Randomness Within Heart Rate
6,780,181	Even Temperature Linear Lesion Ablation Catheter
6,795,731	Anti-Tachycardia Pacing Methods and Devices
6,804,577	Battery Monitoring System for an Implantable Medical Device
6,817,520	Magnetic Card Swipe Signature Security System
6,826,427	Methods and Devices for Inhibiting Battery Voltage Delays in an Implantable Cardiac Device
6,853,859	Electrical Cardiac Output Forcer
6,854,844	Tan-Thru Sunglasses
6,862,475	Pediatric Rate Varying Implantable Cardiac Device
6,865,420	Cardiac Stimulation Device for Optimizing Cardiac output with Myocardial Ischemia Protection
6,904,314	Automatic defibrillation threshold tracking

6,907,286	Anti-tachycardia pacing methods and devices
6,928,321	Hypnosis augmented ICD
6,931,278	Implantable cardioverter defibrillator having fast action operation
6,937,896	Sympathetic nerve stimulator and/or pacemaker
6,954,669	System and method of generating an optimal three-step defibrillation waveform for use in an implantable cardioverter/defibrillator (ICD)
6,961,615	System and method for evaluating risk of mortality due to congestive heart failure using physiologic sensors
6,964,116	Ambulatory hairdryer
6,968,574	Light selective sports garments
6,980,850	System and method for emulating a surface EKG using an implantable cardiac stimulation device
6,987,999	Implantable defibrillator with alternating counter electrode
6,993,379	System and method for emulating a surface EKG using an implantable cardiac stimulation device
6,997,180	Breathing gas therapeutic method and apparatus
7,003,348	Monitoring cardiac geometry for diagnostics and therapy
7,010,358	Single lead system for high voltage CHF device
7,010,346	Implantable medical device having atrial tachyarrhythmia prevention therapy

7,006,867	Methods and apparatus for overdrive pacing multiple atrial sites using an implantable cardiac stimulation device
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7,062,328	System and method for providing improved specificity for automatic mode switching within an implantable medical device
7,072,712	Disposable external defibrillator with hinged housing halves
7,076,295	Automatic defibrillation shock energy adjuster

7,076,300	Implantable cardiac stimulation device and method that discriminates between and treats atrial tachycardia and atrial fibrillation
7,076,301	Implantable cardiac stimulation device that minimizes parasitic muscle stimulation and method
7,079,891	System and method for providing cardioversion therapy and overdrive pacing using an implantable cardiac stimulation device
7,103,412	Implantable cardiac stimulation device and method for detecting asymptomatic diabetes
7,113,822	System and method for providing cardioversion therapy and overdrive pacing using an implantable cardiac stimulation device
7,120,491	Implantable cardioversion device with a self-adjusting threshold for therapy selection
7,123,961	Stimulation of autonomic nerves
7,139,611	System and method for rejecting far-field signals using an implantable cardiac stimulation device
7,149,579	System and method for determining patient posture based on 3-D trajectory using an implantable medical device
7,149,584	System and method for determining patient posture based on 3-D trajectory using an implantable medical device
7,155,277	Pathway management for CHF patients
7,155,286	System and method for reducing pain associated with cardioversion shocks generated by implantable cardiac stimulation devices
7,158,825	Implantable cardioverter defibrillator with leakage detection and prevention system

7,158,826	System and method for generating pain inhibition pulses using an implantable cardiac stimulation device
7,162,299	ICD with VF prevention
7,164,944	Analgesic therapy for ICD patients
7,164,950	Implantable stimulation device with isolating system for minimizing magnetic induction
7,171,268	Implantable cardiac stimulation device providing accelerated defibrillation delivery and method
7,181,281	ICD using MEMS for optimal therapy
7,181,277	Methods and systems for reducing the likelihood of arrhythmia onset
7,181,269	Implantable device that diagnoses ischemia and myocardial infarction and method
7,177,684	Activity monitor and six-minute walk test for depression and CHF patients
7,175,271	Tan-thru glasses
7,177,684	Activity monitor and six-minute walk test for depression and CHF patients
7,181,269	Implantable device that diagnoses ischemia and myocardial infarction and method
7,181,277	Methods and systems for reducing the likelihood of arrhythmia onset
7,181,281	ICD using MEMS for optimal therapy
7,191,002	Anti-tachycardia pacing methods and devices

7,194,304	Implantable cardiac defibrillation assembly including a self-evaluation system and method
7,200,437	Tissue contact for satellite cardiac pacemaker
7,203,546	System and method of implementing a prophylactic pacer/defibrillator
7,203,547	System and method of implementing a prophylactic pacer/defibrillator
7,203,550	Implantable medical device with a current generated for infection control
7,212,855	System and method for providing preventive overdrive pacing and antitachycardia pacing using an implantable cardiac stimulation device
7,212,859	Dual-chamber implantable cardiac stimulation system and device with selectable arrhythmia termination electrode configurations and method
7,225,030	Management of implantable devices
7,225,029	Implantable cardiac therapy device with dual chamber can to isolate high-frequency circuitry
7,225,020	System and method for providing preventive overdrive pacing and antitachycardia pacing using an implantable cardiac stimulation device
7,225,029	Implantable cardiac therapy device with dual chamber can to isolate high-frequency circuitry
7,225,030	Management of implantable devices
7,231,255	System and method for reducing pain associated with cardioversion shocks generated by implantable cardiac stimulation devices

7,254,440	Implantable ischemia and myocardial infarction monitor and method
7,260,433	Subcutaneous cardiac stimulation device providing anti-tachycardia pacing therapy and method
7,270,411	Light selective sports garments
7,272,438	Mode switching heart stimulation apparatus and method
7,274,961	Implantable cardiac stimulation device and method that discriminates between and treats ventricular tachycardia and ventricular fibrillation
7,277,755	Subcutaneous cardiac stimulation device providing anti-tachycardia pacing therapy and method
7,283,871	Self adjusting optimal waveforms
7,292,886	Bifocal cardiac stimulation device and methods
7,295,873	Anti-tachycardia pacing method and apparatus for multi-chamber pacing
7,305,266	Cardiac stimulation devices and methods for measuring impedances associated with the heart
7,305,270	Cardiac pacing/sensing lead providing far-field signal rejection
7,308,305	Optimally timed early shock defibrillation
7,308,307	Implantable single-chamber atrial pacing device providing active ventricular far field sensing and rate limit
7,321,792	Pacing therapy and acupuncture
7,324,849	Methods and devices for inhibiting battery voltage delays in an implantable cardiac device

7,333,854	Orthostatic cardiac output response pacer for heart failure patients and diabetic patients
7,340,302	Treating sleep apnea in patients using phrenic nerve stimulation
7,359,752	Configurable test load for an implantable medical device
7,363,081	System and method for providing preventive over-drive pacing and antitachycardia pacing using an implantable cardiac stimulation device
7,363,086	Capture verification in respiratory diaphragm stimulation
7,369,898	System and method for responding to pulsed gradient magnetic fields using an implantable medical device
7,373,202	Unipolar and bipolar lead cardiac pacemaker and method for inhibiting anode stimulation
7,386,342	Subcutaneous cardiac stimulation device providing anti-tachycardia pacing therapy and method
7,386,343	Spectrum-driven arrhythmia treatment method
7,389,140	Adjustment of stimulation current path
7,398,122	Self adjusting optimal waveforms
7,403,823	Super plastic design for CHF pacemaker lead
7,412,285	Method and device for treating cancer with electrical therapy in conjunction with chemotherapeutic agents and radiation therapy
7,413,302	Tan thru glasses
7,414,534	Method and apparatus for monitoring ingestion of medications using an implantable medical device

7,421,292	System and method for controlling the recording of diagnostic medical data in an implantable medical device
7,438,283	Toddler stair safety system
7,444,154	Nuisance cell phone locator
7,447,544	System and method for controlling the recording of diagnostic medical data in an implantable medical device
7,450,995	Implantable cardiac stimulation device including an output circuit that provides arbitrarily shaped defibrillation waveforms
7,454,249	Early warning for lead insulation failure
7,457,636	Self defense cellular telephone
7,467,012	Respiration parameters controlled by heart rate
7,480,531	System and method for reducing pain associated with cardioversion shocks generated by implantable cardiac stimulation devices
7,483,715	Self defense cell phone with projectiles
7,520,081	Electric immobilization weapon
7,526,336	Left heart implantable cardiac stimulation system with clot prevention and method
7,540,605	Tan-through sunglasses
7,565,195	Failsafe satellite pacemaker system
7,570,995	Method for reforming a capacitor in an implantable medical device
7,577,478	Ischemia detection for anti-arrhythmia therapy

7,585,071	Tan thru glasses
7,587,239	Cardiac pacemaker system, lead and method for rejecting far-field signals
7,590,445	Indirect mechanical medical therapy system
7,596,410	Tiered antitachycardia pacing and pre-pulsing therapy
7,596,412	Opto-electrical coherence detection of hemodynamically compromising arrhythmia
7,610,090	Implantable medical device with automatic sensing adjustment
7,613,513	System and method for determining cardiac geometry
7,634,313	Failsafe satellite pacemaker system
7,640,065	Cardiac constraint/therapeutic stimulation device
7,653,440	Stimulation lead and methods of stimulating
7,654,230	Domestic animal telephone
7,654,964	System and method for detecting arterial blood pressure based on aortic electrical resistance using an implantable medical device
7,676,266	Monitoring ventricular synchrony
7,680,529	System and method for monitoring blood glucose levels using an implantable medical device
7,684,870	Direct current fibrillator
7,689,280	Automatic system for determining bi-ventricular pacing responders

7,706,864	Method and apparatus for electrically forcing cardiac output in an arrhythmia patient
7,711,415	Implantable devices, and methods for use therewith, for monitoring sympathetic and parasympathetic influences on the heart
7,720,549	Partially implantable system for the electrical treatment of abnormal tissue growth
7,756,577	Multi-modal medical therapy system
7,751,887	Tiered antitachycardia pacing and pre-pulsing therapy
7,747,320	Responding a partial lead failure in an implantable cardioverter defibrillator
7,742,811	Implantable device and method for the electrical treatment of cancer
7,738,954	His bundle control

7,747,320	Responding a partial lead failure in an implantable cardioverter defibrillator
7,751,887	Tiered antitachycardia pacing and pre-pulsing therapy
7,756,577	Multi-modal medical therapy system

7,787,961	Reduced-diameter body-implantable leads and methods of assembly
7,805,158	Self defense cell phone with acceleration sensor and emergency call button
7,809,439	Spectrum-driven arrhythmia treatment method
7,813,798	Systems and methods for preventing, detecting, and terminating pacemaker mediated tachycardia in

	biventricular implantable cardiac stimulation systems
7,848,804	Apparatus and related methods for capacitor reforming
7,848,806	Virtual electrode polarization for shock therapy
7,856,268	Ischemia detection for anti-arrhythmia therapy
7,859,818	Electronic control device with wireless projectiles
7,876,228	Method and apparatus for monitoring ingestion of medications using an implantable medical device
7,878,152	Domestic animal telephone
7,894,915	Implantable medical device
7,899,537	Pericardial cardioverter defibrillator
7,946,056	Ambulatory hairdryer
7,970,465	Decision paradigms for implantable cardioverter-defibrillators
7,986,965	Self defense cell phone with shocking circuitry
8,005,474	Cell phone locator method
8,014,854	Method and device for treating abnormal tissue growth with electrical therapy
8,060,200	Self-adjusting optimal waveforms
8,121,680	Subcutaneous cardiac stimulation device providing anti-tachycardia pacing therapy and method
8,099,174	Left heart implantable cardiac stimulation system with clot prevention electrode body coating and method
8,123,716	Pericardial delivery of treatment

8,160,655	Automatic recharging wireless headset
8,170,689	Implantable cardiac defibrillation system with defibrillation electrode entrapment prevention and method
8,200,330	Responding to partial lead failure in an implantable cardioverter defibrillator
8,201,522	Domestic animal telephone
8,269,635	Method and apparatus for monitoring ingestion of medications using an implantable medical device
8,269,636	Method and apparatus for monitoring ingestion of medications using an implantable medical device
8,340,731	Automatic recharging wireless headset
8,352,033	Apparatus and methods for measuring defibrillation lead impedance via a high magnitude, short duration current pulse
8,401,637	Medium voltage therapy applications in treating cardiac arrest
8,483,822	Adaptive medium voltage therapy for cardiac arrhythmias
8,551,019	Variable stiffness guide wire
8,577,425	Automatic recharging wireless headset
8,600,494	Method and device for treating abnormal tissue growth with electrical therapy
8,676,317	System and method for estimating defibrillation impedance based on low-voltage resistance measurements using an implantable medical device

8,700,156	High accuracy painless method for measuring defibrillation lead impedance
8,718,759	Multi-modal electrotherapy method and apparatus
8,750,990	Coordinated medium voltage therapy for improving effectiveness of defibrillation therapy
8,750,972	Implantable medical device with automatic sensing adjustment
8,805,495	Adaptive medium voltage therapy for cardiac arrhythmias
8,812,103	Method for detecting and treating insulation lead-to-housing failures
8,868,178	Arrhythmia electrotherapy device and method with provisions for mitigating patient discomfort
8,868,186	Methods for measuring impedances associated with the heart
9,061,164	Method for coordinating medium voltage therapy for improving effectiveness of defibrillation therapy
9,144,684	Medium voltage therapy applied as a test of a physiologic state
9,168,381	Arrhythmia electrotherapy device and method with provisions for inferring patient discomfort from evoked response
9,272,150	Method for detecting and localizing insulation failures of implantable device leads
9,333,009	Spinal correction system actuators
9,408,638	Spinal correction system actuators
9,421,391	Coordinated medium voltage therapy for improving effectiveness of defibrillation therapy

9,427,577	Method for detecting and treating insulation lead-to-housing failures
9,480,851	Multi-modal electrotherapy method and apparatus
9,636,500	Active surveillance of implanted medical leads for lead integrity
9,636,504	Arrhythmia electrotheraphy device and method with provisions for mitigating patient discomfort
9,675,799	Method and apparatus for implantable cardiac lead integrity analysis
9,713,727	Cardiac-safe electrotherapy method and apparatus
9,821,156	Apparatus for detecting and localizing insulation failures of implantable device leads
9,895,168	Spinal correction system actuators
9,987,485	Method and apparatus for implantable cardiac lead integrity analysis
10,039,919	Methods and apparatus for detecting and localizing partial conductor failures of implantable device leads
10,118,031	Method and apparatus for implantable cardiac lead integrity analysis
10,143,851	Arrhythmia electrotherapy device and method with provisions for mitigating patient discomfort
10,238,884	Cardiac-safe electrotherapy method and apparatus
10,252,069	Micro-charge ICD lead testing method and apparatus
10,675,062	Spinal correction system actuators

10,792,493	Method and apparatus for implantable cardiac lead integrity analysis
11,224,474	System for managing high impedance changes in a non-thermal ablation system for BPH

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AU1305595A1	Method and Apparatus Utilizing Short Tau Capacitors
AU1305795A1	Implantable defibrillator employing polymer thin film capacitors
AU1696897A1	Medical current limiter
AU2003299471	Method and Device for Treating Cancer with Electrical Therapy in Conjunction with Chemotherapeutic Agents and Radiation Therapy
AU2012261983B2	Spinal correction system actuators
AU3625295A1	Low profile defibrillation catheter
AU697971B2	Medical current limiter
AU9048267	Bio-acoustic signal sensor
AU921460392A1	Electrocardiographic signal processing device
AU9513055	Implantable cardioverter defibrillator (extended shock duration)
AU9513057	Implantable cardioverter defibrillator (polymer thin film capacitors)
AU952637295	Implantable Defibrillator System for Generating Biphasic Waveforms
AU9539631	Implantable cardioverter defibrillator (stepped cardioversion)
AU9716968	Two terminal bi-directional medical current limiter
CA1291792	Flexible and Disposable Electrode Belt Device
CA2838047A1	Spinal correction system actuators
CN103781429B	Spinal correction system actuators
DE3637956	Flexible egwerfbare elektrodenbandvorrichtung (electrode belt)

DE60016125T	Implantable Cardioversion Device with Automatic Filter Control
DE60026121T	Implantable ventricular cardioverter/defibrillator employing atrial pacing for preventing atrial fibrillation from ventricular cardioversion and defibrillation shocks
DE60114507T	Method and apparatus for biventricular stimulation and capture monitoring
DE60203863T	XY Selectable lead assembly
DE60212280T	Pacing mode to reduce effects of orthostatic hypotension and syncope
DE60303758T	System for monitoring blood glucose levels using an implantable medical device
DE69218658	Implantable defibrillator system providing waveform optimization
DE69228735T2	Defibrillationssystem mit einem kleinen kondensator
DE69230430C0	Vorrichtung zur behandlung von herz vor einer defibrillation
DE69319641T2	Detektion von tachykardie und herzflimmern
DE69320474T2	Implantierbarer kardiovertierer/defibrillator mit einem kleineren verdraengungsvolumen
DE69321629T2	Optimale energiesteuerung fuer einen implantierbaren defibrillator
DE69323868C0	Herzrhythmuskorrektur mittels kurzer impulse
DE69936786T	Temporary atrial cardioversion electrode catheter
EP0406381	Bio-acoustic signal sensor
EP0515059	Implantable defibrillator system providing waveform optimization
EP0540266	Cardiac Pacemaker with Pretreatment Circuit

EP0558353	Implantable Defibrillation System with Optimum Energy Steering
EP0560569	Defibrillation and Tachycardia Detection System
EP0578700	Electrocardiographic signal processing device
EP0636041	Cardioversion Waveform Production Circuit for Tachycardia Termination
EP0642368	Treatment of Ventricular Tachycardia Using Far-Field Pulse Series
EP0642369B1	Implantable Cardioverter Defibrillator for Subcutaneous Location
EP0720496A4	Prophylactic implantable cardioverter defibrillator
EP0738171	Implantable cardioverter defibrillator (stepped cardioversion)
EP0739223	Implantable cardioverter defibrillator (extended shock duration)
EP0739224	Implantable cardioverter defibrillator (polymer thin film capacitors)
EP0751805A4	Staged Energy Storage System for Implantable Defibrillator
EP0820652	Two terminal bi-directional medical current limiter
EP-0868206-A1	Method and apparatus for temporarily electrically forcing cardiac output as a backup for tachycardia patients
EP-1035890-A1	Implantable stimulation lead for use with an ICD device having autocapture pacing features
EP1046409	An implantable cardioverter-defibrillator with automatic arrhythmia detection criteria adjustment
EP-1062987-A2	Implantable medical device
EP1084730	Implantable cardioversion device with automatic filter control

EP-1110581-A2	Implantable ventricular cardioverter/ defibrillator employing atrial pacing for preventing atrial fibrillation from ventricular cardioversion and defibrillation shocks
EP1114653	An Implantable Cardioversion Device with a Self-Adjusting Threshold for Therapy Selection
EP1127587	Dual-Chamber Implantable Cardiac Stimulation System and Device with Selectable Arrhythmia Termination Electrode Configurations and Method
EP1140279	Temporary atrial cardioversion electrode catheter
EP1155711	Method and Apparatus for Biventricular Stimulation and Capture Monitoring
EP1155712	Implantable dual site cardiac stimulation device having independent automatic capture capability
EP1205215	Implantable Cardioverter Defibrillator Having a Rechargeable, Fast-Charging Battery and Method Thereof
EP1234597	His Bundle Sensing Device and Associated Method
EP1291036	Pacing Mode to Reduce Effects of Orthostatic Hypotension and Syncope
EP1300175	XY selectable lead assembly
EP1304137	Anti-tachycardia pacing devices
EP1304138	Automatic defibrillation shock energy adjuster
EP1306105	Implantable Cardiac Therapy Device with Dual Chamber Can
EP1308182	Implantable cardiac stimulation device
EP1419731	System and Method For Monitoring Blood Glucose Levels Using an Implantable Medical Device
EP1515775 (A2)	Method and device for treating cancer with electrical therapy in conjunction with chemotherapeutic agents and radiation therapy

EP1524008 (A1)	Implantable cardiac stimulation device providing arbitrarily shaped defibrillation waveforms
EP1570880 (A1)	Left heart implantable cardiac stimulation system with clot prevention
EP1598093 (A2)	System for automated fluid monitoring
EP1614446 (A2)	Electrically forcing cardiac output temporarily in tachycardia patients
EP1647301 (A1)	Mode switching heart stimulation apparatus and method
EP1666086 (A1)	Automatic capture pacing lead
EP1747039	Partially implantable system for the electrical treatment of cancer
EP2092953 (A3)	Implantable stimulation lead for use with an ICD device having autocapture pacing features
EP2713916B1	Spinal correction system actuators
EP2854702 (A1)	Method For Detecting And Localizing Insulation Failures Of Implantable Device Leads
EP2931362A1	Arrhythmia electrotherapy device and method with provisions for mitigating patient discomfort
EP2931364A1	Coordinated medium voltage therapy for improving effectiveness of defibrillation therapy
EP547878A3	Defibrillation Pulse Generator with Small Value Capacitor
FR642369R4	Implantable Cardioverter Defibrillator Having a Smaller Displacement Volume
FR720496R1	Prophylactic implantable cardioverter defibrillator
FR751805R1	Staged Energy Storage System for Implantable Defibrillator
GB2185403B	Flexible and Disposable Electrode Belt Device

GB642369R4	Implantable Cardioverter Defibrillator Having a Smaller Displacement Volume
GB720496R1	Prophylactic implantable cardioverter defibrillator
GB751805R1	Staged Energy Storage System for Implantable Defibrillator
IT642369R4	Implantable Cardioverter Defibrillator Having a Smaller Displacement Volume
JP6158176B2	Spinal correction system actuators
JP8509385 T2	Implantable Cardioverter Defibrillator for Subcutaneous Location
JP9622811W1	Staged Energy Storage System for Implantable Defibrillator
NL642369R4	Implantable Cardioverter Defibrillator for Subcutaneous Location
NL650383R4	Implantable Cardioverter Defibrillator Having a Smaller Displacement Volume
NL720496R1	Prophylactic implantable cardioverter defibrillator
NL751805R1	Staged Energy Storage System for Implantable Defibrillator
SE0200626-0	Management of implantable devices
WO199008506	Bio-acoustic signal sensor
WO199215245	Electrocardiographic signal processing device
WO199319809	Treatment of Ventricular Tachycardia Using Far-Field Pulse Series
WO199320892	Cardioversion Waveform Production Circuit for Tachycardia Termination
WO199400193A1	Implantable Cardioverter Defibrillator for Subcutaneous Location
WO199509030A3	Prophylactic ICD

WO199516492	Implantable cardioverter defibrillator (extended shock duration)
WO1995016492A1	Method and apparatus utilizing short tau capacitors
WO199516495	Implantable cardioverter defibrillator (polymer thin film capacitors)
WO199532020	Biphasic defibrillation waveform production method and apparatus
WO199606655	Low profile defibrillation catheter
WO199611035	Implantable cardioverter defibrillator (stepped cardioversion)
WO199622811A1	Staged Energy Storage System for Implantable Defibrillator
WO199622812	Implantable Cardioverter Defibrillator Pulse Generator Kite-Staged Energy Storage System for Implantable Cardioverter-Defibrillator
WO199715351	Method and Apparatus for Temporarily Electrically Forcing Cardiac Output as a Backup for Tachycardia Patients
WO199725761	Two terminal bi-directional medical current limiter
WO1992015245A1	Electrocardiographic signal processing method and device
WO2000036987A1	Dual sensor ablation catheter
WO2000038780A1	Temporary atrial cardioversion electrode catheter
WO200187410	Cardiac Stimulation Devices and Methods for Measuring Impedances Associated with the Left Side of the Heart
WO20020071	Implantable Stimulation Lead for Use with an ICD Device Having Autocapture Pacing Features
WO20020071A1	Implantable Stimulation Lead for Use with an ICD Device Having Autocapture Pacing Features

WO2002068049	Implantable Medical Device with a Current Generated for Infection Control
WO2003072192	Management of Implantable Devices
WO2003072192A1	Management of implantable devices
WO2003073192	Management of Not Yet Implanted IMD by Use of Telemetry Means
WO20036987	Dual sensor ablation catheter
WO20036987A1	Dual sensor ablation catheter
WO20038780	Temporary atrial cardioversion electrode catheter
WO20038780A1	Temporary atrial cardioversion electrode catheter
WO2004037341	Method and Device for Treating Cancer with Electrical Therapy in Conjunction with Chemotherapeutic Agents and Radiation Therapy
WO2005099812 (A2)	Partially Implantable System For The Electrical Treatment Of Cancer
WO20057955	Method and Apparatus for Electrically Forcing Cardiac Output in an Arrhythmia Patient
WO2006058133 (A3)	Medium Voltage Therapy Applications In Treating Cardiac Arrest
WO2006085990 (A2)	Immobilization weapon
WO2006085990 (A9)	Immobilization Weapon
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WO2014093674A1	Coordinated medium voltage therapy for improving effectiveness of defibrillation therapy
WO2014US32163	Cardiac-Safe Electrotherapy Method And Apparatus
WO2015148632 (A1)	Active Surveillance Of Implanted Medical Leads For Lead Integrity

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Attachment 3

FEDERAL BUREAU OF INVESTIGATION

Date of entry 02/24/2022

On 02/18/2022, DAVID WRIGHT, date of birth [redacted], telephone number [redacted], email address, [redacted], was interviewed via a Microsoft Teams video conference call regarding the Mace brand Compact Stun Gun. Also present for the interview were Washington, D.C. U.S. Attorney's Office AUSAs Jennifer Blackwell, Caroline Burrell, and Sharon Marcus-Kurn, Chief, Sex Offense and Domestic Violence Section. After being advised of the identity of the interviewing Agent and the nature of the interview, WRIGHT provided the following information:

WRIGHT is a private contractor employed by Axon, a law enforcement technology company that owns the Taser brand electrical shock weapon system. WRIGHT is the Chief Master Instructor for Axon. WRIGHT is also employed by Highmark Health, a company that provides police services to Alleghany Health Network facilities. WRIGHT administers Highmark's Use-of-Force Training Program. Additionally, WRIGHT is the owner of Wright's Gym, a fitness and martial arts gym located in Crafton, PA. WRIGHT was a former police officer with the Pittsburgh, Pennsylvania Police Department, where he was in charge of the department's Use of Force Program. WRIGHT has been shocked multiple times with police-issued electrical shock weapons, in his capacity as a Use-of-Force trainer and instructor. He has conducted multiple validation studies on electrical shock weapons during which he used these weapons on himself.

In preparation for this interview, WRIGHT discussed the Mace Brand Compact Stun gun with Axon's Taser engineers. The engineers described the device as a low charge weapon that would not likely incapacitate anyone as the electrical charge could not override the central nervous system. The engineers also called the weapon "junk." This weapon was designed to cause pain. WRIGHT explained that the strength of electrical shock weapons was measured in microcoulombs, which WRIGHT described as a measurement of energy. WRIGHT used the example of the Taser brand Taser-7 model, which emits 62 microcoulombs. Sixty-two microcoulombs is typically sufficient to incapacitate a person without causing permanent damage. Conversely, a device emitting 7.6 microcoulombs will cause pain, but will not likely incapacitate a person. When manufacturers advertise electrical shock

weapons with an "up-to" microcoulomb rating, this generally means the weapon can deliver a shock from 0 to no more than 7.6 microcoulombs. Microcoulombs don't necessarily correlate to the amount of pain a person may feel when touched with an electrical shock weapon.

WRIGHT reviewed the Mace Brand Compact Stun Gun and intended to order one to conduct validation tests on the weapon. WRIGHT opined this specific weapon was designed as both an impact weapon and an electrical shock weapon, in part because of the weapon's beveled edge and the protruding tabs at the top of the weapon. WRIGHT noted that although the weapon may not be as effective if obstructed by clothing, the electrical current could nevertheless cause a shock through clothing. If the Mace Brand Compact Stun Gun were used on certain parts of the body, either as an electrical shock weapon and/or an impact weapon, it could cause severe pain and serious harm and/or incapacitation. For example, if deployed to the neck, face, or groin. Blindness could occur if the weapon were to make contact with eyes. At a minimum, the weapon would serve to distract, and alter a person's movements. Extended contact with the weapon's electrical charge could cause loss of balance.

If WRIGHT were being attacked with an electrical shock weapon in his capacity as a police officer, he would immediately create distance between himself and the attacker, and draw his firearm as he would have no way of knowing the electrical strength of the weapon. His immediate concern would be to avoid being shocked/struck in vulnerable areas, as this could cause incapacitation, and provide access to WRIGHT's weapons.

Attachment 4

Sharon Byerly

9310 N Stillman Valley Road

Stillman Valley, IL 61084

Honorable Randolph D. Moss

United States District Court Judge

Re: United States v. Alan William Byerly

Criminal Number 21-527

Dear Honorable Randolph D. Moss,

Concerning Alan William Byerly, Criminal Number 21-527, who is to be sentenced soon in your courtroom, I am prayerfully writing this letter to you. I am Alan's stepmother of 48 years, and it is hard for me to even hear the word 'criminal' used to describe my stepson. I have been made aware of the charge against Alan, therefore I wanted to write to you to earnestly implore for leniency in sentencing. To my knowledge, Alan has always been very respectful to those in authority and has always had the highest regard for police officers in general, always treating them with the utmost respect.

Alan is a very caring person; he is always willing to help someone in need. He helped take care of a friend's disabled husband for quite some time. Alan opened his home to his elderly mother and took care of her until her passing. My sister, who lives close to where Alan lived, could always rely on him to come over to help when she had a need. Alan's father and I, recently while visiting Pennsylvania, had serious vehicle problems, and Alan dropped everything to come to help his dad find the problem and fix it. These are just some of the examples that I can think of to paint for you a picture of Alan's compassionate character quality.

I know that no one is perfect, and that Alan has been charged with violating the law. I also know that he has expressed to his father and I his remorse for many of the things that had happened that day. I am sure that Alan wishes that he had never set foot in Washington, DC, on the 6th of January. Also, I believe that because of this awful experience, Alan will absolutely abstain in the future from attending any gatherings of this nature; therefore, I once again respectfully ask that you consider the lowest possible sentence for my stepson.

Thank you, Your Honor. I am sincerely grateful to you for taking the time to read my letter.

Respectfully yours,

Sharon Byerly

Sharon Byerly

James McHugh

From: Susan Pultro <sueartforhim@yahoo.com>
Sent: Wednesday, October 12, 2022 11:12 PM
To: James McHugh
Subject: Re: reference letter for Alan W Byerly

EXTERNAL SENDER

On Wednesday, October 12, 2022 at 11:04:22 PM EDT, Susan Pultro <sueartforhim@yahoo.com> wrote:

Dear Honorable Randolph Moss,
HI, my name is Susan Pultro and I am Alan Byerly's aunt. I'm writhing concerning my dearest nephew, Alan Byerly. And wanted to write you about Alans character over the years of knowing him. Alan is a very kind, caring and respectful person. He is very respectful of the police and servicemen. I've known him since he was about 10 years old who was a fun loving and good kid. He played on the football team in his school. As a man he has helped my husband and I many times. After buying our house in 2001, Alan helped my husband put a new roof on our house. He also came over in 2019 every day for about a week and a half to help us remodel bathroom and put a new shower insert in our bathroom and he did not want any money for this. We had him over many times for picknicks and had a very blessed time. Alan also had us over his home and he cooked many scrumptious meals. He helped his mom with money many times and opened up his home to his mom who became ill and when she needed it, he took complete care for her until she passed away.
Alan also raised three children who were not his and worked and provided for all the needs of the children. I'm asking you to please consider all this, also he stated that he is sorry for many things that happened on January 6th. I implore you to consider with truth and mercy as you judge my dear nephew Alan.
I thank you Honorable Randolph Moss reading this letter and pray that God blesses you.
Respectfully yours,
Susan M Pultro
On Wednesday, October 12, 2022 at 02:11:56 PM EDT, James McHugh <james_mchugh@fd.org> wrote:

James J. McHugh, Jr.

Assistant Federal Defender

Federal Community Defender for the Eastern District of Pennsylvania

601 Walnut Street, Suite 540W

Philadelphia, PA 19106

(215) 928-1100

(215) 928-1112 (facsimile)

E-mail: james_mchugh@fd.org