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LETTER FROM THE EDITOR-IN-CHIEF

Howard University School of Law is an institution known for developing scholars who drive change and provide cutting-edge solutions to some of the world's biggest legal issues, especially those impacting minority communities. As we prepare to end the second year of living in a global pandemic, we have seen how devastating circumstances can lead to unconventional growth and indispensable brilliance. The articles that fill the following pages remind us of the need to not only find creative answers to legal topics, but also to ensure that solutions are inclusive and complete. We take pride in upholding the legacy of social justice and scholarship by providing thoughtful and innovative pieces of work. It is an honor to invite you to read issue one of Volume 65 of the *Howard Law Journal.*

This issue begins with Professor Aliza Hochman Bloom's article "Long Overdue: Confronting Race in the Fourth Amendment's Free-to-Leave Analysis," where Hochman Bloom examines the role race plays in police encounters, specifically for African Americans. She argues that the Court should consider race as a factor in a totality of the circumstances analysis to determine whether a police encounter should be considered consensual.

In our next article, "Wellness and Law: Reforming Legal Education to Support Student Wellness," Professor Janet Thompson Jackson explores the impact of the legal profession and legal education on mental health and provides solutions to support student wellness. For many law students, mental health and wellness become a major concern during their legal education. Professor Jackson offers a blueprint for law schools to implement student wellness into various aspects of their institutions' curriculum to ensure law students, especially minorities, are provided with the proper tools to combat the stresses of law school.

We are pleased to publish two pieces by our very own *Journal* editors. The Executive Publications Editor, Dr. Reinaldo Franqui Machin, addresses the lack of laws and security measures surrounding CRISPR, a gene-editing tool, in his article, "Are We Editing Genes Responsibly? CRISPR Laws, Gaps, Concerns, And Proposals for Stronger and More Inclusive Regulations." Dr. Franqui Machin analyzes the potential damage CRISPR can cause to public health and national security and proposes regulations to make it safer and more inclusive for scientists.

Finally, Senior Editor Aja Nunn discusses how law enforcement's use of DNA databases for solving crimes implicates the Fifth Amendment's Takings Clause in her article, "Far From Batman and Robin: Why Investigative Genetic Genealogy Cannot Be Law Enforcement's Trusty Sidekick."

While access to consumer DNA sequencing companies is on the rise for people to learn more about their genetic history, law enforcement has also become interested in this information. Ms. Nunn argues that because the information obtained by DNA sequencing companies is far more sensitive than what is usually available to law enforcement, there must be compensation schemes and legislation to protect the right of privacy to genetic information, while balancing governmental interests in public safety and crime solutions.

On behalf of the *Howard Law Journal*, we thank you for your continued support and readership. We hope you enjoy this issue and find it intellectually stimulating and thought-provoking. We proudly present Volume 65, issue 1 of the *Howard Law Journal*.

ADRIENNE R. PARMS
EDITOR-IN-CHIEF
VOLUME 65

Long Overdue: Confronting Race in the Fourth Amendment's Free to Leave Analysis

ALIZA HOCHMAN BLOOM*

ABSTRACT

Over the past three decades, and especially over the past several years, the invidious problem of racial bias in policing and its effects have been at the forefront of public and scholarly debate. "It is no secret that people of color are disproportionate victims"[1] *of suspicionless stops by police. Statistical studies documenting the racial bias in policing have been accumulating, and such "evidence of racial bias in our criminal justice system isn't just convincing — it's overwhelming."*[2] *Last summer, President Biden acknowledged that there was "absolutely" "systemic racism in law enforcement."*[3]

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* Faculty Fellow, New England Law I Boston. For helpful conversations and comments on earlier drafts, I owe thanks to Tracey Maclin, Adeel Bashir, and the student editors of the *Howard Law Jouornal*.

1. Utah v. Strieff, 136 S. Ct. 2056, 2070 (2017) (Sotomayor, J., dissenting) (citing MICHELLE ALEXANDER, THE NEW JIM CROW, 95–136 (2010)).

2. Radley Balko, *There's Overwhelming Evidence that the Criminal Justice System Is Racist: Here's the Proof*, WASH. POST (June 10, 2020), https://www.washingtonpost.com/graphics/2020/opinions/systemic-racism-police-evidence-criminal-justice-system/ (cataloging studies of racial bias in the criminal justice system, including 45 peer-reviewed studies demonstrating racial bias in policing and profiling over the past five years). For example, *see* U.S. DEP'T OF JUST., INVESTIGATION OF THE FERGUSON POLICE DEPARTMENT 4 (2015) (concluding that African Americans were "more than twice as likely as white drivers to be searched during vehicle stops even after controlling for non-race variables."); Floyd v. City of N.Y., 959 F. Supp. 2d 540, 556 (S.D.N.Y. 2010) (finding that over 80% of the individuals forcibly stopped by New York City Police between 2004 and 2012 were Black or Hispanic).

3. Kathryn Watson, *Biden Says there Is 'Absolutely' Systemic Racism in Law Enforcement*, CBS NEWS, https://www.cbsnews.com/news/joe-biden-systemic-racism-exists-law-enforcement/ (June 10, 2020, 7:22 AM). President Biden continued: "It's real. It's genuine. It's serious. And it is — it is able to be dealt with. Look, not all law enforcement officers are racist; my lord, there are some really good, good cops out there. But the way in which it works right now is we've seen too many examples of it." *Id.*

In Fourth Amendment jurisprudence, not every encounter between citizens and police triggers constitutional review.[4] *The opening act of the criminal investigation process, a category of interaction between law enforcement and citizens known as a "consensual encounter," is defined as any encounter with police where a reasonable person, in view of all of the circumstances surrounding the incident, would have believed that he was free to leave and disregard police presence.*[5] *A consensual encounter requires no suspicion of criminal behavior and is excluded from Fourth Amendment protection.*[6]

The increasing public discussion about racism in policing is pervasive, including in Congress.[7] *Additionally, statistical evidence regarding how incidents of excessive use of force in minority communities deteriorates relationships with police is accumulating.*[8] *Although "[s]cholars have examined ad nauseam the dynamics between marginalized groups—particularly African Americans—and law enforcement,"*[9] *"our current framework fails to meaningfully consider the*

4. The Fourth Amendment provides: "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized." U.S. CONST. amend. IV.

5. United States v. Mendenhall, 446 U.S. 544, 554 (1980). Encounters between law enforcement and citizens are grouped into three broad categories: exchanges lacking coercion or detention, known as "consensual encounters," brief investigatory detentions known as *Terry* stops, and full arrests. *See* Terry v. Ohio, 392 U.S. 1, 26–27 (1968).

6. *Mendenhall*, 446 U.S. at 553–54.

7. For example, in 2016, Senator Tim Scott of South Carolina spoke on the floor of the U.S. Senate about the seven times in one year that he was pulled over by police officers who seemed suspicious of a Black man driving an expensive car. *See* Ted Barrett, *Black Senator Describes Facing Unfair Scrutiny by Police*, CNN POLITICS, https://www.cnn.com/2016/07/13/politics/tim-scott-police-racial-profiling/index.html (July 13, 2016, 9:56 PM); *see also* Benjamin Siegel & Libby Cathey, *'Stop the Pain': George Floyd's Brother Testifies on Policing Reform*, ABC NEWS (June 10, 2020, 8:20 PM), https://abcnews.go.com/Politics/george-floyds-brother-testify-house-police-brutality-hearing/story?id=71161017 (Statement of Philonese Floyd, brother of George Floyd, before the U.S. House Judiciary Committee Hearing on Police Reform: "I'm tired of the pain I'm feeling now and I'm tired of the pain I feel every time another Black person is killed for no reason.").

8. U.S. COMM'N ON CIV. AND HUM. RTS., POLICE USE OF FORCE: AN EXAMINATION OF MODERN POLICING PRACTICES 41–42 (2018) (citing NPR, ROBERT WOOD JOHNSON FOUND., HARVARD T.H. CHAN SCH. OF PUB. HEALTH, DISCRIMINATION IN AMERICA: EXPERIENCES AND VIEWS OF AFRICAN AMERICANS 1–2 (2017) (61 percent of the 802 Black respondents said they believed officers were more likely to use force against African Americans; consequently, 31 percent said that they avoided calling the police due to fear of discrimination.).

9. State v. Spears, 839 S.E.2d 450, 463 (S.C. 2020) (Beatty, C. J., dissenting). Justice Beatty cites evidence that African Americans often perceive their interactions with law enforcement differently than other demographics, and "the sight of an officer in uniform evokes a sense of fear and trepidation, rather than security." *Id.* (citing Robert V. Ward, *Consenting to a Search and Seizure in Poor and Minority Neighborhoods: No Place for a 'Reasonable Person,'* 36 How. L. J. 239, 247 (1993)). "There is little doubt that uneven policing may reasonably affect the

ways in which a person's race can influence their experience with law enforcement."[10] *Indeed, since establishing the consensual encounter paradigm in Mendenhall, the Supreme Court remains woefully silent on whether an individual's race can be considered within the totality of circumstances used to determine whether an encounter was consensual.*[11] *The Fourth Amendment's reasonable person standard continues to ask whether a hypothetical, average individual — whose race is irrelevant — would have felt free to disregard police presence and go about his business.*[12] *The Court's continued silence on consensual encounters, despite a circuit split on the question,*[13] *is particularly dangerous. Denying courts the possibility to consider an individual's race when determining whether a reasonable person would have felt free to terminate an encounter with law enforcement unreasonably ignores the objective reality for millions of minorities in the United States, whose everyday life experience leads to a different reality when confronted by law enforcement than their white counterparts.*

Recently, the Supreme Court decided that an individual's age is a relevant consideration when deciding whether she was in custody for Miranda purposes.[14] *Permitting courts to consider race for the doctrinally similar consensual encounter will address a dangerous legal fiction — that race is irrelevant when determining whether a reasonable person feels free to ignore police presence. Taking an individual's race into account, when appropriate, enables the totality of circumstances for consensual encounter determinations to better reflect the reality — one which has been repeatedly studied, documented, and discussed — that people of color have a different relationship with law enforcement and this relationship impacts whether they would feel free to terminate an encounter with police. It is due time.*

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reaction of certain individuals—including those who are innocent—to law enforcement." *Spears*, 839 S.E.2d at 464 (citing United States v. Brown, 925 F.3d 1150, 1187–88 (9th Cir. 2019)).

10. *Spears*, 839 S.E.2d at 464.

11. *See* Tracey Maclin, '*Black and Blue Encounters' Some Preliminary Thoughts About Fourth Amendment Seizures: Should Race Matter?*, 26 VAL. UNIV. L. REV. 243, 262 n.78, 264 (1991).

12. *See* California v. Hodari D., 499 U.S. 621, 627–28 (1991).

13. *See* United States v. Easley, 911 F.3d 1074, 1082 (10th Cir. 2018); United States v. Washington, 490 F.3d 765, 774 (9th Cir. 2007).

14. J.D.B. v. North Carolina, 564 U.S. 261, 264 (2001).

> It is beyond dispute that children will often feel bound to submit to police questioning when an adult in the same circumstances would feel free to leave. Seeing no reason for police officers or courts to blind themselves to that commonsense reality, we hold that a child's age properly informs the *Miranda* custody analysis.

Id.

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I. INTRODUCTION

On January 26, 2018, Anthony Knights sat with a friend in his wife's Oldsmobile, parked on the front yard of another friend's home.[15] While on a routine patrol, two officers drove past Mr. Knights and his friend, testifying later that the two Black men gave them a "blank stare" as they passed.[16] Once they passed Mr. Knights, the officers heard what sounded like someone trying to start the engine, and "turned the cruiser around . . . to ensure that no criminal activity was underway."[17] After making a U-turn, the officers re-

15. United States v. Knights, 967 F.3d 1266, 1268 (11th Cir. 2020).
16. *Id.*
17. United States v. Knights, No. 8:18-cr-100-T-33AAS, 2018 U.S. Dist. LEXIS 151829, *3 (M.D. Fla. Sept. 6, 2018) (order denying Motion to Suppress).

turned towards Mr. Knights, drove across the median, and parked their patrol car immediately next to the parked Oldsmobile, nearly trunk-to-trunk, on the wrong side of the street, blocking oncoming traffic.[18] After parking in this manner, both officers exited the vehicle: one officer walked towards Mr. Knights's friend, but when the friend walked into the residence, that officer turned back around, returning towards Mr. Knights's parked car.[19] At this point, Mr. Knights sat down in his driver's seat, flanked on either side by a standing police officer.[20]

After a suppression hearing, the judge agreed that "no reasonable person in Mr. Knights's position would feel free to leave or disregard these two officers," relying on the officers' physical location and Mr. Knights's impeded ability to drive or walk away.[21] However, the district and appellate courts concluded otherwise, concluding that even after the two officers stood flanking Mr. Knights's parked car, it was a consensual encounter and "with skilled driving, [he] could have driven away (if his car could start) and, it is clear that he could have walked away."[22] The Eleventh Circuit acknowledged that Mr. Knights's race and age were relevant factors in the "free to leave" totality of circumstances, but not dispositive because "[i]n this encounter, a reasonable person would have felt free to leave."[23]

Separately, on March 29, 2012, three federal agents were dispatched to conduct surveillance at a bus stop, pursuant to a tip that

18. *Knights*, 967 F.3d at 1268.

19. *Id.* at 1268–69.

20. *Id.* at 1269.

21. United States v. Knights, No. 8:18-cr-100-T-33AAS, 2018 U.S. Dist. LEXIS 152920, *14 (M.D. Fla. July 16, 2018). The magistrate judge also found that no reasonable suspicion of criminal activity existed, thus the seizure was not justified at its inception, and thus recommended suppressing all evidence and statements from the encounter. *Id.* at *22, 25, 28 (". . . even taking the facts in the light most favorable to the government, the suspicion that Messrs. Knights and Keaton were in the process of burglarizing the car or stealing the car itself was not reasonable.").

22. *Knights*, 2018 U.S. Dist. LEXIS 151829 at *9–10. The district court agreed with the factual finding that the patrol car was parked nearly trunk-to-trunk with Mr. Knights's parked car and blocking the flow of traffic but found that it remained a consensual encounter even after the officers approached his car from either side having parked their car in that manner. *See id.* at *3, *10–11.

23. *Knights*, 967 F.3d at 1271–72. Neither the district court nor the Eleventh Circuit addressed reasonable suspicion. *Id.* ("Because we concluded that the encounter was initially consensual, we need not decide whether the officers had reasonable suspicion."). The Eleventh Circuit recalled the panel opinion and is presently considering whether race can be a relevant factor in deciding when a Fourth Amendment seizure has occurred. In response, the United States adopted the conclusion in *U.S. v. Easley*, that race has no place in the objective, reasonable-person analysis. United States v. Easley, 911 F.3d 1074, 1081 (10th Cir. 2018), *cert. denied*, 139 S. Ct. 1644 (2019).

drugs were being brought into South Carolina via interstate bus lines.[24] As passengers were exiting the bus, the agents observed a young Black man, Eric Terrell Spears, and a woman with four suitcases who "were paying an excess amount of attention" to the plain-clothed agents.[25] The agents followed the pair, and "while walking briskly behind the man and woman to catch up with them, observed a woman remove an object from her purse and pass it to the man."[26] When the agents were about ten feet from the couple, they asked to stop and speak with them.[27] The couple complied and engaged the agents in a conversation.[28] The man was identified as Mr. Spears.[29] As they spoke, Mr. Spears "kept placing his hands inside his untucked shirt near his waistband."[30] Fearing Mr. Spears might have a weapon, one agent repeatedly asked him to stop, but he persisted in this movement, so the agent frisked him, and found contraband.[31]

On review, the South Carolina Supreme Court held that it need not consider the fact that Mr. Spears was a Black male when determining that a reasonable person in his circumstances was free to decline the three officers' requests to stop, talk and answer questions — he was free to terminate the encounter.[32] Chief Justice Beatty dissented, concluding that Mr. Spears was seized in violation of the Fourth Amendment at the beginning of his interaction with the agents.[33] Recognizing that the precedent does not explicitly take into account personal characteristics such as race, Chief Justice Beatty explained that "a true consideration of the totality of circumstances cannot ignore how an individual's personal characteristics—and accompanying experiences—impact whether he or she would feel free to terminate an encounter with law enforcement."[34]

The Circuits are in conflict on whether courts can consider an individual's race in the Fourth Amendment seizure analysis. The Tenth Circuit determined that race is an inappropriate factor to con-

24. State v. Spears, 839 S.E.2d 450, 452 (S.C. 2020).
25. *Id.* at 453.
26. *Id.*
27. *Id.*
28. *Id.*
29. *Id.*
30. *Id.*
31. *Id.* at 453.
32. *Id.* at 461. Mr. Spears also did not preserve a request for consideration of his race in the free to leave analysis. *Id.*
33. *Id.* at 464 (Beatty, C.J., dissenting).
34. *Id.* at 463.

sider when determining whether a reasonable person would have felt free to terminate an encounter and ignore police questioning, holding that "there is no uniform way to apply a reasonable person test that adequately accounts for racial differences consistent with an objective standard for Fourth Amendment seizures."[35] The Ninth Circuit, however, acknowledged the relevance of an individual's race when determining whether the individual has been seized and relatedly, whether their consent to search was voluntary.[36]

Absent direction from the Supreme Court,[37] the current legal framework fails to meaningfully address the ways that an individual's race can influence whether they feel free to terminate an encounter with police. Race is a relevant contextual factor because race impacts whether a person will feel free to terminate a police interaction. As legal scholars have explained, excluding race does not leave communities of color in a racially neutral nirvana.[38] Instead, preventing courts from considering an individual's race within the totality of circumstances in the free to leave analysis legitimizes racial asymmetries in communities' perceptions of police authority, and their vulnerabilities to police misconduct.[39]

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35. United States v. Easley, 911 F.3d 1074, 1081–82 (10th Cir. 2018), *cert. denied*, 139 S. Ct. 1644 (2019).

36. U.S. v. Washington, 490 F.3d 765, 775 (9th Cir. 2007).

> We also find significant the context in which Washington made his decision whether to consent to the search of his car: (1) at night, (2) outnumbered two-to-one, (3) in the unique situation in Portland between the African–American community and the Portland police, and (4) after complying with Shaw's detailed instructions, (5) and being searched under Shaw's direction, at Shaw's squad car with his hands on the top of the squad car, (6) with the return to his car blocked by Pahlke, so that (7) a reasonable person in Washington's circumstances would not have felt free to terminate the encounter and leave.

Id.

37. Mr. Knights has petitioned for certiorari from the Supreme Court. *See United States v. Knights*, No. 20-198.

38. *See* Maclin, *supra* note 11, at 250; Devon Carbado, *(E)racing the Fourth Amendment*, 100 MICH. L. REV. 946, 970 (2002).

39. After two Supreme Court decisions expanded the consensual encounter doctrine, Professor Tracey Maclin observed that construing the reasonable person without considering race "is naive, it produces distorted Fourth Amendment rules and ignores the real world that police officers and black men live in." Maclin, *supra* note 11, at 248. Subsequently, Professor Devon Carbado explained that denying courts the ability to consider race in Fourth Amendment questions is worse than putting our heads in the sand; it solidifies inequality and "leaves people of color in a worse constitutional position than whites." Carbado, *supra* note 38, at 1002–03.

II. THE INCIDENTAL ESTABLISHMENT OF THE CONSENSUAL ENCOUNTER

Reviewing the Supreme Court's establishment of a "consensual encounter" is critical to understanding why its extended silence on race is problematic. The Supreme Court in *Terry* defined an investigative stop and frisk by juxtaposing it against the consensual encounter.[40] The Fourth Amendment protects individuals from unreasonable searches and seizures.[41] While a consensual encounter is, definitionally, excluded from Fourth Amendment protection, it is still defined and cabined by Fourth Amendment doctrine. Prior to *Terry*, police officers could only detain individuals with probable cause.[42] The Supreme Court assumed that any restraint of an individual was a seizure, protected by the Fourth Amendment, and requiring probable cause.[43] To be sure, consensual interactions between individuals and law enforcement existed before *Terry,* but they had not been discussed as such, or defined by the Supreme Court.[44]

In 1968, the Warren Court determined that where a police officer observes unusual conduct leading him to reasonably conclude in light of his experience that "criminal activity may be afoot" and that the individual may be "armed and presently dangerous," the officer is entitled to conduct a carefully limited search of the outer clothing of such individual in attempt to discover weapons.[45] To conduct a frisk, police officers need "specific and articulable facts which, taken together with rational inferences from these facts, reasonably warrant

40. Terry v. Ohio, 392 U.S. 1, 8, 10–11 (1968).

41. The Fourth Amendment provides:

> The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

U.S. CONST. amend IV.

42. Henry v. United States, 361 U.S. 98, 102 (1959) (holding that the individual was arrested without probable cause when FBI agents stopped the car that he was riding in). Prior to *Terry*, probable cause was needed for an arrest. *See* Draper v. United States, 358 U.S. 307, 310 (1959); Brinegar v. United States, 338 U.S. 160, 164 (1949).

43. *Henry*, 361 U.S. at 104 ("To repeat, an arrest is not justified by what the subsequent search discloses. Under our system suspicion is not enough for an officer to lay hands on a citizen. It is better, so the Fourth Amendment teaches, that the guilty sometimes go free than the citizens be subject to easy arrest.").

44. *See* Wainwright v. City of New Orleans, 392 U.S. 598, 605–07 (1968) (Warren, J., dissenting from denial of certiorari) (recognizing that although officers were able to speak and ask Mr. Wainwright questions on the night of the challenged stop, their "technique, using a minor and imaginary charge to hold an individual, in my judgment deserves unqualified condemnation.").

45. *Terry*, 392 U.S. at 30.

[the] intrusion."[46] This form of investigative frisk requires reasonable suspicion that criminal activity is afoot, or that the individual has committed a recent crime.[47]

In actualizing this intermediate category, *Terry* incidentally formalized a third category of police-citizen interaction, the "consensual encounter," with this conclusion:

> Obviously, not all personal intercourse between policeman and citizens involves 'seizures' of persons. Only when the officer, by means of physical force or show of authority, has in some way restrained the liberty of a citizen may we conclude that a 'seizure' has occurred.[48]

Indeed, *Terry* acknowledged that police interactions could be used inappropriately to harass individuals based on race, but simultaneously carved out this category of encounters that are excluded from Fourth Amendment scrutiny.[49] Since this decision, a *Terry* stop and frisk requires an articulated factual justification, while a consensual encounter requires none.[50] The Court went out of its way not to address the Fourth Amendment validity of an investigative seizure based on less than probable cause for the purposes of detention or interrogation.[51] The Court explained that the sole justification for the search under these circumstances was to protect the officers and others nearby.[52]

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46. *Id.* at 21, 27. The Supreme Court distinguished "specific and articulable facts" from "nothing more substantial than inarticulate hunches" or "inchoate and unparticularized suspicion" which cannot justify a stop. *Id.*

47. United States v. Hensley, 469 U.S. 221, 229 (1985).

48. *Terry*, 392 U.S. at 19 n.16. *See id.* at 34 (White, J., concurring) ("There is nothing in the Constitution which prevents a policeman from addressing questions to anyone on the streets. Absent special circumstances, the person approached may not be detained or frisked but may refuse to cooperate and go on his way.").

49. Josephine Ross, *Can Social Science Defeat a Legal Fiction? Challenging Unlawful Stops Under the Fourth Amendment*, 18 WASH. & LEE J. CIV. RTS. & SOC. JUST. 315, 324 (2012).

50. *See* Florida v. Royer, 460 U.S. 491, 497 (1983) (holding that police may approach citizens on the street or in any public place, and if they give voluntary responses, those responses are admissible in any criminal procedure.). Notably, *Terry* avoided talking about seizure, deciding "there was justification for [Officer] McFadden's invasion of Terry's personal security by searching for weapons in the course of the investigation." *Terry*, 392 U.S. at 23. Although the majority concedes that Terry was seized at some point, it "decide[s] nothing today concerning the constitutional propriety of an investigative 'seizure' upon less than probable cause . . ." *Id.* at 19 n.16. In the companion case, *Sibron v. N.Y.*, the Court discusses the frisk without addressing the officer's previous action in directing the individual to leave the restaurant. Sibron v. New York, 392 U.S. 40, 44–45 (1968).

51. *See* Wayne R. LaFave, *"Street Encounters" and the Constitution:* Terry, Sibron, Peters, *and Beyond*, 67 MICH. L. REV. 39, 125 (1968).

52. *Terry*, 392 U.S. at 30.

> Officer McFadden had reasonable grounds to believe that petitioner was armed and dangerous, and it was necessary for the protection of himself and others to take swift

As others have noted, *Terry* was the Supreme Court's first recognition that race is relevant to Fourth Amendment seizures, and the first acknowledgment of the tensions between police and minority communities.[53] *Terry* authorizes officers to frisk an individual for weapons when the officer reasonably suspects that the individual is armed and dangerous.[54] Justice Warren distinguished a "stop" from a full arrest, and a "frisk" from a full-blown search, creating another category of searches and seizures that required "reasonable suspicion."[55]

The following cases defined this new category of unprotected, consensual encounters. In each, the Supreme Court determined that the petitioner had not been seized, and thereby expanded the class of permissible police action that does not constitute a Fourth Amendment seizure.[56]

After *Mendenhall*, a Fourth Amendment seizure occurs when, "in view of all of the circumstances surrounding the incident, a reasonable person would have believed that he was not free to leave."[57] Otherwise, the encounter was consensual.[58] In this seminal case, two plain clothed Drug Enforcement Agency (DEA) agents approached the defendant, a young Black female, as she was walking through an airport concourse, identified themselves as federal agents, and asked to see her airline ticket and identification.[59] At the agents' request, she fol-

> measures to discover the true facts and neutralize the threat of harm if it materialized. The policeman carefully restricted his search to what was appropriate to the discovery of the particular items which he sought. Each case of this sort will, of course, have to be decided on its own facts.

Id.

53. Tracey Maclin, *Race and the Fourth Amendment*, 51 VAND. L. REV. 33, 365 (1998) ("*Terry* was the Court's first Fourth Amendment ruling to acknowledge that a police intrusion may cause adverse racial tensions[.]"); *see also* Alexandra Natapoff, *A Stop Is Just a Stop:* Terry's *Formalism*, 15 OHIO ST. J. CRIM. LAW 113, 115 (2017) (explaining that *Terry* is typically viewed as "an anti-formalistic, pragmatic compromise: it created a new rule that gave police less power than they wanted but more than civil libertarians would have liked."); Daniel C. Richman, *The Process of* Terry-*Lawmaking*, 72 ST. JOHN'S L. REV. 1043, 1051 (1998) (". . . I suppose we should . . . celebrate *Terry's* effort to apply the Fourth Amendment pragmatically to the exigencies of street encounters[.]").

54. Terry v. Ohio, 392 U.S. 1, 31 (1968) (holding that "[s]uch a search is a reasonable search under the Fourth Amendment, and any weapons seized may properly be introduced in evidence against the person from whom they were taken.").

55. SARAH A. SEO, POLICING THE OPEN ROAD: HOW CARS TRANSFORMED AMERICAN FREEDOM 151 (2019) ("Chief Justice Earl Warren crafted a rule that split the baby . . . Warren, like Taft before him, created an intermediate police option just short of arrest.").

56. United States v. Mendenhall, 446 U.S. 544, 559–60 (1980) (plurality opinion); California v. Hodari D., 499 U.S. 621, 625 (1991).

57. *Mendenhall*, 446 U.S. at 554.

58. *Id.*

59. *Id.* at 547–48.

lowed them to the DEA office, where she eventually consented to a search of her person and purse.[60] Justice Stewart, writing for a plurality, found that Mendenhall was never seized on the airport concourse, explaining that a person has not been seized unless her freedom of movement has been restrained, either through physical force or a show of authority.[61] For the *Mendenhall* plurality, circumstances that might indicate a seizure, even where the person did not attempt to leave, include: (1) the threatening presence of several officers; (2) the display of a weapon by an officer; (3) some physical touching of the person of the citizen; (4) or the use of language or tone of voice indicating that compliance with the officer's request might be compelled.[62] Reiterating *Terry's* proclamation that "not every encounter between a police officer and a citizen is an intrusion requiring an objective justification,"[63] the Court found that respondent was not seized on the airport concourse because a reasonable person in respondent's position would have believed they were free to leave.[64] The Court emphasized an "objective standard" that "calls for consistent application from one police encounter to the next, regardless of the particular individual's response to the actions of the police."[65]

Mendenhall next addressed the question of "whether the respondent's consent to accompany the agents was in fact voluntary or was the product of duress or coercion, expressed or implied, is to be determined by the totality of the circumstances."[66] Citing its leading precedent for analyzing the voluntariness of consent,[67] the Court explained that the analysis permits the consideration of the individual's subjective traits.[68] The Court noted that respondent's ticket and identification were returned to her before she was asked if she would accompany the officers, with "neither threats nor any show of force."[69] The Court explained, citing *Bustamonte*, that the respondent's age, race and level of education were "not irrelevant" qualities

60. *Id.* at 548.
61. *Id.* at 554–55.
62. *Id.* at 554.
63. *Id.* at 553.
64. *Id.* at 554.
65. Michigan v. Chesternut, 486 U.S. 567, 574 (1988).
66. *Mendenhall*, 446 U.S. at 557.
67. Schneckloth v. Bustamonte, 412 U.S. 218, 248–49 (1973) (holding that an individual's knowledge of their right to refuse consent is a factor in determining whether consent was voluntary, the Fourth Amendment does not require the state to prove the individual knew their right to refuse).
68. *Mendenhall*, 446 U.S. at 558.
69. *Id.*

to the determination of whether her consent to accompany the agents to their office was voluntary.[70]

The Supreme Court repeatedly employed *Mendenhall*'s free to leave standard. In *Florida v. Royer*, the Court concluded that Mr. Royer was not seized when two undercover officers approached him in the Miami airport because he fit the drug courier profile of a young man, casually dressed, carrying heavy luggage.[71] The Fourth Amendment is not triggered, and an individual is not seized, when the police approach an individual and ask him questions—even without reason to suspect wrongdoing.[72] The seizure did not occur until "the officers identified themselves as narcotics agents, told Royer that he was suspected of transporting narcotics, and asked him to accompany them to the police room, while retaining his ticket and driver's license and without indicating in any way that he was free to depart."[73] For the first time, the Court authorized a seizure on less than probable cause, explaining that an encounter only rises to a "seizure" if, under the totality of the circumstances surrounding the encounter, a reasonable person would not have felt free to leave.[74]

The Supreme Court clearly expanded the universe of consensual encounters where the Fourth Amendment does not apply in *I.N.S. v. Delgado*. There, the Court concluded that respondents were never "seized," when Immigration and Naturalization Services (I.N.S.) agents searching for undocumented workers systematically questioned the entire workforce at two factories, while some of them stood at the factory exits.[75] Recognizing that it had yet to rule on whether police questioning, without more, can amount to a Fourth Amendment seizure, *Delgado* relied upon *Royer*'s implication that "interrogation relating to one's identity or a request for identification by the police does not, by itself, constitute a Fourth Amendment seizure."[76] The *Delgado* majority emphasized that when people are at work, their freedom of movement has already been significantly restricted by their voluntary obligations to their employers.[77] Accordingly, immi-

70. *Id.*
71. Florida v. Royer, 460 U.S. 491, 502 (1983).
72. *Id.* at 497.
73. *Id.* at 502 ("These circumstances surely amount to a show of official authority such that 'a reasonable person would have believed he was not free to leave.'") (citing *Mendenhall*, 446 U.S. at 554).
74. *Id.*
75. *I.N.S. v. Delgado*, 466 U.S. 210, 218 (1984).
76. *Id.* at 216.
77. *Id.* at 218.

gration officers posted at every exit of the factory "posed no reasonable threat of detention to these workers while they walked throughout the factories on job assignments."[78] Justice Brennan vehemently disagreed with the majority's conclusion that respondents in the factory were not seized, famously noting that "what is striking about today's decision is its studied air of unreality."[79]

Similarly, the Court concluded that an individual was not seized even after a police car followed him and then drove parallel to him as he ran.[80] The *Chesternut* Court determined that the police officer's "brief acceleration to catch up" and the "short drive alongside [respondent]" were not "so intimidating" that respondent would reasonably believe "he was not free to go about his business" as he continued walking.[81] Critically, *Chesternut* added an additional justification to its free to leave test, emphasizing that this Fourth Amendment inquiry "calls for consistent application from one police encounter to the next, regardless of the particular individual's response to the actions of the police."[82] The Court believed that the test had predictive power, and thus would be useful for law enforcement to determine in advance what conduct would violate the Fourth Amendment.[83]

In 1991, the Supreme Court heard several cases asking whether an individual confronted by police had been seized, concluded that both of the encounters were consensual and did not implicate the Fourth Amendment.[84] *California v. Hodari D.* presented the question of whether a seizure has occurred even where the individual does not yield to the officer's command.[85] Justice Scalia explained that the

78. *Id.* at 219.

79. *Id.* at 226 (Brennan, J., dissenting in part) ("At first blush, the Court's opinion appears unremarkable. But what is striking about today's decision is its studied air of unreality. Indeed, it is only through a considerable feat of legerdemain that the Court is able to arrive at the conclusion that the respondents were not seized.").

80. Michigan v. Chesternut, 486 U.S. 567, 576 (1988).

81. *Id.*

82. *Id.* at 574.

83. *Id.*

84. California v. Hodari D., 499 U.S. 621, 629 (1991).

85. *Id.* at 626. Several teenagers were standing next to a parked car when they saw an unmarked police car approaching them, and the minors, including Mr. Hodari, took flight. The officers gave chase, one running after Hodari.

> Looking behind as he ran, [Hodari] did not turn and see [the officer] until the officer was almost upon him, whereupon he tossed away what appeared to be a small rock. A moment later, [the officer] tackled Hodari, handcuffed him, and radioed for assistance. Hodari was found to be carrying $130 in cash and a pager; and the rock he had discarded was found to be crack cocaine.

Id. at 622–23.

Fourth Amendment does not apply when a show of authority is not *also* accompanied with either physical restraint or yielding to the show of the authority.[86] Thus, after *Hodari*, for a "seizure" to occur, there must be a show of police authority coupled with either physical restraint of the person or that person's submission to the authority.[87]

The Court also extended the consensual encounter to bus searches aimed at drug and weapons interdictions, on which passengers are not free to leave, because they are on a moving bus.[88] Addressing the interdiction of a Black man traveling on an interstate bus, Justice O'Connor modified the free to leave standard[89] recognizing that for someone who was already seated on a bus and "has no desire to leave, the degree to which a reasonable person would feel that he or she could leave is not an accurate measure of the coercive effect of the encounter."[90] In such cases, where the *Mendenhall* test is an inappropriate measure of coerciveness, the "appropriate inquiry is whether a reasonable person would feel free to decline the officers' requests or otherwise terminate the encounter."[91] The determination becomes whether the officers' behavior would have communicated to a reasonable person that the person was not free to decline the officers' requests or otherwise terminate the encounter or alternatively, if he was "at liberty to ignore the police presence and *go about his business*."[92] Although the "cramped confines of a bus are one relevant factor," it is not dispositive as the Florida Supreme Court had held, and instead, a court must consider all the circumstances surrounding the encounter to determine whether the police conduct would have communicated to a reasonable person that the person was

86. *Id.* at 626 (holding that an arrest requires the application of physical force, or "where that is absent, *submission* to the assertion of authority").

87. *Id. Hodari D.* was revisited this year, when the Supreme Court reviewed the appellate court's determination that petitioner was not seized when two officers fired thirteen bullets into her moving car, and struck her twice, because she was able to continue driving away—to a hospital. *Madrid v. Torres*, Case No. 19-292, will address whether a seizure can occur where police clearly make a show of authority, but the individual does not submit.

88. Florida v. Bostick, 501 U.S. 429, 439–40 (1991).

89. *Hodari D.*, 499 U.S. at 625–26 (stating that officers may ask questions of individuals, ask to examine their identification and request consent without implicating the Fourth Amendment).

90. *Bostick,* 501 U.S. at 435–36.

91. *Id.* at 436.

92. *Bostick*, 501 U.S. at 437. Because the Supreme Court rejected Florida's *per se* rule that bus interdictions are seizures, the case was remanded for proceedings consistent with the conclusion that they are not. *Id.* at 440. LaFave discusses, and they just say he ended up giving consent, never a determination as to whether he had been seized.

not free to decline the officers' requests or otherwise terminate the encounter."[93]

Justices Marshall, Blackmun and Stevens notably dissented, disagreeing that it was a random stop: "[i]t does not follow . . . that the approach of passengers during a [bus] sweep is completely random. Indeed, at least one officer who routinely confronts interstate travelers candidly admitted that *race* is a factor influencing his decision whom to approach."[94] In *Delgado,* Justice Brennan had criticized the expanding scope of a consensual encounter, explaining that the majority's notion that immigration officers posted at every exit of a factory "posed no reasonable threat of detention to these workers while they walked throughout the factories on job assignments" contained the "studied air of unreality."[95]

A decade later, the Court revisited the suspicionless drug interdiction in *Drayton*, addressing a situation where multiple police officers boarded petitioners' bus, one officer at the front and one at the rear while a third moved through the aisles to question individual passengers.[96] In *Drayton*, although several of the *Mendenhall* factors indicating coercion were present,[97] the Court held that the defendants had not been seized and also that police officers did not need to give an affirmative indication that any passengers could refuse their consent to searches.[98] For example, *Drayton* minimized the import of one police officer showing passengers his badge while questioning.[99] The

93. *Id.* at 429.

94. *Id.* at 444, n.1 (Marshall, J., dissenting) (citing *United States v. Williams*, No. 1:89CR0135 (ND Ohio, June 13, 1989), *vacated*, 501 U.S. 901 (1991)).

95. *See* I.N.S. v. Delgado, 466 U.S. 210, 226 (1984) (Brennan, J., dissenting in part) ("At first blush, the Court's opinion appears unremarkable. But what is striking about today's decision is its studied air of unreality. Indeed, it is only through a considerable feat of legerdemain that the Court is able to arrive that the conclusion that the respondents were not seized.").

96. United States v. Drayton, 536 U.S. 194, 197–98 (2002).

97. For example, the presence of multiple officers, the display of their badges, and language and tone indicated compliance might be compelled. *See id.*

98. United States v. Drayton, 231 F.3d 787, 790 (11th Cir. 2000), *rev'd*, 536 U.S. 194 (2002) (concluding upon review of the circumstances that "a reasonable person [in the defendants' situation] would *not* have felt free to disregard the [officers'] requests without some positive indication that consent could be refused.") (emphasis added).

99. *Drayton*, 536 U.S. at 204–05.

> And while neither Lang nor his colleagues were in uniform or visibly armed, those factors should have little weight in the analysis. Officers are often required to wear uniforms and in many circumstances this is cause for assurance, not discomfort. Much the same can be said for wearing sidearms. That most law enforcement officers are armed is a fact well known to the public. The presence of a holstered firearm thus is unlikely to contribute to the coerciveness of the encounter absent active brandishing of the weapon.

Id.

majority also rejected reliance on one officer's position at the front of the bus, citing *Delgado* for the conclusion that it "does not tip the scale in respondents' favor."[100] Upon reviewing the totality of circumstances, the majority concluded that nothing the officer said to petitioners would suggest to a reasonable person a requirement to answer or an inability to end the encounter.[101]

Having decided that respondents were not seized within the meaning of the Fourth Amendment, the majority addressed whether their subsequent consent to the suspicionless search was involuntary.[102] *Drayton* explained that police are not required to inform citizens of their right to refuse a warrantless consent search and reiterated that the Supreme Court has relied upon the totality of circumstances to evaluate consent "without giving extra weight to the absence of this type of warning."[103]

Analyzing the same facts, the *Drayton* dissent concluded that beginning with the authority these officers demonstrated by boarding the bus, how the bus driver yielded to all three of them, and how all of the passengers complied with their requests, "[i]t is very hard to imagine that either [defendant] would have believed that he stood to lose nothing if he refused to cooperate with the police, or that he had any free choice to ignore the police altogether."[104] Given the disagreement between justices about the totality of the same set of facts, *Drayton* demonstrates the challenge with replicating the totality of circumstances approach, to which *Chesternut* had aspired.

Terry's incidental formalization of the "consensual" encounter was grounded in the Supreme Court's assumption that police constantly interact with citizens to fulfill their community safety obligations.[105] *Terry* recognized that "[d]oubtless some police 'field interrogation' conduct violates the Fourth Amendment," and in fact *Terry* acknowledged the racial tensions in police encounters, but concluded that "[e]ncounters are initiated by police for a wide variety of purposes, some of which are wholly unrelated to a desire to prosecute for crime."[106] Because *Terry* does not address the legality of a tempo-

100. *Id.* at 205.
101. *Id.* at 204.
102. *Id.* at 206.
103. *Id.* at 207 (citing Schneckloth v. Bustamonte, 412 U.S. 218, 223 (1973)).
104. *Id.* at 212 (Souter, J., dissenting). Indeed, "[n]o reasonable [person] could have believed that, only an uncomprehending one." *Id.*
105. Terry v. Ohio, 392 U.S. 1, 13 (1968).
106. *Id*. at 13–14.

rary detention, the Burger Court of the 1980s created the "Free to Leave" test, a concept that clearly expanded police powers, and solidified the category of police interactions to fall outside any Fourth Amendment justification.[107]

The implied assumption is that a police officer can approach anyone, ask them questions, for identification, and for consent to search their property without any individual suspicion, but as a requirement of their job.[108] *Mendenhall* formalized this entire category of citizen-police interactions that are excluded from Fourth Amendment protection, and demonstrated the Court's understanding that permitting law enforcement to speak broadly with citizens is necessary to keep communities safe and to solve crimes.[109] By the time the Court decided *Royer* and *Delgado*, it became clear that there was an evolving elastic view of when the Fourth Amendment applied and when it did not.[110] Notwithstanding evidence that most people engaged in questioning with police are not free to leave, the Supreme Court's reiteration of the consensual encounter endeavored "to allow police some latitude to stop and detain without cause."[111]

The consensual encounter is grounded in the supposition that when an individual agrees to a police request to engage in conversation, it is—at least potentially—a volitional act and not a submission to a "show of authority."[112] Unquestionably, the aim of many consensual encounters is to develop, through questioning and possibly through an individual's consent to search, enough incriminating information to generate the reasonable suspicion required for a *Terry* stop, or even to make an arrest.[113] Because the consensual encounter requires no level of suspicion, and can be initiated for any reason, it is "a

107. David K. Kessler, *Free to Leave? An Empirical Look at the Fourth Amendment's Seizure Standard*, 99 J. CRIM. L. & CRIMINOLOGY 51, 51 (2009).

108. *Terry*, 392 U.S. at 13.

> Street encounters between citizens and police officers are incredibly rich in diversity. They range from wholly friendly exchanges of pleasantries or mutually useful information to hostile confrontations of armed men involving arrests, or injuries, or loss of life. Moreover, hostile confrontations are not all of a piece. Some of them begin in a friendly enough manner, only to take a different turn upon the injection of some unexpected element into the conversation.

Id.

109. United States v. Mendenhall, 446 U.S. 544, 553–54 (1980).

110. Florida v. Royer, 460 U.S. 491, 508–09 (1983); *see also* I.N.S. v. Delgado, 466 U.S. 210, 212 (1984).

111. Ross, *supra* note 49, at 325; *See* Edwin J. Butterfoss, *Bright Line Seizures*: *The Need for Clarity in Determining When Fourth Amendment Activity Begins*, 79 J. CRIM. L. & CRIMINOLOGY 437, 439–40 (1988).

112. California v. Hodari D., 499 U.S. 621, 625 (1991).

113. *See* Terry v. Ohio, 392 U.S. 1, 30–31 (1968).

fertile field for the racial stereotyping that is, unfortunately, prevalent in every area of unregulated police discretion."[114]

If we accept the premise that police-citizen encounters, including police questioning of citizens without suspicion, can be consensual, there is no doubt that these interactions quickly escalate into *Terry* stops.[115] Of course, the precise temporal determination of when the consensual encounter *becomes* an investigative stop is paramount for a criminal defendant. When evidence or statements are obtained by police after the encounter became a "seizure," then a reviewing court requires reasonable suspicion consistent with the Fourth Amendment.[116] On the other hand, if the reviewing court finds that the evidence was discovered or a statement was made while the encounter was consensual, that evidence can be used towards the adjudication of guilt.[117]

III. TWO SIDES OF THE SAME COIN: CONSENT ANALYSIS IS SIMILAR TO THE SEIZURE DETERMINATION

When evaluating what the Supreme Court has held about race in the context of consensual encounters, it is important to understand the doctrinal overlap between consent to a search, custody for *Miranda* purposes,[118] and consensual encounters.

Technically, an individual's consent to a warrantless search constitutes a waiver of their Fourth Amendment right to be free from unreasonable searches.[119] Although *Bustamonte* embraced subjective inquiry into the characteristics of an individual,[120] the Supreme Court

114. Daniel J. Steinbock, *The Wrong Line Between Freedom and Restraint: The Unreality, Obscurity, and Incivility of the Fourth Amendment Consensual Encounter Doctrine*, 38 SAN DIEGO L. REV. 507, 509 (2001).

115. In *Knights*, the district court accurately explained that the parties' disagreement turned on less than a minute. *See* United States v. Knights, No. 8:18-cr-100-T-33AAS, 2018 U.S. Dist. LEXIS 151829, at *5 (M.D. Fla. Sept. 6, 2018) (The "[d]efendant was obviously subject to both search and seizure. The question is: Did law enforcement violate his Fourth Amendment Rights? The analysis here turns on when Defendant was 'seized.'").

116. *Terry*, 392 U.S. at 27 (creating a category of searches and seizures that requires the police to have reasonable suspicion).

117. *Id.*

118. Miranda v. Arizona, 384 U.S. 436, 478 (1966).

119. Schneckloth v. Bustamonte, 412 U.S. 218, 249 (1973) (holding in the context of a consent search, that knowledge of one's right to refuse consent is a relevant but not required factor in determining whether a grant of consent was voluntary, and the government does not need to prove that the person who granted consent to search knew of the right to refuse consent under the Fourth Amendment).

120. *Id.* at 226.

> In determining whether a defendant's will was overborne in a particular case, the Court has assessed the totality of all the surrounding circumstances—both the characteristics

has moved away from subjective characteristics in its subsequent consent cases.[121] In *Jimeno*, for example, the Court addressed whether an individual's consent to search his car included permission for the police to open containers within his car.[122] Employing a reasonable person standard, the Court concluded that because the officer stated he was searching for drugs, and Mr. Jimeno did not explicitly limit the scope of the search, it was reasonable for him to search the car and containers within the car that contained drugs.[123]

In contrast, a consensual encounter where a court determines that the person was free to leave police and terminate the interaction, is not a seizure and is outside of the Fourth Amendment's purview entirely.[124]

However, deciding whether an individual's consent to a police search was voluntary addresses the same ultimate question as whether an encounter was consensual—does the specific person in those circumstances know that they can decline the police officer's request to search or disregard their presence?

Legal scholars have noted the similarities between consent to search and consensual encounters and have criticized the two doctrines for similar reasons. First, observers argue that while the premise of consent to search and consensual encounters is that individuals are free to decline an officer's request, the reality is that almost everyone "consents" in the manner defined by the precedent.[125] Indeed, scholars treat these two doctrines interchangeably,

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> of the accused and the details of the interrogation. Some of the factors taken into account have included the youth of the accused [. . .] his lack of education [. . .] or his low intelligence [. . .] the lack of any advice to the accused of his constitutional rights, [. . .] the length of detention [. . .].

Id.

121. *See* Illinois v. Rodriguez, 497 U.S. 177, 179–81 (1990) (holding, with respect to whether a girlfriend voluntarily consented to search of her boyfriend's apartment, that when there is common authority over a space, it is reasonable to recognize that any of the co-inhabitants has the right to permit the inspection in his own right and that the others have assumed the risk that the common areas could be searched).

122. Florida v. Jimeno, 500 U.S. 248, 251 (1991) (holding that the scope of an individual's consent to a search is based on objective reasonableness; asking what would a reasonable person have understood by the exchange between the officer and the suspect?).

123. *Id.* at 252; *See* Daniel L. Rotenberg, *An Essay on Consent(less) Police Searches*, 69 WASH. UNIV. L. REV. 175, 177 (1991) ("In the context of the consent search, the subjective view seems required because the sole validating source of police authority to intrude on a premier constitutional right is the individual's grant of permission.").

124. Kentucky v. King, 563 U.S. 452, 467 (2011).

125. *See, e.g.*, Oren Bar-Gill & Barry Friedman, *Taking Warrants Seriously*, 106 Nw. UNIV. L. REV. 1609, 1662 (2012) ("[P]eople consent so often that it undermines both the meaningfulness of the consent and the believability that the police are really respecting the doctrine"); Ric Simmons, *Not "Voluntary" But Still Reasonable: A New Paradigm for Understanding the Consent*

arguing that it is inconsistent for the Court to treat consent searches as an exception to the Fourth Amendment's warrant requirement, but exclude the consensual encounter completely from constitutional review.[126]

When evaluating the waiver of an individual's right to refuse a search, courts look at the mental state of the person who consented, and also "objectively" at how a reasonable police officer would have perceived the voluntariness of their consent.[127] Similarly, a consensual encounter occurs when, from an "objective" point of view, the reasonable person would "feel free to leave" or "free to terminate the encounter."[128] For both analyses, however, objectivity is supposedly from the view of a reasonable individual, but the Court focuses on police behavior, comparing police behavior in one circumstance to that in another.[129] Similarly, the validity of an individual's consent to search is determined by the totality of the circumstances, but judges compare the police actions presented in one case to that of a prior case.[130] Finally, for both standards, the Court assumes that a reasonable person has the capacity to say "no" in response to an officer's request and does not require law enforcement to inform the person that they can decline.[131]

The Supreme Court has also linked these doctrines. In *Bostick*, the Court concluded that officers can ask individuals questions, ask for identification, and request consent to search without implicating the Fourth Amendment, "as long as the police do not convey a message that compliance with their requests is required."[132] In *Drayton*, the Court explicitly acknowledged the similarity between Fourth Amendment consent and seizure analyses stating: "[i]n circumstances such as these, WHERE THE QUESTION OF VOLUNTARINESS PERVADES

Searches Doctrine, 80 IND. L. J. 773, 773 (2005) ("Over 90% of warrantless police searches are accomplished through the use of the consent exception to the Fourth Amendment.").

126. Alafair S. Burke, *Consent Searches and Fourth Amendment Reasonableness*, 67 FLA. L. REV. 509, 512 (2016).

127. *See* Schneckloth v. Bustamonte, 412 U.S. 218, 248 (1973); *Jimeno*, 500 U.S. at 251.

128. Florida v. Bostick, 501 U.S. 429, 434 (1991).

129. *See* United States v. Mendenhall, 446 U.S. 544, 558–59 (1980); California v. Hodari D., 499 U.S. 621, 625 (1991); United States v. Drayton, 536 U.S. 194, 206 (2002).

130. John M. Burkhoff, *Search Me?*, 39 TEX. TECH L. REV. 1109, 1114 (2007).

131. *See Mendenhall*, 446 U.S. at 555. As discussed, critics of the consensual encounter doctrine argue that the Supreme Court attributes a greater ability in an average person to "just walk away" from police than most people actually possess. *See* Kessler, *supra* note 107, at 51–52.

132. *Bostick*, 501 U.S. at 435.

BOTH THE SEARCH AND SEIZURE INQUIRIES, the respective analysis turn on very similar facts."[133]

With respect to race, the consent and consensual encounter doctrines are similarly flawed. As Professor Devon Carbado explains, Black men in particular are conditioned to assume that asserting their constitutional rights in a police encounter will increase a likelihood of arrest, or physical harm.[134] Accordingly, for Carbado, consent to search, custody, and consensual encounter doctrines contain an implicit assumption—that the reasonable person knows they can deny consent to a law enforcement officer—that is inaccurate for Black men.[135]

Although these are distinct doctrines, the interrelated nature of the consent doctrine and the consensual encounter determination is relevant to the question of race. To be sure, the Court has endeavored to create a totality of circumstances approach for each, that can provide effective guidance for law enforcement and for lower courts. But, at its base, these doctrines involve the same ultimate question, of whether a person, facing the totality of circumstances, believes that they can decline a police officer's request or ignore their presence. It is irresponsible to deny all consideration of an individual's race when answering that question.

IV. INTERPRETING SILENCE: DOES THE SUPREME COURT PERMIT CONSIDERATION OF RACE IN A CONSENSUAL ENCOUNTER DETERMINATION?

As noted, legal observers widely condemn the Supreme Court's Fourth Amendment decisions for being divorced from the realities of actual encounters between citizens and law enforcement.[136] In addi-

133. *Drayton*, 536 U.S. at 206 (emphasis added). After finding that the Respondents were "free to terminate" their encounter with police on the bus, the Court addressed whether their consent to the suspicionless search was involuntary and highlighted the similarity of these inquiries. In *Ohio v. Robinette,* the Court addressed whether an attempt at consensual search by an officer after a traffic stop required the officer first telling the individual that they were free to go. Ohio v. Robinette, 519 U.S. 33, 39–40 (1996). The Court held that no warnings about the right to refuse needed to precede a request for consent to search. The *Robinette* Court analogized the consensual encounter to a consent to search, taking a totality of the circumstances approach.

134. Carbado*, supra* note 38, at 1013–14.

135. *Id.*

136. *See* Marcy Strauss, *Reconstructing Consent*, 92 J. CRIM. L. & CRIMINOLOGY 211, 212 (2001) ("Only if the police behave with some extreme degree of coercion beyond that inherent in the police-citizen confrontation will a court vitiate the consent [to search]."); *see* Carbado*,*

tion to this general reproach, the Court's Fourth Amendment precedent is criticized for ignoring the significant racial bias in police decision-making.[137] The Court has "define[d] [Fourth Amendment] reasonableness in a manner that largely excludes consideration of racial equity."[138]

For example, in 1996, a unanimous Court held that an arrest supported by probable cause does not violate the Fourth Amendment even if it was motivated by racial profiling or bias.[139] *Whren* avoids discussing the pervasive impact of race on citizen-police encounters and instead emphasizes objective analysis, denying import to any subjective motives of the officers. Justice Scalia stated that while we "agree with petitioners that the Constitution prohibits selective enforcement of the law based on considerations such as race. But the constitutional basis for objecting to intentionally discriminatory application of laws is the Equal Protection Clause, not the Fourth Amendment."[140] Despite consistent condemnation of *Whren*, and its implicit acceptance of racially based pretextual stops, the Court has not signaled true interest in reconsideration.[141]

The Supreme Court insists that the feelings of a hypothetical reasonable person are central to seizure analysis, and has lamented the dearth of empirical evidence about human behavior when making reasonable person determinations.[142] For example, Justices Breyer and

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supra note 38, at 1033 (criticizing Whren v. U.S., 517 U.S. 806 (1996) for making race disappear "for purposes of Fourth Amendment law, race does not matter.").

137. *See* Strauss, *supra* note 136, at 212 (criticizing the formalistic application of the consent standard in many cases); *see also* Carbado, *supra* note 38, at 1033.

138. David A. Sklansky, *Traffic Stops, Minority Motorists, and the Future of the Fourth Amendment*, 1997 SUP. CT. REV. 271, 323 (1998).

139. Whren v. U.S., 517 U.S. 806, 813 (1996) (holding that the constitutional reasonableness of a traffic stop does not depend on the actual motivations of the officers involved).

140. In light of well-known difficulty of proving racially motivated discrimination pursuant to the Equal Protection clause Justice Scalia's suggestion in *Whren* that there were other ways to address massive racial inequality in law enforcement rings disingenuous. *Id.* at 813.

> We of course agree with petitioners that the Constitution prohibits selective enforcement of the law based on considerations such as race. But the constitutional basis for objecting to intentionally discriminatory application of laws is the Equal Protection Clause, not the Fourth Amendment. Subjective intentions play no role in ordinary, probable-cause Fourth Amendment analysis.

Id.

141. Justice Ginsburg recognized the widespread criticism of *Whren* in 2018, recognizing the problem with denying any examination of a police officer's subjective intent. *See* District of Columbia v. Wesby, 138 S. Ct. 577, 593–94 (2018) (Ginsburg, J., concurring) ("I would leave open, for reexamination in a future case, where a police officer's reason for acting, in at least some circumstances, should factor into the Fourth Amendment inquiry.").

142. *See* Janice Nadler, *No Need to Shout: Bus Sweeps and the Psychology of Coercion*, 2002 SUP. CT. REV. 153, 167 (2002).

Scalia acknowledged, during oral argument for *Brendlin v. California*, the concerning absence of statistical social science informing their standard for identifying whether an encounter is a seizure.[143] However, especially during in the last decade, there has been significant empirical evidence of racial disparities as a consequence of the Court's Fourth Amendment methods. For example, in the decades since *Whren*, the disparate racial impact of pretext stops has been well documented.[144] In light of the omnipresence of traffic stops, scholars argue that the Court's decision "facilitates part of the bias contaminating America's criminal justice system."[145]

For obvious reasons, empirical evidence of racial bias in consensual encounters is harder to generate than for traffic stops. When an encounter is challenged but the reviewing court deems it to have been consensual, it is excluded from Fourth Amendment review—it is, then, not a stop at all.

Far from addressing its critics, the Supreme Court has articulated its desire to *avoid* race, and not to use race-based classification as a justification for a corrective or balancing societal inequality. For example, upon rejecting two school districts' plans for forced integration to achieve more racially balanced schools, Chief Justice Roberts explained his applicable view: "working backward to achieve a particu-

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> [T]hese are questions that depend crucially on empirical inquiries [. . .]. [R]elying on casual intuition to infer why someone acted the way that they did in a situation where all of the details and circumstances are important and must be taken into account (as the Court has emphasized repeatedly) almost always leads to mistaken and erroneous judgments.

Id.; see RONALD JAY ALLEN, JOSEPH L. HOFFMANN, DEBRA A. LIVINGSTON, ANDREW D. LEIPOLD & TRACEY L. MEARES, CRIMINAL PROCEDURE: INVESTIGATION AND RIGHT TO COUNSEL 404 (Wolters Kluwer ed., 2016) ("[D]oes the average person when approached b a police officer feel free to terminate the encounter . . . ? Isn't the seizure test in fact a legal fiction . . . ?").

143. Tr. of Oral Arg. at 43.

> So what do we do if we don't know? I can follow my instinct. My instinct is he would feel he wasn't free because the red light's flashing. That's just one person's instinct. Or I could say, let's look for some studies. They could have asked people about this, and there are none . . . . What should I do? . . . Look for more studies?

Id.

144. *See* CHARLES R. EPPS ET. AL., PULLED OVER: HOW POLICE STOPS DEFINE RACE AND CITIZENSHIP 52 (2014) (finding through an empirical analysis of pretextual stops that Black Americans are 270 percent more likely than whites to be subjected to an investigatory stop). In his book regarding traffic stops, Charles Epps details the intentional development of pretextual traffic stops as a method of discovering contraband. *See also* LYNN LANGTON & MATTHEW DUROSE, U.S. DEP'T OF JUSTICE, POLICE BEHAVIOR DURING TRAFFIC AND STREET STOPS, 2011 (Morgan Young ed., 2013)

145. Tracey Maclin & Maria Savarese, *Martin Luther King, Jr. and Pretext Stops (and Arrests): Reflections on How Far We Have Not Come Fifty Years Later*, 49 UNIV. MEMPHIS L. REV. 43, 62 (2018); *see also* JAMES FORMAN, JR., LOCKING UP OUR OWN: CRIME AND PUNISHMENT IN BLACK AMERICA 197-215 (2017) (describing how pretext stops contribute to racial disparities in America's criminal justice system).

lar type of racial balance, rather than working forward from some demonstration of the level of diversity that provides the purported benefits, is a fatal flaw under our existing precedent. We have many times over reaffirmed that 'racial balance is not to be achieved for its own sake.'"[146] School desegregation presents a very different constitutional challenge than consensual encounters and the Fourth Amendment. Nevertheless, the Supreme Court's guiding inclination to stay silent with respect to race is clear. For the Roberts Court, it was inappropriate to address serious racial inequalities in our society as long as they have not been proven to be the result of intentional racial discrimination.[147]

By avoiding discussions of race in Fourth Amendment cases, the Court has promoted doctrines—like the free to leave standard—dissociated from the realities of racial inequities throughout the criminal system.[148]

Against this critical backdrop, we analyze whether the Court permits consideration of race in the totality of circumstances of whether an encounter between an individual and police officer was "consensual."[149] In my view, likely as a result of the Court's general avoidance of racism in policing, it has neither expressly permitted nor

146. Parents Involved in Cmty. Sch. v. Seattle Sch. Dist. No. 1, 551 U.S. 701, 729–30 (2007). Accepting racial balancing as a compelling state interest would justify the imposition of racial proportionality throughout American society, contrary to our repeated recognition that '[a]t the heart of the Constitution's guarantee of equal protection lies the simple command that the Government must treat citizens as individuals, not as simply components of a racial, religious, sexual or national class.

Id. (citing Miller v. Johnson, 515 U.S. 900, 911 (1995)).

147. Two examples stand out from last year's term. Comcast Corp. v. Nat'l Ass'n of African American-Owned Media, 140 S. Ct. 1009, 1019 (2020) (holding that a plaintiff who sues for racial discrimination in contracting, pursuant to federal law, has to show that race was a but-for cause of the plaintiff's injury, and not just a motivating factor); *see also* Dep't of Homeland Sec. v. Regents of the Univ. of Cal., 140 S. Ct. 1891, 1915 (2020) (holding that the Trump administration acted arbitrarily in rescinding the Deferred Action for Childhood Arrivals (DACA) program, limiting itself to the executive's violation of administrative procedure and avoiding any discussion of the racial and ethnic context and potential implications of the case).

148. *See* SHARON DOLOVICH, THE NEW CRIMINAL JUSTICE THINKING 114 (Sharon Dolovich & Alexandra Natapoff eds., 2017). Death penalty scholars Carol and Jordan Steiker appropriately observe that "[r]ace has been woven into the history of American criminal justice and yet often ignored by the courts." Carol S. Steiker & Jordan M. Steiker, *The American Death Penalty and the (In)visibility of Race*, 82 U. CHI. L. REV. 243, 287 (2015); *see also* Neil S. Siegel, *The Supreme Court Is Avoiding Talking About Race: Saying Nothing is Often Saying Something*, THE ATLANTIC, (Aug. 7, 2020) ("The general silence of the justices can have spillover effects that produce bad law in cases in which correct interpretation of the Constitution and statutes requires serious engagement with the long, tragic history of racism in this nation—and with its continued existence.").

149. A seizure occurs only when the police officer's conduct under the circumstances would have communicated to a reasonable person that she was not free to decline the officer's requests or terminate the encounter. Florida v. Bostick, 501 U.S. 429, 434, 437 (1991).

rejected the consideration of an individual's race in the consensual encounter determination.

A. Supreme Court's Use of Race in Fourth Amendment Doctrine

Although the Supreme Court commonly avoided race in its seizure decisions, the Court did acknowledge the relevance of race in the context of a Fourth Amendment seizure before *Mendenhall.*

First, in *Terry,* the Court acknowledged the tension between law enforcement and minority communities, and recognized ongoing "wholesale harassment by certain elements of the police community, of which minority groups, particularly Negroes, frequently complain."[150] The Court explained that its holding should not "be taken as indicating approval of police conduct outside the legitimate investigative sphere."[151] Moreover, *Terry* reminded lower courts that they "still retain their traditional responsibility to guard against police conduct which is over-bearing or harassing, or which trenches upon personal security without the objective evidentiary justification which the Constitution requires."[152]

Second, in *United States v. Brignoni-Ponce,* the Court found that an individual's ethnicity could be relevant when assessing whether or not there was justification for a *Terry* stop.[153] There, in the context of Mexican Americans near the Texas-Mexico border and attempted drug interdictions, the Court found that the "officers relied upon a single factor to justify stopping respondent's car: the apparent Mexican ancestry of the occupants."[154] Although it was reasonable to use an individual's ethnicity in the sum total of reasonable suspicion for a stop, an individual's ethnicity, standing alone, did not provide reasonable grounds to believe that the car's three occupants were illegal aliens or smuggling contraband.[155]

In 1976, the Supreme Court examined "fixed, interior checkpoints" set up by Customs and Border Protection (CBP), addressing

150. Terry v. Ohio, 392 U.S. 1, 14.
151. *Id.* at 15.
152. *Id.*
153. United States v. Brignoni-Ponce, 422 U.S. 873, 886 (1975) (holding that reasonable suspicion of criminal activity warrants a temporary seizure for the purpose of questioning limited to the purposes for the stop). The Court found that the interference with Fourth Amendment interests in these stops was "modest," whereas the inquiry served significant law enforcement needs. *Id.* at 880.
154. *Id.* at 885–86.
155. *Id.*

the question of whether CBP officers asking individuals about their citizenship at these checkpoints violated the Constitution.[156] Writing for the majority, Justice Powell acknowledged that routine stops are Fourth Amendment seizures, but explained that unlike roving patrol stops, these routine stops, where motorists see that others are being stopped, and an individual "is much less likely to be frightened or annoyed by the intrusion."[157] Justice Powell further approved of pulling over motorists to a secondary inspection on the basis of "apparent Mexican ancestry" as follows:

> We further believe that it is constitutional to refer motorists selectively to the secondary inspection area at San Clemente checkpoint on the basis of criteria that would not sustain a roving patrol stop. Thus even if it be assumed that such referrals are made largely on the basis of apparent Mexican ancestry, we perceive no constitutional violation.[158]

Next, a closer look at *Mendenhall*'s discussion of race is informative. First, the plurality concluded that the initial encounter between respondent and the DEA agents on the concourse of the Detroit Airport was not an unlawful seizure.[159] Having decided that her initial encounter was consensual, the plurality stated that "it is still arguable that the respondent's Fourth Amendment protections were violated when she went from the concourse to the DEA office."[160] The Court reviewed the evidence of respondent's decision to accompany these officers, which had been provided before the lower court, and included that she was 22 years old, had not graduated from high school, was a Black female, and "may have felt unusually threatened by the officers, who were white males."[161] The plurality acknowledged that her race, age, and education were relevant but not decisive factors in

156. United States v. Martinez-Fuerte, 428 U.S. 543 (1976) (holding that under the circumstances of these checkpoint stops, which do not involve searches, the government's interest in making these stops outweighs the constitutionally protected interest of the private citizen).

157. *Id.* at 558 (citing United States v. Ortiz, 422 U.S. 891, 894–95).

158. *Id.* at 563.

159. United States v. Mendenhall, 446 U.S. 544, 555. (finding that no "seizure" of the respondent occurred and that the conduct displayed by the agents did not amount to an intrusion upon any constitutionally protected interest because the events took place in the public concourse, the agents wore no uniforms and displayed no weapons and did not summon the respondent to their presence, but instead approached her and identified themselves as federal agents, and because the agents requested, but did not demand to see the respondent's identification and ticket.).

160. *Id.* at 557.

161. *Id*. at 558.

determining whether she voluntarily accompanied DEA officers from the concourse to their office.[162]

In *Mendenhall*, the Court was clearly considering an individual's race as relevant within the totality of the circumstances for, at a minimum, respondent's decision to accompany officers to the second location.[163] The Supreme Court has not, however, explicitly addressed an individual's race when determining whether a challenged police-citizen interaction was a Fourth Amendment seizure or a consensual encounter.

B. The Lower Courts' Treatment of Race in Light of Dearth of Guidance

In the decades of Supreme Court silence regarding the consideration of race in Fourth Amendment seizure analysis, courts have interpreted *Mendenhall's* reliance on race (in the consent portion of the decision) in a variety of ways. Although few United States Courts of Appeal have reached the issue of race in the seizure analysis, the Ninth and Tenth Circuits have come to disparate conclusions about whether race is relevant to that analysis.

In *United States v. Washington*, the Ninth Circuit concluded that recent well-publicized incidents, in which police shot Black citizens in Portland, Oregon, provided the requisite threshold of objectivity, and the "unique situation in Portland between the African-American community and Portland police" was significant to the context in which respondent consents to the search of his car."[164] The Ninth Circuit's determination that the encounter was a seizure, and that the lower court erred in finding it had been consensual, "ha[d] a major impact" on the conclusion that Mr. Washington's consent to search was involuntary.[165]

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162. *Id.*

163. *Id.* ("It is additionally suggested that the respondent, a female and a Negro, may have felt unusually threatened by the officers, who were white males. While these factors were not irrelevant . . . neither were they decisive.").

164. United States v. Washington, 490 F.3d 765, 775 (9th Cir. 2007).

165. *Id.* at 776.

> The district court clearly erred in finding that Washington was not seized, and this factor in context deserves significant weight in our assessment of voluntariness. Having carefully considered the totality of the circumstances in which Washington gave his consent to his car being searched, we hold that the district court also clearly erred in ruling that Washington's consent was voluntary. Given that it was late at night on a dark street, that Washington had been led away from his car and seized by two police officers, and the tension between the African–American community and police officers in Portland in light of the prior shootings above-mentioned, we have no confidence that Washington's assent to the car search was voluntary under the total circumstances.

By contrast, the Tenth Circuit recently reversed the district court's conclusion that respondent's race—and her status as the sole Black woman on a bus—were relevant to determining whether a reasonable person in her circumstances would have felt free to terminate an encounter with DEA agents on a stopped bus.[166] The district court had explained that "it *must* consider race in weighing the totality of the circumstances as to whether someone in [her] position would have felt free to leave, in order to ensure that Fourth Amendment protections apply equally to people of color."[167] Upon reversing that determination, the Tenth Circuit distinguished between *Mendenhall*'s consideration of an individual's race when evaluating their consent to a search—an inquiry that necessarily takes the defendant's subjective characteristics into account—from "the Fourth Amendment's seizure analysis," which "has always been an objective one."[168] In other words, *Mendenhall* should be cabined as support for consideration of an individual's race when evaluating whether consent is voluntary, but cannot be relied upon when considering whether a reasonable person would feel they can terminate an encounter with police. The Supreme Court denied certiorari on this question of race.[169]

Other Courts have stated that race is relevant to seizure determinations, but have not undertaken that analysis, finding, instead, that the circumstances of the cases confronting them involved Fourth Amendment seizures without considering race. The Seventh Circuit, for example, concluded that no reasonable person in petitioner's circumstances, as a young Black man, confronted in a high-crime, minority-dominated area where police-citizen relations are strained, would

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Id.

166. United States v. Easley, 293 F. Supp. 3d 1288 (D.N.M. 2018). Upon consideration of the totality of the circumstances in the encounter between DEA Agent Perry and Ms. Easley, the district court found that a person in Ms. Easley's position would not have felt free to terminate the encounter and that, accordingly, Ms. Easley's abandonment of the G-brand suitcase was involuntary and the methamphetamine obtained from the suitcase must be suppressed. The district court's decision to suppress evidence was reversed by the Tenth Circuit. *Id.* at 1309.

167. *Id.* at 1308–09. The district court viewed the agent's request to speak with Ms. Easley outside the bus

> as an assertion of law enforcement authority that would make a reasonable person of color feel that they are not free to decline or terminate the interaction. . . . In the context of an interaction between a white officer and the only black person on the bus, taking place after a stream of passengers have already agreed to answer questions of be searched, and after SA Perry has repeatedly misrepresented his purpose, the Court considers SA Perry's words and instructions to Ms. Easley to have authoritative and coercive force.

Id.

168. *Easley*, 911 F.3d 1074, 1081 (10th Cir. 2018).

169. Easley v. United States, 139 S. Ct. 1644 (2019).

have felt free to walk away from the encounter with two police officers.[170] Citing *Mendenhall*'s reference to the relevance of an individual's race, *Smith* concluded that race, racial profiling, and "other racial disparities in the criminal justice system" were relevant to the question of whether a seizure had occurred.[171] However, the Seventh Circuit concluded that the challenged encounter was clearly a seizure without consideration of race. In 2020, the Supreme Court of New Hampshire made similar declarations, without relying upon an individual's race when determining that a seizure had occurred.[172]

Without citing the Supreme Court, the Massachusetts Supreme Judicial Court held that racial realities must be acknowledged in the totality of circumstances used in evaluating whether there was sufficient reasonable suspicion for an investigatory stop.[173] In *Warren,* the Court recognized that, based on a recent study, Black men in Boston were statistically more common targets of police interactions of both "consensual" and investigational categories, and in light of that, a Black man's flight from police could not be used to support a finding of reasonable suspicion.[174] *Warren* recognized that because the implicit assumption of consensual encounters is that a person may choose to walk away from police, there is a "factual irony in the consideration of flight as a factor in the reasonable suspicion calculus."[175] Next, the Court explained that "where the suspect is a black male stopped by the police on the street of Boston, the analysis of flight as a factor in the reasonable suspicion calculus cannot be divorced from the findings . . . [that] Black men are disproportionately targets for police-civilian encounters in the consensual and seizure categories, "[s]uch an individual, when approached by the police, might just as easily be motivated by the desire to avoid the recurring indignity of being racially profiled as by the desire to hide criminal activity."[176]

170. United States v. Smith, 794 F.3d 681, 687–88 (7th Cir. 2015).

171. *Id.* at 688 (recognizing "the relevance of race in everyday police encounters with citizens in Milwaukee and around the country" as well as "empirical data demonstrating the existence of racial profiling, police brutality, and other racial disparities in the criminal justice system" but concluding that the encounter at issue constituted a seizure without consideration of those factors.).

172. State v. Jones, 172 N.H. 774, 780 (2020) ("Although we reach our conclusion irrespective of the defendant's race, we observe that race is an appropriate circumstance to consider in conducting the totality of the circumstances seizure analysis.").

173. Commonwealth v. Warren, 475 Mass. 530, 539–40 (Mass. 2016) (citing hugely disproportionate targeting of Black men in Boston to explain why defendant fled from police).

174. *Id.* at 539.

175. *Id.*

176. *Id.* at 539–40.

Last year, the Supreme Judicial Court further concluded that respondent had demonstrated circumstances showing he was subject to an illegal, racially motivated stop and accordingly suppressed evidence.[177] After *Long*, a Massachusetts defendant can establish "a reasonable inference" that the officer's decision to initiate the stop was motivated by race, based on specific facts from the circumstances surrounding the stop, but without statistical evidence.[178] While revising the framework for proving that a pretextual stop was motivated by racism, *Long* explained, "[t]he right of drivers to be free from racial profiling will remain illusory unless and until it is supported by a workable remedy."[179]

However, in the companion case, *Commonwealth v. Evelyn*, the Supreme Judicial Court declined to address the petitioner's argument that his race should be considered in determining at what point he is considered seized by police.[180] The court

> agree[d] that the troubling past and present of policing and race are likely to inform how African[ ]Americans and members of other racial minorities interpret police encounters. . . . African[ ]Americans, particularly males, may believe that they have been seized in situations where other members of society would not.[181]

After acknowledging the federal courts of appeal's distinct ways of addressing race in the seizure analysis,[182] the court agreed with the defendant that in this case, "based on factors other than race," he was seized and that it "d[id] not decide here whether the race of a defendant properly informs the seizure inquiry."[183]

One federal appellate judge, relying on *Mendenhall*, recognized the importance of race to the consensual encounter and consent doc-

177. Commonwealth v. Long, 485 Mass. 711, 712–13 (2020) (finding that a lack defendant established a reasonable inference of improper racial discrimination in traffic law enforcement, through examination of the totality of the circumstances including nonstatistical evidence).

178. *Id.* at 724–26.

179. *Id.* at 721.

180. Commonwealth v. Evelyn, 485 Mass. 691, 693 (2020). The petitioner argues that the same reports relied upon in *Long*, documenting the pattern of disproportionate stops of African Americans by Boston police injects an "element of coercion into police encounters with African-American individuals that is not present in other police interactions." *Id.* at 701.

181. *Id.* (citing Maclin, *supra* note 11, at 255 (1991) ("Black males learn at an early age that confrontations with the police should be avoided; [B]lack teenagers are advised never to challenge a police officer, even when the officer is wrong.")).

182. *Id.* at 120-21 (citing United States v. Easley, 911 F.3d 1074 (10th Cir. 2018)*;* United States v. Smith, 794 F.3d 681 (7th Cir. 2015); United States v. Washington, 490 F.3d 765 (9th Cir. 2007)).

183. *Id.* at 121.

trines in what has become a well-known dissent.[184] Judge Mack disagreed with the moment when the petitioner was seized, arguing that it occurred when interdiction officers boarded the bus and cornered him.[185] With respect to whether he consented to the body search,[186] the dissenting judge urged the court on remand to consider that the petitioner was a "fourteen year old [B]*lack* youth," citing *Mendenhall* for support that personal characteristics such as age, sex, and race are "worth noting in the assessment of coercion."[187] Moreover, Judge Mack criticized the Supreme Court's silence in the face of racial reality: "Whether the courts speak of it or not, race is a factor that has for many years engendered distrust between [B]lack males and law enforcement personnel."[188] Judge Mack "respectfully venture[d] to suggest that no reasonable[,] innocent [B]lack male (with any knowledge of American history) would feel free to ignore or walk away from a drug interdiction team."[189]

In sum, without Supreme Court guidance, lower courts have taken differing views of the role of race in determining whether a reasonable person would have felt free to ignore police presence and go

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184. *In re J.M.*, 619 A.2d 497, 512–14 (D.C. 1992) (Mack, J., dissenting, but concurring in remand).

185. *Id.* at 509–10 (Mack, J., dissenting, but concurring in remand) (citing Florida v. Bostick, 501 U.S. 429 (1991)).

> In my view, J.M. was seized when cornered by police in the early morning hours of October 31, 1989. I cannot find that a reasonable person, even an innocent person, (in the circumstances in which J.M. found himself) would feel 'free to decline the officers' request or otherwise terminate the encounter' in the physically confining interior of an interstate bus commandeered by armed drug interdiction officers at 2:00 a.m. for the purpose of conducting interviews during a rest stop.

Id.

186. Notably, the dissenting Judge Mack explained that consensual encounter and consent were "'two conceptually distinct yet, in practice, often overlapping issues,' *i.e.,* whether there has been seizure and/or consent for Fourth Amendment purposes, we must not lose sight of the fact that, regardless of the applicable standards, judges at both the trial and appellate levels must rest any decisions on the 'totality of [factual] circumstances.'" *Id.* at 509 (Mack, J., dissenting, but concurring in remand).

187. *Id.* at 509, 511 (citing United States v. Mendenhall, 446 U.S. 544, 558 (1980)).

188. *Id*. at 512–13 (Mack, J., dissenting, but concurring in remand) (citing Maclin, *supra* note 11; Sheri Lynn Johnson, *Race and the Decision to Detain a Suspect,* 93 YALE L.J. 214 (1983)). Judge Mack continued in dissent to lament that "America's history in large measure may be responsible for this phenomenon; it is painful to remember the era when some local sheriffs, deputies, jailers, policemen and prominent citizens cooperated with purveyors of mob violence to provide punishment for [B]lacks accused of crime." *Id.* (Mack, J., dissenting, but concurring on remand).

189. *Id.* at 513 (Mack, J., dissenting, but concurring on remand). Citing *Mendenhall*, Judge Mack explained that he "would factor into the totality of circumstances the relevant characteristics of age and race, as well as the fact that appellant was not told that he was free to decline to consent to the search." *Id.* at 514 (Mack, J., dissenting, but concurring on remand) (citing *Mendenhall*, 446 U.S. at 558).

about their business. The Fourth, Tenth and Eleventh Circuit have held that race is irrelevant to the question of whether an individual has been seized, while the Ninth, Seventh, and D.C. Circuit have held that race may be relevant to the totality of circumstances considered in the inquiry.[190] Similarly, state supreme courts vary in their interpretation of *Mendenhall* in light of the Supreme Court's subsequent silence. Given the overlapping nature of the doctrines of consent to search, and consensual encounters, and because their "totality of circumstances" inquiries suffer from the same racial reality deficiencies, *Mendenhall* supports the consideration of race in both contexts.

C. The "Permissible" Consensual Encounter Factors to Consider Are Not Clearly Defined

If the courts are not sure about whether to considerrace in the Fourth Amendment seizure determination, then what factors can they consider in the totality of circumstances for the consensual encounter analysis? The consensual encounter determination is based on the "totality of the circumstances,"[191] and is supposed to be "objective" such that it is "flexible enough" to apply in every setting.[192] Briefly reviewing the "acceptable" factors, however, shows that these factors are far from objective or clear.

The Supreme Court recognizes that the consensual encounter test is "necessarily imprecise" because "what constitutes a restraint on liberty prompting a person to conclude that he is not free to 'leave' will vary, not only with the particular police conduct at issue, but also with the setting in which the conduct occurs."[193] Ultimately, a person "has been 'seized' within the meaning of the Fourth Amendment only if, in view of all of the circumstances surrounding the incident, a reasonable person would have believed that he was not free to leave."[194]

190. See United States v. Knights, 989 F.3d 1281 (11th Cir. 2021); United States v. Easley, 911 F.3d 1074 (10th Cir. 2018), cert. denied, 139 S. Ct. 1644 (2019); Monroe v. City of Charlottesville, 579 F.3d 380 (4th Cir. 2010), cert. denied, 559 U.S. 992 (2010); c.f. United States v. Washington, 490 F.3d 765 (9th Cir. 2007); Dozier v. United States, 220 A. 3d 933 (D.C. 2019); United States v. Smith, 794 F.3d 681 (7th Cir. 2015).

191. Ohio v. Robinette, 519 U.S. 33, 39–40 (1996).

192. Michigan v. Chesternut, 486 U.S. 567, 574–76 (1988) (holding that following an individual in a patrol car has been held not to communicate to the reasonable person that he is not free to go about his business).

193. *Id.* at 573.

194. *Mendenhall*, 446 U.S. at 554.

Mendenhall's list of relevant factors comes with the express caveat that they are "[e]xamples," and not exhaustive.[195] The circumstances suggesting a seizure include: "the threatening presence of several officers, the display of a weapon by an officer, some physical touching of the private citizen, . . . the use of [forceful] language or tone of voice indicating that compliance with the officer's request might be compelled," and the location in which the encounter takes place.[196] *Chesternut* reiterated that courts may consider as relevant whether the individual's freedom of movement was intruded upon in some way by the officer.[197]

First, an officer's restriction of an individual's movement is primary to the encounter analysis. Courts inquiring about whether a reasonable person would feel free to leave a particular police interaction consider strongly whether that individual's path is blocked or impeded by police, as well as the other *Mendenhall* factors.[198] An officer's physical touching of an individual or physical blocking of the individual's path for exit is central to this analysis.[199] *Bostick* emphasizes that the physical impediment of an exit, by blocking an individual's path, is a critical indicator that the interaction is not consensual.[200] Courts rely heavily on whether law enforcement officers have physically blocked an individual's path, on foot or in a car, when determining whether the challenged encounter is consensual.[201] However, in *Delgado,* the Court found that the factory workers were not seized despite the fact that immigration agents physically blocked all exits from the factory during their encounter.[202]

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195. *Id.*

196. *Id.* at 554–55.

197. *Chesternut*, 486 U.S. at 574–76 (holding that following an individual in a patrol car has been held not to communicate to the reasonable person that he is not free to go about his business).

198. *See e.g.,* United States v. De La Rosa, 922 F.2d. 675, 678 (11th Cir. 1991).

199. *See* California v. Hodari D., 499 U.S. 621, 626 (1991); Brown v. Texas, 443 U.S. 47, 50 (1979); Terry v. Ohio, 392 U.S. 1, 16, 19 (1968).

200. United States v. Bostick, 501 U.S. 429, 447–48 (1991).

201. *See* United States v. Camacho, 661 F.3d 718, 725 (1st Cir. 2011) (finding that the initial encounter with the defendant was a seizure because the police blocked his path with their parked car). The First Circuit's analysis is instructive:

> Applying this standard, we conclude that Camacho's initial detention constituted a seizure rather than a consensual encounter. This is not a case in which the offices "merely approach[ed] an individual on the street [. . .] by asking him if he [was] willing to answer some questions." . . . Rather, Officers [ ] intentionally blocked Camacho's path with their Crown Victoria; . . . Under the totality of these circumstances, we agree with the district court that a reasonable person in Camacho's circumstances would not "feel free 'to disregard police and go about his business.'"

Id. (citing *Bostick*, 501 U.S. at 434).

202. I.N.S. v. Delgado, 466 U.S. 210, 218 (1984).

Second, *Drayton* explained that courts can consider whether the encounter occurred in a public or private place, implying that an individual would feel more secure in their ability to ignore a police officer in a public place where there are many witnesses to the police conduct.[203] This factor, however, is ambiguous. For example, public alleys are distinguishable from open public spaces where the police encounter is more likely to be consensual: an alley can be sparsely populated or even deserted.[204] Also, a person approached by police while parked in their car in a public parking lot could feel especially vulnerable to the police presence or more protected than they would be on foot in the same parking lot.[205]

Third, *Mendenhall* cites an officer's tone of voice as a relevant factor for the seizure analysis: "circumstances that might indicate a seizure, even where the person did not attempt to leave" include "the use of language or tone of voice indicating that compliance with the officer's request might be compelled."[206] This factor is also complex. *Drayton* relied heavily on the officer's spoken voice and tone, explaining that "[h]e spoke to passengers one by one in a polite, quiet voice," when concluding that the respondents were not seized, and the encounter was consensual.[207] However, the *Drayton* dissent interpreted the officers' calm statement that they "would like [. . .] cooperation" as indicating that while they would prefer cooperation, they would not let a lack of individual consent get in their way.[208] The dissent concluded that respondents were seized, even though the police officers did not shout, because the officers established "an atmosphere of obligatory participation" and "[i]t is very hard to imagine that either [of the respondents] would have believed that he stood to lose nothing if

203. United States v. Drayton, 536 U.S. 194, 204 (2002) (noting that "a reasonable person may feel . . . more secure in his or her decision not to cooperate with police on a bus than in other circumstances" . . ."because many fellow passengers are present [on a bus] to witness officers' conduct").

204. *Compare* Florida v. Rodriguez, 469 U.S. 1, 4–6 (1984) (finding no seizure where questioning occurred in "public area of the airport") *with* Florida v. Royer, 460 U.S. 491, 496–97, 508–09 (1983) (Powell J., concurring) (questioning that occurred in an enclosed, windowless room constituted a seizure).

205. *See* United States v. Gaines, 918 F.3d 793 (10th Cir. 2019). Here, Mr. Gaines was sitting in his parked car in a public parking lot when two uniformed police officers arrived in marked police cars, flashing their lights, and approached him. *Id.* at 796–98. The Tenth Circuit concluded that a reasonable person in that situation would feel unable to leave and ignore the police presence. *Id.* at 799.

206. United States v. Mendenhall, 446 U.S. 544, 554 (1980).

207. *Drayton*, 536 U.S. at 204. "Nothing [the officer] said would suggest to a reasonable person that he or she was barred from leaving the bus or otherwise terminating the encounter."

208. *Id.* at 211–12 (Souter, J., dissenting).

he refused to cooperate with the police, or that he had any free choice to ignore the police altogether."[209] Similarly, legal observers have explained that depending on the location and context of a particular police encounter, an officer's whisper can be more intimidating than a loud command.[210] Certainly, "[a] police officer who is certain to get his way has no need to shout."[211]

Relatedly, other aspects of the police officer's clothing and demeanor have been used as factors in the consensual encounter determination, including displaying of a police badge, wearing a uniform, shining their flashlights, and being armed. In *Delgado*, the Supreme Court held that agents' wearing badges and questioning workers in a factory did not constitute a seizure.[212] *Drayton* minimized the importance of an officer's obvious firearm or uniform when analyzing the coerciveness of a challenged encounter.[213] Indeed, the Court suggested that a police officer's uniform could, in many circumstances, be a "cause for assurance, not discomfort."[214] In other words, for the *Drayton* court, the officer's uniform or visible sidearm are irrelevant to the consensual encounter determination, and the presence of a uniform can be reassuring. The Court does not explain whether, in its evaluation, reassuring indicates someone would feel free to leave and ignore the police presence.

The Tenth Circuit, by contrast, recently referred to the fact that officers were uniformed and arrived in two marked police cars as evidence that the encounter was coercive.[215] These facts, for the Tenth Circuit, "would undoubtedly have cast at least some doubt on a reasonable person's belief in his or her freedom to leave."[216] Meanwhile, the Eighth Circuit minimized the relevance of an officer's shining of a

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209. *Id.* at 212 (Souter, J., dissenting).

> It is very hard to imagine that either Brown or Drayton would have believed that he stood to lose nothing if he refused to cooperate with the police, or that he had any free choice to ignore the police altogether. No reasonable passenger could have believed that, only an uncomprehending one.

Id.

210. *See* Janice Nadler, *No Need to Shout: Bus Sweeps and the Psychology of Coercion*, 2002 SUP. CT. REV. 153, 186–90 (discussing empirical tests showing that the social situation and context of the speech can be more significant than the tone in which speech is delivered).

211. *Drayton*, 536 U.S. at 212 (Souter, J., dissenting).

212. I.N.S. v. Delgado, 466 U.S. 210, 212 (1984).

213. *Drayton*, 536 U.S. at 204-05.

214. *Id.* ("Officers are often required to wear uniforms and in many circumstances this is cause for assurance, not discomfort. Much the same can be said for wearing sidearms. That most law enforcement officers are armed is a fact well known to the public.").

215. United States v. Gaines, 918 F.3d 793, 796-97 (10th Cir. 2019).

216. *Id.*

flashlight at individuals, explaining that "shining a flashlight to illuminate a person in the darkness is not a coercive act that communicates an official order to stop or comply."[217] A police officer's brandishing of a firearm is a fact clearly indicative of a seizure.[218] Absent brandishing, however, the precedent regarding how a police officer's use of a uniform, visible holstered firearm, and flashlight pointed at individuals contributes to the "coerciveness of the encounter" is anything but clear.

Although *Mendenhall* formalized several factors that are relevant to the determination of whether an individual has been seized within the meaning of the Fourth Amendment, reviewing relevant factors shows that there continues to be significant ambiguity.

V. SIMILARITY BETWEEN CUSTODY INQUIRY AND CONSENSUAL ENCOUNTER INQUIRY: THE SUPREME COURT'S CONSIDERATION OF AGE IN *J.D.B. V. NORTH CAROLINA*

In *Miranda*, the Supreme Court famously adopted prophylactic measures designed to safeguard the constitutional guarantee against self-incrimination.[219] While any police interview of an individual suspected of a crime has coercive aspects, only those that occur while a suspect is in police custody "heighten[ ] the risk" that statements obtained are not the product of the individual's free choice.[220] The warnings are required only when a suspect is "in custody,"[221] which the Court holds to be — like seizure inquiry — objective, requiring courts to examine the totality of circumstances in the interrogation, including those that "would have affected how a reasonable person" in the individual's position "would perceive his or her freedom to leave."[222]

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217. *See* United States v. Hayden, 759 F.3d 842, 847 (8th Cir. 2014).

218. United States v. Mendenhall, 446 U.S. 554, 554 (1980).

219. Miranda v. Arizona, 384 U.S. 436, 444 (1966) (finding that prior to questioning, a suspect "must be warned that he has a right to remain silent, that any statement he does make may be used as evidence against him, and that he has a right to the presence of an attorney, either retained or appointed.").

220. *See* Dickerson v. United States, 530 U.S. 428, 435 (2000).

221. *See* Yarborough v. Alvarado, 541 U.S. 652, 661–62, 668 (2004) (holding that the benefit of objective custody analysis is that it is "designed to give clear guidance to the police.").

222. Stansbury v. California, 511 U.S. 318, 321, 325 (1994). The test involves no consideration of the "actual mindset of a particular suspect" subjected to police questioning. *Alvarado*, 541 U.S. at 667.

While the custody inquiry under *Miranda* primarily protects the right against self-incrimination and the right to counsel,[223] the seizure inquiry protects an individual's right to be free from unreasonable seizures under the Fourth Amendment.[224] Nevertheless, "[a]t their cores, both inquiries attempt to ascertain whether, considering the totality of the circumstances, an individual has been compelled to interact with police."[225]

In *J.D.B. v. North Carolina*, the Supreme Court held that "a child's age properly informs the *Miranda* custody analysis" because "children will often feel bound to submit to police questioning when an adult in the same circumstances would feel free to leave."[226] Although the custody inquiry is objective, the Court reasoned that age "is a fact that 'generates commonsense conclusions about behavior and perception," and there is "no reason for police officers or courts to blind themselves to that commonsense reality."[227] In arriving at this decision, *J.D.B.* rejected three arguments that have been made to argue against permitting consideration of race in the seizure analysis. I will address each argument in turn, and explain why the Supreme Court's dismissal of the argument in the context of age is effective in the context of race and seizure analysis.

First, in *J.D.B.,* the opponents to consideration of an individual's age for custody purposes, argued that age is irrelevant to custody analysis because it goes to how a suspect may "internalize and perceive" the circumstances of an interrogation, and this effect on the perception of custody "is internal."[228] In other words, the effects of an individual's age on whether they feel that they are in custody or voluntarily giving consent are too subjective. The Court, in response, dismantled the idea that there was a clear line between objective and subjective custody factors, explaining that the custody inquiry turns on the mindset of a reasonable person in the suspect's position, and it cannot be the case that a circumstance is subjective simply because it has an "internal" or "psychological" impact on a person.[229] Further, the Court reasoned that permitting the consideration of age will not undermine the objective nature of the inquiry, because many of the

223. *Alvarado*, 541 U.S. at 668; *see* U.S. CONST. amend. V.
224. Brendlin v. California*,* 551 U.S. 249, 255 (2007).
225. Commonwealth v. Evelyn, , 152 N.E.3d 108, 118 (Mass. 2020).
226. J.D.B. v. North Carolina, 564 U.S. 261, 264–65 (2011).
227. *Id.* at 265, 272.
228. *J.D.B.*, * U.S. at 278.
229. *Id.* at 279.

effects of youth "apply broadly to children as a class" and "are self-evident to anyone who was [once] a child . . . ."[230]

Correspondingly, the Court has endeavored to have an "objective" standard for consensual encounters;[231] idealizing that the "test's objective standard—looking to the reasonable man's interpretation of the conduct in question—allows the police to determine in advance whether the conduct contemplated will implicate the Fourth Amendment" and "ensures that the scope of Fourth Amendment protection does not vary this the state of mind of the particular individual being approached."[232] Ultimately, *J.D.B.* reconciled this tension between the objectivity of the custody inquiry and the need to recognize the effects of a suspect's age by finding that the effect of youth on cognition are not entirely individualistic.[233] And just as courts can consider that a minor is typically less likely to feel free to leave an interaction with police, courts can weigh the commonsense reality,[234] backed by substantial evidence, that race is a relevant contextual factor for whether a reasonable person would feel free to ignore police presence. "Through everyday experiences, people of color are conditioned to presume that asserting their constitutional rights in a police encounter will increase their likelihood of physical harm or arrest."[235] In his recent scholarship on Fourth Amendment law, Professor Orin Kerr demonstrates that the Court's Fourth Amendment doctrine is less objective than it seems to believe.[236]

Second, the *J.D.B.* majority dismissed the dissent's fear that considering age would destroy the "clarity of the custody analysis," deciding instead that "ignoring a juvenile defendant's age will often make the inquiry more artificial."[237] Indeed, North Carolina and the *J.D.B.* dissenters worried about gradations and differences among children of

230. *Id.* at 272.
231. United States v. Drayton, 536 U.S. 194, 202 (2002).
232. Michigan v. Chesternut, 486 U.S. 567, 574 (1988).
233. *J.D.B.*, 564 U.S. at 271–72.
234. *Id*. at 272.
235. United States v. Easley, 293 F. Supp. 3d 1288, 1306 (D.N.M. 2018). *See* Carbado, *supra* note 38, at 1013–14 (stating that people of color learn that during police encounters they should comport themselves (a) to signal racial respectability and (b) to make the officers racially comfortable. The assertion of rights can undermine that performance strategy. Specifically, it can racially aggravate or intensify the encounter, increasing the person of color's vulnerability to physical violence, arrest, or both.").
236. *See* Orin S. Kerr, *The Questionable Objectivity of Fourth Amendment Law*, 99 TEX. L. REV. (forthcoming) (arguing that as the "Fourth Amendment law's objective façade has begun to crack," the Supreme Court has not explained why it uses subjective rules in some cases and objective rules in others).
237. *J.D.B.*, 564 U.S. at 279.

different ages. However, the majority recognized that seven-year-olds and seventeen-year-olds would have different reactions to a police presence, but ultimately concluded "that concern cannot justify ignoring a child's age altogether."[238]

Similarly, opponents of the consideration of race in the "free to leave" analysis insist that race does not have a uniform or "objectively discernible effect on members' attitudes towards compliance with law-enforcement requests."[239] The concerns about permitting courts to consider an individual's race in the seizure analysis are vast. For example, the Eleventh Circuit asked for the government's position on whether race can be considered in the seizure analysis in 2020, and the government identified the following reasons for opposing consideration of race in the totality of the circumstances included: imperfection of racial identification by an officer of a citizen's race;[240] variation in intra-community perceptions about law enforcement; and disparate histories of police misconduct between geographical areas leading to different contextual realities for racial minorities.[241]

There is no question that race is a social construct, not a monolith, and that, for example, all young Black males do not hold parallel views regarding whether or not they can ignore law enforcement. The argument, however, that race does not have a generally discernible effect on young Black males is contradicted by a plethora of evidence, that at present, people of color throughout this country understand their race to be a primary factor precipitating a stop or seizure by police officers.[242] To deny courts any consideration of race in the to-

238. *Id.*

239. *See Petition for Rehearing En Banc at 13,* United States v. Knights 989 F.3d 1281(11th Cir. 2021), (No. 19-10083), ("Race, though, unlike age (or intelligence or education), is not a characteristic that pertains to a person's ability to understand his or her freedom to leave."); *see also Easley*, 911 F.3d at 1082.

240. The Supreme Court rejected parallel concerns in *J.D.B.*, because "gradations among children of different ages . . . cannot justify ignoring a child's age altogether." *J.DB.*, 564 U.S. at 279.

241. Petition for Rehearing En Banc at 10-14, United States v. Knights 989 F.3d 1281(11th Cir. 2021), Case (No. 19-10083).

242. African Americans are aware of the disproportionate scrutiny they receive from law enforcement. *See* Utah v. Strieff, 136 S. Ct. 2056, 2070 (2016) (Sotomayor, J. dissenting) ("For generations, black and brown parents have given their children 'the talk' – instructing them never to run down the street; always keep your hands where they can be seen; do not even think of talking back to a stranger – all out of fear of how an officer with a gun will react to them."); HUM. RTS. WATCH, *Decades of Disparity: Drug Arrests and Race in the United States* (2009), https://www.hrw.org/report/2009/03/02/decades-disparity/drug-arrests-and-race-united-states#; *see also* Maclin, *supra* note 11, at 253 (explaining that people of color know they can be "stopped at any time, and that when they question the authority of the police, the response from the cops is often swift and violent.").

tality of circumstances of a seizure determination because of differing beliefs within racial groups is an insult to the no demonstrated reality that people of color, and particularly Black men, are more likely to be stopped, harassed, detained, and killed by the police than whites.[243]

Third, *J.D.B.* rejected the dissent's plea to "simplify[ ] the analysis" and North Carolina's plea for "clarity" in the consent analysis. The majority explained that it has never excluded circumstances from the custody analysis that it determined to be relevant just because doing so would make a line "brighter" between custodial and noncustodial interrogations.[244] As discussed, the existing consensual encounter analysis lacks substantial clarity: while there are undisputedly relevant factors to the court's determination of whether a reasonable person would have felt free to leave, this is not a "bright line" analysis.[245] Instead, race is one factor that should be permissible within the totality of circumstances analyzed to determine whether an encounter was consensual. As Justice Sotomayor emphasized with respect to age, "[t]his is not to say that a child's age will be a determinative, or even a significant factor in every case . . . . It is, however, a reality that courts cannot simply ignore."[246]

Others, including Professor LaFave, have predicted that the Supreme Court's reasoning in *J.D.B.* will be applicable to seizure analysis.[247] Indeed, litigants have made the argument that an individual's race is relevant to the analysis of whether or not they were seized, although without yet achieving success in the Supreme Court.[248]

Race, like age, is a personal characteristic that largely affects interactions between members of the class and police.[249] The Supreme

243. *See* U.S. DEP'T OF JUST., *Investigation of the Ferguson Police Department* at 4 (2015) (concluding that African Americans were "more than twice as likely as white drivers to be searched during vehicle stops even after controlling for non-race variables."); Floyd v. City of New York, 959 F. Supp. 2d 540, 573–74 (S.D.N.Y. 2010) (finding that over 80% of the individuals forcibly stopped by New York City Police between 2004 and 2012 were black or Hispanic).

244. *J.D.B.*, 564 U.S. at 279–80.

245. *See supra,* Section III.C.

246. *J.D.B.*, 564 U.S. at 277.

247. *See* 4 W.R. LaFave, Search and Seizure § 9.4(a) (5th ed. 2012 & Supp. 2020) (predicting application of reasoning in *J.D.B. v. North Carolina* to seizure).

248. *See* United States v. Easley, 911 F.3d 1074 (10th Cir. 2018); United States v. Knights, Case No. 19-10083, Petition for Rehearing en Banc (Aug. 24, 2020) and Reply to Government's Response to Eleventh Circuit Sua Sponte Question (Nov. 19, 2020); *see* Commonwealth v. Evelyn, 485 Mass. 691, 698 (2020).

249. Professor Devon Carbado effectively explains that the substitution of race for age in this argument to include race is not intended to "suggest that blacks are to whites what children are to adults." Devon W. Carbado, *From Stopping Black People to Killing Black People: The Fourth Amendment Pathways to Police Violence*, 105 CALIF. L. REV. 125, 141–42 (2017). To the

Court's consideration of age in its custody analysis in *J.D.B.* supports permitting the consideration of race in the consensual encounter analysis.

VI. EXCLUDING RACE FROM CONSENSUAL ENCOUNTER ANALYSIS PERPETUATES A DAMAGING LEGAL FICTION

The Supreme Court's silence over the past three decades on whether race is a permissible consideration within the totality of circumstances of whether a police encounter was consensual is astounding. Immediately after *Hodari D.* and *Bostick* expanded the free to leave standard, Professor Tracey Maclin identified the concerning absence of race:

> The hobgoblin lurking in the shadows of both cases that the Court does not confront is the anger and mistrust that surrounds encounters between black men and police officers. Instead of acknowledging the reality that exists on the street, the Court hides behind a legal fiction. The Court constructs Fourth Amendment principles assuming that there is an average, hypothetical person who interacts with the police officers. This notion is naive, it produces distorted Fourth Amendment rules and ignores the real world that police officers and black men live in.[250]

Yet, the legal fiction Maclin criticized remains. Federal courts of appeal and state supreme courts are split on whether race can be considered in the seizure analysis; the Supreme Court has avoided the question.[251] Upon deciding motions to suppress evidence, trial courts routinely apply the consensual encounter doctrine, and it is subsequently interpreted by the Courts of Appeal, and all without guidance on race.[252] Presently, it is rare for any of the justices other than Jus-

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contrary, "mindful of the racial infantilization of black people under both slavery and Jim Crow," Carbado substituted "race for age . . . simply to suggest that even if one thinks that age is more relevant than race in determining whether a person is seized, the claim that race is irrelevant is difficult to sustain." *Id.* at 142.

250. Maclin, *supra* note 11, at 248.

251. *See Easley*, 911 F.3d 1074 (cert. denied); United States v. Smith, 794 F.3d 681, 687–88 (7th Cir. 2015); United States v. Washington, 490 F.3d 765 (9th Cir. 2007); State v. Jones, 172 N.H. 774 (2020).

252. *See, e.g.* United States v. Gaines, 918 F.3d 793, 799 (10th Cir. 2019) (reversing the district court's finding that a citizen police encounter was consensual and "viewing these circumstances as a whole, we conclude that (1) the police officers showed their authority and (2) no reasonable person would have felt free to leave.").

tice Sotomayor, often in a dissent,[253] to mention racism in cases involving police stops.[254]

The Court's silence on race in seizure analysis is not just academically newsworthy. This silence is harmful. There is no question that Black men are losing their lives at an astonishing rate in interactions with police officers.[255] A recent study found that police encounters are a leading cause of death for young men in the United States, especially for Black men—1 in 1,000 of whom can expect to be killed by police.[256] Understandably, this violent reality is reflected in the fears of African Americans about officers' routine use of excessive levels of force, as documented by the Pew Center.[257]

In his emotional order of June 2020, U.S. District Court Judge Carlton Reeves lamented how the doctrine of qualified immunity permitted repeated acts of police brutality against Black Americans to go unpunished.[258] After listing twenty recent cases of police violence against Black Americans leading to their death or serious injury,[259]

253. *See, e.g.,* Schuette v. Coal. To Defend Affirmative Action, 572 U.S. 291, 380–81 (2014) (Sotomayor, J., dissenting) ("[R]ecognizing race validates the lives and experiences of those who have been burdened because of their race . . . [C]olorblindness seeks to deny the continued social significant of the category, to tell blacks that they are no different from whites, even thought blacks as blacks are persistently made to feel that difference.").

254. *See* Siegel*, supra* note 129 ("The general silence of the justices can have spillover effects that produce bad law in cases in which correct interpretation of the Constitution and statutes requires serious engagement with the long, tragic history of racism in this nation—and with its continued existence.").

255. *See* Mike Baker, Jennifer Valentinio-DeVries, Manny Fernandez & Michael LaForggin, *Three Words. 70 Cases. The Tragic History of 'I Can't Breathe,*" N.Y. TIMES (June 29, 2020) (discussing the death of Eric Garner, George Floyd, and 68 other people killed while in law enforcement custody whose last words were 'I can't breath.").

256. Frank Edwards, Hedwig Lee & Michael Esposito, *Risk of Being Killed By Police Use of Force in the United States by Age, Race-Ethnicity, and Sex*, 34 PROC. NAT'L ACAD. SCIS. 16793 (Aug. 20, 2019), https://doi.org/10.1073/pnas.1821204116.

257. Rich Morin & Renee Stepler, *The Racial Confidence Gap in Police Performance*, PEW RSCH. CTR. (Sept. 29, 2016), *https://www.pewsocialtrends.org/wp-content/uploads/sites/3/2016/09/ST_2016.09.29_Police-Final.pdf* (finding that only 33% of African American respondents believe local police do an "excellent or good job" when it comes to using the right amount of force for each situation).

258. Jamison v. McClendon, 476 F. Supp. 3d 386, 404, 419, 423–24 (S.D. Miss. 2020) (granting the police officer qualified immunity while calling upon the Supreme Court to change the doctrine it created) ("Just as the Supreme Court swept away the mistakes of 'separate but equal' so too should it eliminate the doctrine of qualified immunity . . . Let us waste no time in righting this wrong."). Judge Reeves explained that Black people in Mississippi were the targets of repeated massacres during Reconstruction, including in Vicksburg (a short drive from where Mr. Jamison was pulled over), where white mobs killed at least 50 Black citizens who had organized to protest the removal of their elected Black sheriff. *Id.* at 400.

259. Clarence Jamison wasn't jaywalking.
He wasn't outside playing with a toy gun.
He didn't look like a 'suspicious person.'
He wasn't suspected of 'selling loose, untaxed cigarettes.'

Judge Reeves cites the Fourth Circuit's qualified immunity decision in his plea to the Supreme Court to revise the doctrine of qualified immunity. "Although we recognize that our police officers are often asked to make split-second decisions, we expect them to do so with respect for the dignity of black lives."[260]

To be sure, race matters to the seizure analysis because of persistent centuries-long history of abuse that exists today with disproportionate cases of abuse of power, injury, and death of Black Americans at the hands of law enforcement. The disparate treatment of racial minorities by police has been statistically documented.[261] While recognizing race as a relevant factor would validate the lives and experiences of those whose lives have been burdened by their race, denying such consideration is not being neutral. Instead, "colorblindness seeks to deny the continued social significance of the category, to tell blacks that they are no different from whites, even though blacks as blacks are persistently made to feel that difference."[262]

However, to insist, in light of these concerns, that race cannot be considered among "all the circumstances surrounding the encoun-

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He wasn't suspected of passing a counterfeit $20 bill.
He didn't look like anyone suspected of a crime.
He wasn't mentally ill and in need of help.
He wasn't assisting an autistic patient who had wandered away from a group home.
He wasn't walking home from an after-school job.
He wasn't walking back from a restaurant.
He wasn't hanging out on a college campus.
He wasn't standing outside of his apartment.
He wasn't inside his apartment eating ice cream.
He wasn't sleeping in his bed.
He wasn't sleeping in his car.
He didn't make an ;improper lane change.'
He didn't have a broken tail light.
He wasn't driving over the speed limit.
He wasn't driving under the speed limit.

No, Clarence Jamison was a Black man driving a Mercedes convertible. As he made his way home to South Carolina from a vacation in Arizona, Jamison was pulled over and subjected to one hundred and ten minutes of an armed police officer badgering him, pressuring him, lying to him, and then searching his car top-to-bottom for drugs.
Id. at 390–91.

260. Estate of Jones v. City of Martinsburg, W. Va., 961 F.3d 661, 673 (4th Cir. 2020), as amended (June 10, 2020).

261. *See, e.g.*, *Decades of Disparity: Drug Arrests and Race in the United States,* HUM. RTS. WATCH (2009), *https://www.hrw.org/report/2009/03/02/decades-disparity/drug-arrests-and-race-united-states#*; *see* Floyd v. City of New York, 959 F. Supp. 2d 540, 573–74 (S.D.N.Y. 2010) (finding that over 80% of the individuals forcibly stopped by New York City Police between 2004 and 2012 were Black or Hispanic).

262. T. Alexander Aleinikoff, *A Case for Race-Consciousness*, 91 COLUM. L. REV. 1060, 1087 (1991).

ter,"[263] would elevate *potential* problems at the cost of ignoring a very large *current* problem. A problem that has been repeatedly recognized and discussed for thirty years.[264] While an individual's race will not be relevant every time a court examines a challenging encounter with police, it can be, as the Supreme Court held in *J.D.B.* for age in the custody analysis, "a reality that courts cannot simply ignore."[265]

VII. CONCLUSION

As a consequence of the disturbing recent episodes of police use of force against Black Americans, the current political climate includes a long overdue examination of the role of race in policing. This political moment demands a wholesale examination of the role of race in policing.[266] In this public reckoning of politicians and leaders about racial injustice in policing, the highest court is conspicuously silent.

For the reasons discussed, namely that consensual encounters are initiated without any reason and are excluded from Fourth Amendment review, the consensual encounter is particularly susceptible to implicit bias of police officers and explicit racial profiling.[267] Race can be considered without the totality of circumstances in a seizure analysis without significant compromise to that test's objectivity or workability. It is due time.

263. Florida v. Bostick, 501 U.S. 429 (1991).

264. *In re J.M.*, 619 A.2d 497, 512–13 (D.C. 1992) (Mack, J., dissenting) ("Whether the courts speak of it or not, race is a factor that has for many years engendered distrust between black males and law enforcement personnel. . . . I respectfully venture to suggest that no reasonable innocent black male (with any knowledge of American history) would feel free to ignore or walk away from a drug interdicting team.").

265. J.D.B. v. North Carolina, 564 U.S. 261, 277 (2011).

266. For example, Professor Ric Simmons recently argued that courts must evaluate under what circumstances police can evaluate a suspect's race, for the purposes of developing reasonable suspicion. *Race and Reasonable Suspicion*, PUBLIC LAW AND LEGAL THEORY WORKING PAPER SERIES No. 572 (September 21, 2020). With respect to consensual encounters, the Supreme Court needs to reexamine how an individual's race is truly relevant to their reaction to particular circumstances and actions of law enforcement.

267. *See* I. Bennet Capers, *Rethinking the Fourth Amendment: Race, Citizenship, and the Equality Principle*, 46 HARV. C.R.– C.L. L. REV. 1, 40 (2011) ("[A]n officer's decision to single out an individual for a limited detention or consensual encounter is more likely to be based on implicit racial biases unknown to the officer rather than deliberate racism."); Wesley MacNeil Oliver, *With an Evil Eye and an Unequal Hand: Pretextual Stops and Doctrinal Remedies to Racial Profiling*, 74 TUL. L. REV. 1409, 1410–11 (2000) (describing "consensual" vehicular searches as "[t]he archetypal example of racial profiling.").

Wellness and Law: Reforming Legal Education to Support Student Wellness

JANET THOMPSON JACKSON*

ABSTRACT

No one goes to law school with the expectation that their mental health and overall well-being will be significantly compromised during those three years. But, for a substantial number of law students, it is. It does not have to be this way.

This is not a typical law review article. It cannot afford to be. Most law students begin law school as reasonably happy and well-adjusted people. We must ask, what is it about law school that contributes to the disproportionate decline in student wellness? The answer to that question is complex because many of the very factors that make good lawyers also contribute to their mental health challenges.

This paper contains a blueprint, born out of experience, of how to reimagine legal education with a focus on wellness. This goes beyond a general call to action, but rather presents concrete actions that faculty, law administrators, and students themselves can take to effectively manage the stresses inherent in law school and the legal profession. These changes will be long-term and will profoundly impact the well-being of not only legal practitioners, but the very practice of law itself. There will be resistance, but making this transition is crucial. We know that when law students first enter law school, their psychological profile is similar to that of the general public, but their depression rates increase

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drastically across three years of legal education. Lawyers have the dubious distinction of being the most frequently depressed professionals in the United States, and the legal profession ranks among the highest in incidence of suicide by occupation.

Two recent and major events have exacerbated this already dire landscape of wellness dysfunction: COVID-19 and widespread protests associated with the quest for racial justice. For students who managed their addiction recovery or mental health challenges in part by having the structure and accountability of a classroom setting and nearby counseling services, social distancing upended those means of coping and recent virus variants continue to threaten that structure. Then the killings of Breonna Taylor, George Floyd, and others ignited a wave of protests that likely caused some law students to experience race-based and other types of traumas. The absence of a culture of wellness in law schools may lead law students to endure these added traumas in silence.

As other movements have found national and global recognition recently, it is time for a wellness crusade in legal education. Just as movements have galvanized the public to demand action on issues of racial injustice, gender equality, and climate change, so the legal profession must take steps to comprehensively address the wellness crisis spanning the lecture halls to practice. Just as America must be willing to undergo an honest reckoning and radical reforms in order to evolve into a more just and equitable society, law schools and the legal profession must undergo foundational changes in order to graduate healthy and whole students. The reforms outlined in this article not only reimagine the law school experience for thousands of law students, but they would, over time, lead to a qualitative change in the delivery of legal services themselves. The legal profession, indeed our lives, literally depends on it.

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I. IT DOES NOT HAVE TO BE THIS WAY

A. Introduction

Some people go to law school for the noble purpose of wanting to help other people or to be a legal agent for social justice. Others may choose the legal path for its earning potential or to gain influence. Most who enter law school understand that mastering the law and passing the bar will be stressful. I suspect that no one, however, goes to law school with the expectation that their mental health and overall wellness will be significantly compromised during those three years. But, for a substantial number of law students, it will be. Several studies have documented the wellness regression many law students experience during their time in law school, which often follows them into practice.[1] The wellness dysfunction can be insidious, at first present-

1. *See generally* G. Andrew H. Benjamin, Alfred Kaszniak, Bruce Sales & Stephen B. Shanfield, *The Role of Legal Education in Producing Psychological Distress Among Law Students and Lawyers*, 11 AM. BAR FOUND. RSCH. J. 225 *passim* (1986) (reporting results of an empirical study of law students' emotional well-being); Kennon M. Sheldon & Lawrence S. Krieger, *Does Legal Education Have Undermining Effects on Law Students? Evaluating Changes in Motivation, Values, and Well-Being*, 22 BEHAV. SCI. L. 261 *passim* (2004), https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.555.7527&rep=rep1&type=psf (evaluating changes in well-being, motivation, and values during law school); Jerome M. Organ, David B. Jaffe & Katherine M. Bender, *Su?ering in Silence: The Survey of Law Student Well-Being and the Reluctance of Law Students to Seek Help for Substance Use and Mental Health Concerns*, 66 J. LEGAL EDUC. 116 *passim* (2016) (reporting the results of a multi-school survey of law students' alcohol, street and prescription drug use, and mental health concerns); Patrick R. Krill, Ryan Johnson & Linda Albert, *The Prevalence of Substance Use and Other Mental Health Concerns Among American Attorneys*, 10 J. ADDICTION MED. 46 *passim* (2016). https://journals.lww.com/journaladdic-

ing itself as the excitement of a new, challenging experience that requires less sleep and more sacrifice. But then, as students struggle over time to adapt to the law school culture, many become "dissatisfied, demoralized, and depressed."[2] Bright students who succeeded in their undergraduate studies may feel like imposters and find themselves immobilized by anxiety. As their sleep and nutrition suffer, they may turn to unhealthy coping mechanisms such as the abuse of alcohol, drugs, food, and exercise regimens. Some become so despondent they may even consider suicide.[3] It does not have to be this way.

In recent years, two major events have exacerbated the already dire landscape of wellness dysfunction in the legal profession. The novel coronavirus, or COVID-19,[4] upended normal routines and rhythms around the world. The global pandemic disrupted the regular functioning of schools, and most students had to shift to online learning. Along with this academic upheaval, for some, this shift brought additional mental health stresses or exacerbated challenges that they were already facing. Unfortunately, those stresses will not end once the virus is managed. Even as governments, businesses, and academic institutions navigate new routines and practices because of COVID-19, the most highly impacted individuals will still need long-term support.

During the same time that COVID-19 hit the world, highly publicized killings of Black people[5] brought renewed attention to ongoing racial injustices abetted by American institutions and society. Like many other Americans, large numbers of law students protested, and some law clinic students assisted clients impacted by COVID-19.[6]

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tionmedicine/Fulltext/2016/02000/The_Prevalence_of_Substance_Use_and_Other_Mental.8.aspx (measuring mental health concerns and barriers to treatment among licensed attorneys).

2. NAT'L TASK FORCE ON LAW. WELL-BEING, THE PATH TO LAWYER WELL-BEING: PRACTICAL RECOMMENDATIONS FOR POSITIVE CHANGE 35 (2017), https://www.americanbar.org/content/dam/aba/images/abanews/ThePathToLawyerWellBeingReportRevFINAL.pdf.

3. *Id.* at 7.

4. *Basics of COVID-19*, CDC, https://www.cdc.gov/coronavirus/2019-ncov/your-health/about-covid-19/basics-covid-19.html (last updated May 24, 2021).

5. Li Cohen, *Police in the U.S. Killed 164 Black People in the First 8 Months of 2020. These Are Their Names. (Part I: January-April)*, CBS NEWS (Sept. 10, 2020, 4:39 PM), https://www.cbsnews.com/pictures/black-people-killed-by-police-in-the-u-s-in-2020 (listing the 164 black people killed by police in the first eight months of 2020, including George Floyd and Breonna Taylor).

6. *See, e.g.*, *Georgia State Law Community Responds to Pandemic and Protests*, GA. ST. UNIV. (Nov. 11, 2020), https://news.gsu.edu/2020/11/11/georgia-state-law-community-responds-to-pandemic-and-protests/; Madeline Joung, *Students Protest Tuition Hikes as Universities Continue Online*, VOA NEWS (Aug. 17, 2020, 3:43 PM), https://www.voanews.com/covid-19-pandemic/students-protest-tuition-hikes-universities-continue-online.

While such activism and legal representation may have been gratifying, involvement in these activities likely caused some students to experience race-based and other types of traumas, which warranted attention and treatment. Then, the blatant contrast between the law enforcement response to the Summer 2020 Black Lives Matter protests and the white-led insurrection at the U.S. Capitol on January 6, 2021, further compounded the experience of trauma for Black, Indigenous, People of Color ("BIPOC"). For students of color, while advocacy through protests and clinical work may be rewarding, their experiences impact them on a personal level, and the lack of integrated wellness checks may cause them to endure their trauma in silence.

This article does more than explore the long-standing wellness problem within the legal profession and the institutions that train lawyers. It posits that, just as America must be willing to undergo an honest reckoning and radical reforms in order to evolve into a more just and equitable society, law schools and the legal profession must undergo foundational changes in order to graduate healthy and whole students. Such changes include wellness as a key gateway to professional identity formation.

While we have long known that law school and the legal profession have caused sickness, many professors have felt that it was not their job to incorporate wellness principles into their teaching. This article points out the need to change that mindset, while endorsing a cultural shift that prioritizes wellness in law schools and the legal profession. Part I begins with my own journey from being an extremely stressed and anxious law student, lawyer and law professor to eventually becoming a person who has adopted (and continues to explore) practices to manage the inherent stresses in life. I include my personal story because, for so long, I did not think my experiences mattered. Even after I began including information on lawyer wellness in my classes and in presentations, I did not share my own story. That changed when I decided, impromptu, to talk about my own journey during a wellness presentation to law students. As I talked about my own anxiety and depression, I caught the eye of a law student who had suddenly started paying attention. I left that class knowing that telling my story made a difference to, and hopefully helped, at least one person.

Part II of this article calls for a wellness reckoning in law schools. It addresses the resistance law school faculty may have in adopting

wellness strategies in their courses, starting with an honest examination of our own wellness. This section challenges legal administrators and faculty to look below the surface and push ourselves to make fundamental changes in how we perceive our responsibility as modelers of wellness as well as teachers of the law. Part II continues by drawing a comparison with medical schools, highlighting the wellness advances made in some of those institutions, and identifying practices that law schools can adopt.

Part III provides a paradigm for wellness in legal education based on developed and tested practical tools. The model presents a wellness matrix as the floor on which a student (conceptualized as a stool) can firmly stand. This section describes a holistic approach to a lawyer's professional identity formation and approaches that can be utilized to achieve wholeness.

Part IV describes the current landscape of wellness dysfunction in the legal profession and outlines how a holistic wellness approach in law school can mitigate the current wellness costs of becoming a lawyer. This section highlights specific ways that law students respond to stress and how law schools and the legal culture contribute to the wellness dysfunction. This section offers solutions to address those problems. Part IV also illustrates how societal challenges around race, gender, and other differences are compounded by insufficient engagement around wellness. Finally, Part V suggests practices to support student wellness and explains how those practices can be put to work in different settings such as orientation, doctrinal classes, clinics and externships, and seminars (Those practices are further illustrated in a separate Wellness and Law workbook written by the author). An appendix to this article provides a sampling of what some law schools are already doing in the area of student wellness.

B. My Own Journey to Wellness

I am very familiar with anxiety. I was so used to feeling anxious that it was somehow comforting. I now say that I am in recovery from anxiety, and I do not use that terminology lightly. I learned decades ago in therapy that my self-identity was so closely connected to my anxiety that I needed to approach it like an addiction. With every day, year, and decade it has gotten easier as I developed practices to manage my anxiety and find a new way of functioning. I can now say that *equilibrium*, instead of anxiety, is my default; however, it was a

journey to arrive at this place of balance, and it takes work for me to stay there.

My anxiety has ebbed and flowed throughout my life. The stresses of law school took my anxiety to a new high. And then, along with the usual pressures associated with law school, I had some atypical stressors. My dad died of cancer in my second year. When I returned to school, the Dean of Students suggested that I sit out the rest of the semester, but instead, I chose to put my head down, study hard, and do well. I did not allow myself to grieve. I told myself that I didn't even have time to cry. As I suppressed my grief, my anxiety continued to escalate.

My anxiety followed me after law school. I worked as a litigation associate for about six years. I liked the people I worked with, but I did not love litigation. I was gripped by stress all the time, and by the time I was twenty-six years old, I had an ulcer. My anxiety came partly from being a new associate in a large law practice, but it was more than that. I was one of four Black people in a firm of approximately 200 attorneys, and I was the only person of color in litigation. While I always felt supported and even protected by the litigation associates and partners, there were occasions when I felt unwelcome. I remember working on a case for a partner and meeting the client for the first time. When I walked into the room the client's mouth literally fell open and she stammered, "I didn't expect you to . . ." and her voice trailed off. I usually don't have a quick-witted response at the ready, but in that instance, I quipped, "I know, everyone says I look young for my age." She blushed and we went on with the meeting. The partner and I never spoke of the event. On another occasion, I appeared before a judge for a civil hearing in a small town in Pennsylvania. After the opposing counsel and I introduced ourselves, the judge looked at me and asked, "Where is your attorney?" I again stated my name and my client's name and added the name of the firm for which I worked. He asked again, "But where is the attorney?" The third time I said, "Your Honor, I am the attorney. I am here to represent my client." I repeated the name of my firm, which was one of the largest in the state. The judge stared at me for a few moments, and then invited us to proceed.

Those events occurred in the late 1980s and early 90s, a time when no one talked about the internalized stress caused by racially motivated experiences, or "microaggressions" in today's parlance. No publications existed on race-based stress and trauma. Professionals of

color were just expected to deal with whatever came our way and move on. The refrain at Howard University School of Law (and other Historically Black Colleges and Universities) was that we had to perform twice as well in order to be considered as competent as our white counterparts. Missing from our marching orders, though tacitly understood, was the recognition that "twice as good" might never afford fair and equal treatment. The award of *juris doctor* would not shield us from the mental and emotional traumas that are grounded in racism.

Those experiences served as a nagging reminder to me that in some peoples' eyes, I did not belong. That fed into my already present imposter syndrome, and my anxiety increased even more. I did not know where to turn, so I started therapy to help manage my daily stress. That is when the floodgates first opened, and I allowed myself to process my grief over my dad's passing for the first time. Before therapy, I dealt with stress in ways that statistics tell us *many* law students and new lawyers cope. I occasionally drank too much and developed an eating disorder. I grasped for ways to manage my constant feeling of inadequacy and overwhelm.

While therapy definitely helped me, I still felt something was missing. I wanted real tools that I could integrate into my daily life in order to manage my anxiety. I thought leaving firm work would help, so I became the CEO of a nonprofit organization. I found the nonprofit's mission very fulfilling, and it did relieve some of the stresses inherent in law practice. I also started teaching law school as an adjunct and found that I loved it. Of course, that brought its own stresses, but it also led to my becoming a full-time law professor.

My first year at Washburn was filled with joy, but also a lot of anxiety. Pregnant with our first child, my husband and I excitedly moved across the country to start this new phase of our lives. Though I had been teaching full-time for the previous two years, I was not prepared for the stress of taking on a new course; hence, I struggled. I had moved to a new part of the country, started a new job, and I was about to have a child. I felt inadequate in the face of all of these responsibilities. After our daughter was born, I experienced postpartum depression—and I did not seek treatment for it. *Why?* We see it in the stats—*I thought I could handle it on my own*. But I could not and I very unwisely came back to teach in the middle of Spring semester. It was an unmitigated disaster. Honestly, I do not know how I got through the semester, and I wish I had asked for professional help.

Today, I urge anyone experiencing depression to get the help they need.

My depression lifted after about one year and I decided things had to change. I wanted to find the tools that could support me, so I started researching and practicing a new regimen of self-care. I came to understand something that resonated with me. I discovered that there is a very close connection between anxiety and the illusion of control. In my own life, I knew this to be true. When I worried, I felt productive. I told myself that my anxiety gave me an edge. I think that is one reason high-performing people, including law students, have a hard time adopting self-care practices. They see their anxiety as a competitive advantage. However, it is not—the competitive advantage is just an illusion.

Adopting habitual self-care practices does not usually happen overnight. Typically, a struggle is involved, especially when one has a busy life. At least that was true for me. I had a baby, a demanding tenure-track position, and a husband who, at that time, was a full-time seminary student in another city and was only home on weekends. Sleep was elusive. Exercise consisted of long neighborhood walks pushing the stroller with the help of my mother, who lived with us full-time (thankfully) for the first year of my daughter's life. When my daughter was about six months and I was on the other side of the worst of my depression, I started a journal. I mostly wrote about what was going on with my daughter, and I noticed that writing helped. Since that time, journaling has become a regular part of my self-care regimen. Gradually, I added occasional meditation and yoga sessions to my routine and rode my bicycle to work more often. I began to notice a difference in my mindset, and I seemed to handle stress better. Then, after six years of living ten minutes away from work we moved seventy miles away when my husband was called to pastor a church in Kansas City. At first, I mostly enjoyed my 2.5-hour round-trip commute four days a week. Then the drive started to wear on my body and in 2013 I was hit by a car while walking with my dog in a crosswalk. I did not sustain severe injuries at the time (and the dog was fine), but eventually I started experiencing chronic pain in my body. That led me to a greater focus on yoga to ease my pain.

Yoga helped to manage my chronic pain significantly, so I decided to take yoga teacher training to help others. It took me three years to complete on a very part-time basis, but by the time I earned my certification I understood through personal experience the power

of yoga to manage stress and relieve pain. During that time, I added daily meditation to my self-care routine, which also helped with pain, stress management, and my overall life outlook. I taught yoga and meditation for several years and often talked to my law students about the benefits of meditation, even teaching some of them some basic meditation techniques. As my law students responded favorably to meditation and other wellness tips and I spent more time talking to them about self-care, I joked to my husband that I should become a wellness coach. That thought stayed with me and after researching the field, I completed a program that required trainees to create a signature program. I chose a wellness program for law students, which is the basis for this article and the foundation of Well-Law, a multi-media wellness program[7] I developed.

You may think that with my background and experience I have perfected self-care and wellness for myself. Not true. Like everyone else, I sometimes struggle to manage my workload and my responses to stress. Some days I open my journal to see that it has been a week since I last wrote anything. When I have lots of projects going at once, my sleep may suffer. On occasion, I find myself ruminating at length on a worrying thought. It is during those times that I remind myself that wellness does not require perfectionism. In fact, perfectionism can be the enemy of wellness. As best I can, I anticipate my wellness struggles and prepare for them. I anticipate by knowing my triggers, be they a too-full calendar or too many days without walking or yoga. I prepare for those challenging times by having a plan to get back on track and an accountability partner or community to support me. Anticipating the downs and having a plan helps me to maintain equilibrium in the changeable flow of my wellness journey, rather than feeling thrown off by the inherent uncertainties of life. A successful approach to wellness involves adopting a personalized wellness mindset, seeking to use our wellness practices daily, and having a plan to quickly reset when we find ourselves off-track from our wellness

7. WELL-LAW, https://www.well-law.com/ (last visited Oct. 2, 2021). Well-Law is an interactive multi-media program designed to facilitate student wellness. *Id.* Ideally, students join the program pre-orientation and participate through post-graduation, though students may join at any time during law school. *Id.* Each module invites students to engage different facets of wellness in relation to their development as lawyers and legal professionals. *Id.* Modules cover areas such as professional identity formation, collaboration and leadership, culturally conscious lawyering, interviewing, and developing a personal wellness plan. *Id.* Students also track the state of their wellness throughout the program using an assessment tool called the Wellness Quotient. *Id.* Well-Law also gives students access to monthly wellness coaching calls, recorded meditations, and other wellness support. *Id.*

goals. This article and the *Well-Law program* give guidance on how to adopt a wellness mindset, support student wellness, develop realistic and personalized wellness goals, and navigate the ups and downs of managing our wellness in everyday life.

II. A WELLNESS RECKONING IN LAW SCHOOLS

A. If Not Now, When?

The wellness dysfunction in the legal profession is at a crisis level. As other movements have found national and global recognition recently, it is time for a wellness crusade in legal education. In 2017, the "Me-Too" movement became known worldwide, though it started in 2006 as founder Tarana Burke's way of raising awareness of the abuse of women.[8] Black Lives Matter was started by community organizers in 2013 after the death of teenager, Trayvon Martin[9], but found the movement's greatest resonance following the spate of killings of Black men and women in 2020.

Just as those movements galvanized the public to demand action on issues of sexual assault and racial injustice, so the legal profession must take steps to comprehensively address the wellness crisis spanning the lecture halls to practice. Scholars have called for such attention as far back as 1985.[10] A wellness reckoning in the legal profession, and particularly in law schools, is overdue.

The legal community has known for some time that the emotional debilitation experienced by a disproportionate number of lawyers begins in law school.[11] The fact that such dysfunction increases drastically each semester[12] tells us that something is happening in the law school experience that creates or exacerbates anxiety and dysfunction. Studies give us some indication of how the culture of law school contributes to the dysfunction and some law schools have taken steps to

8. *History & Inception*, ME TOO, https://metoomvmt.org/get-to-know-us/history-inception/ (last visited Sept. 9, 2021).

9. George Zimmerman fatally shot the unarmed 17-year-old on February 26, 2012. *Her Story*, BLACK LIVES MATTER, https://blacklivesmatter.com/herstory/ (last visited Sept. 10, 2021). On July 13, 2013, a six-woman jury acquitted Zimmerman of all charges. CNN Editorial Research, *Trayvon Martin Shooting Fast Facts*, CNN, https://www.cnn.com/2013/06/05/us/trayvon-martin-shooting-fast-facts/index.html (last updated Feb. 17, 2021, 9:38 AM).

10. *See* Stephen B. Shanfield & G. Andrew H. Benjamin, *Psychiatric Distress in Law Students*, 35 J. LEGAL EDUC. 65, 68 (1985); Benjamin et al., *supra* note 1, at 524; Jennifer Jolly-Ryan, *Promoting Mental Health in Law School: What Law Schools Can Do for Law Students to Help Them Become Happy, Mentally Healthy Lawyers*, 48 U. LOUISVILLE L. REV. 95, 95 (2009).

11. Shanfield & Benjamin, *supra* note 10.

12. Benjamin et al., *supra* note 1, at 241.

specifically address student wellness through mindfulness programs. Those efforts are critical, as mindfulness techniques have a proven positive effect on mental and physical health, as well as judgment and decision-making.[13] Still, more needs to be done to address this crisis. Many of the people in legal education who want to support student wellness need guidance in doing so. They may also need guidance in supporting their own wellness. This article seeks to give that support.

The isolation caused by COVID-19 is surely amplifying an already vexing problem. Students who managed their addiction recovery or mental health challenges in part by having the structure and accountability of a classroom setting and nearby counseling services are likely encountering heightened struggles. Additionally, for those for whom physical connection and touch is essential, social distancing presents an acute challenge.

Many law professors and administrators, while sympathetic to the mental health and alcohol/substance abuse challenges of law students, may believe that it is not their responsibility to attend to the mental and emotional health of their students. These law professor and administrators might think, that is what the counseling office or Dean of Students is for. Other concerns may include: the perceived time commitment necessary in an already overloaded schedule; questions about the efficacy of intervention by law faculty; whether, even if effective, the impact would be significant enough; and the self-critique on the mind of many: *I don't have the skills to do this and I struggle to maintain my own mental health!*

Those attitudes were prevalent in medical schools for a long time as well, but within the past decade, several medical schools recognized the cost of not attending to the mental and emotional health of its students and have begun to address those issues in medical school curricula and in residency programs.

B. Parallels with Medical School Students

The negative statistics for medical students and physicians surpass those for law students and lawyers. Nearly one in three medical students report indicators for depression and one in nine struggles with suicidal thoughts.[14] At least one medical publication reported that the

13. Jolly-Ryan, *supra* note 10.

14. Elizabeth Lawrence, *Success Story: Normalizing Mental Health Care During Medical Student Training*, AMA Ed Hub (June 11, 2020), https://edhub.ama-assn.org/steps-forward/module/2767285.

highest rate of suicidal ideation among medical students surveyed was found among Black/African American students.[15] According to the American Foundation for Suicide Prevention, an estimated 300 physicians commit suicide each year.[16] As with law students, medical students matriculate with stress and depression levels similar to those in the general population. Also like law students, medical students experience significant increases in rates of depression after their first year of medical school.[17] The spike in mental health challenges after entering medical school and law school also share common causes, including role transition, lack of sleep, disconnection with support networks, and feelings of isolation.[18] The barriers to seeking help are also similar, including fear of a negative impact on licensing and a perceived negative impact on professional advancement.[19]

Recently, a number of medical schools have started to acknowledge the crisis in their midst and have instituted programs to raise awareness of mental health and well-being challenges among medical students and increase support for students. Previously, medical schools approached student wellness in a typical way—reactively.[20] In an effort to find a more effective approach, some medical schools began viewing "student well-being from a person-in-context perspective and targeted the specific elements of that context that are associated with poor student mental health."[21] The goal of many of these programs is to normalize discussions about mental health and wellness and to integrate a culture of wellness in medical schools.[22] Some medical schools have established programs on mindfulness, increased access to mental health providers, and created other programs and

15. Deborah Goebert, Diane Thompson, Junji Takeshita, Cheryl Beach, Philip Bryson, Kimberly Ephgrave, Alan Kent, Monique Kunkel, Joel Schechter & Jodi Tate, *Depressive Symptoms in Medical Students and Residents: A Multischool Study*, 84 ACAD. MED. 236, 236 (2009).

16. AM. FOUND. FOR SUICIDE PREVENTION, AMERICAN FOUNDATION FOR SUICIDE PREVENTION 1, https://nam.edu/wp-content/uploads/2018/01/American-Foundation-for-Suicide-Prevention_Commitment-Statement.pdf.

17. Cheri Dijamco, *Staying Sane: Addressing the Growing Concern of Mental Health in Medical Students*, AMSA (Sept. 8, 2015), https://www.amsa.org/2015/09/08/staying-sane-addressing-the-growing-concern-of-mental-health-in-medical-students/; *See* Marc Zarefsky, *How to Help Medical Students Keep Tabs on Their Mental Health*, AMA (Sept. 4, 2020), https://www.ama-assn.org/residents-students/resident-student-health/how-help-medical-students-keep-tabs-their-mental-health.

18. Dijamco, *supra* note 17.

19. *Id.*

20. Stuart J. Slavin, Debra L. Schindler & John T. Chibnall, *Medical Student Mental Health 3.0: Improving Student Wellness Through Curricular Changes*, 89 ACAD. MED. 573, 574 (2014).

21. *Id.*

22. Zarefsky, *supra* note 17.

activities to mitigate the negative aspects of medical education.[23] Other medical schools, however, have gone beyond creating extra-academic programs and have instituted curricular changes that are designed to improve medical student mental health outcomes. Those schools are choosing to "attack the source of the distress within context, through the curriculum itself," rather than placing the focus on ancillary experiences with the hope of counteracting the stressful culture of medical school.[24]

For example, Saint Louis University ("SLU") School of Medicine began collecting data on student wellness in 2008 and found that 57% of students had moderate to high symptoms of anxiety and 27% had moderate to severe symptoms of depression.[25] The school instituted its first curricular changes for the incoming class of 2013, which included shifting some classes to pass/fail; reducing contact hours to allow students more time in learning communities; extending the time allowed to complete electives to give students more freedom to explore their interests and create mentoring relationships; and establishing learning communities composed of students and faculty.[26] The SLU School of Medicine wellness outcomes showed a clear trend in post-change classes, compared to pre-change classes, with the post-change classes exhibiting lower rates of moderate to severe depression and a substantial decrease in mean anxiety scores and stress levels.[27]

Vanderbilt University School of Medicine added a required resilience and mindfulness program for their incoming class of 2014 and in 2015, rescheduled a first-year course that was identified as a major source of stress to later in the program.[28] The Vanderbilt Medical Student ("VMS") Wellness Program began in 2005.[29] VMS is comprised of three main components: The Advisory College Program; The Student Wellness Committee; and VMS LIVE, each separate and unique programs, but all working together to accomplish the broader "goal of maximizing student health, happiness, and potential."[30] The program

23. Slavin et al., *supra* note 20, at 574–75.

24. *Id.* at 574.

25. *Id.*

26. *Id.*

27. *Id.* at 575.

28. *Id*.

29. Brian Drolet & Scott Rodgers, *A Comprehensive Medical Student Wellness Program–Design and Implementation at Vanderbilt School of Medicine*, 85 ACAD. MED. 103, 103–10 (2010).

30. *Id.*

has had great success since its inception, with steady growth and student participation.[31]

The University of New Mexico ("UNM") School of Medicine developed a robust program five years ago to address student wellness and to normalize conversations about mental health. The program involves a staff of wellness cohorts, including a Director of Physician and Student Wellness, Wellness faculty, student mentors, and a university Assistant Dean for Professional Well-Being.[32] This multi-faceted program begins before students even start medical school. Prior to the formal White Coat Ceremony for incoming medical students, family members receive a forty-five-minute talk and a booklet that explains the unique challenges of medical school and ways that family members can support students while in school and training.[33] Incoming students meet upper-level students who share their personal stories about accessing wellness resources while in medical school. During medical school and training, students receive formal wellness check-ins, meetings with the Wellness Dean, and first-year students attend a wellness retreat.[34] The UNM wellness office published a book of narratives to encourage all medical students to share their personal stories about mental health, even if told anonymously, and developed a list of frequently asked questions about mental illness that includes input from all stakeholders.[35] To overcome student resistance to wellness activities, UNM School of Medicine faculty emphasize that wellness activities are designed to teach skills that will help students to thrive in their professional lives and feel better during school.[36] The list of frequently asked questions also addresses student concerns about the confidentiality of any diagnosis and/or treatment.[37] UNM School of Medicine collects data and evaluates its wellness programs on an ongoing basis. Overall, feedback about the initiatives has been positive and students have proposed new wellness practices such as yoga, mindfulness, and hypnosis.[38]

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31. *Id.*

32. Lawrence, *supra* note 14.

33. *Id.*

34. Topics covered by the Wellness Dean include imposter syndrome, growth and fixed mindsets, sleep, nutrition, life-work integration, depression, and anxiety. *Id.* During the retreat a panel of physicians in recovery from addiction share their personal stories. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.*

Law schools should follow the model of medical schools that have fully integrated a culture of wellness into their curriculum. Some law schools have already begun to make that shift and the paradigm in Part III of this Article provides a roadmap for incorporating wellness in legal education.

III. A PARADIGM FOR WELLNESS IN LEGAL EDUCATION

A. The Wellness Matrix

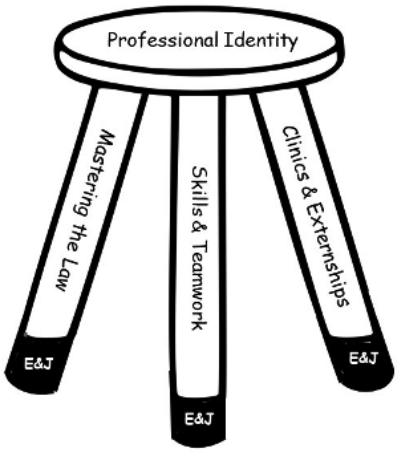
Wellness is multi-faceted. It involves different aspects of a physical, emotional, spiritual, and material existence. I conceive of this as an inter-connected matrix. When I first began speaking about student wellness, I realized that I needed two images—one to represent how we prepare law students today and a second to depict law students being equipped for the legal profession, but with their wellness intact. This led me to the stool and the floor.

1. The Stool

Picture a three-legged stool. The stool itself represents the law student today. The imagined stool begins as an unadorned structure, but from the very first day, the stool starts to take on certain characteristics. Upon the first introduction to the law school culture, the students start to form their professional identity. On our stool, the seat represents the students' professional identity. Traditionally, students begin learning substantive and procedural law in their first year, and this mastery of the law is represented on one of the three legs of the stool. Law school also equips students with a variety of skills through legal writing, simulation courses, and the teamwork they experience in activities such as moot court competitions, law journal, and involvement in affinity groups. A second leg of the stool represents the skills of learning and teamwork. The third leg of the stool represents experiential learning through clinical programs and externships. Typically, a stool also has caps on the ends of the legs, which serve the purpose of protecting the floor and also finishing or completing the stool. In the same way, our stool legs have caps that represent principles that many law schools in recent years have recognized should undergird or complete the law school curriculum, namely, ethics and professionalism. Also, in the wake of social unrest and a new awakening to racial justice, many law programs are thread-

ing justice and anti-racism throughout the curriculum, as represented on our stool caps. Exhibit 1 illustrates our student stool.

Exhibit 1 – The Stool



E & J = Ethics & Justice

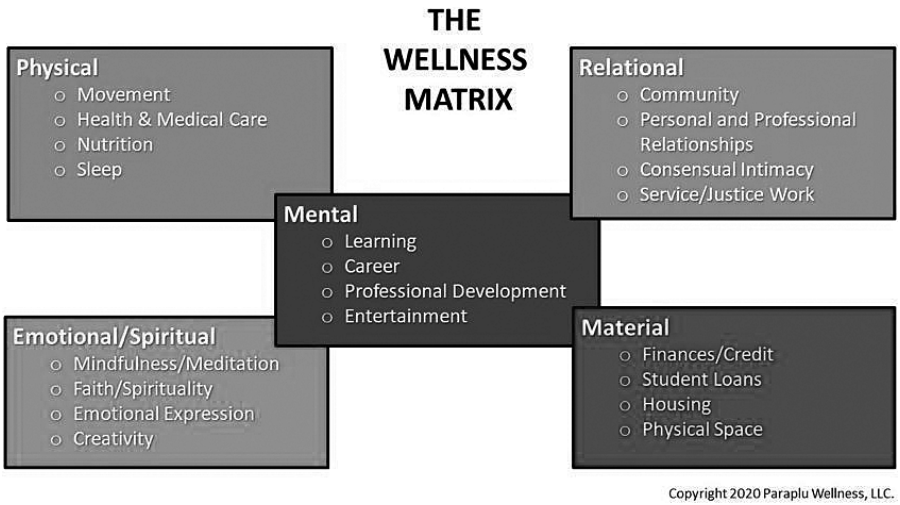
As a representation of a student who has completed law school, the finished stool looks complete, just as most of our students today appear fully equipped to pass the bar and begin their lives as lawyers and legal professionals. A closer look, however, reveals an important missing component. A well-made stool needs a solid floor on which to stand. Likewise, our students need a solid foundation that will support them as they navigate the stresses inherent in law school and the legal profession. That foundation must be one of wellness, if we are serious about ending the cycle of unwellness in law school and in the legal profession.

2. The Floor

Imagine a wooden floor consisting of long, interlocking floorboards. In this paradigm, the floor represents the foundation upon which our stool stands. This is not just any foundation, though. This floor is a foundation of wellness, and each floorboard represents a distinct area of wellness. The wellness areas are organized according to broad categories grouped in blocks on a Wellness Matrix, as shown in Exhibit 2. The five Matrix blocks include: (1) physical well-being, (2) relational well-being, (3) mental well-being, (4) emotional/spiritual

well-being, and (5) material well-being. Each Matrix block contains elements that relate to that particular dimension of wellness, though the lists are not exhaustive. The physical block includes movement, health, nutrition, and sleep as considerations. The relational block holds personal relationships, ties to community, and service to local, national, and global communities, such as work for racial justice. The mental block encompasses learning, career, professional development, and entertainment. The emotional/spiritual block includes mindfulness practices, faith/spirituality, emotional expression, and creativity. The material block contains finances/credit, student loans, housing, and physical space. The Wellness Matrix provides a visual illustration of the specific areas to consider as we think about wellness.

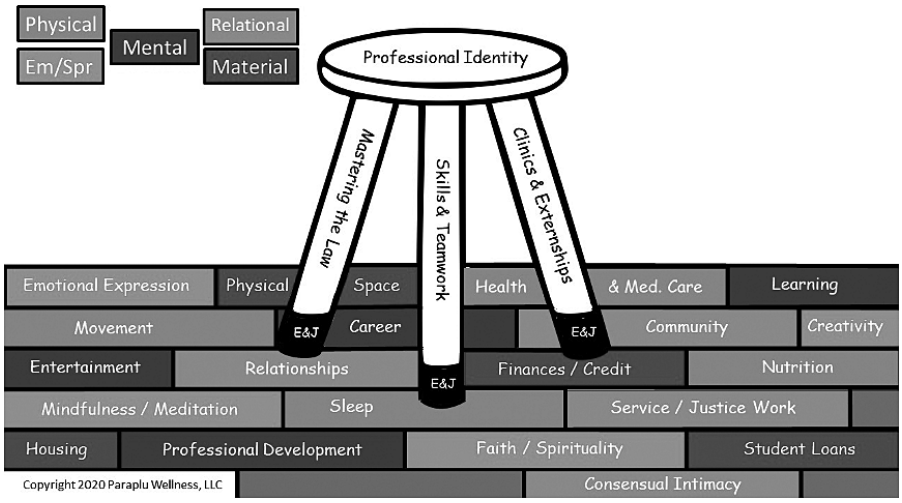
Exhibit 2 – The Wellness Matrix



We use the Wellness Matrix to build the wellness floor, which provides a solid support for our stool. Each floorboard contributes to the foundation of holistic wellness, which is multidimensional, as illustrated in Exhibit 3. Holistic wellness considers the entire person and all the areas of life that impact a person's overall well-being and ability to thrive. If one floorboard, representing a single area of wellness, is missing, the stool may still have a relatively solid foundation of support. If additional boards are splintered or missing, however, the stool loses its stability. And if enough boards are missing, the stool will topple over. The stool represents the current situation in legal educa-

tion. Our current law school culture does not adequately support holistic wellness for students.

Exhibit 3 – The Floor



B. A Holistic Blueprint to Building Wellness

A cultural shift away from the norm can be difficult and uncomfortable. The legal education experienced cultural growing pains when law schools moved from strictly doctrinal case-method instruction to the inclusion of skills training through simulations, clinics and externships.[39] Another cultural shift occurred when law schools stopped relying solely on third-party bar preparation programs and incorporated academic support programs into the curriculum.[40] In addition to concerns about the monetary cost of such changes, many complained about the cost of faculty resources needed for such experiential and academic support instruction.[41] I imagine that the same concerns will be voiced about integrating wellness into the law school curriculum. My response is that the data shows that the cost of not integrating wellness is far greater. Legal education can no longer afford to educate students in an intellectual silo and not attend to stu-

39. *See* Katherine R. Kruse, *Legal Education and Professional Skills: Myths and Misconceptions About Theory and Practice*, 45 McGeorge L. Rev. 1, 7 (2013).

40. *Id.* at 38.

41. *Id.* at 39.

dents' wellness needs. Indeed, we have a moral and ethical duty to do so.

True change in the wellness landscape for law students will require more than occasional self-care exercises, weekly meditations, or even seminar classes on mindfulness. Rather, law schools need to expand their mission from that of producing excellent "practice-ready" legal minds capable of passing the bar and gaining employment, to producing graduates whose formative professional identity includes a focus on self-care and long-term wellness. Such focus requires a holistic approach to law student wellness. Some law schools, including my own, are making significant efforts to bolster student wellness.[42] However, more is needed. I propose that law schools look for ways to mitigate the stresses inherent in law school by integrating wellness into the curriculum as a core value, similar to what some medical schools have done.

Specifically, law students should receive wellness support before starting their first semester. Similar to the UNM School of Medicine's pre-White Coat Ceremony, law schools could prepare materials for family members of law students that outline a student's typical schedule, the expectations placed on students, and predictable stressors that may trigger anxiety or other problems. Orientation week would initiate a robust wellness program for incoming students. By using *Well-Law* as a model during orientation, students would come to understand the current wellness landscape for law students and lawyers, discover their own wellness quotient,[43] start to collect tools to manage their stress, and develop their own personal wellness plans. Wellness support would continue throughout law school through Well-Law's module study each semester, including ongoing development of students' personal wellness plans and a wellness quotient survey before graduation to assess any changes that have occurred.[44]

Additional wellness support would include periodic evaluations that focus on areas of dysfunction that are dominant among law students, ongoing individual and group wellness coaching, participation in regularly scheduled wellness activities, and continually adopting practices to manage daily stress in healthy ways. The goal is for stu-

42. *See infra* Section VII (displaying a sampling of wellness programs offered at law schools in the United States).

43. *See* WELL-LAW, *supra*, note 7.

44. The Wellness & Law program will collect and assess student wellness data throughout to determine program efficacy.

dents to leave law school with a demonstrated understanding of how to manage the stresses inherent in law practice while maintaining long-term wellness in their professional and personal lives.

As evidenced in medical schools, significant change occurs when wellness is integrated into the curriculum. Such integration could happen in a number of creative ways that would not compromise the quality of education or jeopardize ABA requirements. The "humanizing legal education" movement has called for substantive changes in legal education for over a decade and is credited with improving the learning environments at many law schools.[45] For example, humanizing concerns include a demonstrated respect for students, collaborative learning, increased practice and feedback, a focus on self-directed learning skills, and diverse teaching methodologies, to name a few. Yet, more is necessary. This article includes a range of suggestions that law schools and law faculty could adopt to transform the wellness landscape at law schools. Clearly, the legal education community has the data, the knowledge, and the resources to identify and address the problem. What we now need is the desire to change.

IV. THE HIGH WELLNESS COST OF BECOMING A LAWYER

A. The Adverse Conditions Experienced by Law Students and the Further Impact of COVID-19

A study funded by the Hazelden Betty Ford Foundation and the ABA Commission on Lawyer Assistance Programs found that law students and lawyers in their first decade of practice abuse alcohol and drugs and experience mental health challenges at rates substantially higher than the general population.[46] The personal and professional impact of COVID-19 has already been shown to make the situation worse. The pandemic has changed how we interact and, even more importantly for many people, it has taken away our normal routines. For some people, the abnormal routines may not be significant, but for those who live with anxiety, and especially Obsessive Compulsive Disorder ("OCD") or other disorders, the sudden loss of a routine can be traumatic.[47]

45. *See* Michael Hunter Schwartz, *Humanizing Legal Education: An Introduction to a Symposium Whose Time Came*, 47 WASHBURN L. J. 235, 235 (2008).

46. Krill et al., *supra* note 1, at 46.

47. NAT'L INST. OF MENTAL HEALTH, OBSESSIVE-COMPULSIVE DISORDER: WHEN UNWANTED THOUGHTS OR REPETITIVE BEHAVIORS TAKE OVER 2 (2020), https://

When I present these negative wellness trends to law students, I let them know that I am not trying to talk them out of being a lawyer. My goal instead is to name out loud the threats that legal education today poses to their personal wellbeing and arm them with a sense of urgency about their own self-care. I want to help them be their best selves as law students, as lawyers, and then — outside of the classroom and work — in any role that gives meaning to their lives.

1. Progressive Anxiety, Depression, and Suicide Rates

Law students enter law school with depression rates similar to that of the general public at less than 10%.[48] After just one semester, however, depression rates rise to 27%. After two semesters, the rate spikes to 34%. After three years, up to 40% of law students experience mental health challenges.[49] Law students also reported experiencing stress at significantly higher levels than medical and graduate students.[50] A further study found that law students were far less inclined to seek help than medical students.[51]

While anxiety may *manifest* itself in law school, it doesn't end there.[52] Anxiety will follow many law students into practice and onto the bench for some judges. Lawyers and judges reported problematic alcohol use at 20.6%, but after being asked specifically about frequency, the percentage rose to 36.4%.[53] Lawyers are among the most

www.nimh.nih.gov/sites/default/files/documents/health/publications/obsessive-compulsive-disorder-when-unwanted-thoughts-take-over/20-mh-4676-ocd.pdf.

48. *Lawyers & Depression*, DAVE NEE FOUND., http://www.daveneefoundation.org/scholarship/lawyers-and-depression (last visited Sept. 9, 2021).

49. *Id.*

50. *Id.*

51. *See* Marilyn Heins, Shirley Nickols Fahey & Roger C. Henderson, *Law Students and Medical Students: A Comparison of Perceived Stress*, 33 J. LEGAL EDUC. 511, 520–21 (1983).

52. An additional source of anxiety and stress for law students is the bar exam. As the bar exam is administered outside of law schools, it is beyond the scope of this article. Some leaders in legal education, however, have called for reforms to attorney licensure that would benefit student wellness. While modifications concerning the exam were made during the COVID-19 outbreak, a successful bar exam remains the requirement for attorney licensure in most every U.S. jurisdiction, with Wisconsin and New Hampshire providing alternative options for licensure. Critics of the current system argue that alternative pathways to licensure would yield a more diverse profession and would alleviate student stress. Suggested alternative pathways include: (1) a performance-based bar exam; (2) an apprenticeship model; and (3) diploma privilege. *Conversation with Dean Carla Pratt*, WASHBURN L. SCH. (Jan. 28, 2021) (notes on file with author). *See generally* Marsha Griggs, *Building a Better Bar Exam*, 7 TEX. A&M L. REV. 1, 1 (2019); Claudia Angelos, Sara Berman, Mary Lu Bilek, Carol Chomsky, Andrea A. Curcio, Marsha Griggs, Joan W. Howarth, Eileen Kaufman, Deborah Jones Merritt, Patricia E. Salkin & Judith Wegner, *Diploma Privilege and the Constitution*, 73 SMU L. REV. F. 168, 168 (2020).

53. Krill et al., *supra* note 1, at 51.

frequently depressed professionals in the United States.[54] According to the American Psychological Association, "[l]awyers are 3.6 times more likely to suffer from depression than nonlawyers."[55]

Not only are anxiety and depression prevalent among law students and lawyers, but the incidence of suicide is also high in the legal profession. A 2016 study showed that of 3,000 law students surveyed, 21% reported serious thoughts of suicide in their lifetimes and 6% had seriously considered suicide in the twelve months before the survey.[56] A major study conducted by the National Institute for Safety and Health reported that male lawyers are more than twice as likely to die from suicide than those in the general population.[57] Common contributing factors for lawyer suicide include depression, anxiety, job stress, unfulfilled expectations, and a perceived sense of failure.[58]

In terms of overall mental health, 74% of lawyers recently surveyed reported that the law profession has had a negative effect on their mental health over time.[59] As to whether mental health and substance abuse are at crisis levels in the legal industry, 41% said yes.[60] When asked what about their job negatively impacts their mental well-being, the top answers were: (a) the feeling of always being on call and unable to disconnect; (b) billable hours pressures; (c) lack of sleep; and (d) client demands.[61]

When asked about vacation time use, only 36% said they used all their time and of those, 72% said that when they do they cannot disconnect.[62] When asked if they felt they could take extended leave to address mental health or substance abuse issues, only 35% said yes. Of the 65% who said no, 78% feared taking time would hurt their

54. *Cave Nee Found.*, *supra* note 48.

55. *Id.*; Jeena Cho, *Attorney Suicide: What Every Lawyer Needs to Know,* ABA J. (Jan. 1, 2019, 2:05 AM), https://www.abajournal.com/magazine/article/attorney_suicide_what_every_lawyer_needs_to_know.

56. Organ et al., *supra* note 1, at 139; s*ee* John Hendrickson, *Jamie Raskin Lost His Son. Then He Fled a Mob*, ATLANTIC, https://www.theatlantic.com/politics/archive/2021/01/jamie-raskin-capitol-attack/617609 (reporting the suicide death of Tommy Raskin, a Harvard Law student and son of Congressman Jamie Raskin) (last updated Jan. 13, 2021, 4:22 PM).

57. Debra Cassens Weiss, *Lawyer Personalities May Contribute to Increased Suicide Risk*, ABA J. (Apr. 30, 2009, 6:43 PM), https://www.abajournal.com/news/article/lawyer_personalities_may_contribute_to_increased_suicide_risk.

58. Cho, *supra* note 55.

59. Lizzy McLellan, *Lawyers Reveal True Depth of Mental Health Struggles*, LAW (Feb. 19, 2020, 11:00 AM), https://www.law.com/2020/02/19/lawyers-reveal-true-depth-of-the-mental-health-struggles (reporting findings from the ALM Survey).

60. *Id.*

61. *Id.*

62. *Id.*

career trajectory, 77% feared what their firm would think, and 36% feared what clients would think.[63]

Data are still being collected on how COVID-19 is affecting anxiety levels, but a study of graduate students, including law and medical students, showed that Major Depressive Disorder has increased from 15% in 2019 to 32% in 2020.[64] That same study showed that Generalized Anxiety Disorder increased from 26% in 2019 to 39% in 2020.[65] The report showed the same rates of depression between women and men, but women were more likely to report anxiety.[66] The study reported signs of mental distress as more common in low-income students, Latinx students and most dramatically, in students who identified as LGBTQ.[67] Also, students who stated that they *did not adapt well to remote instruction* reported higher levels of depression and anxiety and 60% said that the pandemic made it more difficult to access mental-health services.[68]

2. Abuse of Alcohol and Drugs

Law students and lawyers have always had a reputation for drinking, but these numbers help to tell the story. The most recent statistics for law students is from a 2014 study, which shows that over half the students surveyed reported being drunk at least once in the prior 30 days, 43% reported binge drinking[69] at least once in the prior two weeks, and 22% reported binge drinking two or more times in the prior two weeks.[70] A 2016 study of legal professionals distinguished between *problem* drinkers, those who have an unhealthy relationship with alcohol, and *hazardous* drinkers, those who abuse alcohol or are alcoholics.[71] The study revealed that 20.6% of licensed, employed lawyers and judges qualify as problem drinkers, compared to 6.8% of

63. *Id.*

64. IGOR CHIRIKOV, KRISTA M. SORIA, BONNIE HORGOS & DANIEL JONES-WHITE, UNDERGRADUATE AND GRADUATE STUDENTS' MENTAL HEALTH DURING THE COVID-19 PANDEMIC 5 (2020), https://escholarship.org/uc/item/80k5d5hw. The SERU conducted a survey of nine U.S. research universities. *Id.* at 1. Among the participants were 15,000 graduate students. *Id.* Chris Woolston, *Signs of Depression and Anxiety Soar Among US Graduate Students During Pandemic*, NATURE (Aug. 18, 2020), https://www.nature.com/articles/d41586-020-02439-6.

65. CHIRIKOV ET AL., *supra* note 64.

66. *Id.*

67. *Id.* Alarmingly, 49% of students who identify as gay or lesbian and 59% of bisexual students report anxiety. *Id. See also* Woolston, *supra* note 64.

68. CHIRIKOV ET AL., *supra* note 64, at 7–8.

69. Organ et al., *supra* note 1, at 129.

70. *Id.*

71. Krill et al., *supra* note 1, at 47.

the general population.[72] Of that same population, 36.4% engage in hazardous drinking or alcohol abuse and women are at a higher incidence in that category.[73] "Problem drinkers" are mostly comprised of men (25.1% compared to women at 15.5%), junior associates (up to ten years in practice), and those working at private firms or for bar associations.[74] While the effects of COVID-19 on alcohol abuse among law students and lawyers are yet to be determined, alcohol sales in general have risen by at least 54% since March 2020 compared to 2019, and online sales have increased 262% compared to 2019.[75]

In a 2016 survey involving fifteen law schools, over 14% of law students reported using prescription drugs without a prescription in the prior twelve months.[76] The reasons given for prescription drug use included: to concentrate better while studying (67%); to increase alertness and study longer (64%); and to enhance academic performance (49%). In addition, a 2016 study showed that 74.1% of lawyers surveyed used stimulants in the twelve months prior to the study and 51.3% used sedatives.[77]

3. Eating Disorders

Eating disorders are an area often overlooked, but many people experience them. Commonly associated with women, a significant number of men also report eating disorder behaviors.[78] While no existing organization explicitly addresses eating disorders in the legal community, 27% of law students screened positive for eating disorders (18% male and 34% female).[79] There is a high correlation between depression, anxiety, and stress with eating disorders.[80] How people cope with stress through their relationship with food is not always an obvious problem. Some people may look perfectly fine, but

72. *Id.*
73. *Id.* at 48.
74. *Id.*
75. MICHAEL S. POLLARD, JOAN S. TUCKER & HAROLD D. GREEN JR., CHANGES IN ADULT ALCOHOL USE AND CONSEQUENCES DURING THE COVID-19 PANDEMIC IN THE US 109 (2020), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2770975.
76. Organ et al., *supra* note 1, at 134.
77. *Id.* at 135.
78. *Eating Disorders in Men & Boys*, NAT'L EATING DISORDERS ASS'N, https://www.nationaleatingdisorders.org/learn/general-information/research-on-males (last visited Sept. 9, 2021).
79. Organ et al., *supra* note 1, at 138–39.
80. Hannah Geller, *High Prevalence And Low Prevention Of Lawyers' Eating Disorders*, ABOVE THE LAW (Feb. 10, 2017, 8:24 AM), https://abovethelaw.com/career-files/high-prevalence-and-low-prevention-of-lawyers-eating-disorders/.

they engage in binging and purging. Others exercise excessively. Others may be eating unhealthy food, perhaps because they have an addiction to sugar, salt, or fat that they cannot seem to control.

Since COVID-19, more than one-third of survey respondents in the United States and the Netherlands said their eating disorder had worsened during the pandemic with the changes being attributed to lack of structure, a triggering environment, the absence of social support, and the inability to get foods that fit their meal plan.[81] The shame often associated with eating disorders causes many people to hide the problem, leaving these disorders to thrive in isolation.[82]

4. Burnout

Not all law students experience depression, alcohol and substance abuse, or eating disorders. But, if law students were asked if they had experienced burnout during law school, most would likely say yes. Burnout can mean different things to different people, but it usually involves emotional exhaustion.[83] Burnout among lawyers (and probably law students) may be related to the environment or to the individual[84] and the causes in both cases are likely to resonate with law students. As related to the work environment, competition, the pessimistic nature of focusing on problems, and the pressure of a new environment may lead to burnout. Individual causes of burnout among lawyers include traits very familiar to many law students: perfectionism and the need to control.[85]

B. Barriers to Seeking Help

Studies show that a significant number of law students and lawyers encounter barriers to seeking help for alcohol and/or drug abuse and mental health challenges. The top reported barrier for law stu-

81. Michelle Konstantinovsky, *COVID-19-Era Isolation Is Making Dangerous Eating Disorders Worse*, SCI. AM. (Aug. 26, 2020), https://www.scientificamerican.com/article/COVID-19-era-isolation-is-making-dangerous-eating-disorders-worse/.

82. *Id.*

83. Brittany Stringfellow Otey, *Buffering Burnout: Preparing the Online Generation for the Occupational Hazards of the Legal Profession*, 24 S. CAL. INTERDISC. L.J. 147, 161 (2018); *see also* Jennifer Villwock, Lindsay B. Sobin, Lindsey A Koester & Tucker M. Harris, *Imposter Syndrome and Burnout Among American Medical Students: A Pilot Study*, 7 INT'L J. MED. EDUC. 364, 364, 366 (2016) (describing burnout in the medical field as a "triad of emotional exhaustion, depersonalization, and diminished feelings of personal accomplishment" and manifests as "fatigue, inability to concentrate, insomnia, irritability, and . . . 'just going through the motions'").

84. Otey, *supra* note 83, at 163.

85. *Id.*

dents seeking help for alcohol and drug problems is the potential threat to bar admission (63%).[86] Next, in order of importance, was potential threat to a job or academic status (62%), social stigma (43%), privacy concerns (43%), belief they could handle the problem themselves (39%), and not enough time (36%).[87] When I ask students to guess the reasons for not seeking help they mention these same reasons, with a surprising number saying that they believe they can handle the problem without intervention.

The barriers to seeking help for mental health issues are similar. Forty-eight percent view getting help a potential threat to job or academic success.[88] Other reasons include social stigma and financial reasons (47%), potential threat to bar admission (45%), belief they could handle it themselves (36%), not enough time (34%), and privacy concerns (30%).[89]

Fortunately, some jurisdictions have listened and have or are responding to the position that law students find themselves in. Many students feel, and this has turned out to be true in a few cases, that if they answer honestly to questions about mental health in particular, they may not be admitted to practice. But even if that was not a consequence of answering honestly, no one should be made to feel that the better choice is to hide their mental health condition. No one, regardless of profession, should compromise their mental health — or any aspect of their personal wellness — due to real or perceived expectations of the school or workplace.

C. How Law School Culture Contributes to the Wellness Dysfunction & Some Solutions

> Law school's arguable focus on a narrow definition of success — getting high grades and securing prestigious employment — undermines the foundation that previously gave students a sense of self-worth, purpose, and personal fulfillment. Ironically, while the students' worth becomes increasingly identified with intellectual ability, their intellectual ability comes into question, perhaps for the first time.[90]

86. Organ et al., *supra* note 1, at 141.
87. *Id.*
88. *Id.*
89. *Id.*
90. Ann L. Iijima, *Lessons Learned: Legal Education and Law Student Dysfunction*, 48 J. LEGAL EDUC. 524, 527 (1998).

Given that most law students begin law school as reasonably happy and well-adjusted people, a question that begs to be asked is, what is it about law school that contributes to the disproportionate decline in student wellness? The answer to that question is complex because many of the very factors that make good lawyers also contribute to their mental health challenges. Hence, some of the areas listed below as "dysfunction" may also have positive attributes. I have also included "sources of anxiety" for law students, which disproportionately affect students of color and other marginalized groups and are likely on the rise as BIPOC individuals feel threatened and vulnerable in American society. The suggested actions law schools can take in all of these areas should not be viewed as exhaustive and some solutions will apply to more than one dysfunction or source of anxiety.

1. Dysfunction: Think Like a Lawyer

During my year between college and law school, I interned on Capitol Hill and some of the people I worked with had law degrees. When hearing them discuss the merits of certain legislation or develop strategy, I noticed how the legally trained aides framed their positions and developed arguments. I was already leaning toward law school, but being around these legally trained minds convinced me. I wanted to learn to think like a lawyer. I literally said those words.

When I arrived at law school, I experienced culture shock. I felt as though I had been dropped into a foreign land. I had to learn a new way of reading, deciphering, and analyzing information. I experienced a completely different classroom interaction with my professors and classmates than what I had experienced in college. And I learned a new language and method of speaking. I learned to think like a lawyer.

Those critical thinking and analyzing skills are crucial to good lawyering. What we now know, however, is that those skills sometimes come at a high cost. As one scholar put it:

> in law school, we purposely teach students to not only think about the worst things that can happen but also to look for fault in others. We teach students to look for defects and holes in arguments. We call it 'issue spotting,' learning to think like a lawyer, and developing critical thinking skills.[91]

91. Nathalie Martin, *Think Like a (Mindful) Lawyer: Incorporating Mindfulness, Professional Identity, and Emotional Intelligence into the First Year Law Curriculum*, 36 U. ARK. LITTLE ROCK L. REV. 413, 425 (2014).

But, students pay a price for the skill of thinking like a lawyer. After two years of law school education, students' interpersonal and empathy skills suffer.[92] Moreover, "thinking like a lawyer" can deplete students' creativity and lead them to value "consistency over ambiguity, rationality over emotion, and rules over social context."[93] Students have reported that law school's intellectual emphasis led to them suppressing their feelings and caring less about others.[94] Students also found that their value systems changed in that their ability to express and defend cogent arguments assumed paramount importance, resulting in the "moral neutering" of students.[95]

The same characteristics that may make a person a good lawyer also predisposes that person to depression. Their problem-solving skills lead to high success rates, but also to perfectionism.[96] While these traits may result in high levels of achievement, they also highly correspond to depression, which can lead to suicide or suicidal ideations.[97]

i. What Law Schools Can Do: Facilitate Development of Empathy Skills and Mindfulness

The solution should not include abandoning the traditional approach of teaching law students to think logically and analytically. Rather, teaching "empathetic lawyering"[98] must accompany issue spotting and analytical reasoning. The study and practice of law are, substantially, cognitive endeavors that require logic, analysis, judgment, and problem-solving. Empathy, on the other hand, "is not entirely, or even primarily, a cognitive experience . . . . [rather] it involves the momentary *suspension* of most of the key cognitive func-

92. *Id.*

93. Rhonda V. Magee, *Legal Education and the Formation of Professional Identity: A Critical Spirituo-Humanistic — "Humanity Consciousness" — Perspective*, 31 N.Y.U. Rev. L. & Soc. Change 467, 469–70 (2007) (quoting Jean Stefanic & Richard Delgado, How Lawyers Lose Their Way: A Profession Fails Its Creative Minds (2005)).

94. Iijima, *supra* note 90, at 529.

95. *Id.*

96. Weiss, *supra* note 57.

97. Angela Morris, *Lawyers Are at High Risk for Suicide. Texas Program Aims to Fight Back to Help Attorneys, Law Students*, Law (May 13, 2020, 1:36 PM), https://www.law.com/texaslawyer/2020/05/13/lawyers-are-at-high-risk-for-suicide-texas-program-aims-to-fight-back-to-help-attorneys-law-students/. Texas Lawyers' Assistance Program director Chris Ritter encourages attorneys to support their colleagues by asking three questions: "Are you okay? Have you thought of suicide? Do you have a plan?" *Id.*

98. Ian Gallacher, *Thinking Like Non-Lawyers: Why Empathy is a Core Lawyering Skill and Why Legal Education Should Change to Reflect Its Importance*, J. Ass'n. Legal Writing Dirs., (Oct. 16, 2012), at 37, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1693146.

tions we teach . . . in law school."[99] Why, then, would we advance empathy as a lawyering skill? Because emotional wellness requires empathy, and a higher degree of emotional wellness or intelligence results in better lawyering. "It is empathy's ability to act as a moral compass which allows lawyers to steer an often difficult professional and personal course in a complicated world."[100]

While most people have experienced empathy, the concept can be difficult to describe. A helpful understanding of empathy captures the meaning in three categories: "1) feeling the emotion of another; 2) understanding the experience or situation of another, both affectively and cognitively, often achieved by imagining oneself in the position of the other; and 3) action brought about by experiencing the distress of another . . . ."[101] Even if difficult to adequately describe in writing, empathy can be emphasized and developed in law school. One suggestion includes "permeat[ing] empathetic development before, during, and after law school" by assigning pre-law school reading, adapting legal research and writing courses to emphasize empathetic responses, and introducing post-law school programs and CLEs on developing empathetic skills.[102]

Another scholar suggests an increased focus on relationships to develop empathy. Through a course on Interpersonal Dynamics, Professor Joshua Rosenberg allows and encourages students to share their "perceptions, thoughts, feelings, motivations, and wants" with each other and gives them time to "slow down their own processes enough so that they become aware of the thoughts and feelings that motivate their behavior, as well as of the impact of their behavior on others."[103] Professor Rosenberg accomplishes this with as many as thirty-six students who meet both as a large group and in smaller groups with faculty facilitators. Clearly, Professor Rosenberg has put much thought into the structure and environment that creates a safe space for students to share and "attain self-knowledge in the service of more effective behavior."[104] While he acknowledges that he did not set out to teach empathy, by teaching students essential communica-

99. Joshua D. Rosenberg, *Teaching Empathy in Law School*, 36 UNIV. S.F.L. REV. 621, 632 (2002) (emphasis in original).

100. Gallacher, *supra* note 98, at 36.

101. Chalen Westaby & Emma Jones, *Empathy: An Essential Element of Legal Practice or 'Never the Twain Shall Meet'?,* 25 INT'L J. LEGAL PRO. 107, 113 (2018).

102. Gallacher, *supra* note 98, at 37.

103. Rosenberg, *supra* note 99, at 642.

104. *Id.* at 657.

tion skills, he has found that students shift from a state of alienation to an interest in, and concern for others.[105]

2. Dysfunction: Limited View of Professional Identity Formation

It is well accepted that professionalism is an attribute expected of law students entering the legal profession. Law students' first formal encounter of professionalism usually comes through professional responsibility courses. Those courses examine the Rules of Professional Conduct for lawyers and help students understand a lawyer's ethical obligations and how to avoid conflicts of interest. While a critical part of a law student's training, those courses are generally not designed to provide a full understanding of professional identity. How, then, do law students learn to shape their professional identities?

The medical profession has long realized that medical students begin their professional identity formation while still in medical school. Law schools have increasingly come to that same conclusion and, as a result, many now offer courses in professional identity formation ("PIF"). Too often, however, a lawyer's professional identity is not viewed beyond their role as a stakeholder in the legal system. Some scholars have articulated the need for a broader perspective, including adopting normative ideas from other disciplines like "philosophy, education, social work, psychology, and pastoral studies. . . . [as well as the] developing fields [of] mindfulness and neuroscience."[106] From those disciplines, law schools could gain guidance on "how to teach relational skills and values, including practical wisdom, self-awareness, deep listening, empathy, compassion . . . and an ethic of care."[107] I applaud that approach and, as described below, I would go further in fostering a holistic professional identity based on a foundation of wellness.

Another limiting factor in how PIF is currently approached involves the standard by which we measure professional identity. As in the rest of American society, the dominant group is the norm in legal education and, therefore, serves as the standard by which PIF is defined. Such a standard discounts people of color and other groups that have been marginalized and leads to "problems with self-esteem,

105. *Id.*

106. Susan L. Brooks, *Fostering Wholehearted Lawyers: Practical Guidance for Supporting Law Students' Professional Identity Formation*, 14 U. ST. THOMAS L.J. 412, 420 (2018).

107. *Id.*

feelings of isolation, and lack of meaning."[108] Professor Rhonda Magee posits that such alienation impacts

> [*A*]*ll* students in ways that infringe upon students' full and free development. Accordingly, all of those engaged in the legal educational process should care about and address these feelings of alienation as a means of minimizing their impact *on the system as a whole*—including the students of today who will be the practitioners of tomorrow.[109]

The approach to professional identity formation in law schools must be broadened to include non-dominant identities and must find support in principles of wellness.

i. What Law Schools Can Do: Adopt a Holistic Approach to Professional Identity Formation Based on Wellness

Law schools can learn from medical schools' approach to professional identity. One doctor offered a message to her students that is equally relevant to law students. I have changed "doctor" to "lawyer" and "patient" to "client" to reset her words for the legal academy.

> If you believe that 'real' [lawyers] never show weakness, then you run the risk of shame and inadequacy whenever you find yourself struggling. If you believe that the best [lawyers] demonstrate compassion towards both their [clients] and towards themselves, then you set yourself up with the capacity for self-love in times of distress. Our professional identities can impact our tendency toward burnout and our ability to bounce back from stress.[110]

Understanding the connection between PIF and wellness is especially important when we consider the relationship between PIF and the lack of wellness many law students experience. Data support that when a person's wellness quotient goes down, their professional identity quotient goes down, and imposter syndrome goes up.[111] Fortunately, the opposite is also true. Studies with medical faculty showed that when faculty taught mindfulness as a tool to reduce stress and foster self-awareness, they saw positive effects on professional identity

108. Magee, *supra* note 93, at 473.

109. *Id.* (emphasis in original).

110. Arlene Chung, *Wellness and Resiliency During Residency: Professional Identity Formation (Featuring a Podcast with Dr. Michael Weinstock)*, ACAD. LIFE EMERGENCY MED. (Apr. 24, 2017), https://www.aliem.com/wellness-resiliency-residency-professional-identity-formation/.

111. Valerie E. Houseknecht, Brenda Roman, Adrienne Stolfi & Nicole J. Borges, *A Longitudinal Assessment of Professional Identity, Wellness, Imposter Phenomenon, and Calling to Medicine Among Medical Students*, 29 MED. SCI. EDUCATOR 493, 493 (2019), https://doi.org/10.1007/s40670-019-00718-0.

including communication, connection with others, empathy, active listening, and self-confidence.[112]

A holistic view of professional identity "necessarily entails the nurturing of a sense of professional self-consciousness and constructive introspection, and an attitude of respect and responsibility towards others . . . ."[113] Another descriptor of holistic professional identity is that of a "wholehearted"[114] lawyer. Professor Susan Brooks distills five core principles for wholehearted lawyering, which she describes as bringing more heart-centered practices into legal education and practice.[115] The principles, intended to create a law school culture conducive to professional identity formation, start with the principle of teaching with kindness and curiosity and encouraging students to do the same.[116] The second principle calls for everyone "mattering," that is, every student knowing that their presence makes a difference and that they are seen and heard.[117] Such mattering, Professor Brooks says, correlates with academic success and positive outcomes.[118]

The third wholehearted lawyering principle involves the importance of contextualizing information and includes an awareness and appreciation of the different culture and values each person brings in the lawyering process.[119] The fourth principle, strengths orientation, focuses on the awareness and building of assets and abilities in order to help students become more resilient.[120] Professor Brooks calls the final principle an ethic of care, which she describes as an ethic that calls our attention to responsiveness in relationships, including relationship with self, and highlights the cost of losing those connections.[121] Professor Brooks' principles for wholehearted lawyering describe a mindfulness approach to PIF. As with most mindfulness practices, incorporating even some of the practices into our teaching and daily lives will have a positive impact.

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112. Chung, *supra* note 110.

113. Jan L. Jacobowitz, *Cultivating Professional Identity & Creating Community: A Tale of Two Innovations*, 36 Univ. Ark. Little Rock L. Rev. 319, 321 (2014).

114. Brooks, *supra* note 106, at 423.

115. *Id.* at 423–25.

116. *Id.* at 424.

117. *Id.*

118. *Id.*

119. *Id.*

120. *Id.* at 424–25.

121. *Id.* at 425.

Another support for law students' professional identity formation can be found in wellness and leadership coaching. Wellness coaching leads a person toward whole life transformation by guiding individuals and groups in gaining self-awareness, clarifying goals, and reaching their full potential. Specifically with law students, a wellness coach can support students by guiding them to respond differently to the stresses of law school so that instead of resorting to the overuse of alcohol, drugs, food, or other damaging behaviors, they can successfully manage their daily demands in healthy ways while learning to shift to positive thinking patterns.

Similarly, leadership coaching supports students, not only by helping students develop leadership skills, but also by reinforcing student well-being; aiding students' critical thinking abilities; contributing to diversity, equity, and inclusion in the legal profession; and, preparing students to engage globally.[122] Today, many business leaders, academics, lawyers, and professional athletes enlist coaches to enhance their performance and improve their work and life satisfaction. Since becoming trained as a wellness coach, I have regularly employed coaching techniques as a part of my teaching in the law clinic and classroom, both in groups and individually. From my observations and from the feedback I have received, students greatly appreciate the attention to their well-being and have responded favorably to coaching they received. I have included some student testimonials at the end of this article.

3. Source of Anxiety: Imposter Syndrome

Almost everyone experiences some level of insecurity at some point in their life. Impostorism, also known as imposter syndrome, goes beyond mild insecurity and describes an internal feeling of distrust in one's own abilities and accomplishments along with the fear of being exposed as an "imposter," even in the face of demonstrated success and competence.[123] A phenomenon first attached primarily to women, imposter syndrome has been observed across genders and populations.[124] Among students of color, studies suggest that those

122. *See* Susan R. Jones, *The Case for Leadership Coaching in Law Schools: A New Way to Support Professional Identity Formation*, 48 HOFSTRA L.R. 659, 659–660 (2020).

123. Beth Levant, Jennifer A. Villwock & Ann M. Manzardo, *Impostorism in Third-Year Medical Students: An Item Analysis Using the Clance Imposter Phenomenon Scale*, 9 PERSP. MED. EDUC. 83, 83 (2020), https://doi.org/10.1007/s40037-020-00562-8.

124. *Id.*

who reported significant impostorism also reported higher levels of depression, anxiety, psychological distress, and minority student status stress.[125] While research on imposter syndrome among United States law students is limited, a study of the experiences of Indigenous law students may be instructive. That study revealed that imposter syndrome manifested in Indigenous students as feelings of social and academic isolation, and that such feelings created a barrier to students completing their studies.[126] Studies on college students found mature students (defined as twenty-one years or older) more at risk for imposter syndrome.[127] Those students expressed fear of being judged harshly for less-than-perfect assignments and fear of being judged by their classmates.[128]

The psychological attributes associated with imposter syndrome include perfectionism, anxiety, and neuroticism.[129] Studies of imposter syndrome among medical students is illustrative, especially given similarities in anxiety and depression markers between medical and law students. In the medical profession, imposter syndrome has been associated with related mental health issues such as pervasive self-doubt, anxiety, burnout, increased substance use, depression, and suicide.[130] Described as a culture of "low psychological safety," traditional medical learning and training environments have been said to promote anxiety and impostorism by viewing student doubts and fears as signs of weakness.[131] Studies of medical students have also shown that impostorism impedes professional identity formation.[132] The same is likely true for law students. As the intensity of imposter feelings tend to increase during career transitions, it makes sense that the

125. Jeremy Bauer-Wolf, *Feeling Like Impostors*, INSIDE HIGHER ED, (Apr. 6, 2017), https://www.insidehighered.com/news/2017/04/06/study-shows-impostor-syndromes-effect-minority-students-mental-health (following a study by the University of Texas at Austin of 332 minority undergraduate students); *see also* Ling Le, *Unpacking the Imposter Syndrome and Mental Health as a Person of Color First Generation College Student Within Institutions of Higher Education*, 15 MCNAIR RSCH. J. SJSU 21, 22 (2019), https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1035&context=Mcnair.

126. Melanie Schwartz, *Retaining Our Best: Imposter Syndrome, Cultural Safety, Complex Lives and Indigenous Student Experiences of Law School*, 28 LEGAL EDUC. REV. 1, 7 (2018).

127. Le, *supra* note 125, at 30–31.

128. *Id.* at 31.

129. *Imposter Syndrome*, PSYCH. TODAY, https://www.psychologytoday.com/us/basics/imposter-syndrome (last visited Sept. 9, 2021).

130. Anique Atherley & Stephanie N E Meeuwissen, *Time for Change: Overcoming Perpetual Feelings of Inadequacy and Silenced Struggles in Medicine*, 54 MED. EDUC. 92, 92 (2020), https://onlinelibrary.wiley.com/doi/epdf/10.1111/medu.14030.

131. *Id.* at 93.

132. Levant et al., *supra* note 123, at 84.

syndrome increases in medical students as they move from the preclinical to the clinical stages of training.[133] I see the same phenomenon in my clinical law students as they move from the classroom to clinical law practice. They demonstrate significant levels of insecurity and impostorism as they assume the role of representing actual clients, even when their performance demonstrates high levels of proficiency.

i. What Law Schools Can Do: Provide Direct Support

Many students experience imposter syndrome at some point in their studies. Those who overcome it usually have received direct personal support from their professors, mentors, or others in their institution.[134] Some solutions include the use of upper-level peer mentors with whom beginning students can share their feelings and gain a sense of belonging,[135] improving cultural competence in the classroom to boost feelings of safety and belonging,[136] fostering a sense of community on campus,[137] and understanding the relationship between complex lives and academic success.[138]

4. Source of Anxiety: Stereotype Threat

> Stereotype threat is another phenomenon that is attached to the stress and anxiety especially experienced by people of color and commonly seen in students.[139] While distinct concepts, both imposter syndrome and stereotype threat underscore the anxiety that some groups who have been marginalized, such as women and people of color, experience based on how they interpret and internalize the perceptions of others. Whether they feel as though they do not belong (i.e., imposter syndrome) or they feel as though they must prove they belong (i.e., stereotype threat), some groups are hyperaware of how they are othered, and this awareness influences how they navigate spaces. Instead of being their full selves, they mask, camouflage, or alter their being to be accepted by the majoritarian group. In addition, for individuals who identify with two or more

133. *Id.* at 89.
134. Le, *supra* note 125, at 31.
135. *Id.* at 31–32.
136. Schwartz, *supra* note 126, at 13.
137. *Id.* at 16.
138. *Id.* at 17.
139. Callie Womble Edwards, *Overcoming Imposter Syndrome and Stereotype Threat: Reconceptualizing the Definition of a Scholar*, 18 TABOO: J. CULTURE & EDUC. 1, 19–20 (2019).

> marginalized groups, [such] intersectionality . . . can overlap creating multilayered experiences with identity-based oppression.[140]

Stereotype threat adds to already present anxiety for students and can negatively impact the performance of members of stereotyped groups. Specifically, the threat interferes with the brain's capacity to process information, making memory, cognition, and mental processing more difficult, and it can get worse over time.[141] "The lower performance occurs because the psychological impact of the existence of a risk of confirming the group stereotype works to limit the individual's ability to perform up to capacity on the task."[142] In addition, the more a person is aware of the negative stereotype, the worse that person will perform.[143] For law students at the bottom of their class, stereotype threat increases the danger of them performing badly on the bar exam, regardless of their individual abilities.[144] Fortunately, some interventions have been shown to ameliorate the effects of stereotype threat.

i. What Law Schools Can Do: Neutralize it Through Feedback and Belonging

Academic institutions have substantial control over the prevalence of stereotype threat, as students' experience of it is often in response to their immediate environment.[145] Studies reveal that directly acknowledging the existence of stereotype threat can neutralize it, as can providing feedback to students that both holds them to a high standard and affirms the students' ability to meet that standard.[146] With respect to the bar exam, a reframing of students' understanding of the exam can reduce negative stereotypes. For example, academic support programs can clearly communicate to students that the bar exam is a test of preparation rather than a test of intelligence.[147] Other interventions include providing students with positive images of

140. *Id.*

141. Russell A. McClain, *Helping Our Students Reach Their Full Potential: The Insidious Consequences of Stereotype Threat*, 17 RUTGERS RACE & L. REV. 1, 12 (2016).

142. *Id.* at 12.

143. Catherine Martin Christopher, *Eye of the Beholder: How Perception Management Can Counter Stereotype Threat Among Struggling Law Students*, 53 DUQUESNE. L. REV. 161, 165 (2015).

144. *Id* at 165–66. ("The pressure to perform, and to counter the stereotype, may actually inhibit students from performing up to their natural capabilities, like an athlete who 'chokes' in a crucial moment.").

145. McClain, *supra* note 141, at 23–24.

146. *Id.* at 24–25.

147. Christopher, *supra* note 143, at 172.

people with whom they identify, exposure to positive role models, opportunities for conscious reflection, and mindfulness practices.[148]

Reducing or dissolving stereotype threat may also occur when faculty members celebrate students' struggle as a sign of emotional strength rather than weakness.[149] One scholar also suggests that struggling students may find support during bar study from lawyers who graduated with low GPAs but succeeded in passing the bar exam.[150] Interventions such as these are needed and appropriately begin with actions within law schools. One scholar who has lived with stereotype threat, however, voiced the importance of students themselves actively unlearning what these experiences implicitly teach.[151] Recognizing her own tendency to self-criticize, she articulates the importance of acknowledging the systemic origins of stereotype threat and practicing self-compassion.[152] She asks the questions, "*What power differentials are at play? How does the environment contribute to the situation? What messages are being promoted explicitly or implicitly? How does this current situation relate to my past lived experiences?*"[153] For that scholar, such inquiry allows her to mentally shift from a place of condemnation and self-doubt to freedom.[154]

5. Dysfunction: Teamwork Without True Collaboration

Law schools generally do a great job of creating opportunities for students to work together outside of the classroom through moot court competitions, student affinity groups, law journal boards, and other activities. Such teamwork helps students to use their individual efforts to achieve a goal, but it does not necessarily teach students how to collaborate. Collaboration occurs when people combine their knowledge, efforts, perspectives, and expertise in order to achieve a common outcome.[155] Beyond teamwork, where typically a team leader directs the group and each individual team member contributes their part, collaboration requires more than simply working together, it also involves *thinking together*. Collaborators are equal partners

148. McClain, *supra* note 141, at 24–26.
149. Christopher, *supra* note 143, at 174–75.
150. *Id.* at 175.
151. Edwards, *supra* note 139, at 32.
152. *Id.*
153. *Id.* (emphasis added).
154. *Id.*
155. Heidi K. Gardner, *Collaboration in Law Firms*, THE PRAC., Sept.–Oct. 2015, at 1, https://thepractice.law.harvard.edu/article/collaboration-in-law-firms/.

who create together an end product through a process that reflects an investment in the mutual growth of each person involved. In addition to the benefits of collaboration discussed below, law schools should recognize that Gen Z students, like the Millennials preceding them, have grown up in collaborative learning environments and tend toward team-based approaches.

i. What Law Schools Can Do: Emphasize Collaborative Learning

Collaboration as a lawyering skill finds early support in the 1992 ABA MacCrate Report, which identified "collaborating with other attorneys in the same office or other offices" as an essential element of efficient law office management.[156] The MacCrate Report concluded that "effective collaboration with others" was a critical skill, "regardless of whether a lawyer is a solo practitioner, a partner or associate in a firm, or a lawyer in public service practice."[157] Yet, twenty-five years later, collaboration still does not receive high priority as a practice skill outside of clinics, legal writing, and skills courses.[158]

This underemphasis of collaborative learning spaces in law schools has its origins in the traditional culture of competition between law students. Some of the blame for this competition goes to law school grading policies that reinforce the "zero sum, you win I lose" competitive culture in the legal academy. Such a system results in "the (accurate) message that success is only to be determined by besting your classmates, not by the absolute measure of your understanding."[159] Arguably, professors share some of the blame for the competitive culture. "[L]aw students learn more than just law from their professors. They also learn what it means to be a lawyer. In terms of their psychological and intellectual development, [p]robably the greatest role models for students are faculty members themselves. To the extent that law professors avoid collaboration, so will their students."[160]

156. ROBERT MACCRATE, LEGAL EDUCATION AND PROFESSIONAL DEVELOPMENT: AN EDUCATIONAL CONTINUUM 201 (AM. BAR ASSOC. 1992).

157. *Id.*

158. Janet Thompson Jackson & Susan R. Jones, *Law & Entrepreneurship in Global Clinical Legal Education*, 25 INT'L J. CLIN. LEG. EDUC. 85, 117 (2018), https://doi.org/10.19164/ijcle.v25i3.769.

159. *Id.* (quoting Michael I. Meyerson, *Law School Culture and the Lost Art of Collaboration: Why Don't Law Professors Play Well with Others?,* 93 NEB. L. REV. 547, 556 (2014)).

160. *Id.* at 118–19; *see also* Janet Weinstein, Linda Morton, Howard Taras & Vivian Reznik, *Teaching Teamwork to Law Students*, 63 J. LEGAL EDUC. 36, 36 (2013) ("[L]aw professors unfa-

The consequences of the legal academia's underutilization of collaborative learning are many, and increasingly harmful in a global society. "Among the many critiques of legal education are criticisms that law students do not graduate with effective emotional intelligence[161] skills — in particular, they have not learned to work well with others."[162] Sending new lawyers into the workforce with low emotional intelligence ("EI") is problematic on multiple levels, but perhaps most strikingly, as it relates to well-being. From an emotional and mental health perspective, weak EI translates to lower resiliency, which often results in problems accepting failure, rejection, and loss.[163] It should then follow that collaborative skills would give rise to emotional intelligence and, correspondingly, to greater resilience, by offering students opportunities to exercise judgment, self-awareness, and relationship building. Resilience, defined as "the ability to recover from or adjust easily to misfortune or change,"[164] is critical for law students and legal professionals at any time, and especially so during times of unusual stress and uncertainty.

Considering the many benefits of collaborative learning, along with the expectation of collaborative lawyering, law schools should include collaboration as a core learning objective. Professors can honor diverse learning styles when teaching collaboration by communicating that students who learn through "deliberation, contemplation and quiet reflection" are as valued as those who actively participate in the classroom.[165] Collaborative skills may take more time to master, but it would be worth the effort to help mitigate the loss of interpersonal skills and empathy typically experienced in law school while also equipping students with the skills they need to excel in the increasingly diverse United States workforce and global marketplace.

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miliar with teamwork theory and practice are unlikely to use teams to engage students in learning.").

161. The term emotional intelligence became widely known through the work of Daniel Goleman, who describes it as an array of emotional competencies consisting of self-awareness, self-management, social awareness, and relationship management. *See* Daniel Goleman, *What People (Still) Get Wrong About Emotional Intelligence*, HARV. BUS. REV., Dec. 22, 2020; *see also* Martin, *supra* note 91, at 420.

162. Sophie M. Sparrow, *Can They Work Well on a Team? Assessing Students' Collaborative Skills*, 38 W.M. MITCHELL L. REV. 1162, 1162 (2012).

163. *See* Larry Bridgesmith, *Collaboration Is the Future, Not Competition*, ABA (Sept. 1, 2018), https://www.americanbar.org/groups/law_practice/publications/law_practice_magazine/2018/SO2018/SO2018Bridgesmith/.

164. *Resilience*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/resilience (last visited Sept. 10, 2021).

165. *See* Thompson Jackson & Jones, *supra* note 158 (quoting A. Rachel Camp, *Creating Space for Silence in Law School Collaborations*, 65 J. LEGAL EDUC. 897, 899 (2016)).

6. Source of Anxiety: Race-Based Traumatic Stress

Race-Based Traumatic Stress ("RBTS" or "racial trauma") is a mental and emotional injury experienced by BIPOC.[166] While studies do not yet exist on how RBTS impacts law students in particular, we know that BIPOC law students experience racism, and that racism itself is traumatic. Particularly relevant to current events in the United States, increased racism occurs during national challenges and times of tragedy.[167] Middle Eastern Americans, including law students, experienced increased discrimination following September 11, 2001.[168] Asian Americans, including law students, have been targeted as the source of COVID-19 in the United States, even at the level of the presidential administration and some media referring to COVID-19 as the "Chinese virus" or "kung flu."[169] In fact, the effects of cultural and structural[170] racism have been felt in the U.S. since its formation. And while all people of color are at risk of experiencing racial trauma, Black Americans face the highest risk because of historical and systemic anti-Black racism.[171] Belonging to multiple marginalized groups compounds the impact of racism and may increase experiences of racial trauma.[172] Therefore, RBTS must also be viewed through the intersectional lenses of race, gender, sexuality, and disability. Additionally, RBTS can have intergenerational effects. Specifically, historical traumatic events such as "colonization, genocide, slavery, dislocation, and other related trauma" can create epigenetic "soul

166. ROBERT T. CARTER & ALEX L. PIETERSE, MEASURING THE EFFECTS OF RACISM: GUIDELINES FOR THE ASSESSMENT AND TREATMENT OF RACE-BASED TRAUMATIC STRESS INJURY 7 (Columbia Univ. Press 2020).

167. Sabrina R. Lui & Sheila Modir, *The Outbreak that Was Always Here: Racial Trauma in the Context of COVID-19 and Implications for Mental Health Providers*, 12 AM. PSYCH. ASS'N 439, 439–42 (2020).

168. *Id.*

169. *Id.* at 440.

170. Structural racism is

> a complex, dynamic system of conferring social benefits on some groups and imposing burdens on others that results in segregation, poverty, and denial of opportunity for millions of people of color. It comprises cultural beliefs, historical legacies, and institutional policies within and among public and private organizations that interweave to create drastic racial disparities in life outcomes.

William M. Wiecek, *Structural Racism and the Law in America Today: An Introduction*, 100 KY. L.J. 1, 5 (2011).

171. *See generally* RESMAA MENAKEM, MY GRANDMOTHER'S HANDS: RACIALIZED TRAUMA AND THE PATHWAY TO MENDING OUR HEARTS AND BODIES *passim* (Central Recovery Press 2017); *Coping with Racial Trauma*, UNIV. GA. DEP'T PSYCH., https://www.psychology.uga.edu/coping-racial-trauma (last visited Sep. 9, 2021).

172. UNIV. GA. DEP'T PSYCH., *supra* note 171.

wounds" that parents pass on to their children.[173] That means that the horror that most everyone felt when viewing the brutal killing of George Floyd by police may trigger RBTS in some black people.

Racial trauma shares symptoms with post-traumatic stress disorder ("PTSD"), such as re-experiencing traumatic events; increased somatic disorders; chronic stress and depression; anger; increased sensitivity to threat; increased vigilance and suspicion; low self-esteem and avoidance, which to law students, can manifest as decreased willingness to take academic risks.[174] Distinct from PTSD, however, racial trauma contains the accumulation of experiences of racism, which can extend to a larger collective of historical and generational encounters with racism.[175]

Given the number of first-generation BIPOC law students and the ongoing racial hostility encountered by students of color at predominantly white law schools, racial trauma must be addressed when considering the wellness needs of students. As students of color engage in protests and other activities to fight racial injustice, they frequently ignore their own wellness needs and may have less emotional bandwidth to perform academically.[176] Studies on adult learners found that such trauma may negatively affect student learning with regards to storing and retrieving new information, vocabulary, and in other ways.[177]

> Dealing with regular microaggressions and overt acts of racism on an individual level, while also living through the constant debates and discussions of systemic and institutional racism, can be sources of pain, trauma and stress. . . . Additionally, the coronavirus pandemic has had a disproportionate impact on Black and brown people who have died from COVID-19 and suffered financially at much higher rates than white people.[178]

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173. Lillian Comas-Díaz, Gordan Nagayama Hall & Helen A. Neville, *Racial Trauma: Theory, Research, and Healing: Introduction to the Special Issue*, 74 Am. Psych. 1, 2 (2019), http://dx.doi.org/10.1037/amp0000442.

174. Univ. Ga. Dep't Psych., *supra* note 171.

175. Della V. Mosley, Candice N. Hargons, Carolyn Meiller, Blanka Angyal, Paris Wheeler, Candice Davis & Danelle Stevens-Watkins, *Critical Consciousness of Anti-Black Racism: A Practical Model to Prevent and Resist Racial Trauma*, 68 J. Couns. Psych 1, 1 (2020), http://dx.doi.org/10.1037/cou0000430.

176. Greta Anderson, *The Emotional Toll of Racism*, Inside Higher Ed (Oct. 23, 2020), https://www.insidehighered.com/news/2020/10/23/racism-fuels-poor-mental-health-outcomes-black-students.

177. *Id.*

178. *Id.*

Not only students experience race-based trauma. BIPOC faculty often find themselves in the position of having to perform their academic obligations as usual while at the same time supporting BIPOC students and living with their own trauma. Faculty of color also expend considerable emotional and physical energy responding, on the one hand, to concerned colleagues who want to dialogue about antiracism and contribute to meaningful change, and on the other hand, to colleagues who insist that *all lives matter,* thereby discounting BIPOC experiences and grievances. In addition, non-tenured faculty may feel pressure to remain silent or carefully manage their responses about racial injustice, and specifically about implicit bias among their own faculty, to advance in their institution.

i. What Law Schools Can Do: Name It, Hold Space, and Provide Allyship

One of the most important responses to RBTS is to acknowledge its existence and the vulnerability of BIPOC students who may be experiencing it. If law school administrators understand the symptoms and triggers, they can take steps to proactively address it. Creating supportive communities and spaces for students and faculty of color to share their stories and feel validated can go a long way to counteracting the devaluation that racism brings.

Law schools can also provide allyship training to address RBTS and the trauma of "otherism" in law school. The concept of allyship has early roots in the 1920s Harlem Renaissance, but allyship has been most closely connected to the 1990s LGBT political movement.[179] More recently, the concept of allyship has arisen in the Black Lives Matter movement, though a dearth of research exists that examines ally activism on behalf of BIPOC and communities.[180] A useful definition of allyship in the context of racial injustice is "a *strategic* mechanism used by individuals to become *collaborators*, *accomplices*, and *co-conspirators* who fight injustice and promote equity . . . through supportive personal relationships and public acts of sponsorship and advocacy."[181] Citing evidence-based best practices for becoming an

179. Breana Z. Clark, *Enhancing Racial Allyship at a Predominately White Institution*, UNIV. SAN DIEGO SCH. LEADERSHIP & EDUC. SCI., Spring 2019, at 7-8.

180. *Id.* at 8.

181. Tsedale M. Melaku, Angie Beeman, David G. Smith, & W. Brad Johnson, *Be a Better Ally*, HARV. BUS. REV., Nov.–Dec. 2020, https://hbr.org/2020/11/be-a-better-ally (emphasis in original).

ally, scholars listed a number of ways for people in positions of power and privilege to support colleagues of color. Some practices include adopting a learning mindset, owning one's own privilege, accepting feedback, becoming a confidant, creating a community of allies, and most critically, speaking up and shutting down racist comments and behavior.[182] Perhaps most importantly, support comes through believing a person's experience rather than questioning it. Scholars warn against gaslighting, the "psychological manipulation that creates doubt in victims of sexist or racist aggression, making them question their own memory and sanity."[183] While it is not possible to always know if a law student experiences race-based or other trauma, certain mindfulness strategies, described later in this article, can be helpful for any student and have been shown to help those living with trauma.

7. Dysfunction: What We Model

Even before the coronavirus pandemic, the typical academic may have found setting boundaries between work and life challenging. Now with Zoom meetings from home and students in multiple time zones, those boundaries are more blurred than ever. Many professors can likely relate to one faculty member's comment that, "faculty are expected to be available to their students not merely during office hours but via email and social media as well, which results in a daily avalanche of requests on their time and attention. With the hours students keep, academia becomes a 24/7 job."[184]

Assuming the truth of that statement, we need to change what we are modeling in legal education.

i. What Law Faculty Can Do: Incorporate Wellness in Our Own Lives

Law school faculty and administrators can take small steps to incorporate wellness in our own lives and, thereby, model wellness to students. To start, faculty can consider: (1) What days and times do we send emails to students?; (2) How do we use (and talk about) our weekends and holiday time?; (3) How do we demonstrate flexibility or innovation in our classrooms or curricula?; and, (4) How do we model anti-racism through coursework and professional conduct?

182. *Id.*
183. *Id.*
184. Philip Preville, *Work-Life Balance: A Guide for Professors*, Top Hat (Apr. 24, 2019), *https://tophat.com/blog/work-life-balance-guide/*.

All of these considerations begin with reflection. As faculty, we often feel like we are on a treadmill that never stops. In reality, we must stop the treadmill (or jump off) and give ourselves space and time to reflect so that we can be more fully present in our own lives and for our students. While work-life balance may represent more of a myth than a realistic aspiration, work-life harmony or integration is achievable. A helpful place to begin is with awareness. Awareness of how we spend our time and whether those choices align with our values and desires. Awareness of how much of our time, if any, is dedicated to self-care. We too often, especially women, put the needs of everyone else in our lives before our own. But, in reality we cannot give to others what we lack in ourselves.

Integrating self-care into our lives begins with making the daily choice to do so. All of the self-care practices included in this article can be adopted by anyone who chooses to try them and determine what works for them. Some practices, such as yoga, tai chi, or certain meditation methods may require some training and practice to feel proficient or see results, but others may offer immediate relief. For example, I rarely give a class or presentation these days where I do not ask the students or audience to take a moment to breathe consciously. Taking less than three minutes, I ask the audience to (1) close their eyes or lower their gaze, (2) notice their connection to the chair or seat holding them, (3) notice their breathing and where they feel their breath in their bodies, (4) allow their bodies to relax, starting with softening their eyes and jaw, then their shoulders, back muscles, hips, legs, and feet, (5) and rest in that relaxed state for a few seconds. I have noticed that even people who resist following my cues become quiet and more relaxed. Simply being part of a relaxed environment appears to benefit people. Try it.

V. PRACTICES TO SUPPORT STUDENT WELLNESS

A. Using the Wellness Matrix: Personally

I will use the Wellness Matrix as a guide in demonstrating how wellness practices can be incorporated during in-person and Zoom classes and in presentations. But first, I want to share some of my own personal practices because my ability to support my students' wellness begins with my taking care of myself.

A quick and easy way to brighten my morning involves essential oils. I spread a few drops of an invigorating oil like orange or lemon

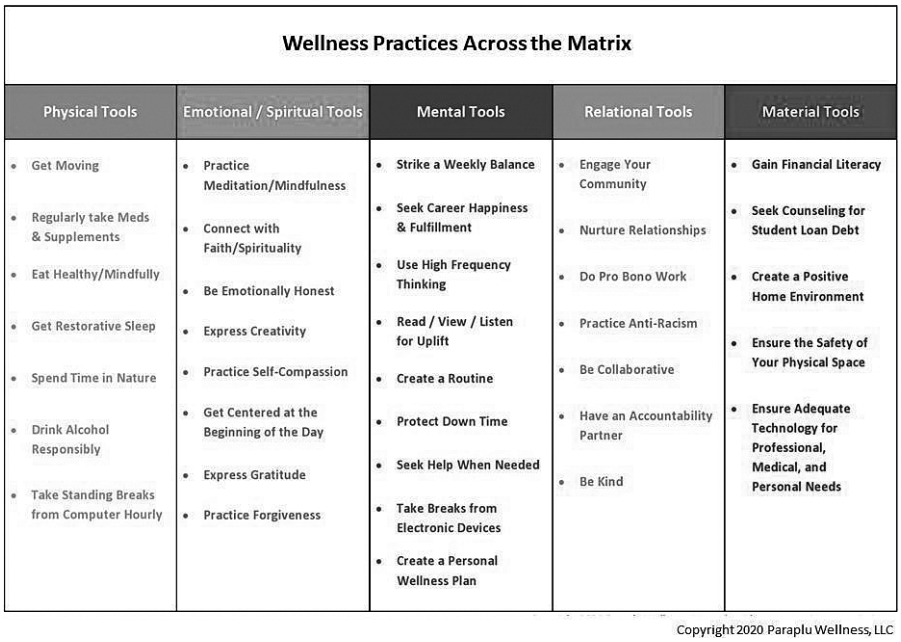
on the floor of my shower and inhale the scent. It is surprising how such a small act can bring me so much joy. I meditate every day. I didn't always have a daily meditation practice, but it is something I developed when I realized the benefits I reaped from my practice, such as sustained emotional equilibrium, increased compassion, and better sleep. Even weekly or occasional meditation is helpful.

I move my body almost every day, either through yoga, walking, or biking. I walk in nature as much as possible and I try to journal daily, even if to write just one gratitude for the day. If I am having an extremely busy day my yoga practice may be five minutes. I find that consistency is more important than quantity. If, however, my body tells me to rest instead of move, I honor that. I have a morning waking ritual that does not involve looking at my phone or other screen. After my meditation and gentle stretching, I have a drink of warm lemon water before I consume anything else. Getting my lemon water is my signal to start my screen time if I wish. It took practice to release the habit of reaching for my phone first thing in the morning, but I have found that those few minutes without checking my email, texts, or the latest news helps me to ease into my day more calmly. I also give myself social media breaks. Several days may go by when I do not check social media, which may mean that I am extending belated birthday wishes and missing friends' posts, but I now enjoy the occasional disconnection. I try to schedule phone or video check-ins with my community of friends on a regular basis. Finally, I do something for enjoyment every day. Recently my sixteen-year old daughter noted that I did not have any fun hobbies. In response to her astute observation, I began taking violin lessons again.

B. Using the Wellness Matrix: With Students

We can adopt a range of practices to support student wellness. Exhibit 4 below lists some of the practices from the five categories of physical wellness, emotional/spiritual wellness, mental wellness, relational wellness, and material wellness.

Exhibit 4. Wellness Practices Across the Matrix



Wellness Practices Across the Matrix

Physical Tools	Emotional / Spiritual Tools	Mental Tools	Relational Tools	Material Tools
• Get Moving	• Practice Meditation/Mindfulness	• Strike a Weekly Balance	• Engage Your Community	• Gain Financial Literacy
• Regularly take Meds & Supplements	• Connect with Faith/Spirituality	• Seek Career Happiness & Fulfillment	• Nurture Relationships	• Seek Counseling for Student Loan Debt
• Eat Healthy/Mindfully	• Be Emotionally Honest	• Use High Frequency Thinking	• Do Pro Bono Work	• Create a Positive Home Environment
• Get Restorative Sleep	• Express Creativity	• Read / View / Listen for Uplift	• Practice Anti-Racism	• Ensure the Safety of Your Physical Space
• Spend Time in Nature	• Practice Self-Compassion	• Create a Routine	• Be Collaborative	• Ensure Adequate Technology for Professional, Medical, and Personal Needs
• Drink Alcohol Responsibly	• Get Centered at the Beginning of the Day	• Protect Down Time	• Have an Accountability Partner	
• Take Standing Breaks from Computer Hourly	• Express Gratitude	• Seek Help When Needed	• Be Kind	
	• Practice Forgiveness	• Take Breaks from Electronic Devices		
		• Create a Personal Wellness Plan		

Below, I describe in brief how I use one practice from each wellness dimension in my teaching.

Wellness Dimensions	Practices
Physical	*Take standing or stretching breaks*. If a class or presentation is more than one hour, pause and invite the students to stand or stretch in their seats.
Emotional/ Spiritual	*Emotional expression*. Before beginning class, ask students to write down one thing they are grateful for that day.[185]
Mental	*Entertainment*. At the beginning or end of class, ask students what they like to do for fun and encourage them to protect down time, even during busy periods. Perhaps share something you do to unwind.
Relational	*Practice anti-racism*. When teaching, be deliberate about unpacking concepts of privilege and power and how those are reflected in your area of teaching/practice. Also be intentional about featuring scholars of color in assigned readings.
Material	*Safe space*. Create a safe and positive physical or virtual space for students by being conscious of how course materials, language used by you and students, and body language may affect students.

In addition to the examples above, my classroom strategies include being as transparent as possible with my students about expectations, including sharing with them that I am concerned about and invested in their wellness. Specifically, I share the statistic that entering law students have a psychological profile similar to the general public, but by the end of their third year up to 40% of law students will experience anxiety or depression. I let them know that I am sharing that information to let anyone in that situation know that they are not alone. But, I also believe that a downward trend in mental health during law school places some responsibility on me to try to mitigate that. I let them know that I will do that by talking to them about wellness and facilitating some short self-care practices during class. I also invite my students to extend grace to each other, and in a clinical setting, to their clients. That does not mean excusing behavior, but it

185. *Giving Thanks Can Make You Happier*, HARV. HEALTH PUBL'G (Aug. 14, 2021), https://www.health.harvard.edu/healthbeat/giving-thanks-can-make-you-happier (explaining that acknowledging even one gratitude daily improves mental health and life satisfaction).

does ask students to consider not only the actions of others, but also their needs and circumstances. That is my way of introducing empathy into my courses as I seek to model that for my students. Witnessing a student occupy that space of grace and empathy has been one of the most rewarding experiences of my teaching career.

C. Putting the Practices to Work

Having a collection of wellness practices is one thing, knowing what practices to use and when to use them is another. To make these practices as accessible as possible I have categorized practices that, through my experience, work well in groups, individually, via email or video, and in conjunction with other support networks.

1. Supporting Student Wellness in Group Classes

In addition to the breathing and gratitude examples already given, I often spend approximately five minutes or less on the following practices.

Word for the day. Ask students to write a word or phrase that expresses their intention or desire for that day. I often give them an example to get them started, such as "calm," "energy," or "I am prepared."

Brain dump. Often at the end of a class I will ask students to take thirty seconds to list all of their worries or repetitive thoughts on a piece of paper. I then give them thirty seconds to circle anything on the list they have *no* control over. For another thirty seconds they transfer everything that is not circled to another piece of paper. I then have them review the list of things they *do* have control over and invite them to later (outside of class), create a plan to address the things they can control and release the things they cannot control. Students have told me that the act of simply writing their worries on paper gives them emotional release.

Share your stories. Without revealing anything too personal, share your own joys and challenges. Doing so makes faculty more accessible to students and also gives faculty a chance to model how they handle different situations.

Mindfulness exercise. Invite students to do the 5-4-3-2-1 exercise where, in the environment immediately around them, they silently note five things they can see, four things they can feel with their touch,

three things they can hear, two things they can smell, and one thing they can taste. End with one good thing about themselves.

2. Supporting Student Wellness in Individual Meetings

Invite conversation. Ask a student about their biggest current challenge and what they can do immediately to try to overcome it. I find that asking about the biggest challenge helps to narrow a student's focus to one area they can then take steps to resolve.

Time management. Suggest time management systems for students struggling with prioritization, organization, and focus.

Resources. Suggest resources for dealing with boundary setting, trauma, and mental health concerns.

Personal Wellness Plan. Help students develop a personal wellness plan by asking them to identify one current wellness goal, why it is important to them, how they plan to achieve it, what obstacles they might encounter, and to name an accountability partner.

Exhibit 5 provides a Personal Wellness Plan template.

Exhibit 5. Personal Wellness Plan Template

Personal Wellness Plan for:					
How I Define Wellness:					
Wellness Matrix:	**Physical**	**Emotional / Spiritual**	**Mental**	**Relational**	**Material**
Goal:					
Why:					
Plan:					
Obstacles:					
Accountability:					
Wellness Matrix Elements:	• Movement • Health & Medical Care • Nutrition • Sleep	• Mindfulness/ Meditation • Faith/Spirituality • Emotional Expression • Creativity	• Learning • Career • Professional Development • Entertainment	• Community • Personal and Professional Relationships • Consensual Intimacy • Service/Justice Work	• Finances/Credit • Student Loans • Housing • Physical Space

3. Supporting Student Wellness via Email

Send wellness tips to students as part of a larger email or separately. Check-in and follow-up with students who have expressed concerns or have met with you individually. Provide access to videos or resources on wellness topics.

4. Supporting Student Wellness in Connection with Other Networks

Create student awareness of university or law school wellness programs and events. Provide information about your local lawyer's assistance program. Invite guests to speak in your class on wellness topics.

Below are a few comments from students about what it means to them to have wellness incorporated into their law school experience.

D. Student Testimonials

> I am a law student and had the opportunity to hear your presentation to our class. I just wanted to reach out and express my appreciation for your presentation. I particularly appreciated how candid you were about your own experiences dealing with mental health and burnout issues. I feel that your presentation has influenced me to be more active and deliberate in my approach towards my own self-care.
>
> –Wayne State law student

> I am thankful for a space where PJJ [Professor Janet Jackson] has acknowledged the stressful times that everyone is going through and offered to listen if we needed it. It helped to have a professor acknowledge what we're going through and to affirm that it is okay if it takes some time to adjust or even find a new routine. Simply having PJJ affirm my feelings was extremely reassuring for me, it made me feel seen.
>
> –Washburn Law School student (early COVID-19)

> "We appreciate your guidance and calm leadership during this uncertainty . . . [Your] class could not have come at a better time. Thank you for how well you share your gifts of understanding the natural tools we have to function in the world."
>
> –Washburn Law School student

> "After my first year of law school I was not expected to pass the bar. You encouraged me to try again and to keep working toward

> my goals. Now, not only [am I licensed in two jurisdictions], I'm the president-elect of my local bar association!"
>
> –Washburn Law School alum

> Thank you so much for offering this class. I really enjoyed the content, as well as your teaching style. There are some pretty obvious (at least to me) reasons why law school is so stressful, and many of them can be resolved by how professors treat and evaluate students. I think you are doing more than your part to help with this!
>
> –Visiting law student

> You, personally, have done wonders for my confidence and I always hear your voice in my head when I'm being too critical, hard, or down on myself, reminding me to be kind and give myself a break. The lessons you've taught me about self-care resonate more strongly each day. Thanks again for all you do and the investment you make in your students.
>
> –Washburn Law School student

VI. CONCLUSION

The wellness crisis in the legal profession begins in law school. For far too long we have known that, but we have failed to adequately address it. While we may be graduating students who are capable passing the bar and securing employment, too many of those same students lack the foundation of a complete professional identity that will support them as they navigate the stresses inherent in the legal profession. That foundation must be one of wellness if we are serious about ending the cycle of anxiety, depression, extreme stress, and suicide in law schools and the legal profession.

The time for action is now. Just as other movements have galvanized the public to demand change, so too must legal education take action to comprehensively address its lack of wellness. This is especially urgent in light of the recent global and national events of COVID-19 and protests over ongoing racial injustice. These events challenge the coping mechanisms of students who already struggled to manage anxiety, depression, and addiction in addition to creating anxiety for students who feel newly anxious and overwhelmed by societal events.

Needed action begins with acknowledging the sources of anxiety created or exacerbated by law school culture and then addressing the willingness to make systemic changes. And, as law faculty and admin-

istrators, we must also be willing to support student wellness by addressing how we model wellness ourselves.

While this article focuses on what can and should be done in law schools to support student wellness, the entire legal profession would do well to consider how employers can better support legal professionals. Our very lives and our profession depend on it.

VII. APPENDIX: SAMPLE OF WELLNESS PRACTICES IN LEGAL EDUCATION

A. UC Berkeley School of Law
   (a) *Mindfulness Weekly Wit*, 4-part workshop offered to all students each fall/spring, contacts: Emily Bruce and Sue Schechter
   (b) *Mindfulness and Law*, 2-unit course, offered each fall or spring: Judi Cohen
   (c) *Satisfaction in Law and Life*, 1-unit course, offered each spring
   (d) *How to Be Happy in Law School*, 1 unit course, offered this fall: Kristen Holmquist
   (e) *Human Centered Lawyering Initiative* offers meetings (including a monthly Community Craft Circle) and other events throughout the semester, contacts: Molly Van Houweling and Kristen Holmquist

B. Denver Law School
   (a) *Guest speakers*, Patience Crowder, Denver

C. George Washington University Law School
   (a) Ice-breaker interview in clinic orientation. Questions include: *what brings student attorneys joy and balance?;*
   (b) One-word check in periodically. *How are you feeling?;*
   (c) Learning Goals Worksheet questions include: what are you most passionate about and what activities and experiences bring you peace and energy?, *Susan R. Jones, George Washington University*

D. Loyola – Chicago Law School
   (a) *Leadership Lab* - a program where students get points for taking courses and participating in activities involving leadership skills that includes a heavy emphasis on mindfulness, wellness and dispute resolution
   (b) *Mindfulness* sessions two times a week for the law school community. Students, faculty, staff and families participate regularly
   (c) *Community Building Circles* - a number of students, faculty and staff have been trained to facilitate talking circles. The

law school holds circles on a regular basis and particularly when disturbing events are in the news.

(d) *Professional Identity Formation* - a required course for 1L students held in a circle format to build community with a special focus on anti-racism as part of professional development.

(e) *Lawyers Assistance* Program - on campus, University wellness services extended to law students, including mental health services, *Chipo Nyambuya and Teresa Frisbie, Loyola – Chicago*

E. *McGeorge Law School*

(a) *Alternative wellness activities* (from which students choose) that are built into orientation

(b) *Connect students to their purpose*, e.g., *letter to future self* about why they are in law school

(c) *Structured study group program* to provide academic and social support

(d) *First-year class, the Legal Profession*, that includes wellness activities

(e) *Meditation and yoga* student groups

(f) *Annual wellness week*, filled with wellness-focused activities, *Michael Schwartz, McGeorge*

F. *Northwestern Pritzker School of Law*

(a) *Wellness Curriculum*, https://www.law.northwestern.edu/student-life/student-services/wellness/curriculum/. The listed classes and workshops centers around several topics: Mindfulness in Law, Mindfulness-Based Courses and Curriculum, Personal Development, Stress Management, and Healthy Relationships. Such workshops include Introduction to Mindfulness, Mindfulness-Based Resilient Lawyering (MBRL), Emotional Intelligence: What It Is and Why it Matters for Lawyers, Understanding and Avoiding Burnout, and Mastering Work/Life Balance, respectively.

G. *Seattle Law School*

(a) Work on secondary trauma and secondary resilience, and imposter syndrome [through] *reflection*, *growth mindset*, *Gillian Dutton, Seattle*

H. Stanford Law School
   (a) "WellnessCast" Podcast, https://law.stanford.edu/media/wellnesscast/#slsnav-about. It is cohosted by a Stanford Law Professor and students and features expert guests each week. The podcast is apart of the school's Law School Wellness Project and focuses on the wellness and mental health in the legal profession. It is available on both iTunes and Soundcloud.

I. Washburn Law School
   (a) *Yoga* with Dean Carla Pratt
   (b) *Weekly Meditation* with Professor Jackson
   (c) Talk about the *emotional side of learning, writing, and rhetoric* at least weekly in class, sometimes daily; encourage them to take *longer-term views of their education* and to focus on *positive goals*, even though grades are hard to ignore, *Antonia (Tonya) Kowalska, Washburn*
   (d) *Wellness-related ice breaker questions* (what's one thing you did this last week for one aspect of your personal wellness? on a scale of these *funny looking sheep*, *how are you feeling this week?)*, *Emily Grant, Washburn*

Are We Editing Genes Responsibly? CRISPR Laws, Gaps, Concerns, and Proposals for Stronger and More Inclusive Regulations

Reinaldo Franqui Machin*

ABSTRACT

CRISPR, the newest gene-editing tool, is revolutionizing human disease treatment, drug discovery, pest control, agriculture, biofuel production, and many other industries. The driving force of this revolution in genetics is CRISPR's speed, power, affordability, and ease of use. Unfortunately, these same qualities are sparking concerns as CRISPR applications extend to new areas both inside and outside the walls of the laboratory. Even though this molecular tool is not even a decade old, it is already being used to treat diseases, modify organisms then released into the wild, and even gene-editing of healthy babies. As it often happens when technology takes massive leaps, laws and regulations are not

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keeping pace. This article explores the concerning new uses of CRISPR as they relate to national security and public health. Additionally, this article surveys laws and regulatory frameworks currently in place to conclude that there is little to no oversight of CRISPR and its uses. These inadequate regulations are creating a ticking time bomb that will eventually impact our food and water supplies, public health, and national security. To mitigate the risk caused by the misuse of CRISPR, this article ends with a series of recommendations that consider research institutions, government agencies, scientists, the community, and the critical process of innovation. If implemented, CRISPR will continue to fuel our genetic revolution, but responsibly, so it does not offend the environment, our communities, or our genes.

I. INTRODUCTION

Revolutions in science have extended our lives,[1] fueled our economic and population growth,[2] and now, through targeted gene-editing, it is promising to solve some of our most complicated diseases and environmental problems.[3] Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) was initially discovered in the 1980s, but it was not a sensational occurrence; it was a whisper in an obscure subfield of molecular biology.[4] In essence, CRISPR is an immune system built into bacteria to fight viral infections; interesting, but mainly to the scientists working in that niche field.[5] A few decades later, however, these molecular scissors have been adapted to execute on-demand targeted edits on the DNA of anything from *E. coli* to humans.[6] Like the cut and paste feature of a word processor, CRISPR can remove faulty genes and replace them with the correct sequences with unparalleled accuracy.[7] The applications of this technology are widespread. CRISPR is already being used to treat cancer;[8] it is reinforcing

1. Eileen M. Crimmins, *Lifespan and Healthspan: Past, Present, and Promise*, 55 GERONTOLOGIST, 901, 902 (2015), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4861644/.

2. Graham Zabel, *Peak People: The Interrelationship Between Population Growth and Energy Resources*, RESILIENCE (April 20, 2009), https://www.resilience.org/stories/2009-04-20/peak-people-interrelationship-between-population-growth-and-energy-resources/.

3. Michael Le Page, *Three People with Inherited Diseases Successfully Treated with CRISPR*, NEW SCIENTIST (June 12, 2020), https://www.newscientist.com/article/2246020-three-people-with-inherited-diseases-successfully-treated-with-crispr/.

4. Daphne Ng, *A Brief History of CRISPR-Cas9 Genome-Editing Tools*, BITESIZE BIO (June 30, 2020), https://bitesizebio.com/47927/history-crispr/.

5. *Id.*

6. *Id.*; Yu Jiang, Biao Chen, Chunlan Duan, Bingbing Sun, Junjie Yang, Sheng Yanga, *Multigene Editing in the Escherichia Coli Genome Via the CRISPR-Cas9 System*, 81 APPLIED & ENV'T MICROBIOLOGY 2506, 2506 (2015); Clara Rodríguez Fernández, *Eight Diseases CRISPR Technology Could Cure*, LABIOTECH.EU (Apr. 13, 2021), https://www.labiotech.eu/best-biotech/crispr-technology-cure-disease/.

7. Caitlin McDermott-Murphy, *New CRISPR Innovations Record Cellular History and Edit with Unparalleled Precision*, H.U. DEP'T OF CHEMISTRY & CHEM. BIOLOGY (Mar. 1, 2018), https://chemistry.harvard.edu/news/new-camera-cells.

8. Kevin Bryant, *CAR T Therapies and CRISPR Are Fighting Cancer and Revolutionizing Medicine*, SYNTHEGO (May 8, 2018), https://www.synthego.com/blog/car-t-crispr-cancer.

crops affected by disease,[9] and it is expected to curtail the spread of malaria and other mosquito-derived diseases.[10]

Although technical limitations still exist, CRISPR potentiates several new threats because its accuracy, ease of use, and affordability may be allowing for genetic edits to take place undetected. In 2016, the then director of National Intelligence, James R. Clapper, testified for the United States Senate, arguing that CRISPR had become a significant threat that could open the door to agents that can harm national security on a global scale.[11] Clapper's statement is not alone. In recent years many scientists and policymakers have been sounding alarms about the new risks of CRISPR.[12] A common source of their concern is the lack of regulations of this technology for scientists, the public, or worse, for nefarious groups with intentions to cause harm. Of note, the main risks associated with CRISPR do not include generating an entirely new organism or creating super soldiers, as various popular culture references have hinted.[13] Still, CRISPR could modify existing pathogens making them more infectious or deadly.[14] There is no shortage of potential pathogenic candidates, and the list includes anthrax, smallpox, and many varieties of coronavirus.[15] There are also concerns that researchers will introduce, either intentionally or accidentally, a modified organism into the wild that will cause unfore-

9. Amy Maxmen, *CRISPR Might Be the Banana's Only Hope Against a Deadly Fungus*, NATURE (Sept. 24, 2019), https://www.nature.com/articles/d41586-019-02770-7#:~:text=Going%20bananas%20with%20CRISPR&text=specifically%2C%20he's%20trying%20to%20turn,for%20trials%2C%E2%80%9D%20Dale%20says.

10. Megan Scudellari, *Self-Destructing Mosquitoes and Sterilized Rodents: The Promise of Gene Drives*, NATURE (July 9, 2019), https://www.nature.com/articles/d41586-019-02087-5.

11. Kelly Servick, *CRISPR—a Weapon of Mass Destruction?*, SCI. (Feb. 11, 2016), https://www.sciencemag.org/news/2016/02/crispr-weapon-mass-destruction.

12. Kevin Esvelt & Piers Millett, *Genome Editing as a National Security Threat*, 36 REV. SCI. TECH. 459, 459–62 (2017); Stew Magnuson, *National Security Implications of Gene Editing*, NAT'L DEF. (Mar. 26, 2019), https://www.nationaldefensemagazine.org/articles/2019/3/26/editors-notes-national-security-implications-of-gene-editing.

13. Adam Epstein, *The Worst-Case Scenarios of CRISPR Gene Editing, According to Hollywood*, QUARTZ (Nov. 27, 2018), https://qz.com/1476271/the-disasters-of-crispr-gene-editing-according-to-hollywood/. Hollywood has created a very unrealistic vision of the capabilities of CRISPR through movies like Dwane Johnson's "Rampage" and even the potential CRISPR TV show starring Jennifer Lopez. *Id.* Although entertaining, these depictions of CRISPR have created a distorted understanding of the technology's capabilities.

14. Kirsten Gronlund, *Genome Editing and the Future of Biowarfare: A Conversation with Dr. Piers Millett*, FUTURE LIFE INST., (Oct. 12, 2018), https://futureoflife.org/2018/10/12/genome-editing-and-the-future-of-biowarfare-a-conversation-with-dr-piers-millett/.

15. *Select Agents and Toxins List*, FED. SELECT AGENT PROGRAM, https://www.selectagents.gov/sat/list.htm (last visited Mar. 14, 2021).

seeable and irreversible consequences on the environment and human health.[16]

Because CRISPR is so novel and the technology is evolving quickly, regulations aimed at mitigating the risks posed to national security and public health are limited. In the United States, there are few federal regulations limiting genome editing with CRISPR. CRISPR's main restrictions involve barring human germline[17] and embryonic genetic modifications and only allowing public research funding for basic and translational medicine purposes.[18] Many other countries also have alarmingly relaxed regulations despite numerous problematic experiments and accidents occurring across the globe.[19] These lax regulations set the conditions for a significant threat to materialize.

This note will explore two ideas: (1) CRISPR, even with its potential hardships, presents considerable threats to national security and public health that need to be addressed; and (2) a proposal to adapt current biotechnological regulations in the United States to make CRISPR safer and more inclusive for scientists and the communities touched by the technology. The following sections of this article are organized as follows: Part II provides an overview of genetics and CRISPR and how it compares to previous gene-editing technologies; Part III presents CRISPR's current regulatory framework and gaps in the United States, as well as a brief look on concerning activities with CRISPR abroad; Part IV outlines suggestions for better regulations of CRISPR in the United States and internationally; and finally, Part V contains concluding remarks.

16. Satyajit Patra & Araromi Adewale Andrew, *Human, Social, and Environmental Impacts of Human Genetic Engineering*, 4 J. Biomedical Sci. no.2, 2015, at 1.

17. Germline edits refer to genetic changes that reach the reproductive cells of an individual, such as sperm and eggs. Henry T. Greely, *CRISPR'd Babies: Human Germline Genome Editing in the 'He Jiankui affair'*, 6 J.L. & Biosciences 111, 113–15 (2019). These edits are particularly troublesome because they can be passed down to future generations with unforeseeable consequences. Kelly E. Ormond, Douglas P. Mortlock, Derek T. Scholes, Yvonne Bombard, Lawrence C. Brody, W. Andrew Faucett, Nanibaa' A. Garrison, Laura Hercher, Rosario Isasi, Anna Middleton, Kiran Musunuru, Daniel Shriner, Alice Virani & Caroline E. Young, *Human Germline Genome Editing*, 101 Am. J. Hum. Genetics 167, 171–72 (2017).

18. Tracey Tomlinson, *A CRISPR Future for Gene-Editing Regulation: A Proposal for an Updated Biotechnology Regulatory System in an Era of Human Genomic Editing*, 87 Fordham Uni. Sch. L. 437, 455–59 (2018); Tanya Samazan, *Government Funding of CRISPR Research and Policy Changes*, IBO (Jan 4, 2019), https://instrumentbusinessoutlook.com/government-funding-crispr-research-policy-changes/.

19. *See* discussion *infra* Section III.B.

II. UNDERSTANDING GENETICS AND CRISPR

Before addressing CRISPR risks and regulations, a brief explanation of genetics and how CRISPR works will be beneficial. Thus, this section provides a brief history of genetics, a big-picture description of CRISPR, its applications, and how it differs from previous genetic engineering tools.

A. From Factors to Genes: A Brief History of Genetics

For a couple of thousand years, humans have been toying with genetics. Through selective breeding for over the past twelve thousand years, dogs, cows, chickens, and many kinds of crops were invented.[20] However, it was not until the nineteenth century that an Augustinian monk, Gregory Mendel, began to understand how traits were passed down from each generation.[21] By 1869, these inheritance "factors" were isolated by Frederick Miescher, who dubbed nuclein what we now call deoxyribonucleic acid or DNA.[22] Soon after, chromosomes were observed inside cells undergoing cellular division.[23] It was not until 1909 when Danish botanist Wilhelm Johannsen coined the term "genes."[24] In the following decades, scientists uncovered that these genes resided in chromosomes and were responsible for inheritance.[25] Understanding that DNA was the driving force of inheritance, scientists rushed to figure out the structure of DNA, and, in 1951, Rosalind Franklin made X-ray diffraction images of DNA.[26]

20. Fabrice Teletchea, *Animal Domestication: A Brief Overview*, INTECHOPEN (June 7, 2019), https://www.intechopen.com/books/animal-domestication/animal-domestication-a-brief-overview.

21. *Gregor Mendel: A Private Scientist*, SCITABLE, https://www.nature.com/scitable/topicpage/gregor-mendel-a-private-scientist-6618227/ (last visited Oct. 21, 2020).

22. Dahm Ralf, *Friedrich Miescher and the Discovery of DNA*, 278 DEVELOPMENTAL BIOLOGY 274, 276–77 (2005).

23. Clare O'Connor & Ilona Miko, *Developing the Chromosome Theory*, SCITABLE, https://www.nature.com/scitable/topicpage/developing-the-chromosome-theory-164/ (last visited Apr. 12, 2021).

24. *1909: The Word Gene Coined*, NIH NAT'L HUM. GENOME RSCH. INST., https://www.genome.gov/25520244/online-education-kit-1909-the-word-gene-coined (last updated Apr. 22, 2013).

25. Ananya Mandal, *History of Genetics*, NEWS MED. LIFE SCIS., https://www.news-medical.net/life-sciences/History-of-Genetics.aspx (last updated May 3, 2019).

26. *Rosalind Franklin Was so Much More than the 'Wronged Heroine' of DNA*, 583 NATURE 492 (2020).

These images allowed Watson and Crick to create the double-helix structure of DNA.[27]

Structurally, DNA consists of two spiraling sugar and phosphate outer backbones that wrap around each other, like the rails on a spiraling staircase.[28] At the center axis of these rails, four different base pairs, or nucleotides, meet. These nucleotides are called adenine, guanine, cytosine, and thymine (A, G, C, and T, respectively).[29] These nucleotides pair with each other creating distinct sequences, which look like the stairs on the spiraling staircase.[30] These nucleotide pairs discriminate, only forming pairs with one other nucleotide; specifically, A bonds only with T and G only with C.[31] Less than a decade after discovering the structure of DNA, scientists came to understand that segments of three nucleotides each codify and translate into a single amino acid, the building blocks of proteins.[32] This discovery began to piece together the Central Dogma of Biology: genetic material provides the information that is later translated into proteins that effectuate the roles essential for life.[33]

The most notable genetic experiments until the early 1970s elucidated the function and structure of DNA.[34] However, in 1973, scientist Herb Boyer conducted the first experiment in genetic engineering by cutting and splicing DNA into a bacterial plasmid at precise locations.[35] This modified plasmid could then be replicated and inserted into other bacteria to produce desired proteins.[36] Thus, scientists

27. *James Watson, Francis Crick, Maurice Wilkins, and Rosalind Franklin*, SCI. HIST. INST. (Dec. 4, 2017), https://www.sciencehistory.org/historical-profile/james-watson-francis-crick-maurice-wilkins-and-rosalind-franklin.

28. JENNIFER DOUDNA & SAMUEL STERNBERG, A CRACK IN CREATION: GENE EDITING AND THE UNTHINKABLE POWER TO CONTROL EVOLUTION, 9 (Houghton Mifflin Harcourt eds., 2017).

29. *Id.*

30. *DNA Structure*, N. AZ UNIV., https://www2.nau.edu/lrm22/lessons/dna_notes/dna_notes.html (last visited Sept. 24, 2021).

31. *Id.*

32. Ann P. Smith, *Nucleic Acids to Amino Acids: DNA Specifies Protein*, SCITABLE, https://www.nature.com/scitable/topicpage/nucleic-acids-to-amino-acids-dna-specifies-935/ (last visited Apr. 12, 2021).

33. DOUDNA & STERNBERG, *supra* note 28, at 11.

34. SAURABH BHATIA & DIVAKAR GOLI, INTRODUCTION TO PHARMACEUTICAL BIOTECHNOLOGY 21 (IOP Publ'g Ltd. Eds., vol. 1, 2018).

35. *Herbert W. Boyer and Stanley N. Cohen*, SCI. HIST. MUSEUM, https://www.sciencehistory.org/historical-profile/herbert-w-boyer-and-stanley-n-cohen (last visited Sept. 24, 2021); *Plasmid/Plasmids*, SCITABLE, https://www.nature.com/scitable/definition/plasmid-plasmids-28/#:~:text=A%20plasmid%20is%20a%20small,advantages%2C%20such%20as%20antibiotic%20resistance (last visited Mar. 22, 2021) (clarifying that plasmids are short circular sequences of DNA that bacteria pass on to different bacteria).

36. SCI. HIST. MUSEUM, *supra* note 35.

could now move genes from one species to another, and mass production of human proteins in bacteria began.[37] The most notable result of this tinkering was the production of human insulin in bacteria, becoming the first biotechnological product available on the market.[38]

B. The Arrival of CRISPR

In 1987, fifteen years after the start of the biotechnology revolution, Japanese scientists discovered a strange set of short repeating genetic sequences in the bacteria *E. coli*.[39] These sequences were palindromic, meaning that these read the same forward as they do backward.[40] For example, GCACG is a palindromic DNA sequence, in the same way as the words "dad" or "racecar" are palindromic. These short palindromic sequences were also repeatedly interspaced by other genetic sequences, and the pattern repeated itself many times.[41] The scientists assumed the sequences were important, but their function was unknown.[42] These sequences were given the long but descriptive name CRISPR, for Clustered Regularly Interspaced Short Palindromic Repeats.[43] Another group noted a similarity between genes of different organisms near CRISPR.[44] Although their function was also unknown, they were aptly called *C*RISPR-*as*sociated genes, or *Cas* for short.[45] The spacers within CRISPR matched sequences of different viruses.[46] This discovery led to an educated guess that CRISPR was an adaptive bacterial immune system.[47]

Some years later, the Cas protein was found to incorporate viral DNA into the CRISPR sequences.[48] In a future infection with the same virus, the CRISPR-Cas system can recognize the viral DNA and

37. *Id.*
38. *Id.*
39. Yoshizumi Ishino, Mart Krupovic & Patrick Forterrea, *History of CRISPR-Cas from Encounter with a Mysterious Repeated Sequence to Genome Editing Technology*, 200 J. BACTERIOLOGY, Apr. 2018, at 1.
40. *Id.* at 2.
41. *Id.* at 3.
42. *Id.* at 1.
43. *Id.* at 3–4.
44. *Id.* at 5.
45. *Id.*
46. *Id.* at 2.
47. *Id.* at 6.
48. *See generally* Samuel H. Sternberg, Hagen Richter, Emmanuelle Charpentier & Udi Qimron, *Adaptation in CRISPR-Cas Systems*, 61 MOLECULAR CELL 797 (2016) (explaining the current advancements and methods developed to study the process of viral DNA incorporation into CRISPR sequences).

inactivates it by cutting it, effectively halting an infection.[49] Because CRISPR cuts at specific regions in the DNA, scientists studied it with hopes of converting it into a molecular biology tool. In 2012, a seminal project by Dr. Doudna showed CRISPR could be engineered to make targeted edits in DNA with unparalleled ease and accuracy.[50]

C. How Is CRISPR Faster, Cheaper, and More Powerful?

The advantages of CRISPR over previous technologies are plentiful, but they can be boiled down to four factors: it is (1) simpler, (2) faster, (3) cheaper, and (4) more powerful.

Unlike its predecessors, CRISPR does not require time-consuming bioengineering to generate the functional proteins that cut DNA.[51] CRISPR merely requires two DNA sequences: (1) a sequence that codes for the Cas protein (the DNA-cutting scissors); and (2) a sequence containing the target that guides the DNA scissors to the site of interest in the genome, also known as the guide RNA.[52] Once these sequences are inside a target cell, its biological machinery produces the protein scissors, and the guide sequence is transcribed into RNA, ready to locate the target sequence in the genome.[53] Because all of the functional components are synthesized and self-assembled inside the cell, it is as if scientists were outsourcing the most laborious aspects of gene editing to the cell.[54]

CRISPR is easier to use but just as important are its speed and affordability, allowing scientists to design a customized system in a matter of weeks or less for very little money.[55] This quick and cheap

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49. Ishino et al., *supra* note 39, at 7.

50. Martin Jinek, Krzysztof Chylinski, Ines Fonfara, Michael Hauer, Jennifer A. Doudna & Emmanuelle Charpentier, *A Programmable Dual-RNA–Guided DNA Endonuclease in Adaptive Bacterial Immunity*, 337 SCI. 816–821 (2012).

51. Rajat M. Gupta & Kiran Musunuru, *Expanding the Genetic Editing Tool Kit: ZFNs, TALENs, and CRISPR-Cas9*, 124 J. CLINICAL INVESTIGATION 4154, 4155–56 (2014).

52. *CRISPR Guide*, ADDGENE, https://www.addgene.org/guides/crispr/ (last visited Dec. 14, 2020).

53. Gupta & Musunuru, *supra* note 51, at 4155–56.

54. For genome editing technologies, the synthetic production of proteins capable of locating specific genome sequences has been the Achilles Heel of prior technologies because predicting protein folding and structure (and thus its function) from sequence along has been very difficult. Jonathan B. Tucker & Raymond A. Zilinskas, *The Promise and Perils of Synthetic Biology*, NEW ATLANTIS 25, 30–31 (2006). With CRISPR, simple nucleic acid molecules take on the task of finding and binding to the target DNA, which dramatically enhance efficiency and lower costs. *Questions and Answers About CRISPR*, BROAD INST., https://www.broadinstitute.org/what-broad/areas-focus/project-spotlight/questions-and-answers-about-crispr (last visited Sept. 24, 2021).

55. Robert Sanders, *Simple Technology Makes CRISPR Gene Editing Cheaper*, BERKELEY NEWS (July 23, 2015), https://news.berkeley.edu/2015/07/23/simple-technology-makes-crispr-

customization was the original goal hoped for restriction enzymes, zinc finger nucleases (ZFNs), and transcription activator-like effector nucleases (TALENs), the gene-editing technologies used before CRISPR.[56] But these failed to meet expectations as they required a high degree of expertise and were too arduous and time-consuming to produce.[57] With CRISPR, a scientist can simply place an order for a customized genetic sequence that targets their site of interest and splice it into commercially available plasmids, which can be achieved in about a week. In comparison, the process of creating and isolating ZFNs or TALENs takes months of trial and error with expensive reagents, adding up to hundreds and often thousands of dollars.[58]

D. What Are Current and Future Applications of CRISPR?

One of the most remarkable features of CRISPR is its widespread applicability, powering projects that impact human health and disease, biofuels, pest control, farming, and many others.[59] For human health, monogenic conditions[60] will most likely be the first to be tackled by CRISPR, as these will be the easier ones to fix. For example, two patients, one suffering from sickle cell anemia and another from thalassemia, were effectively cured by CRISPR in a recent clinical trial.[61] Other monogenic diseases expected to be cured by CRISPR include cystic fibrosis, blindness, Huntington's disease, and muscular dystrophy.[62] For decades, these diseases' genetic culprits have been

gene-editing-cheaper/; Kevin Mayer, *CRISPR—Fast, Easy . . . and Increasingly Accurate*, GEN NEWS (May 1, 2014), https://www.genengnews.com/insights/crispr-fast-easy-and-increasingly-accurate/.

56. Gupta & Musunuru, *supra* note 51, at 4155–56.

57. *Id.*; Mayer, *supra* note 55.

58. Jeffrey M. Perkel, *Genome Editing with CRISPR, TALENs and ZFNs*, BIOCOMPARE (Aug. 27, 2013), https://www.biocompare.com/Editorial-Articles/144186-Genome-Editing-with-CRISPRs-TALENs-and-ZFNs/.

59. Sara Reardon, *CRISPR Gene-Editing Creates Wave of Exotic Model Organisms*, 568 NATURE, 441–42 (2019) (explaining how CRISPR's wide applicability is allowing scientists to modify all sorts of different organisms, previously not possible); Meenakshi Prabhune, *CRISPR Applications: Agriculture, Medicine, Bioenergy, & the Future*, SYNTHEGO (May 8, 2019), https://www.synthego.com/blog/crispr-applications; Meenakshi Prabhune, *CRISPR: A Solution to the Global Energy Crisis?*, SYNTHEGO (June 19, 2019), https://www.synthego.com/blog/crispr-bioenergy.

60. Monogenic diseases are those caused by an error in a single gene. Benjamin A. Raby, *Inheritance Patterns of Monogenic Disorders (Mendelian and non-Mendelian)*, UPTODATE, https://www.uptodate.com/contents/inheritance-patterns-of-monogenic-disorders-mendelian-and-non-mendelian (last updated Dec. 29, 2020).

61. Le Page, *supra* note 3.

62. Clara Rodríguez Fernández, *7 Diseases CRISPR Technology Could Cure*, LABIOTECH, (July 23, 2019), https://www.labiotech.eu/crispr/crispr-technology-cure-disease/.

known, but there had been no effective means to fix the faulty genes.[63] Thus, traditional treatments only slow progression by mitigating the damaged gene's effects, but the underlying defect always remained.[64] Because the defective genes are now fixable, CRISPR would effectively cure these diseases. Other more complicated genetic disorders, like cancer, are also showing very promising clinical trials.[65] CRISPR is helping train a cancer patient's immune, aiding the body's innate ability to identify and destroy harmful cancer cells.[66]

The changing climate and increasingly limited resources are also making CRISPR a vital tool in the agriculture industry.[67] Although genetic engineering has been around for decades, CRISPR's increased power is drastically changing the pace of progress. For essential crops like rice, CRISPR is allowing the alteration of multiple genes simultaneously.[68] As a result, new rice strains produce a higher yield and are more disease resistant despite negative environmental factors like reduced rain.[69] Some species of plants are expected to be saved from extinction by CRISPR.[70] For example, the banana plant is essentially a clone that a single pathogen can wipe out, something that already occurred a few decades ago with another species of banana.[71] With CRISPR, new genetic insertions are being tested to make the plant more vigorous, a process that could even be made on-demand as new viruses target the fruit.[72] Similarly, the cacao plant is having some of its genes turned off through CRISPR to increase its disease and climate change resistance.[73] With the changing climate and increasingly scarce resources, CRISPR and its progeny of derivative technologies

63. Odatha W. Kotagama, Chanika D. Jayasinghe, & Thelma Abeysinghe, *Era of Genomic Medicine: A Narrative Review on CRISPR Technology as a Potential Therapeutic Tool for Human Diseases*, 2019 BioMed Rsch. Int'l, at 1, 3–7 (providing examples of various monogenic diseases being targeted by CRISPR).

64. *Id.* at 3.

65. Jennifer Couzin-Frankel, *Cutting-Edge CRISPR Gene Editing Appears Safe in Three Cancer Patients*, Sci. (Feb. 6, 2020), https://www.sciencemag.org/news/2020/02/cutting-edge-crispr-gene-editing-appears-safe-three-cancer-patients; Shenghui He, *The First Human Trial of CRISPR-Based Cell Therapy Clears Safety Concerns as New Treatment for Late-Stage Lung Cancer*, Signal Transduction & Targeted Therapy (Aug. 25, 2020), https://www.nature.com/articles/s41392-020-00283-8.

66. Couzin-Frankel, *supra* note 65.

67. Amanda Mah, *CRISPR in Agriculture: An Era of Food Evolution*, SYNTHEGO (Mar. 28, 2019), https://www.synthego.com/blog/crispr-agriculture-foods.

68. *Id.*

69. *Id.*

70. *Id.*; Maxmen, *supra* note 9.

71. Maxmen, *supra* note 9.

72. *Id.*

73. Mah, *supra* note 67.

will allow humans to grow food with better yield and create new food varieties while using less land, water, toxic pesticides, and fertilizers.[74]

CRISPR is also revolutionizing the field of biofuels.[75] Biofuels are liquefied fuels generated from biological processes.[76] Because these are renewable sources and their use can be carbon neutral and even carbon negative, biofuels are booming as alternate sources of energy.[77] CRISPR is optimizing the algae, fungi, and bacteria responsible for making these biofuels.[78] Many of the organisms that produce these biofuels, like the well-known *S. cerevisiae*, are sensitive to the biofuel they generate.[79] Thus, as they make more biofuel, they become sick, and the process's efficacy drops dramatically.[80] Increasing the tolerance of these substances involves changes in highly complicated metabolic pathways. Previous gene-editing technologies made it too tedious to perform quick and sequential genetic changes to these organisms to study these complex pathways.[81] But CRISPR accelerates this process, making these organisms heat resistant and even augmenting the substrates that can be converted into biofuels, increasing the biofuel yield and decreasing production costs.[82]

III. A CAUSE FOR CONCERN: CRISPR'S REGULATIONS ARE NOT KEEPING PACE

CRISPR is subject to different regulatory frameworks that depend on the origin of the research funds, the organization doing the experiments, and the purpose of the research. This section explains how CRISPR is currently regulated and explores the applications that are causing concerns in various communities throughout the world. Additionally, this section provides some insight into the current regulations that may be having a disparate impact on researchers and communities of color.

74. *Id.*

75. Prabhune, *supra* note 59 (June 19, 2019).

76. Muhammad Rizwan Javed, Muhammad Noman, Muhammad Shahid, Temoor Ahmed, Mohsin Khurshid, Muhammad Hamid Rashid, Muhammad Ismail, Maria Sadaf & Fahad Khan, *Current Situation of Biofuel Production and Its Enhancement by CRISPR/Cas9-Mediated Genome Engineering of Microbial Cells*, MICROBIOLOGICAL RSCH. 2019, at 2.

77. *Id.* at 3.

78. *Id.* at 6–9.

79. *Id.* at 6, 8.

80. *Id.*

81. *Id.* at 5.

82. *Id.* at 8–9.

A. CRISPR Regulatory Frameworks, Gaps, and Causes for Concern

1. Select Agents Program and Dual-Use Research of Concern

Most regulations do not touch on CRISPR directly, rather, these attach to the organism being used, the ultimate purpose of the project, and the researchers involved. For example, in the United States, research with dangerous biological agents is monitored under the Select Agents Program.[83] The program emerged after a former Aryan Nation member obtained the organism responsible for the bubonic plague through mail order.[84] This resulted in Congress enacting the *Antiterrorism and Effective Death Penalty Act of 1996*, which required the Department of Human and Health Services (HHS) and the United States Department of Agriculture (USDA) to publish regulations on the possession, use, and transfer of select agents.[85] After the fatal anthrax attacks on Congress in 2001, the *PATRIOT ACT* and the *Public Health Security and Bioterrorism Preparedness and Response Act of 2002* strengthened the oversight of the program and created a Security Risk Assessment (SRA) for those who handle agents on the Select Agents Program.[86] The list includes more than eighty pathogens and toxins, and some notable examples of this list include the *Ebola* virus that has caused numerous epidemics in recent years; *B. anthracis*, which caused the anthrax attack in Congress in 2001; *Y. pestis*, the bacteria responsible for the black plague of the 1800s; and many others.[87] Any experimentation with these organisms, including genetic experiments using CRISPR, would automatically fall under the regulations of this program.

The tasks of the Select Agents Program include maintaining a national database of laboratories and scientists engaged in research with select agents; periodically inspecting the institutions that possess, use, or transfer these agents; ensuring that any individual involved with research with select agents has undergone an SRA by the Criminal Justice Information Service, a division of the Federal Bureau of Investigation; creating guidance documents for institutions that handle se-

83. *Fed. Select Agent Program*, FED. SELECT AGENT PROGRAM, https://www.selectagents.gov (last visited Mar. 14, 2021).

84. *History*, FED. SELECT AGENT PROGRAM, https://www.selectagents.gov/overview/history.htm (last updated Sept. 10, 2020).

85. *Id.*; Antiterrorism and Effective Death Penalty Act of 1996, Pub. L. No. 104-132, § 511, 110 Stat. 1214, 1284–85 (1996).

86. FED. SELECT AGENT PROGRAM, *supra* note 84.

87. FED. SELECT AGENT PROGRAM, *supra* note 15.

lect agents; investigating incidents of non-compliance, and much more.[88] The program also creates a yearly report summarizing information about the number of institutions handling the registered entities, the number of inspections conducted, reported theft and losses, and many other important aspects of the control of these agents.[89]

However, potentially dangerous research involving CRISPR with agents that are not on the Select Agents Program list may still be regulated under another regulatory net: the Dual Use Research of Concern (DURC). The birth of formal DURC policies could also be traced to the 2001 attacks on Congress with anthrax,[90] but the United States Government was galvanized to enact formal policies after 2011, when various researchers announced that they made dangerous modifications of the H5N1 virus using NIH funding, and these experiments did not undergo a safety review.[91] Seeing the potential for harm if these modifications were applied to human pathogens, the United States enacted DURC measures to mitigate unreasonably dangerous research projects from commencing. The United States Government defined DURC broadly as:

> [L]ife sciences research that, based on current understanding, can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.?[92]

Experiments that could potentially result in any of the following would fall under DURC rules and policies:

a) Enhanc[ing] the harmful consequences of the agent or toxin[;]
b) Disrupt[ing] immunity or the effectiveness of an immunization against the agent or toxin without clinical and/or agricultural justification[;]
c) Confer[ing] to the agent or toxin resistance to clinically and/or agriculturally useful prophylactic or therapeutic interventions

88. FED. SELECT AGENT PROGRAM, *supra* note 83.

89. *2019 Annual Report of the Federal Select Agent Program*, FED. SELECT AGENT PROGRAM https://www.selectagents.gov/resources/publications/annualreport/2019.htm (last updated Sept. 10, 2020).

90. ELISA D. HARRIS, GOVERNANCE OF DUAL-USE TECHNOLOGIES: THEORY AND PRACTICE 89–90 (2016), https://www.amacad.org/publication/governance-dual-use-technologies-theory-and-practice/section/5.

91. *Id.*

92. *Dual Use Research of Concern*, NAT'L INSTS. HEALTH, https://osp.od.nih.gov/biotechnology/dual-use-research-of-concern/ (last visited Mar. 14, 2021).

> against that agent or toxin or facilitate[ing] their ability to evade detection methodologies[;]
> d) Increas[ing] the stability, transmissibility, or the ability to disseminate the agent or toxin[;]
> e) Alter[ing] the host range or tropism of the agent or toxin[;]
> f) Enhanc[ing] the susceptibility of a host population to the agent or toxin[;]
> g) Generat[ing] or reconstitute[ing] an eradicated or extinct agent or toxin [in the select agents list.][93]

A project that uses an agent from the Select Agents program could also fall under DURC and thus be regulated by both programs.

A look into a hypothetical researcher about to embark on projects that fall under DURC and the Select Agents Program will provide clarity on the regulations. Before commencing a CRISPR project under DURC to modify a pathogen in the Select Agents Program, the researcher would have to go through a background check by the Federal Bureau of Investigation as part of the SRA.[94] The SRA will uncover "restricted persons" and not allow them to handle any of the Select Agents. Under Title 18 of the USC 175b, a restricted person is an individual that:

> Is under indictment for a crime punishable by imprisonment for a term exceeding 1 year;
> Has been convicted in any court of a crime punishable by imprisonment for a term exceeding 1 year;
> Is a fugitive from justice;
> Is an unlawful user of any controlled substance (as defined in section 102 of the Controlled Substances Act (21 USC 802));
> Is an alien illegally or unlawfully in the United States;
> Has been adjudicated as a mental defective or has been committed to any mental institution;
> Is an alien (other than an alien lawfully admitted for permanent residence) who is a national of a country as to which the Secretary of State, pursuant to section 6(j) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)), section 620A of chapter 1 of part M of the Foreign Assistance Act of 1961 (22 USC 2371), or section 40(d) of chapter 3 of the Arms Export Control Act (22 USC 2780(d)), has made a determination (that remains in effect) that

93. *United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern*, U.S. GOV'T (Sept. 24, 2014), at 7–8, https://www.phe.gov/s3/dualuse/documents/durc-policy.pdf.

94. *FAQ: Security Risk Assessment*, FED. SELECT AGENTS PROGRAM, https://www.selectagents.gov/compliance/faq/risk.htm (last visited Mar. 14, 2021).

> such country has repeatedly provided support for acts of international terrorism; or
>
> Has been discharged from the Armed Services of the United States under dishonorable conditions.[95]

If the researcher can clear the SRA screen, they would still have to renew their application every three years to continue working with the dangerous agents.[96]

These restrictions are reasonable because they relate to the character of an individual and the government has a strong interest in not permitting unfit persons working with such dangerous pathogens. However, investigations on the effectiveness of the SRA are worth mentioning as they could be having a disparate impact on researchers of color. A 2009 report showed that just under 70% of all denials after an SRA screening were due to a previous felony conviction.[97] About 50% of the cases in one of the main criminal history databases used for SRA did not contain information about the final disposition of an arrest, potentially allowing wrongful arrests to exclude valuable researchers.[98] Even though an applicant can appeal a denial, these appear only to involve correction of factual errors and do not reassess or allow for secondary considerations explaining why the applicant should be approved.[99] Additionally, foreign nationals may be subjected to a more in-depth background check because there may be more difficulty in acquiring criminal and other information from the applicant.[100] However, concerns have been raised as to the accuracy of the information compiled from foreign nationals because they are prone to misidentification through improper name transliterations, or the same name could be shared by multiple individuals.[101] Together, these policies may be having a disparate impact on researchers of color in fields that are already heavily non-diverse.[102]

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95. 18 U.S.C. § 175(b) (2021).

96. FED. SELECT AGENTS PROGRAM, *supra* note 94.

97. NAT'L RSCH. COUNCIL, RESPONSIBLE RESEARCH WITH BIOLOGICAL SELECT AGENTS 48 (2009), https://www.nap.edu/catalog/12774/responsible-research-with-biological-select-agents-and-toxins.

98. *Id.* at 51.

99. *Id.* at 11.

100. *Id.* at 51.

101. *Id.*

102. Richard Fry, Brian Kennedy & Cary Funk, *STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity*, PEW RSCH. CNTR. (Apr. 1, 2021), https://www.pewresearch.org/science/2021/04/01/stem-jobs-see-uneven-progress-in-increasing-gender-racial-and-ethnic-diversity/.

Even if a researcher clears the SRA, they still cannot pursue a CRISPR project for the sole purpose of increasing the virulence of a coronavirus, for example. This would violate DURC policies and the laws against biological weapons.[103] However, as its name suggests, DURC projects could still have peaceful goals, but the information or results it generates may be used for nefarious purposes. For example, CRISPR-mediated research in *Ebola* to develop new treatments may also shed light on the molecular mechanisms that make the virus more powerful. A nefarious researcher could use this information as a blueprint to modify *Ebola* to increase its virulence and cause an outbreak. In cases like these, the principal investigator of the laboratory has to identify the potential dual use of the research and seek an evaluation from a board within the publicly funded institution that addresses these issues.[104] The board determines if the study's benevolent goal justifies the potential risks associated with conducting the project.[105] If allowed, the laboratory would still have to comply with institutional regulations and a risk mitigation plan that ensures the DURC is being continuously monitored and the policies assessed based on research developments.[106]

This regulatory scheme has caused mixed reactions. A reasonable argument in favor of these regulations is that it restricts research projects with risks that far outweigh the potential benefits. On the other hand, many scientists believe that the regulatory burdens it casts on their research do not justify continuing these projects. Many scientists prefer to destroy the pathogens and research another topic instead of navigating through the complex regulatory frameworks.[107] A 2019 report of the CDC Select Agents Program shows a steady reduction in laboratories certified to do this type of research.[108] A factor that may be causing this reduction is that research grants do not necessarily provide additional funding to pay the expenses of maintaining the heightened security required to comply with DURC policies and

103. U.S. Gov't *supra* note 93, at 6–9.

104. Tools for the Identification, Assessment, Management, and Responsible Communication of Dual Use Research of Concern, Nat'l Insts. Health (Sept. 2014), at 15–18, https://osp.od.nih.gov/wp-content/uploads/Companion_Guide_to_United_States_Government_DURC_Policies.pdf.

105. *Id.* at 22–23.

106. *Id.* at 36–38.

107. Nat'l Rsch. Council, *supra* note 97, at 31.

108. Fed. Select Agent Program, 2019 Annual Report of the Federal Select Agent Program 12 (2019), https://www.selectagents.gov/resources/publications/docs/FSAP_Annual_Report_2019_508.pdf.

the Select Agents Program.[109] The amount of money needed to comply with these regulations varies, but it is significant, ranging from $100,000 to $700,000 annually, with startup costs of about $1-4 million.[110] The total costs to comply with these regulations in 2005 were $16 million, with each institution bearing $15,000 to $170,000 annually.[111] Some institutions have grants to maintain these facilities, but the costs are often passed on to the scientists' research grants.[112] As a result, some scientists suggest that we should be wary about building too many of these laboratories to work with select agents, as it could be economically unsustainable and risk an outbreak in the surrounding communities.[113]

Another criticism of DURC policy is that it does not encompass privately funded research at a private institution.[114] Although the government funds much of the biomedical research in the United States, private companies have been shown to outspend the government in recent years.[115] This loophole in privately funded institutions significantly limits the government's efforts to regulate the dual-use research made more feasible through CRISPR.

Policymakers also raise serious concerns about the Select Agents Program and DURC, suggesting that these are ill-suited for the new challenges created by CRISPR.[116] For example, in 2014 alone, eighty-four CDC employees were exposed to live anthrax because it was accidentally shipped to other laboratories.[117] Another incident involved vials of the smallpox virus that were forgotten and then discovered at the NIH.[118] Because of their virulence and the dangerous nature of these pathogens, both are part of the Select Agents Program list of restricted pathogens.[119] These incidents led to a report by the Gov-

109. NAT'L RSCH. COUNCIL, supra note 97, at 132.
110. *Id.* at 131.
111. *Id.*
112. *Id.* at 132.
113. Elizabeth Eaves, *The Risks of Building Too Many Bio Labs*, NEW YORKER (Mar. 18, 2020) https://www.newyorker.com/science/elements/the-risks-of-building-too-many-bio-labs.
114. NAT'L ACADS. SCIS. ENG'G MED., DUAL USE RESEARCH OF CONCERN IN THE LIFE SCIENCES: CURRENT ISSUES AND CONTROVERSIES 4–5, 50 (2017), https://www.ncbi.nlm.nih.gov/books/NBK458491/pdf/Bookshelf_NBK458491.pdf.
115. COMM. ON ALT. FUNDING STRATEGIES FOR DOD'S PEER REVIEWED MEDICAL RESEARCH PROGRAMS, STRATEGIES TO LEVERAGE RESEARCH FUNDING 37 (2004).
116. Kelly Servick, *U.S. Oversight of Risky Pathogen Research Has Flaws, Report Finds*, SCI. (Oct. 31, 2017), https://www.sciencemag.org/news/2017/10/us-oversight-risky-pathogen-research-has-flaws-report-finds.
117. *Id.*
118. *Id.*
119. FED. SELECT AGENT PROGRAM, *supra* note 15.

ernment Accountability Office, which found that the Select Agents Program is understaffed, improperly trained, and not independent enough to be immune to significant conflicts of interest in the laboratories it is regulating.[120] Additionally, the policies fail to control activities based on their risk, so more dangerous pathogens are handled with the same protocols as those that pose a minor threat.[121] However, these reports have not led to significant changes in the regulatory frameworks, and, as CRISPR becomes more accessible, the risks will increase accordingly.

2. CRISPR's Regulations for the General Public

CRISPR is also becoming more accessible through CRISPR kits available for purchase online.[122] CRISPR kits are somewhat reminiscent of the chemistry sets that became very popular a few decades ago.[123] These kits provide anyone interested with access to CRISPR so they can tinker and learn first-hand about molecular biology and gene editing. There are numerous cheerful accounts from teachers and other educators about the positive impact this is having on their students.[124] The ability to learn about genetics through experimentation used to be limited to scientists or students at later stages of their training. This new paradigm is likely inspiring new generations of scientists and other future experts in the field.

However, these same CRISPR kits are being used heavily by biohackers, a group that sees the human body as a template to hack through robotics, biologics, or any number of implants.[125] One of the

120. U.S. GOV'T ACCOUNTABILITY OFF., HIGH-CONTAINMENT LABORATORIES, COORDINATED ACTIONS NEEDED TO ENHANCE THE SELECT AGENT PROGRAM'S OVERSIGHT OF HAZARDOUS PATHOGENS 14–16, 19–21, 27–31 (2017), https://gao.gov/assets/690/687868.pdf.

121. *Id.* at 22, 24–27.

122. *DIY Bacterial Gene Engineering CRISPR Kit*, ODIN https://www.the-odin.com/diy-crispr-kit/ last visited Mar. 15, 2021); Emily Baumgaertner, *As D.I.Y. Gene Editing Gains Popularity, 'Someone Is Going to Get Hurt'*, N.Y. TIMES (May 14, 2018), https://www.nytimes.com/2018/05/14/science/biohackers-gene-editing-virus.html.

123. *See generally* John C. Halter, *Vintage Chemistry Sets & Science Kits for Kids from the '60s & '70s*, CLICK AMERICANA https://clickamericana.com/toys-and-games/vintage-science-kits-for-kids-from-the-60s-70s.

124. *Teaching CRISPR in the Classroom: A New Tool for Teachers*, DIV. MOLECULAR & CELLULAR BIOSCIENCES (June 17, 2019), https://mcbblog.nsfbio.com/2019/06/07/teaching-crispr-in-the-classroom-a-new-tool-for-teachers/; Lina Dahlberg & Anna M. Groat Carmona, *CRISPR-Cas Technology in and out of the Classroom*, 1 CRISPR J. 107, 108 (2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6636874/; Christiana Care, *Bringing Gene Editing into High Schools*, EUREKALERT! (Apr. 1, 2021), https://www.eurekalert.org/news-releases/908518.

125. Sigal Samuel, *How Biohackers Are Trying to Upgrade Their Brains, Their Bodies—and Human Nature*, VOX, https://www.vox.com/future-perfect/2019/6/25/18682583/biohacking-transhumanism-human-augmentation-genetic-engineering-crispr (last updated Nov. 15, 2019).

most notable members of the biohacker community is Dr. Josiah Zayner, founder and Chief Executive Officer of The ODIN.[126] Dr. Zayner has been public about the experiments he conducts on his own body with his company's CRISPR kits. The most notable of these experiments was in 2017 when he self-administered a CRISPR injection to turn off the myostatin gene, which would theoretically induce muscle growth in his body.[127] With the powerful gene-editing technology and a crude understanding of the risks, many individuals began injecting themselves with CRISPR after witnessing Dr. Zayner's live experiment, often asking for instructions from the company that manufactures the kits.[128]

The CRISPR injections created shockwaves in the scientific community. Still, Dr. Zayner only underwent an investigation for "practicing medicine without a license," which led to no consequences other than free publicity.[129] California responded by enacting legislation requiring these CRISPR kits to have warning labels stating that the product is not for human use.[130] On the other hand, the FDA responded by clarifying that genetic therapies used on humans or sold as intended for human use without FDA approval are illegal.[131] Courts have delved into the FDA's ability to determine a product's intended use in other non-CRISPR cases and concluded that the FDA could consider any information, including behavior and comments made by company executives that suggest a product's intended use.[132] According to this, the FDA would have the authority to take Dr. Zayner's

126. *About Us*, ODIN, https://www.the-odin.com/about-us/ (last visited Mar. 15, 2021).

127. Leslie D'Monte, *Josiah Zayner: The Man Who Hacked His Own DNA*, MINT, https://www.livemint.com/Leisure/FVPrvuBYMtyzHHNpdG2QgN/Josiah-Zayner-The-man-who-hacked-his-own-DNA.html/ (last updated Jan. 5, 2018).

128. Sarah Zhang, *A Biohacker Regrets Publicly Injecting Himself With CRISPR*, ATL., (Feb. 20, 2018) https://www.theatlantic.com/science/archive/2018/02/biohacking-stunts-crispr/553511

129. Kristen V. Brown, *Biohacker Investigation Is Dropped by California Medical Board*, BLOOMBERG (Oct. 15, 2019), https://www.bloomberg.com/news/articles/2019-10-15/biohacker-investigation-is-dropped-by-california-medical-board.

130. Ling Ling Chang, *First CRISPR Law: Selling "Gene-Therapy Kits" Will Be Illegal in California Unless They Carry a Warning*, TECH. NETWORKS (Aug. 16, 2019), https://www.technologynetworks.com/genomics/news/first-crispr-law-selling-gene-therapy-kits-will-be-illegal-in-california-unless-they-carry-a-322889.

131. *Information About Self-Administration of Gene Therapy*, U.S. FOOD & DRUG ADMIN. (Nov. 21, 2017), https://www.fda.gov/vaccines-blood-biologics/cellular-gene-therapy-products/information-about-self-administration-gene-therapy; Sigal Samuel, *Is it Time to Regulate Biohacking? California Thinks So.*, VOX (Aug. 13, 2019), https://www.vox.com/future-perfect/2019/8/13/20802059/california-crispr-biohacking-illegal-josiah-zayner.

132. Christi J. Guerrini, G. Evan Spencer & Patricia J. Zettler, *Legal, Ethical, and Policy Implications of New Gene Editing Technologies: DIY CRISPR*, 97 N.C.L. REV. 1399, 1429–32, n160 (2019) (citing a decision by the Second Circuit and a confirmation by the FDA arguing that the FDA can consider "any relevant source" to determine evidence of a product's intended use).

public self-experimentation as evidence of its intended use for humans, which is illegal if not approved by the agency. Nonetheless, the FDA did not investigate Dr. Zayner after his public self-experimentation. More recently, Dr. Zayner made additional public comments about his plans to inject himself with a self-made vaccine for COVID-19, arguing that it is a perfect opportunity for biohackers to experiment.[133] Without any penalization of this behavior, it will continue, and eventually, someone will get hurt.

The FDA's lack of oversight on the Biohacking movement is not limited to human DNA editing. Another example is Mr. Ishee, who has been editing dog DNA for years with hopes of eliminating faulty genes in various dog breeds.[134] Even though Mr. Ishee has no scientific or veterinarian training, he conducts DNA editing experiments on multiple types of dogs in a homemade laboratory, which has led to canine abortions, and there was no indication that he was consulting veterinarians or other trained personnel to assess animal harm.[135] After being made aware of Mr. Ishee's experiments, the FDA merely advised Mr. Ishee that he was forbidden from selling gene-edited dogs.[136] No further investigations were uncovered.

Some scholars have noted that the extent to which the FDA can regulate self-administered CRISPR treatments or those used on animals is not entirely clear.[137] However, if an individual bought a CRISPR kit to do the experiments, it would fall under the agency's regulatory authority.[138] Nonetheless, the lack of significant efforts to regulate amateur human or animal gene-editing suggests that the FDA does not consider it a problem worth addressing. Other agencies, like the NIH, have guidelines for ethical and responsible gene-editing research. However, these apply to research done with government funding; since most biohackers are self-funding their projects, it

133. Kristen V. Brown, *One Biohacker's Improbable Bid to Make a DIY Covid-19 Vaccine*, BLOOMBERG (June 25, 2020), https://www.bloomberg.com/news/articles/2020-06-25/one-biohacker-s-improbable-bid-to-make-a-diy-covid-19-vaccine.

134. Andrew Rosenblum, *A Biohacker's Plan to Upgrade Dalmatians Ends Up in the Doghouse*, MIT TECH. R. (Feb. 1, 2017), https://www.technologyreview.com/2017/02/01/243683/a-biohackers-plan-to-upgrade-dalmatians-ends-up-in-the-doghouse/.

135. Alissa Greenberg, *Biohacking Is a Bitch*, NEOLIFE (Sept. 6, 2018), https://medium.com/neodotlife/david-ishee-crispr-dogs-dalmatians-d24a48d5d874.

136. Rosenblum, *supra* note 134.

137. Guerrini et al., *supra* note 132, at 1432–34.

138. *Id.*; 21 U.S.C. § 331 (2012).

is unlikely that any of these measures and regulations apply to them.[139]

Since there are no standard federal measures that restrict DNA editing if not funded by the government, some states have enacted legislation to mitigate potential harm caused by homemade CRISPR kits and other similar technologies. California now requires the CRISPR kit warning described above.[140] Maryland also enacted a law requiring research on human subjects conducted in the state to comply with federal regulations and extends the same requirements to *any* research involving human subjects, covering those that would be exempted under federal statute.[141] On the other hand, New York requires a permit to conduct genetic experiments, and these have to comply with NIH biomedical research guidelines before receiving the permit.[142] Nonetheless, no court decisions or state actions were uncovered enforcing these laws. It remains to be seen if these measures are strict enough to deter misuse and promote public health as CRISPR technology continues to advance.

3. CRISPR and Bioterrorism Regulations

The scenarios described thus far have mainly focused on the dangerous but unintentional effects of dual-use research or with dangerous pathogens. However, there is a strict stance against using tools like CRISPR for anything that involves biological weapons because of the *Biological Weapons Anti-Terrorism Act of 1989*.[143] Codified in 18 USC § 175, this act prevents knowingly:

> Develop[ing], produc[ing], stockpil[ing], transfer[ing], acquir[ing], retain[ing], or possess[ing], any biological agent, toxin, or delivery system for use as a weapon, or knowingly assist[ing], a foreign state or any organization to do so, or attempts, threatens, or conspires to do the same, shall be fined under this title or imprisoned for life or any term of years, or both. There is extraterritorial Federal jurisdic-

139. Nat'l Insts. Health, NIH Guidelines For Research Involving Recombinant Or Synthetic Nucleic Acid Molecules (NIH Guidelines) 10 (2019), https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf; Guerrini et al., *supra* note 132, at 1436.

140. Chang, *supra* note 130.

141. Md. Code Ann., Health-Gen § 13–2002 (LexisNexis 2021).

142. N.Y. PUB. HEALTH LAW § 3222 (McKinney 2018); Guerrini et al., *supra* note 132, at 1437 n.180.

143. Biological Weapons Anti-Terrorism Act of 1989, Pub. L. No. 101-298, 104 Stat. 201 (1990).

> tion over an offense under this section committed by or against a national of the United States.[144]

Because the statute's language includes biological agents, toxins, and delivery systems, it most likely covers most of CRISPR's potential nefarious uses. Another provision prohibits possessing large quantities of these agents if "not reasonably justified by a prophylactic, protective, bona fide research, or other peaceful purpose," and fines for a violation can include fines, imprisonment for no more than 10 years, or both.[145] Another provision imposes a prison sentence of no less than twenty-five years and a fine of up to $2 million if a person violates the law with the smallpox virus.[146] These harsh sentences for smallpox suggest a thorough understanding of the heightened dangers of some of these pathogens. If a person is found with large quantities of a potential bioweapon, the government can choose to destroy the material after a hearing in which it establishes that the pathogen is banned by law or it is possessed in quantities that do not justify a peaceful purpose.[147]

However, many experts do not believe CRISPR is a significant threat to bioterrorism because of the inherent unpredictability in biology.[148] Even amongst highly trained scientists, there is a general problem in reproducing results in the life sciences.[149] Additionally, assuming that a group manages to create a superbug through CRISPR, maintaining the pathogen stable, viable, and then disseminating it are still significant hurdles. [150] Thus, these scientists argue, if it is still challenging to develop a workable system in a controlled laboratory with highly trained researchers for a narrow goal, then the real threat of this technology is low.[151] This group also argues that, even if a highly virulent pathogen is released, the erratic process of evolution and natural selection will weed out these traits quickly.[152] Although the arguments against CRISPR as a bioterrorism threat are valid, CRISPR is orders of magnitude ahead of its predecessors, and it

144. 18 U.S.C. § 175 (1996).
145. *Id*.
146. § 175(c).
147. 18 U.S.C. § 176(b) (1990).
148. Kathleen M. Vogel & Sonia Ben Ouagrham-Gormley, *Anticipating Emerging Biotechnology Threats, a Case Study of CRISPR*, 37 POL. & LIFE SCIS. 203, 204–13 (2018).
149. Monya Baker, *1,500 Scientists Lift Lid on Reproducibility*, NATURE (May 25, 2016), https://www.nature.com/news/1-500-scientists-lift-the-lid-on-reproducibility-1.19970.
150. Vogel & Ouagrham, *supra* note 148, at 213.
151. *Id.* at 211–13.
152. *Id.* at 213.

is constantly being perfected. Current limitations argued to be effective at undermining CRISPR's threat potential may only be relevant for a finite amount of time as the technology advances. Thus, current bioterrorism laws need to be continuously evaluated; it would be unwise to be reactive when developing more robust regulatory frameworks for CRISPR.

4. CRISPR and International Laws

Internationally, the Biological Weapons Convention (BWC) and the Chemical Weapons Convention (CWC) are some of the most important conventions in place to halt governments from developing biological and chemical weapons progression, respectively.[153] Both conventions were discussed and negotiated in the United Nations. There are currently around 183 signatories to the BWC and 193 to the CWC, and it bans every signatory from creating or researching biological and chemical agents' weaponization.[154] Because CRISPR facilitates the modification of biological agents and their production of toxic chemicals, these conventions will be critical in curtailing potential weaponization by states in the coming years.

The CWC allows parties to be investigated without warning and no right of refusal after allegations of breach, and members must cooperate or face significant sanctions and other restrictions.[155] Although the CWC is important to mitigate the weaponization of chemical agents, because one of CRISPR's main threats involves modifying existing pathogens, the BWC may be a more relevant tool to examine. If a party to the BWC suspects another of using CRISPR for developing, producing, or stockpiling biological weapons, the parties are encouraged to resolve the dispute among themselves and cooperate with each other to verify compliance.[156] However, unlike the CWC, there is no real enforcement requirement but the matter can be

153. *Biological Weapons Convention*, UNITED NATIONS OFF. DISARMAMENT AFFS., https://www.un.org/disarmament/biological-weapons/ (last visited Mar. 15, 2021); OPCW https://www.opcw.org/chemical-weapons-convention (last visited Dec. 25, 2021).

154. UNITED NATIONS OFF. DISARMAMENT AFFS. *supra* note 153; OPCW, *skpra* note 153.

155. *The Chemical Weapons Convention (CWC) at a Glance*, ARMSCONTROL ASS'N https://www.armscontrol.org/factsheets/cwcglance (last updated Apr. 2020); *Chemical Weapons Convention*, ORG. PROHIBITION CHEM. WEAPONS, https://www.opcw.org/chemical-weapons-convention (last visited Sept. 7, 2021).

156. *The Biological Weapons Convention (BWC) at a Glance*, ARMS CONTROL Ass'n, https://www.armscontrol.org/factsheets/bwc (last reviewed Mar. 2020).

brought to the United Nations Security Council.[157] This council has the "primary responsibility for the maintenance of international peace and security."[158] The council has the power to initiate investigations of suspected breaches, and all member states must comply with these decisions. A significant limitation of this organ of the United Nations is that each permanent member of the Security Council (China, France, Russia, the United Kingdom, and the United States) can unilaterally veto a request for an investigation of an alleged breach, dramatically hampering the overall goal of the convention.[159] This veto power has already been used controversially, albeit for investigations into chemical weapons, by Russia to prevent an investigation into Syria's dreadful sarin gas attack on innocent villagers in 2017 and previous years.[160] Unfortunately, the BWC would be subject to a very similar framework.

The signatories of the BWC also meet every five years to discuss new threats and propose solutions, but many posit that the convention has not made significant strides in its recent meetings.[161] In 2016, for the first time, the convention spent some time discussing the threats of CRISPR.[162] However, countries like France and the Netherlands argued that naturally occurring organisms was more alarming than any concerns surrounding gene-editing technologies.[163] Although an argument later justified by the emergence of the COVID-19 pandemic, the convention still missed the opportunity to lay the groundwork for potential policies to mitigate the incoming threat of CRISPR-mediated weapons.

157. *Biological Weapons Convention (BWC) Compliance Protocol*, NTI (Aug. 1, 2001), https://www.nti.org/analysis/articles/biological-weapons-convention-bwc/.

158. *United Nations Security Council*, UNITED NATIONS, https://www.un.org/securitycouncil/ (last visited Sept. 1, 2021).

159. *Voting System*, UNITED NATIONS, https://www.un.org/securitycouncil/content/voting-system (last visited Sept. 25, 2021).

160. *Russia Uses Veto to End UN Investigation of Syria Chemical Attacks*, GUARDIAN (Oct. 24, 2017), https://www.theguardian.com/world/2017/oct/24/russia-uses-veto-end-un-investigation-chemical-attacks.

161. Daniel Gerstein & James Giordano, *Rethinking the Biological and Toxin Weapons Convention?*, 15 HEALTH SEC. 638, 638, 640 (2017); Bonnie Jenkins, *The Biological Weapons Convention at a Crossroad*, BROOKINGS (Sept. 6, 2017), https://www.brookings.edu/blog/order-from-chaos/2017/09/06/the-biological-weapons-convention-at-a-crossroad/.

162. Jenifer Mackby, *Experts Debate Biological Weapons Challenges*, ARMS CONTROL ASS'N (Sept. 2018), https://www.armscontrol.org/act/2018-09/news/experts-debate-biological-weapons-challenges.

163. *Id.*

B. CRISPR's Lax Regulations Are Having a Negative Impact Around the Globe

The difficulties regulating CRISPR are a global concern, and many countries are already dealing with the consequences of poor regulatory frameworks. In China, Dr. Jiankui He was recently convicted for editing the genome of a pair of baby twins using CRISPR and will spend three years in jail as a punishment.[164] Dr. He was charged for having forged ethical review documents and having misled other medical professionals to implant gene-edited embryos on unaware human patients.[165] Dr. He did this experiment in a formal laboratory setting, which is likely to have safeguards to prevent such misuse of technology. However, CRISPR's ease of use most likely allowed the procedure to go undetected by any human research review board. The genetic edits on these babies also included their germline cells,[166] which means they will eventually develop sperm or eggs containing the mutations.[167] These mutations would then be passed down to their offspring.[168] Any health risks of these mutations will also be passed down, and it could irreversibly shape human evolution. Attempts to prevent the dissemination of these genetic modifications would include forcing these babies not to have children of their own when they are older, which raises an entire set of bioethical concerns outside the scope of this article. China has taken a strong but reactive stance against human genome editing by making changes in its Chinese Civil Code, which now covers genetic editing on human embryos.[169] Unfortunately, this predictable overreactive measure is already causing concerns because it could impede significant scientific progress.[170] Nonetheless, Russia may be considering projects that involve genetically modifying babies with CRISPR even after the Chi-

164. Dennis Normile, *Chinese Scientist Who Produced Genetically Altered Babies Sentenced to 3 Years in Jail*, SCI. (Dec. 30, 2019), https://www.sciencemag.org/news/2019/12/chinese-scientist-who-produced-genetically-altered-babies-sentenced-3-years-jail.

165. *Id.*

166. Germline cells are the reproductive cells (i.e., sperm and egg) that pass on their genetic information to offspring. *Germ Line*, NAT'L INSTS. HEALTH, https://www.genome.gov/genetics-glossary/germ-line (last visited Sept. 25, 2021).

167. Greely, supra note 17, at 113–14.

168. *Id.*

169. Lingqiao Song & Yann Joly, *After He Jianku: China's Biotechnology Regulation Reforms*, 2 MED. L. INT'L 174, 178–79 (2021), https://journals.sagepub.com/doi/pdf/10.1177/0968533221993504.

170. *Id.* at 191.

nese fiasco.[171] The question must be asked: who should determine if or when CRISPR should be used on humans? If this question is not addressed actively in a public and transparent forum, inaction will be its own decision, and the consequences on public health, ethics, and even national security will not be reversible.

Another recent incident in Canada from 2017 is worth mentioning.[172] Researchers recreated a previously extinct horsepox virus from scratch, which bears a striking similarity to the dangerous smallpox virus that affects humans.[173] The scientists were able to produce infectious particles, and they used mail-ordered DNA fragments to complete the project.[174] The researchers concluded the entire endeavor in six months, and it took around $100,000 to achieve.[175] Furthermore, these scientists were not using CRISPR, which means this project would likely be easier, faster, and cheaper to complete with CRISPR.[176] Although the horsepox virus does not harm humans its close relative, the smallpox virus, kills around 30% of those infected, and children are especially vulnerable.[177] Many of those that survive a smallpox infection are disfigured for life and may become blind.[178] Because of its high mortality rate and ease of weaponization, vials of this virus are kept in high-security laboratories only in Russia and the United States.[179] But these measures will be completely ineffective if the virus can be recreated using CRISPR. The Canadian research group did not pursue this project to develop a weapon; they hope to develop better vaccines for some of these pathogens.[180] Still, as the

171. Antonio Regalado, *Putin Could Decide for the World on CRISPR Babies*, MIT TECH. R. (Sept. 30), https://www.technologyreview.com/2019/09/30/132822/putin-could-decide-for-the-world-on-crispr-babies/ (last visited Mar. 15, 2021); Michael Le Page, *Russian Biologist Still Aims to Make CRISPR Babies Despite the Risks*, NEWSCIENTIST (Sept. 3, 2020), https://www.newscientist.com/article/2253688-russian-biologist-still-aims-to-make-crispr-babies-despite-the-risks/.

172. Kai Kupferschmidt, *How Canadian Researchers Reconstituted an Extinct Poxvirus for $100,000 Using Mail-Order DNA*, SCI. (July 6, 2017), https://www.sciencemag.org/news/2017/07/how-canadian-researchers-reconstituted-extinct-poxvirus-100000-using-mail-order-dna.

173. *Id.*

174. *Id.*

175. *Id.*

176. Ryan S. Noyce, Seth Lederman & David H. Evans, *Construction of an Infectious Horsepox Virus Vaccine from Chemically Synthesized DNA Fragments*, 13 PLOS ONE 1, 2–6 (2018).

177. Sophie Ochmann & Max Roser, *Smallpox*, OUR WORLD IN DATA, https://ourworldindata.org/smallpox.

178. *What Is Smallpox?*, CTR. FOR DISEASE CONTROL, https://www.cdc.gov/smallpox/about/index.html (last visited Sept. 25, 2021).

179. Jeanna Bryner, *Just 2 Labs in the World House Smallpox. The One in Russia Had an Explosion.*, LIVESCIENCE (Sept. 17, 2019), https://www.livescience.com/russia-lab-stores-smallpox-explosion-fire.html.

180. Kupferschmidt, *supra* note 172.

scientists likely recognize, this project makes weaponization much more feasible in the future.[181]

Worldwide, CRISPR is being considered to optimize agriculture and control diseases through the use of gene drives.[182] Gene drives are DNA sequences that can propagate efficiently through a population; instead of having a 50% chance of inheriting a particular genetic sequence from parents, gene drives ensure the DNA fragment is passed down to all progeny.[183] This genetic tool has been researched for decades, but CRISPR is allowing more straightforward experimentation and implementation.[184] With this CRISPR-powered tool, one of the most logical and straightforward approaches already being implemented to increase crop resiliency is to permanently splice herbicide resistance genes into essential crops, and these genes are then passed down to all its seedlings.[185] Although this will help plants survive higher concentrations of herbicides to eliminate resistant bugs or weeds, this will accelerate chemical pollution in environments, many of which are predominantly inhabited by marginalized communities.[186]

CRISPR-powered gene drives are also being used to modify mosquitoes and make them less likely to carry diseases like malaria.[187] Eliminating malaria is an admiral goal, considering that it still kills about half a million people every year—most of which are children and vulnerable communities in the African continent.[188] The introduction of mosquitoes resistant to viruses like Chikungunya, Zika,

181. *Id.*

182. Scudellari, *supra* note 10; Virginie Courtier-Orgogozo, Baptiste Morizot & Christophe Boete, *Agricultural Pest control with CRISPR-Based Gene Drive: Time for Public Debate* 18 SCI. & SOC'Y 878, 879 (2017).

183. Courtier-Orgogozo et al., *supra* note 182, at 878.

184. *See generally* Abigail A. Salyers, Nadja B. Shoemaker, Ann M. Stevens & Lhing Yew Li, *Conjugative Transposons: An Unusual and Diverse Set of Integrated Gene Transfer Elements*, 59 MICROBIOLOGICAL RS. 579, 579–80 (1995) (explaining the research in 1995 of bacterial transposons, which is a type of gene drive that exist in nature); Scudellari, *supra* note 10 (clarifying that since 2014 CRISPR-based gene drives have been developed in mosquitoes, fruit flies, fungi and current efforts are being made in mice).

185. Fangquan Wang, Yang Xu, Wenqi Li, Zhihui Chen, Jun Wang, Fangjun Fan, Yajun Tao, Yanjie Jiang, Qian-Hao Zhu & Jie Yang, *Creating a Novel Herbicide-Tolerance OsALS Allele Using CRISPR/Cas9-Mediated Gene Editing*, CROP J. 305, 305, 308–10 (2020), https://www.sciencedirect.com/science/article/pii/S2214514120300878.

186. Michael Gochfeld & Joanna Burger, *Disproportionate Exposures in Environmental Justice and Other Populations: The Importance of Outliers*, 101 AM. J. PUB. HEALTH S53, S57–S59 (2011), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222496/.

187. Scudellari, *supra* note 10.

188. *Malaria*, WORLD HEALTH ORG. (Nov. 30, 2020), https://www.who.int/news-room/fact-sheets/detail/malaria.

Malaria, and others could mitigate or completely eradicate diseases that have a particularly detrimental effect in poor communities.[189] Nonetheless, similar to the overuse of antibiotics creating superbugs in recent decades, this could create more virulent strains of the mosquito-derived diseases, having a complicated impact in the communities that are already battered with public health obstacles.[190] This strategy could also increase the predominance of other diseases as it is known that viruses and other pathogens compete for the same hosts.[191] Already, millions of modified mosquitos have been released into the wild in Brazil and other countries; fortunately, these do not contain the self-perpetuating gene drives discussed above.[192] Nonetheless, a study reported that the modified mosquitoes reproduced and their offspring reached sexual maturity, which was not supposed to happen.[193] This suggests that the wild species has permanently mixed with the genetically modified, and the consequences are still unknown.

IV. A SAFER WAY TO EDIT: RECOMMENDATIONS FOR COMPREHENSIVE CRISPR REGULATIONS

Significant concerns about CRISPR's impact on national security and public health have been raised in this article. However, the solution cannot be a full moratorium on the technology. Indeed, there was an attempt for a global moratorium for genetic editing of human germline cells, but it proved unsuccessful.[194] Any future effort to halt,

189. Chris Mooney, *Why Diseases Like Zika Could Unfairly Target America's Poor*, WASH. POST (Mar. 18, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/03/18/the-troubling-thing-that-flint-and-zika-have-in-common/; Timothée Bonifay, Maylis Douine, Clémence Bonnefoy, Benoit Hurpeau, Mathieu Nacher, Félix Djossou & Loïc Epelboin, *Poverty and Arbovirus Outbreaks: When Chikungunya Virus Hits More Precarious Populations Than Dengue Virus in French Guiana*, 4 OPEN F. INFECTIOUS DISEASES, 3–6 (2017); WORLD HEALTH ORG., *supra* note 188.

190. Demilare O. Famakinde, *Public Health Concerns Over Gene-Drive Mosquitoes: Will Future Use of Gene-Drive Snails for Schistosomiasis Control Gain Increased Level of Community Acceptance?*, 114 PATHOGENS & GLOB. HEALTH 55, 57–59 (2020) (highlighting and comparing the current issues of using gene drives to control diseases in mosquitoes and snails).

191. *Id.*

192. *Florida Mosquitoes: 750 Million Genetically Modified Insects to Be Released*, BBC (Aug. 20, 2020), https://www.bbc.com/news/world-us-canada-53856776 (clarifying that billions of mosquitos have been released over the years in countries like Brazil and others).

193. Kelly Servick, *Study on DNA Spread by Genetically Modified Mosquitoes Prompts Backlash*, SCI. (Sept. 17, 2019), https://www.sciencemag.org/news/2019/09/study-dna-spread-genetically-modified-mosquitoes-prompts-backlash.

194. Rob Stein, *Science Summit Denounces Gene-Edited Babies Claim, But Rejects Moratorium*, NPR (Nov. 29, 1028), https://www.npr.org/sections/health-shots/2018/11/29/671657301/international-science-summit-denounces-gene-edited-babies-but-rejects-moratorium.

even temporarily, the advancements of CRISPR will not be practical, or wise, given its wide availability and ease of use. Policymakers, scientists, and other stakeholders should instead shift how this technology is regulated. The following are proactive proposals to mitigate risks associated with CRISPR in varying contexts. These proposals also consider the importance of CRISPR for scientific progress and innovation.

A. Safer and More Inclusive CRISPR Regulations

1. Expanding and Revamping the Select Agents Program and Dual-Use Research of Concern

As discussed above, the Select Agents Program and DURC play an essential role in maintaining the safety and security of scientists working with CRISPR and the people in the surrounding communities.[195] However, some changes to the program would close existing loopholes that undermine its goal. One such change would be to expand DURC policies to cover dual-use research conducted with private funds at private institutions. DURC policies should attach to the type of research and not to the origin of the research funds. Thus, a dual-use CRISPR project would have to meet baseline safety criteria in the private biopharmaceutical industry and other privately funded research institutes. To achieve this, private research institutions should be required to create small, specialized committees responsible for assessing different projects' risks. These committees would communicate with HHS and USDA, as well as state agencies to ensure compliance with biosafety and biosecurity standards. Private parties may express concern about the risks inherent in disclosing confidential information about their projects to comply with DURC policies. However, current practices in the field already require limited disclosures for partnerships, licensing, and other endeavors.[196] Furthermore, private entities could mitigate any concerns through a nondisclosure agreement and monetary damages in case of a breach.

To ensure the top and brightest scientists work with CRISPR under the Select Agents Program, supplementary funding to researchers planning to undertake this work will also be beneficial. This sup-

195. *Supra* Section III.A.1.

196. *Innovation in Practice: How We Form Partnerships in Pharma*, NOVARTIS (Feb. 10, 2016), https://www.novartis.com/news/innovation-practice-how-we-form-partnerships-pharma (providing examples of partnerships and collaborations in the biopharmaceutical industry).

plemental funding will help incentivize scientists to continue making breakthroughs instead of pursuing other research questions due to the economic hardships caused by maintaining a lab compliant with the Select Agents Program. Current research grants can be easily modified to include a question about possible research that may fall under the Select Agents Program or DURC. These questions could be used to pre-qualify potential recipients, which can then be followed up with additional research funds or a separate grant specifically to fund biosecurity and biosafety measures needed.

The Government Accountability Office report found that the Select Agents Program was understaffed, undertrained, and had significant conflicts of interest.[197] CRISPR will only exacerbate these problems as it will make genetic modifications under the Select Agents Program more feasible. An increase in resources to the Select Agents Program would allow an expansion of in-house personnel with more diverse expertise. This increased personnel would eliminate the current problem of having professionals address biosecurity issues outside of their expertise, potentially missing crucial deficiencies of the laboratories they are supervising.[198] Additionally, the report also found conflicts of interest since the program regulates laboratories working for the agency that oversees the Select Agents Program.[199] It would not be feasible to create a completely independent agency to eliminate these conflicts of interest; however, the HHS and USDA should revamp their measures to enforce existing policies to prevent future breaches or mismanagement of dangerous pathogens. Reports have shown questionable management of these conflicts of interest in recent years, so applying strict sanctions for violations would help maintain an impartial system and prevent future breaches like those described in the previous section.[200]

The SRA of the Select Agents Program could also be modified. Currently, most applicants failed the SRA because of a previous conviction.[201] The current policy is strict, and once an applicant is barred, that applicant can never be considered again.[202] This strict policy creates a powerful impediment for many researchers, especially those stemming from underserved communities. Any researchers from low-

197. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 120, at 14–21, 27–31.
198. *Id.* at 28–29.
199. *Id.* at 15–21.
200. *Id.* at 19–21.
201. NAT'L RSCH. COUNCIL, *supra* note 97, at 48.
202. *Id.*

income or predominantly African American or Latinx communities have a higher likelihood of having an arrest record as their neighborhoods could be subjected to over-policing.[203] This results in the automatic exclusion of bright, diverse scientists working in these sensitive projects. It is a difficult task to properly balance biosecurity and access to potentially dangerous microorganisms modifiable through CRISPR—but it is not an impossible one. As a potential remedy to this issue, the program could expand the appeal process after an SRA denial to allow secondary considerations. These secondary considerations could include the applicant's age at the time of the arrest, if it was a single isolated event, and any rehabilitative measures taken since the arrest. This wider appeal process would be fairer for those with a previous encounter with the law in their records. These guidelines could ensure that research teams are more diverse, which has been a catalyst for innovation,[204] thus, helping sustain CRISPR-based discoveries.

2. Informing Scientists in Academic and Other Research Institutions

A cited problem with biosecurity and biosafety training, involving CRISPR or otherwise, is the lack of engagement from scientists in academia and other research institutions.[205] Current policies place much of the responsibility of assessing potentially dangerous experiments on the principal investigator.[206] However, many of these investigators are often unaware of how to recognize potential dual-use research in their own projects or lack much understanding of the development of nation-state biological weapons programs by life sciences researchers.[207] This is problematic because it creates scientists capable of handling powerful tools, but who are nonetheless blind to the socio-cultural impact of their research. Some institutions and projects have offered seminars and training on the matter, but the im-

203. Ashley Nellis, Sent'g Project, The Color of Justice: Racial and Ethnic Disparity in State Prisons 9–11 (2016).

204. Forbes, Global Diversity and Inclusion, Fostering Innovation Through a Diverse Workforce 5–6, https://images.forbes.com/forbesinsights/StudyPDFs/Innovation_Through_Diversity.pdf.

205. Tim Stearns, Moving Beyond Dual Use Research of Concern Regulation to an Integrated Responsible Research Environment, 5 (2017), https://www.nap.edu/resource/24761/Stearns_Paper_021717.pdf.

206. Nat'l Acads. Scis. Eng'g & Med., *supra* note 114, at 53–54.

207. *Id.*

pact of these seminars has not been carefully studied.[208] Without this data, the effectiveness of these sessions cannot be assessed. Thus, current practices and training on responsible research, biosafety, and biosecurity need to be studied so effective strategies can be devised to ensure scientists can recognize risks and comply with policies. The NIH could take on such research and study the different types of training offered by universities and other institutions. This research would inform subsequent policies on the issue.

The more fundamental problem is that life science researchers in training are currently not required to take courses on biosafety, biosecurity, the impact of biological weapons, or other similar subjects. This lack of awareness could be fueling the disinterest or, worse, could lead to potentially unreported DURC experiments. In order to create a research culture that understands the newer risks of biological research, the student scientists' curriculum needs to be updated with courses about biosecurity and biosafety issues arising from CRISPR applications to fix this lack of engagement. These courses would outline the impact of CRISPR in the students' projects, its effect in different communities, and the strategies being taken to address them. This recommendation should not only be for those being trained in the United States. Because the risks posed by CRISPR and associated technologies cross political borders, this training should be had by all individuals hoping to enter the field. Thus, non-governmental organizations like the World Health Organization or the United Nations Educational, Scientific and Cultural Organization could enact detailed guidelines of biosecurity and biosafety training for all scientists in training, as well as host sessions that reinforce these policies.

Also, for scientists at every career stage, actively creating and promoting training and certification programs about DURC policies and the Select Agents Programs will be helpful. These certifications could make the scientist more professionally marketable and should be advertised as such. However, the most important effect of this encouragement will be to increase understanding of the policies and facilitate conversations about the protections available to scientists and the surrounding community. These policies will continue to morph

208. Dana Perkins, Kathleen Danskin, A. Elise Rowe & Alicia A. Livinski, *The Culture of Biosafety, Biosecurity, and Responsible Conduct in the Life Sciences: A Comprehensive Literature Review*, 24 J. Am. Biological Safety Ass'n Int'l 34, 37, 41 (2019), https://www.liebertpub.com/doi/pdf/10.1177/1535676018778538; *see generally* Brian Rappert, Education and Ethics in the Life Sciences 38-53 (2010), https://library.oapen.org/bitstream/handle/20.500.12657/33761/459095.pdf?sequence=1&isAllowed=Y.

based on new developments and providing space to discuss the risks will keep the relevant public informed.

3. Responsible Democratization of CRISPR

CRISPR's democratization is an admirable goal, and the ease of use and low cost of this technology is allowing young minds to tinker with biology like never before.[209] As a result, CRISPR is inspiring the next generation of scientists. But society should not wield the power of CRISPR unencumbered. The risks of no oversight can include the release of dangerous pathogens (intentionally or otherwise) into water reservoirs or food supplies, which can cause havoc on public health, and even national security. Any direct risks of allowing uncontrolled self-experimentation with this technology could also irreversibly harm an individual. Disasters stemming from this behavior will most likely cause an overreaction by legislators that will place burdensome restrictions on the technology, thus, preventing access and hampering innovation (like what is happening in China after the CRISPR experiments with healthy babies[210]).

To foster responsible use of CRISPR for the general public, creating joint private-public laboratories could be an alternative. These spaces can host educational and hands-on training sessions to expose the public to CRISPR in a responsible manner. Costs to maintain such a public space could be derived from government grants, donations from pharmaceutical companies in the community, and small fees for the public to use the facilities. Before starting any project, the public would have to agree to various ethical and responsible research codes. During the process, the staff can also educate these individuals about the risks of failing to control CRISPR and other similar technologies. This strategy can be an effective way to educate and promote CRISPR's safe use by the public.

On the other hand, the FDA should enforce its regulatory powers and penalize behavior that foments unapproved CRISPR treatments on humans or animals. This approach should be particularly punitive to executives of biotechnology companies selling CRISPR kits. Taking a strong stance against reckless use of this technology will prevent people from getting hurt with CRISPR. The FDA has issued guides

209. Alan Yu, *How a Gene Editing Tool Went from Labs to a Middle-School Classroom*, NPR (May 27, 2017), https://www.npr.org/sections/alltechconsidered/2017/05/27/530210657/how-a-gene-editing-tool-went-from-labs-to-a-middle-school-classroom.

210. *See* discussion, *supra* Section III.B.

for approval of genetically modified organisms for food or drugs.[211] Still, it is unclear if the agency has the authority to regulate animal experimentation being done with CRISPR kits outside the walls of a traditional institution or experimentation that is not being done for the purpose of developing food or drugs and FDA approval. If the FDA does not have the regulatory power to do so, Congress should grant it such authority. Animal experimentation using CRISPR without any oversight or professional evaluation will most likely yield unusable data due to an ineffective experiment setup. More importantly, these experiments are likely to cause pain and suffering to animals, which should be deemed animal cruelty and should be penalized as such. Moreover, allowing this type of experimentation to go unfettered will lead to the release of genetically modified animals into the wild, possibly disrupting numerous ecosystems, impacting crops, water supplies, and public health.

4. Engaging the Communities Adjacent to CRISPR Field Experiments

Many of CRISPR's applications will involve the intentional release of organisms into the ecosystem to prevent disease. In the United States, the release of CRISPR-modified mosquitoes is being monitored by the EPA.[212] However, depending on the overall purpose, the release of other genetically modified organisms could be monitored by the FDA or the USDA.[213] It is sensible to empower different agencies to monitor projects based on the applications, as each agency has different expertise. However, it is not necessarily clear to the general public to what extent or how these agencies control these organisms' release given the somewhat patchy nature of the regulations in their current state.[214] To correct this, the appropriate agency should create explicit and easy-to-understand guidelines and infographics for the communities adjacent to any experiment involv-

211. *See generally* U.S. Food & Drug Admin., Guidance for Industry Regulation of Genetically Engineered Animals Containing Heritable Recombinant DNA Constructs 9–26 (June 2015), https://www.fda.gov/media/135115/download.

212. Anna Staver, *Fact Check: Genetically Modified Mosquitoes Are Cleared for Release in the US*, USA Today (June 9, 2020), https://www.usatoday.com/story/news/factcheck/2020/06/09/fact-check-epa-clears-genetically-modified-mosquitoes-us-release/5327840002/.

213. U.S. Food & Drug Admin., Clarification of FDA and EPA Jurisdiction Over Mosquito-Related Products (2017), https://www.fda.gov/media/102158/download.

214. Janet Cotter & Dana Perls, Gene-Edited Organisms in Agriculture: Risks and Unexpected Consequences 5 (2018).

ing the release of genetically modified organisms. Importantly, these should showcase why and how these projects were approved.

Furthermore, any public or private project aimed at releasing modified organisms should be required to host town halls, conferences, or other educational events to engage the community beforehand. These events should include local scientists, community leaders, and other important government agency representatives. Through these events, the community will be educated about the projects, and they can have an active role in the ultimate determination of these experiments. Also, providing information about the project's success in other communities can help inspire public trust. Lastly, a precise mechanism for accountability and redress has to be created. Many of these genetically modified organisms will be released in underserved communities as they are more susceptible to various outbreaks.[215] Individuals from these communities may not fully grasp the mechanisms to file a formal complaint or request compensation following harm suffered due to these experiments. Thus, the town halls should include a clear framework and provide the contact information of groups responsible for addressing these matters and even legal representation where necessary.

5. Using Non-permanent CRISPR Techniques for Field Experiments

As CRISPR research has evolved, so has the development of anti-CRISPR proteins.[216] As its name suggests, these anti-CRISPR proteins can stop CRISPR genetic modifications.[217] Similarly, research has unveiled a different gene drive with limited reproducibility that does not permanently disseminate through a population.[218] The Department of Defense is funding these discoveries because they can offset any biological outbreak powered by CRISPR and similar technologies.[219] However, this technology should not only be used in the

215. Famakinde, *supra* note 190, at 60 (commenting that in Sub-Saharan Africa, the region bears the overwhelming global burden of schistosomiasis, especially among the poorest populations); Francesco Ricci, *Social Implications of Malaria and Their Relationships with Poverty*, MEDITERRANEAN J. HEMATOLOGY & INFECTIOUS DISEASES, 2–6 (2012).

216. Elie Dolgin, *The Kill-Switch for CRISPR that Could Make Gene-Editing Safer*, NATURE (Jan. 15, 2020), https://www.nature.com/articles/d41586-020-00053-0.

217. *Id.*

218. Famakinde, *supra* note 190, at 56.

219. Ryan Cross, *New CRISPR Inhibitors Found with Help from U.S. Department of Defense Funding*, CHEM. & ENG'G NEWS (Sept. 10, 2018), https://cen.acs.org/biological-chemistry/biotechnology/New-CRISPR-inhibitors-found-help/96/web/2018/09.

context of national security and defense; anti-CRISPR and self-limiting gene drives should substitute every current effort to disseminate genetically modified organisms into the wild. Our understanding of CRISPR and population genetics is still in its infancy; thus, releasing animals modified with this stoppable genetic cassette can counterbalance any unforeseen consequences of the experiment. The public is also more supportive of these transiently modified organisms over permanent modifications in the ecosystem.[220] Perfecting these ecological tools will involve failed experiments, so using anti-CRISPR or self-limiting gene drives will minimize any detrimental effect on biodiversity, public health, and national security.

6. Strengthening International Oversight

As the use of CRISPR-modified organisms and humans continues, international efforts focused exclusively on assessing developments, risks, and mitigation need to accelerate. The BWC can be an appropriate vehicle to meet this goal, but it needs to be strengthened. For example, amending the convention so the permanent members of the Security Council of the United Nations cannot veto investigations into suspected breaches would be ideal. However, given the history of the Security Council, it is unlikely that such a solution would be adopted.[221] Nonetheless, the BWC could take the threats posed by CRISPR more serious for its next meeting 2021. CRISPR needs to be a topic of important discussion so new oversight policies can be negotiated. Due to the still ongoing COVID-19 pandemic, this may actually be possible considering that many countries want to investigate the allegations of the virus having been leaked or fabricated in a laboratory, which would almost inevitably touch on gene editing technologies.[222]

220. Michael S. Jones, Jason A. Delborne, Johanna Elsensohn, Paul D. Mitchell & Zachary S. Brown, *Does the U.S. Public Support Using Gene Drives in Agriculture? And What Do They Want to Know?*, SCI. ADVANCES, Sept. 11, 2019, at 2.

221. Ishaan Tharoor, *The U.N. Veto Is a Problem that Won't Go Away*, WASH. POST (Oct. 2, 2015), https://www.washingtonpost.com/news/worldviews/wp/2015/10/02/the-u-n-veto-is-a-problem-that-wont-go-away/; Michael J. Kelly, *United Nations Security Council Permanent Membership and the Veto Problem*, 52 CASE W. RSRV. J. INT'L L. 101, 101–04 (2020) (explaining the current difficulties of the Security Council's veto power, which represents an outdated form of power by the permanent members, but also clarifying that attempts to reform the veto power in the past have not been fruitful because of the lack of agreement between the permanent members).

222. Amy Maxmen & Smriti Mallapaty, *The COVID Lab-Leak Hypothesis: What Scientists Do and Don't Know*, NATURE (June 8, 2021), https://www.nature.com/articles/d41586-021-01529-3.

Peaceful but risky uses of CRISPR, such as those to control disease spread and human health, also need international oversight. Because many of these benign but risky CRISPR applications have valuable humanitarian goals very different from the BWC, it would be more effective to create new frameworks. The World Health Organization has recently published a series of proposals for responsible human genome editing moving forward.[223] The document includes recommendations for international collaboration for the oversight of CRISPR and other human genome editing experiments.[224] It also recommends that somatic and germline human editing research only occur in countries with domestic policy and oversight mechanisms.[225] Additionally, the document proposes the creation of whistleblowing programs to report illegal or dangerous experiments, such as the ones made by Dr. Jiankui He in China, and much more.[226] The development of treaties, conventions and enforceable domestic legislation that follow these recommendations would go a long way in helping curtail the global risks posed by CRISPR before any tragedy comes to pass.

V. CONCLUSION

The advancements of CRISPR are having a remarkable impact on genetic engineering.[227] With this new power, new avenues for accidental, reckless, or even intentional misuse are permanently open, demanding a reevaluation of the regulatory frameworks in place. Currently, however, the most imminent causes of concern appear not to include the weaponization of CRISPR.[228] The technology could be used for such ends, but it would still require surpassing multiple hurdles, such as a stabilized vehicle, dispersion, and even biology's inherent unpredictability.[229] However, this technology will continue to improve, and the barriers to its application in bioterrorism will eventually dissipate. Thus, now is the perfect time to reassess and develop comprehensive regulations to mitigate these incoming risks. Although

223. *See generally* WORLD HEALTH ORG., HUMAN GENOME EDITING: RECOMMENDATIONS WHO EXPERT ADVISORY COMMITTEE ON DEVELOPING GLOBAL STANDARDS FOR GOVERNANCE AND OVERSIGHT OF HUMAN GENOME EDITING 3–20 (2021), file:///Users/reinaldofranquimachin/Downloads/9789240030381-eng.pdf.
224. *Id.* at 5–14.
225. *Id.* at 10–12.
226. *Id.* at 12–14.
227. *See* discussion, *supra* Section II.D.
228. *See* discussion, *supra* Section III.A.3.
229. *Id.*

laws in the United States are considered adequate by many, underregulated CRISPR kits could change that soon. Similarly, international safeguards are fragile and lagging.[230] The alternative to working these safeguards now would be to wait until CRISPR is readily weaponizable or, worse, taking a reactionary route after an attack, which will lead to unnecessary human suffering and a subsequent excessive restriction of CRISPR.

Although bioterrorism threats permitted by CRISPR may not materialize yet, the negligent, reckless, or even intentional (but benevolent) use of this technology could have an irreversible impact on our environment and ourselves. DURC and the Select Agents Program provide some protection against possible breaches and misuse, but these programs have wide loopholes and are not adequately funded and staffed.[231] Furthermore, the biohacking movement is allowing questionable experiments that can harm people and animals.[232] Together, these developments will lead to a tragedy if left unchecked. As discussed in this article, some changes can be employed to protect scientists, communities, and society overall.[233] Still, these will require significant funds and efforts from regulatory agencies, Congress, and private stakeholders.

The risks posed by CRISPR will never be completely eliminated. Even an ancient tool like a hammer can still be used constructively to build a house or destructively to harm another. Nonetheless, the proposed recommendations in this article will help CRISPR progress quickly but also responsibly. Balancing security with access is not an easy task but failing to take active steps to find such balance is not an option. Previous technological revolutions, such as the nuclear power revolution, eventually led to new regulations and that harmonized progress with security.[234] And as we unlock this new power to edit our genes, our frameworks to regulate it must follow suit. Importantly, CRISPR can level the playing field for historically underserved communities by helping prevent disease, pollution, increase food yield and even serve as a steppingstone for diverse scientists and innova-

230. *See* discussion, *supra* Section III.A.4.

231. *See* discussion, *supra* Section III.A.1.

232. *See* discussion, *supra* Section III.A.2.

233. *See* discussion, *supra* Section IV.

234. *Backgrounder on Nuclear Security*, U.S. NUCLEAR REGUL. COMM'N, https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/security-enhancements.html (last visited Sept. 25, 2021).

tors. The recommendations in this article would help CRISPR meet both the biosecurity and social justice goals.

Far From Batman and Robin: Why Investigative Genetic Genealogy Cannot Be Law Enforcement's Trusty Sidekick

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ABSTRACT

With the rise of consumer genetics databases such as AncestryDNA, GEDmatch, 23andMe, and FamilyTreeDNA has come the development of investigative genetic genealogy, a law enforcement investigation technique used to identify both the suspects and victims of violent crime. In all developments of law enforcement investigative techniques, it is important to analyze the constitutional implications of using these techniques to uphold the police power. Current constitutional research on investigative genetic genealogy has been limited to the Fourth Amendment and privacy implications inherent in accessing sensitive genetic data. However, this note examines how the Fifth Amendment Takings Clause is also implicated in investigative genetic genealogy. The central question is whether law enforcement utilization of investigative genetic genealogy constitutes a taking of private genetic property for public use without just compensation in violation of the Takings Clause. In exploring the Fifth Amendment in connection to this seemingly miracle investigative technique, this article aims to advocate for the legal valuation of genetic property in the forms of regulation and compensatory schemes in line with the Takings Clause.

I. INTRODUCTION

Lewis Thomas once said, "[t]he greatest single achievement of nature to date was surely the invention of the molecule DNA."[1] DNA identification — the use of an individual's unique DNA as an identification tool — is the greatest tool that society has discovered thus far. DNA is so unique to each individual that it has proffered many uses in

1. LEWIS THOMAS, THE MEDUSA AND THE SNAIL 27 (1995).

modern society. For example, law enforcement agencies have used these biological markers to solve crime.[2] This identification technology is a vast improvement from the seemingly archaic practice of solely using blood typing evidence and fingerprints — if such evidence happened to be usable.

The use of DNA sequencing technology has expanded significantly in the last few decades. We have moved past DNA being utilized as a tool for criminal investigation and paternity tests. DNA profiles are now accessible to the average man through direct-to-consumer genetics databases. You may have heard of some of the more famous DNA sequencing companies, such as AncestryDNA, 23andMe, GEDmatch, or MyHeritage DNA. It is quite simple really. (1) The consumer orders a kit from a database; (2) the company mails the consumer a DNA collection kit; (3) the consumer collects the sample as instructed (usually in a saliva tube); (4) the consumer mails the sample back to the company; and finally, (5) the consumer waits for the company to alert them of their test results.[3] Just one small sample of your DNA can allow you to gain access to a trove of information about your lineage, potential health issues related to your genetics, and most importantly, a comprehensive profile of your DNA that you can download to your computer.[4] Access to this sensitive genetic information carries vast importance to many people. For African American descendants of slaves in particular, having access to one's lineage is akin to gaining a piece to a puzzle that was stripped away by force.

This sensitive genetic information has become attractive not only to database customers, but to law enforcement as well.[5] These consumer genetics databases carry vast amounts of genetic information

2. In 1986, Colin Pitchfork was the first person to be arrested through the use of DNA profiling technology. Dominic Casciani, *Colin Pitchfork: Double Child Murderer Released from Prison*, BBC NEWS (Sept. 1, 2021), https://www.bbc.com/news/uk-england-leicestershire-58408210. The FBI launched the Combined DNA Index System in 1990 to allow law enforcement to "exchange and compare DNA profiles electronically" for the purpose of solving crime on a national scale. *Combined DNA Index System (CODIS)*, FBI, https://www.fbi.gov/services/laboratory/biometric-analysis/codis (last visited Sept. 20, 2021).

3. *Top Questions About AncestryDNA*, ANCESTRY, https://www.ancestry.com/dna/?ancid=U55ewmme1f&s_kwcid=Ancestry†na&gclid=CJ0KCQjw8rT8BRCbARIsALWi-OvQCBodD9qhLD9rT9WpAOc7K6yEVonaHDzt635pAM8kAgkgUuY2Q4MwaAnmWEALw_wcB&gclsrc=aw.ds&o_xid=79107&o_lid=79107&o_sch=paid+Search+Brand (last visited Oct. 20, 2020); *How Is Direct-to-Consumer Genetic Testing Done?*, MEDLINEPLUS, https://medlineplus.gov/genetics/understanding/dtcgenetictesting/dtcprocess/ (last updated Sept. 17, 2020).

4. ANCESTRY, *supra* note 3.

5. *See Combined DNA Index System (CODIS)*, *supra*, note 2.

that can assist in identifying suspects of crimes. Investigative Genetic Genealogy ("IGG") —the use of consumer genetics databases to solve crime — is now a potentially useful tool to help law enforcement when all other leads are exhausted.[6] This investigative technique proved itself in 2018 when the Golden State Killer, a prolific serial killer and rapist that operated in California during the 1970s and 1980s, was identified using IGG techniques.[7] The investigating officers in the Golden State Killer case uploaded what they thought was the suspect's DNA to GEDmatch and were able to match the genetic profile to a distant relative.[8] Eventually they were able to draw a family line to Joseph De Angelo who has since been arrested for his crimes.[9]

While the use of IGG can be beneficial in solving crime, this use of DNA violates the Fifth Amendment rights of database consumers whose DNA profiles are accessed in order to solve these crimes. This access is especially concerning given that consumer databases carry far more sensitive information than the criminal DNA databases that law enforcement typically has access to[10] and private laboratories are accessing and analyzing the genetic profiles of these consumers.[11] Given the constitutional concerns surrounding IGG, there must be a compensation scheme that strikes a balance between the consumer's interest in controlling their genetic property and law enforcement's interest in ensuring public safety. This note will: (1) examine the relationship between law enforcement and the use of DNA; (2) describe existing legal frameworks addressing IGG and the arguments for considering DNA as personal property; (3) detail Fifth Amendment Takings Clause implications of allowing law enforcement officers to utilize DNA databases; and (4) propose compensation schemes and legislation that can limit violations of the database and give consumers the right to control how their genetic profiles are used.

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6. Lindsey Van Ness, *DNA Databases Are Boon to Police But Menace to Privacy, Critics Say*, PEW (Feb. 20, 2020), https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/02/20/dna-databases-are-boon-to-police-but-menace-to-privacy-critics-say.

7. Emily Shapiro, *The 'Golden State Killer': Inside the Timeline of Crimes*, ABC NEWS (Oct. 30, 2020, 9:39 AM), https://abcnews.go.com/US/inside-timeline-crimes-golden-state-killer/story?id=54744307.

8. *Id.*; Natalie Ram, *Investigative Genetic Genealogy and the Future of Genetic Privacy*, ABA (July 1, 2020), https://www.americanbar.org/groups/science_technology/publications/scitech_lawyer/2020/summer/investigative-genetic-genealogy-and-future-genetic-privacy/.

9. Shapiro, *supra*, note 7.

10. Ram, *supra*, note 8.

11. Marc McDermott, *Investigative Genetic Genealogy: How Does it Work?*, ISHI NEWS (July 16, 2020), https://www.ishinews.com/investigative-genetic-genealogy-how-does-it-work/.

II. THE RELATIONSHIP BETWEEN LAW ENFORCEMENT AND DNA

A. What Is DNA?

Deoxyribonucleic acid, also known as DNA, is the reason we are able to function. Without this powerhouse protein, our cells would not have any instruction on how to fulfill their individual duties to keep each and every one of us alive.[12] Furthermore, these chemical units compose larger units known as chromosomes.[13] At birth, we are given twenty-three chromosomes that contain the genes that are "the basic physical and functional units of heredity."[14] Typically, individuals inherit two sets of twenty-three chromosomes from each of their parents.[15] Statistically speaking, every individual's DNA on this planet is 99.9 percent similar to the next person's DNA.[16] This means that roughly 3.1 billion of the 3.2 billion DNA base pairs[17] that make up an individual's genome are shared with the average person. As science has progressed, important information has been found in the .1 percent of DNA that is not shared between individuals. This miniscule difference between individuals has served as the basis of DNA identification technology.

B. Law Enforcement and DNA

In the early 1900s, two important discoveries changed the landscape of how the world interacted with biological markers. In 1900, Paul Uhlenhuth, a professor at the University of Griefswald in Griefswald, Germany, developed a technique to find antibodies in blood.[18] Antibodies are proteins in the blood that the immune system uses to "identify and neutralize bacteria, viruses, and other foreign objects."[19] When antibodies come into contact with foreign material present in the blood, they attach to the foreign materials and cause them to

12. THE N.Y. – MID-ATL. CONSORTIUM FOR GENETIC AND NEWBORN SCREENING SERVS., UNDERSTANDING GENETICS: A NEW YORK, MID-ATLANTIC GUIDE FOR PATIENTS AND HEALTH PROFESSIONALS 6 (2009).
13. *Id.*
14. *Id.*
15. *Id.*
16. *Id.* at 9.
17. *What Is DNA?*, YOUR GENOME (Jan. 25, 2016), https://www.yourgenome.org/facts/what-is-dna.
18. Corey Harbison, *ABO Blood Type Identification and Forensic Science (1900-1960)*, EMBRYO PROJECT ENCYCLOPEDIA (June 2, 2016), https://embryo.asu.edu/pages/abo-blood-type-identification-and-forensic-science-1900-1960.
19. *Id.*

clump together.[20] The Uhlenhuth Test monitored the reaction of these antibodies when they came into contact with foreign materials.[21] This test was most commonly used to distinguish blood from humans and blood from animals.[22] In 1901, authorities in Rügen, Germany utilized the Uhlenhuth Test to determine whether the blood stains on a suspected murderer's clothing were from human blood in what was one of the first uses of human biographical markers to aid in criminal investigation.[23] The suspected murderer, Ludwig Tessnow, was convicted and executed for the murders of two boys based upon the evidence from the Uhlenhuth Test, which showed that the mysterious blood stains on his shirt came from human and sheep blood.[24]

The second discovery involved Karl Landsteiner, an Austrian scientist who worked in the University Department of Pathological Anatomy in Vienna, Austria.[25] Through his work studying antibodies, he noted that when the blood of one human is transfused with that of another human, an immunological reaction results in the clumping of the samples.[26] These reactions lead Landsteiner to conclude that humans have different blood types.[27] Landsteiner categorized the different blood types he found as A, B, and C (later referred to as Type O blood).[28]

> Blood from the A group formes[sic] clumps when mixed with blood from the B group . . . blood cells from O-type blood do not cause clumping when mixed with A-type or B-type blood. However, if blood cells from A-type or B-type blood are mixed with O-type blood serum, the A and B anti-bodies react, and cause clumping. O-type blood does not possess any antigens that can react with A or B antibodies to trigger an immunological response.[29]

Eventually, a fourth blood group, the AB group, was discovered by one of Landsteiner's students.[30] Landsteiner received the Nobel Prize for Physiology or Medicine in 1930 for his work identifying

20. *Id.*
21. *Uhlenhuth Test*, AMERICAN FORENSICS (June 27, 2020), https://www.americanforensics.org/uhlenhuth-test.
22. *Id.*
23. Harbison, *supra* note 18.
24. *Id.*
25. *Karl Landsteiner Biographical*, NOBEL PRIZE, https://www.nobelprize.org/prizes/medicine/1930/landsteiner/biographical/ (last visited Oct. 20, 2020).
26. Harbison, *supra* note 18.
27. *Id.*
28. *Id.*
29. *Id.*
30. *Id.*

human blood groups.[31] Thus, a new tool became available for use by law enforcement to identify suspects of crime. Blood typing allowed more precise identification than the Uhlenhuth Test, because individuals could be exculpated from crimes based on their blood type alone.[32]

Although blood typing provided a new avenue for suspect identification, it still had its limitations. Large swaths of the population have the same blood type.[33] While this phenomenon is beneficial for blood and organ donation, it is less beneficial for suspect identification purposes. Blood typing can narrow down suspects from the general population; however, identifying exact suspects is often not possible. In 1984, a process known as DNA Fingerprinting was developed by Sir Alec Jeffreys.[34] This technique compared DNA in a person's cells with DNA from "biological matter found at the scene of a crime or with the DNA of another person for the purpose of identification or exclusion."[35] The technique was first used forensically in 1987 to solve the rape and murder of two teenage girls in England.[36] The case was particularly spectacular because the DNA Fingerprinting technique excluded a man suspected of the crime and led to the identification of the actual perpetrator.[37] DNA Fingerprinting, now known as DNA Profiling,[38] has since been the most reliable investigative tool for identifying suspects and exonerating those wrongfully convicted of crimes.

C. Consumer Genetics

DNA testing technology became even more accessible to the public with the advent of consumer genetics technology, also known as direct-to-consumer genetic testing. These tests cut out the usual middlemen—a healthcare provider or health insurance company—and allow the consumer greater control over the type of testing they

31. NOBEL PRIZE, *supra* note 25.

32. Harbison, *supra* note 18.

33. In the United States, 6.6% of the population has type O- blood; 37.4% have type O+ blood; .6% have type AB- blood; 3.4% have type AB+ blood; 1.5% have type B- blood; 8.5% have type B+ blood; 6.3% have type A- blood; and 35.7% have type A+ blood. *Blood Types*, STANFORD BLOOD CTR., https://stanfordbloodcenter.org/donate-blood/blood-donation-facts/blood-types/ (last visited Feb. 13, 2021).

34. Jessica McDonald & Donald C. Lehman, *Forensic DNA Analysis*, 25 AMERICAN SOC'Y FOR CLINICAL LAB'Y SCI. 109, 110 (2012).

35. Lutz Roewer, *DNA fingerprinting in Forensics: Past, Present, Future*, 4 INVESTIGATIVE GENETICS 22, at 1 (2013).

36. *Id.*

37. *Id.*

38. *Id.*

want and direct access to the results afterward.[39] Some of the prominent companies that offer these services are 23andMe, National Geographic, Ancestry.com, GEDmatch, etc.[40] The services offered by these companies are split into six groups: (1) Ancestry Tests, (2) Health Risks, (3) Pharmacogenomics, (4) Raw Data Analytics, (5) Genetic Carrier Tests, and (6) specific genetic tests for certain conditions such as Breast Cancer.[41]

These testing services provide different functions. Ancestry Tests use genetic information to give an approximation of one's ancestral makeup.[42] Some ancestry tests, such as National Geographic's, are complex enough to trace one's ancestral migratory paths.[43] Raw Data Analytics give the consumer the option of downloading their raw genetic profile.[44] Consumers can even take this data and upload it to other genetics databases for varying reports depending on the company.[45]

Health Risk testing assesses the consumer's predisposition to develop certain health conditions.[46] For example, 23andMe includes health risk testing for twenty-two conditions, ranging from Chronic Kidney Disease to Familial Hypercholesterolemia.[47] Pharmacogenomics is slightly different. This kind of testing analyzes why individuals have certain reactions to different medications based on their genetic code.[48]

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39. *What Is Direct-to-Consumer Genetic Testing?*, MEDLINEPLUS, https://medlineplus.gov/genetics/understanding/dtcgenetictesting/directtoconsumer/ (last visited Sept. 21, 2021).

40. *Which Direct-To-Consumer Genetic Test to Choose?*, MEDICAL FUTURIST, https://medicalfuturist.com/which-direct-to-consumer-genetic-test-to-choose/(last visited Sept. 21, 2021); Other companies include Futura Genetics, Color Genomics, Counsyl, Gene by Gene, Laboratory Corporation of America, MyMedLab, Quest Diagnostics, etc. Sarah Schmidt, *9 Leading Companies in Direct-to-Consumer Genetic Testing*, MKT. RSCH. BLOG (Apr. 6, 2016), https://blog.marketresearch.com/9-leading-companies-in-direct-to-consumer-genetic-testing.

41. MEDICAL FUTURIST, *supra* note 40.

42. *Id.*

43. *Id.*

44. *Id.*

45. *Id.*

46. *Id.*

47. *23andMe Genetic Health Risk Reports: What You Should Know.*, 23ANDME, https://www.23andme.com/test-info/genetic-health (last visited Sept. 10, 2021). The full list of available health predisposition testing includes Atrial Fibrillation, Coronary Artery Disease, High Blood Pressure, LDL Cholesterol, Migraine, Obstructive Sleep Apnea, Restless Legs Syndrome, Uterine Fibroids, Type 2 Diabetes, Age-Related Macular Degeneration, Alpa-1 Antitrypsin Deficiency, BRCA1/BRCA2, Celiac Disease, Chronic Kidney Disease, Familial Hypercholesterolemia, G6PD Deficiency, Hereditary Amyloidosis, Hereditary Hemochromatosis, Hereditary Thrombophilia, Late-Onset Alzheimer's Disease, MUTYH Associated Polyposis, and Parkinson's Disease. *Id.*

48. MEDICAL FUTURIST, *supra* note 40.

Genetic Carrier tests are similar to health risks tests. These do not provide information on whether a person has a particular genetic condition, rather, they alert individuals as to whether they are carriers for a genetic condition that they could pass on to their offspring.[49] Finally, specific genetics tests are health risks tests, but for specific conditions.[50] BRCA genetic testing — testing designed to identify if a person is at high risk for breast cancer — is a common specific genetic test available to consumers.[51]

While direct-to-consumer genetics may seem like the holy grail of knowledge for those curious about their genetic makeup, there are some caveats. According to the Food and Drug Administration ("FDA"), some of these tests have scientific and clinical data to support the information they provide, whereas others do not have the same supporting data.[52] Furthermore, there are "disagreements in the clinical community about the role that different genetic variants have in contributing to different diseases."[53] Additionally, not all direct-to-consumer tests are reviewed by the FDA.[54] In fact, the FDA has only granted marketing authorization to 23andMe.[55]

D. Investigative Genetic Genealogy

Investigative Genetic Genealogy is a technique that utilizes direct-to-consumer genetics services to investigate crimes and identify human remains.[56] Typically, law enforcement uploads crime scene DNA into the Combined DNA Index System ("CODIS").[57] CODIS is the Federal Bureau of Investigation's ("FBI") program of support for criminal justice DNA databases, as well as the software used to run these databases.[58]

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49. *Id.*

50. *Id.*

51. *Id.*

52. *Direct-to-Consumer Tests*, FDA, https://www.fda.gov/medical-devices/vitro-diagnostics/direct-consumer-tests (last updated Dec. 12, 2019).

53. *Id.*

54. *Id.*

55. The FDA has evaluated the following tests for "accuracy, reliability, and consumer comprehension": 23andMe PGS Carrier Screening Test for Bloom Syndrome, 23andMe PGS Genetic Health Risk Test, 23andMe PGS Genetic Health Risk Report for BRCA1/BRCA2, and 23andMe PGS Pharmacogenetic Reports. *Id.*

56. Ram, *supra* note 8.

57. McDermott, *supra* note 11.

58. *Frequently Asked Questions on CODIS and NDIS*, FBI, https://www.fbi.gov/services/laboratory/biometric-analysis/codis/codis-and-ndis-fact-sheet (last visited Dec. 27, 2020).

When the DNA sample does not match with a profile already in CODIS, law enforcement personnel may have the option of turning to IGG.[59] If they do have the option, crime scene samples are taken and uploaded to direct-to-consumer genetics databases.[60] Consumer genetics databases that allow users to connect with genetically similar relatives are the most helpful databases for law enforcement. Ideally, the uploaded crime scene data will match with other genetically similar profiles on the consumer genetics database. These matches can range from an exact match to distant cousins.[61] If a match is found, a genealogist from a third party laboratory will "build out" a family tree in order to identify a perpetrator or victim of a crime.[62] The more distant the familial matches to the crime scene profile, the more complex the scope of the genealogist's analysis will be.[63] The genealogist's analysis can involve more than comparing the shared amount of genetic data between the crime scene DNA and its familial matches. The genealogist often has to use other resources such as "obituaries, old newspapers, census records, public social security databases, people search websites, and even social media websites" to understand how different matches are connected.[64] After research is complete, the genealogist will return a list of candidates to law enforcement.[65] Law enforcement will then use the candidate list as an investigative tool. Once a suspect or victim is identified, a lawfully obtained DNA sample must be taken to definitively tie the suspect or victim to the crime.[66]

1. CODIS DNA v. Consumer Genetics DNA

CODIS DNA profiles are different from DNA profiles on consumer genetics databases. Jurisdictions that use CODIS have statutorily defined which individuals are subject to inclusion in CODIS.[67] Forensic investigative use tactics have not been authorized by any state.[68] Volunteers are not authorized to enter their DNA into

59. McDermott, *supra* note 11.
60. *Investigative Genetic Genealogy FAQs*, Int'l Soc'y of Genetic Genealogy Wiki, https://isogg.org/wiki/Investigative_genetic_genealogy_FAQs (last updated Oct. 18, 2020).
61. McDermott, *supra* note 11.
62. *Id.*
63. *Id.*
64. *Id.*
65. *Id.*
66. *Id.*
67. Ram, *supra* note 8.
68. *Id.*

CODIS in order to help identify criminals by familial relationship.[69] Consumer genetics databases, on the other hand, are filled with genetic data from individuals with no connection with law enforcement.[70] Further, the genetic data from consumer genetics databases is more sensitive than the genetic data in CODIS.[71] CODIS data is "maximally informative about individual identity, but minimally informative about anything else."[72] Genetic data in CODIS is sometimes referred to as "junk" data.[73] Genetic data from consumer genetics databases contain several hundred thousand more DNA data points than CODIS.[74] Consumer genetic data also contains more than source-identifying information. Genetic relatives, ancestral origins, health risks, physical traits, and other information can be revealed by consumer genetic data.[75]

2. Privacy Statements

The specific direct-to-consumer genetics database that law enforcement personnel may use is largely dependent on the database's contractual agreement with the consumer. Currently, only three consumer genetics databases allow for IGG in their terms of service. The databases are GEDmatch[76], Family Tree DNA[77], and DNA Solves.[78] As of January 1, 2020, 23andMe's privacy policy explicitly states, "**We**

69. *Id.*
70. *Id.*
71. *Id.*
72. *Id.*
73. *Id.*
74. *Id.*
75. *Id.*
76. GEDmatch offers four classes of DNA data on their website: 'Private', 'Research', 'Public + opt-in', and 'Public + opt-out.'

> 'PUBLIC + OPT-IN' DNA data is available for comparison to any Raw Data in the GEDmatch database using the various tools provided for that purpose. 'PUBLIC + OPT-OUT' DNA data is available for comparison to any Raw Data in the GEDmatch database, except DNA kits identified as being uploaded for Law Enforcement investigation of a Violent Crime. Comparison results, including your kit number, name (or alias), and email will be displayed for 'Public' kits that share DNA with the kit being used to make the comparison, except that kits identified as being uploaded for Law Enforcement purposes will only be matched with kits that have 'opted-in'.

GEDmatch.Com Terms of Service and Privacy Policy, GEDMATCH, https://www.gedmatch.com/Documents/tos_20210111.html (last updated Jan. 11, 2021).

77. FamilyTreeDNA reserves the right to share a user's genetic profile under two circumstances. The first is for a legal or regulatory process. The policy states "we may provide information that we collect from you if that information is relevant to a court subpoena or to a law enforcement authority or other government investigation, provided this is permissible under applicable data protection law." The second circumstance is through Law Enforcement Matching, which allows FamilyTreeDNA to "create limited access law enforcement accounts ("LE Accounts") which are permitted to upload genetic information to the database to identify the remains of a deceased individual or to identify the perpetrator of a homicide or sexual assault."

will not provide information to **law enforcement** or **regulatory authorities** unless required by law to comply with a valid court order, subpoena, or search warrant for genetic or Personal Information . . . ."[79] Ancestry.com also has a policy in their guide for law enforcement which states,

> Ancestry does not voluntarily cooperate with law enforcement. To provide our Users with the greatest protection under the law, we require all government agencies seeking access to Ancestry customers' data to follow valid legal process and *do not* allow law enforcement to use Ancestry's services to investigate crimes or to identify human remains.[80]

However, similar to 23andMe's privacy policy, law enforcement access is still subject to "valid trial, grand jury or administrative subpoena" requests.[81] Therefore, protection of consumer genetics data from law enforcement agencies is far from absolute.

III. EXISTING LEGAL FRAMEWORKS

A. Federal Regulation of Investigative Genetic Genealogy

On the federal level, the Department of Justice ("Department") announced its Interim Policy on Forensic Genetic Genealogical[82] DNA Analysis and Searching ("Interim Policy") in September 2019. The interim policy was intended to "promote the reasoned exercise of investigative, scientific, and prosecutorial discretion in cases that involve forensic genetic genealogical DNA analysis and searching."[83] This policy is only applicable to (1) investigative agencies in the Department, (2) criminal investigations that the Department provides funding to conduct forensic genetic genealogy ("FGG") searches, (3) criminal investigations that have Department employees or contractors conducting the genealogical research, and (4) federal, state, local,

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FamilyTreeDNA Privacy Statement, FAMILYTREEDNA, https://www.familytreedna.com/legal/privacy-statement (last updated May 7, 2019).

78. INT'L SOC'Y OF GENETIC GENEALOGY WIKI, *supra* note 57.

79. *Privacy Highlights*, 23ANDME, https://www.23andme.com/about/privacy/ (last visited Oct. 22, 2020).

80. *Ancestry Guide for Law Enforcement*, ANCESTRY, https://www.ancestry.com/cs/legal/lawenforcement (last visited Oct. 22, 2020).

81. *Id.*

82. For all intents and purposes, "Forensic Genetic Genealogical Analysis" is a synonym for "Investigative Genetic Genealogy."

83. *Interim Policy: Forensic Genetic Genealogical DNA Analysis and Searching*, U.S. DEP'T OF JUST. (Nov. 01, 2019), https://www.justice.gov/olp/page/file/1204386/download.

or tribal government agencies that receive grant award funding from the Department that is used to conduct FGG searches.[84]

The Department of Justice requires a few procedural conditions to be met before consumer genetics databases can be utilized by applicable law enforcement agencies. There are only two scenarios which are eligible for FGG searches. The first FGG scenario involves using a candidate's forensic sample from the putative perpetrator in an unsolved violent crime.[85] Unsolved violent crimes are defined as homicides or sex crimes; however, other violent crimes are eligible for FGG searches when there is a "substantial and ongoing threat to public safety or national security."[86] The second FGG scenario involves identifying the remains of a suspected homicide victim.[87] This note only addresses the first scenario.

Next, the putative perpetrator's forensic profile must have been uploaded to CODIS and the CODIS search must have failed to produce a probative and confirmed DNA match.[88] The lead investigative agency must also have pursued reasonable leads to solve the case before turning to FGG.[89] If the previous conditions have been satisfied, the investigative agency may contact a designated official at the CODIS laboratory who originally uploaded the putative perpetrator's file to CODIS.[90] The laboratory official will determine if the forensic sample is suitable for FGG and may also advise on reasonable scientific alternatives to FGG.[91] Finally, the investigative agency will meet with their prosecutor and determine whether the forensic sample is suitable for FGG and is a necessary and appropriate step to develop investigative leads.[92]

The Interim Policy also sets forth procedural guidelines for using genetic genealogy services. Investigative agencies are required to identify themselves as law enforcement and can only use genetic genealogy services that provide explicit notice to both their users and the public that law enforcement can utilize the site to investigate crime.[93] If possible, it is also required that user settings be configured to pre-

84. *Id.* at 2.
85. *Id.* at 4.
86. *Id.* at 4–5.
87. *Id.*
88. *Id.* at 5.
89. *Id.*
90. *Id.*
91. *Id.*
92. *Id.* at 5–6.
93. *Id.* at 6.

vent other site users from viewing the FGG profile data.[94] FGG profiles are only authorized for law enforcement identification purposes and investigative agencies must take measures to ensure other parties who have access to these profiles also use them for the same limited purposes.[95] Parties with access to these profiles are strictly prohibited from using the FGG samples to determine genetic predisposition for disease and any other data identifying medical conditions or psychological traits.[96] Investigative agencies cannot arrest suspects solely on the basic of information gathered by FGG searches; other investigative work is necessary to truly identify the suspect of an unsolved violent crime.[97] The Department predicted that a final policy would be issued in 2020.[98] However as of 2021, a final policy on FGG searches has not been issued.

B. State Regulation of Investigative Genetic Genealogy

States such as New York, Maryland, Washington, and Utah, have introduced bills to address the burgeoning use of IGG.[99] As of 2021, Maryland is the only state with an active bill under consideration. New York Senate Bill S703[100], Washington House Bill 2485[101], and Utah House Bill 231[102] all died in committee last year. Maryland's House Bill 240 is largely modeled after the Department of Justice's Interim Policy.[103] Under the Maryland House Bill, judicial authorization is required to perform FGG searches.[104] Only violent crimes are eligible for FGG, and genetic genealogy services must provide explicit

94. *Id.*
95. *Id.*
96. *Id.* at 6–7.
97. *Id.*
98. *Department of Justice Announces Interim Policy on Emerging Method to Generate Leads for Unsolved Violent Crimes*, U.S. DEP'T OF JUST., https://www.justice.gov/opa/pr/department-justice-announces-interim-policy-emerging-method-generate-leads-unsolved-violent (last updated Nov. 19, 2020).
99. Crime and Justice News, *Lawmakers Take on Investigative Genetic Genealogy*, CRIME REPORT, Feb. 21, 2020, https://thecrimereport.org/2020/02/21/lawmakers-take-on-investigative-genetic-genealogy/.
100. Sen. B. S703, 2019-2020 Reg. Sess. (N.Y. 2019), https://www.nysenate.gov/legislation/bills/2019/s703 (last visited Mar. 24, 2021).
101. Wash. H.B. 2485, 66th Leg., 2020 Reg. Sess. (Wash. 2020), https://legiscan.com/WA/text/HB2485/id/2097491. (last visited Mar. 24, 2021); Wash. H.B. 2485, 66th Leg., 2020 Reg. Sess. (Wash. 2020), https://www.billtrack50.com/billdetail/1172930 (last visited Mar. 24, 2021).
102. H.B. 231, 2020 Gen. Sess. (Utah 2020), https://le.utah.gov/~2020/bills/static/HB0231.html (last visited Mar. 24, 2021).
103. U.S. DEPT. OF JUSTICE, *supra* note 98; H.B. 240, 442nd Gen. Assemb., Reg. Sess. (Md. 2021) (*Compare* introduction of H.B. 240 with DOJ introduction).
104. H.B. 240, 442nd Gen. Assemb., Reg. Sess. at § 17-102 (D)(1) (Md. 2021).

notice to their patrons about law enforcement's ability to access genealogies.[105] In contrast to the Interim Policy, Maryland's bill penalizes violations. These violations trigger misdemeanor convictions accompanied by prison sentences lasting one to five years and/or fine impositions that range from $1,000 to $2,000.[106] The bill provides for a licensing structure for laboratories to analyze genetic data in connection with FGG.[107] Furthermore, a cause of action is provided for people whose FGG Profile or DNA sample are "wrongfully disclosed, collected, or maintained."[108] This is Maryland's third bill addressing FGG since 2019.[109] House Bill 30 and Senate Bill 848 died in committee in 2019 and 2020, respectively.[110]

C. DNA and Property

In the United States, there is a history of genetic material being monetized commercially without the knowledge or knowing consent of the progenitor of the genetic material.[111] Currently, five states have recognized and codified an individual's personal property interest in their own DNA.[112] Many cases involving genetic material base their cause of action in the tort theory of conversion.

In *Moore v. Regents of the University of California*, a man seeking treatment for hairy-cell leukemia at UCLA Medical Center found himself in a predicament where his genetic material was being used for profit without his knowledge.[113] John Moore's attending physician, David Golde, recognized the significant commercial value of Moore's blood products.[114] During the seven year time period of follow-up testing for Moore's leukemia, Golde removed tissue, sperm,

105. *Id.*
106. *Id.* at § 17–102(I) & (J).
107. *Id*. at § 17–102(E).
108. *Id*. at § 17–102(K).
109. *See* H.B. 30, 2019 Leg., Reg. Sess. (Md. 2019); S.B. 848, 2020 Leg., Reg. Sess. (Md. 2020); H.B. 240, 442nd Gen. Assemb., Reg. Sess. (Md. 2021).
110. H.B. 30, 2019 Leg., Reg. Sess. (Md. 2019);, https://legiscan.com/MD/bill/HB30/2019 (last visited Mar. 23, 2021); S.B. 848, 2020 Leg., Reg. Sess. (Md. 2020), LEGISCAN, https://legiscan.com/MD/bill/SB848/2020 (last visited Mar. 23, 2021).
111. *See* Susan Scutti, *The Government Owns Your DNA. What Are They Doing with It?*, NEWSWEEK (July 24, 2014), http://www.newsweek.com/2014/08/01/whos-keeping-your-data-safe-dna-banks-261136.html.
112. Jessica L. Roberts, *Progressive Genetic Ownership*, 93 NOTRE DAME L. REV. 1105, 1128 (2018).
113. Moore v. Regents of the Univ of Cal., 51 Cal. 3d 120, 125–28 (1990); Jonathan F. Will, Comment, *DNA as Property: Implications on the Constitutionality of DNA Dragnets*, 65 PITT. L. REV. 129, 139–40 (2003).
114. Will, *supra* note 113 at 139.

bone marrow, blood, and other biological samples from Moore's person.[115] Golde created and patented the "MO" cell line from Moore's genetic material and received more than $400,000 for access to the cell line from biotechnology companies.[116] In a final ruling on Moore's lawsuit against Golde and others for conversion of his genetic material, the Supreme Court of California found that Moore's consent to the procedures amounted to an abandonment and relinquishment of any rights over the tissues involved.[117] Apparently, Moore lacked a property interest in his biological tissue once it left his body.[118]

In contrast, consumer genetics profiles are different from pure biological material. Genetics profiles are derived from pure biological material. These profiles are the "fruit of the labor" used to interpret and report the genetic information contained in pure biological material.[119] For example, the pure biological material sent to consumer genetics databases is typically saliva.[120] Saliva on its own is not what is valued in transactions with consumer genetics databases. However, the raw genetic data and possible information that can be generated from these profiles do contain value. As of today, there are no laws codifying individual property rights in genetic profiles.

D. Ownership of Genetic Data

In terms of who holds ownership over the genetic profiles on these databases, there are varying levels of ownership. For GEDmatch users, raw DNA data, family trees, and other genealogy data are the property of the user.[121] 23andMe users waive any property rights in

115. *Id.*
116. *Id.* at 139–40.
117. *Id.* at 140.
118. Roberts, *supra* note 112.
119. *See DNA Evidence: Basics of Analyzing*, NAT'L INST. OF JUST. (Aug. 8, 2012), https://nij.ojp.gov/topics/articles/dna-evidence-basics-analyzing (listing the general procedure of DNA testing which involves "1) the isolation of the DNA from an evidence sample containing DNA of unknown origin, and generally at a later time, the isolation of DNA from a sample (e.g., blood) from a known individual; 2) the processing of the DNA so that test results may be obtained; 3) the determination of the variations in the DNA test results (or types), from specific regions of the DNA; and 4) the comparison and interpretation of the test results from the unknown and known samples to determine whether the known individual is not the source of the DNA or is included as a possible source of the DNA.").
120. *See Providing Saliva Sample for DNA Test Kit*, 23ANDME, https://customercare.23andme.com/hc/en-us/articles/202904530-Providing-Saliva-Sample-for-DNA-Test-Kit (last visited Apr. 11, 2021); *How it Works*, FAMILYTREEDNA, https://www.familytreedna.com (last visited Apr. 11, 2021); *Activating Your AncestryDNA Test*, ANCESTRY, https://www.ancestry.com/dna/activate/instructions (last visited Apr. 11, 2021).
121. GEDMATCH, *supra* note 76.

research or commercial products that "include or result from [their] Genetic Information or Self-Reported Information."[122] Also, there is no explicit mention of whether 23andMe or the consumer retains property rights outside of research or commercial products[123] produced by 23andMe. Meanwhile, Ancestry.com users retain ownership of their DNA and their DNA Data.[124] Finally, FamilyTreeDNA users also retain ownership of their Personal Information, Self-Reported Information, and User Provided Content.[125]

IV. THE FIFTH AMENDMENT TAKINGS CLAUSE

"[T]he hallmark of a protected property interest is the right to exclude others."[126] The Fifth Amendment serves as a constitutional protection of the property interests of individuals. The Takings Clause of the Fifth Amendment sets forth the following statement, ". . . nor shall private property be taken for public use, without just compensation."[127] The Takings Clause was designed to prevent the Government from forcing individuals to bear public burdens alone which "in all fairness and justice, should be borne by the public as a whole."[128]

In 1897, the Fifth Amendment Takings Clause was incorporated to apply to the states under the Fourteenth Amendment, thereby protecting individuals from unconstitutional federal and state intrusions upon their private property.[129] There are three prongs that need to be satisfied in a Takings Clause analysis: there must be a (1) taking of private property by the government (2) for the purpose of public us-

122. *Terms of Service*, 23ANDME, https://www.23andme.com/about/tos/ (last updated Sept. 30, 2019).

123. Commercialization of genetic information seems to be limited to research conducted on consumer's genetic data and "apply[ing] this new knowledge to improve health care." *Id.* Even still, "23andMe will never release your individual-level Genetic Information and/or Self-Reported Information to any third party without asking for and receiving your explicit consent to do so, unless required by law." *Id.*

124. *Your Privacy*, ANCESTRY, https://www.ancestry.com/cs/legal/privacystatement#personal-info-collect (last updated Aug. 3, 2021).

125. *Terms of Service*, FAMILYTREEDNA, https://www.familytreedna.com/legal/terms-of-service (last updated Mar. 12, 2019).

126. Coll. Sav. Bank v. Fla. Prepaid Postsecondary Educ. Expense Bd., 527 U.S. 666, 673 (1999).

127. U.S. Const. amend. V.

128. Armstrong v. United States, 364 U.S. 40, 49 (1960).

129. Chi., Burlington and Quincy R.R. Co. v. Chicago, 166 U.S. 226, 236 (1897).

age, (3) without just compensation.[130] This article argues that there is a valid Takings Clause claim in the context of genetic information being used for law enforcement by establishing that (1) that law enforcement access to DNA profiles on consumer genetics databases constitutes a physical taking of private genetic property; (2) that this physical taking is for the purpose of promoting the general welfare of the public through solving crime; and (3) that the lack of a compensation scheme for the appropriation of these genetic profiles is a violation of the Takings Clause of the Fifth Amendment.

A. Physical Taking

Law enforcement's appropriation of genetic profiles from consumer genetics databases constitutes a physical taking of private personal property. A physical taking occurs when the government either takes possession of an individual's private property or makes a permanent physical invasion on the individual's private property.[131] Takings are not limited to real property, personal property can be the subject of a Takings Clause violation as well.[132] A taking by the government is not construed so narrowly as to only encompass takings for the government's own personal use.[133] Takings are broad enough to also include appropriations where an individual's private property is given to someone else.[134] In the case of IGG, a physical taking occurs when law enforcement officials give access to consumer genetics profiles to third party laboratories to analyze and compare to crime scene genetic profiles.

1. Consumer Genetics Profiles Are Intangible Personal Property

Here, the consumer's genetic profile can be considered their personal property when considering (1) traditional definitions of personal property and (2) the terms of service for consumer genetic databases. Personal property is defined as "[t]he belongings of an individual, ex-

130. *See* U.S. Const. amend. V.; see also Armstrong v. United States, 364 U.S. 40, 49 (1960) (providing one of many examples of the elements of the Takings Clause decided in Supreme Court cases).

131. Horne v. Dep't of Agric., 576 U.S. 351, 363, 378 (2015).

132. *See Id.* at 358 (holding that the Government's selling, allocating, or other disposing of a raisin farmer's crop under the California Raisin Marketing Order constitutes a taking of private personal property.).

133. Richard A. Epstein & Eduardo M. Peñalver, *The Fifth Amendment Takings Clause*, Const. Ctr., https://constitutioncenter.org/interactive-constitution/interpretation/amendment-v/clauses/634.

134. *Id.*

cluding any real estate property or other buildings. . . It generally includes tangible and intangible assets of an individual."[135] In states that recognize a property interest in one's own genetic material, this is a simple argument. However, in the federal government and states that do not yet recognize property rights in genetic material, let alone genetic profiles, the argument for personal property rights in these profiles can become complex.

Genetic profiles compiled by direct-to-consumer databases are intangible. Intangible personal property has been described as personal property "whose value stems from its intangible elements rather than from its specific tangible elements."[136] As such, consumer genetics profiles gain their value from the information they possess rather than the physical properties of the DNA itself. Thus, an individual's genetic profile can be valuable for multiple reasons. The profiles carry sensitive health information, information on one's ancestral background, and can provide a means of connecting with unknown relatives. Given the vast worth that genetic profiles carry and the fact that these profiles can only be compiled from an individual's biological material, it is safe to recognize genetic profiles as valuable, personal property of an individual.

Another argument in favor of property rights in genetic profiles comes from the terms and conditions of the consumer genetics databases. GEDmatch, Ancestry, and FamilyTreeDNA all allow their users to maintain ownership rights and control over their genetic profiles. Although 23andMe users waive commercial and research rights in products generated by the company, the company requires express consumer authorization to release individual-level Genetic Information to third parties. Thus, if the companies regard these profiles as the property of the user, the user should be able to control access to the profile.

2. Law Enforcement Utilization of Consumer Genetic Profiles Constitutes a Physical Taking of Intangible Personal Property.

Because genetics profiles are the intangible personal property of an individual, the access to this information required by IGG can pose

135. *What Is Personal Property?*, BLACK'S L. DICTIONARY, https://thelawdictionary.org/personal-property/ (last visited Apr. 21, 2021).

136. Marc Hoffman, *Intangible Personal Property*, PLANNED GIVING DESIGN CTR., https://www.pgdc.com/pgdc/intangible-personal-property (last updated Sept. 15, 2012).

an issue. Law enforcement utilization of the consumer's genetic profiles can serve as an encroachment upon the consumer's use and control of their genetic property. This encroachment mainly occurs when private genetic property is given to third-party laboratories to conduct genealogical analyses. Courts have "long held that interference with the right to exclude others is close to a per se taking of property."[137] Thus, government investigative agencies take database user's private property by interfering with the user's right to exclude others from viewing sensitive genetic information. The choice of the consumer to decide and control who sees their information beyond law enforcement is removed.

A counterargument may point to the fact that database users sign away any government taking claims by agreeing to the terms and conditions for the consumer genetics website that they use. While this argument may apply to some databases, it does not apply to others. Of the consumer genetics databases that have been mentioned so far, FamilyTreeDNA is the gold standard when it comes to informing users about law enforcement utilization of the database. The database's privacy policy explicitly states that personal information may be shared "to comply with requests from law enforcement or their authorized representatives that meet our Law Enforcement Guidelines."[138] Furthermore, the Law Enforcement guideline states that law enforcement and "any third-party representative working with law enforcement" can utilize the database for IGG if approved by FamilyTreeDNA.[139] Therefore, FamilyTreeDNA users are aware of what opting into law enforcement searches can entail for their genetic data. GEDmatch falls short of this detailed standard. GEDmatch users are able to opt into law enforcement searches similar to FamilyTreeDNA users. However, GEDmatch's terms of service and privacy policy make no mention of "authorized" third-party representatives of law enforcement (such as the laboratory personnel who conduct IGG) being able to access consumer's personal genetic information.[140] On the opposite side of the spectrum, 23andMe and

137. Eugene Volokh, *Sovereign Immunity and Intellectual Property*, 73 S. CAL. L. REV. 1161, 1163 n.5 (2000) (citing Dolan v. City of Tigard, 512 U.S. 374, 384 (1994)).

138. *FamilyTreeDNA Privacy Statement*, FAMILYTREEDNA, https://www.familytreedna.com/legal/privacy-statement (last updated May 7, 2019).

139. *FamilyTreeDNA Law Enforcement Guide*, FAMILYTREEDNA, https://www.familytreedna.com/legal/law-enforcement-guide (last visited Apr. 22, 2021).

140. *GEDmatch.Com Terms of Service and Privacy Policy*, GEDMATCH, https://www.gedmatch.com/terms-of-service-privacy-policy (last updated Jan. 11, 2021).

Ancestry completely prohibit law enforcement searches of their databases. Thus, while it can reasonably be argued that FamilyTreeDNA users consented to their private genetic property being used to identify violent criminals, the same cannot be said of GEDmatch, 23andMe, and Ancestry users. Therefore, IGG likely involves a physical taking because law enforcement officials give third-party laboratories access to the informational wealth contained in consumer's genetic profiles in order to conduct IGG.

B. Public Use

Law enforcement's appropriation of genetic profiles from consumer genetics databases for the purpose of solving crime constitutes a taking of private property for public use. Supreme Court cases have "defined [public purpose] broadly, reflecting a longstanding policy of deference to legislative judgments in this field."[141] Traditionally, the exercise of police power has been applied with a public purpose in mind.[142] This is because the police power promotes the general welfare of society through the protection of the public's safety and health.[143]

Here, the purpose of law enforcement in appropriating genetic profiles is to assist in exercising police power. These genetic profiles serve as tools used to identify the suspects of crime. The capture of criminal suspects thereby aids in improving safety and health by protecting the property and lives of the public from criminals.

C. Just Compensation

Immediately after the government has appropriated an individual's private property without compensating them, the property owner has an actionable claim under the Takings Clause.[144] However, if the property owner has some way to obtain compensation after the taking of their property, there is no violation of the Takings Clause.[145] Typically, just compensation is measured by the market value of the property at the time of the taking.[146] However, this measure is not

141. Kelo v. City of New London, 545 U.S. 469, 480 (2005).
142. Berman v. Parker, 348 U.S. 26, 32 (1954) (stating that "[p]ublic safety, public health, morality, peace and quiet, law and order . . . are some of the more conspicuous examples of the traditional application of the police power").
143. *Id.*
144. Knick v. Twp. of Scott, 139 S. Ct. 2162, 2170 (2019).
145. *Id.* at 2167–68.
146. United States v. 50 Acres of Land, 469 U.S. 24, 25 (1984).

appropriate in all circumstances. When market value would be too difficult to ascertain, or when its application would result in manifest injustice to the owner or public, other compensation schemes must be utilized.[147]

Currently, there are no compensation schemes used to compensate either consumer genetics companies or the consumers who utilize these services. The consumer's genetic profile can be utilized by law enforcement and the designated third-party laboratory without any exchange of money or other consideration. Since there is no way for the consumer genetics company nor the consumer who owns the profile to be compensated for law enforcement's use of the genetic profile, there is an actionable claim under the Takings Clause.

Some may argue that consumer genetics database users are not entitled to compensation because the consumers do not lose their property permanently. This argument does not pass muster on two fronts. First, if investigative agencies do not destroy the consumer's genetic profile after the investigation is complete, ongoing access to the profiles constitutes a compensable taking of private property. Second, even assuming the investigative agency actually destroyed any genetic profiles utilized during the IGG process, this argument still does not hold weight. "Once the government's actions have worked a taking of property, 'no subsequent action by the government can relieve it of the duty to provide compensation for the period during which the taking was effective.'"[148] In *United States v. Dickinson*, the Supreme Court found that respondents were still entitled to compensation for a taking of their property, even though they reclaimed most of the property taken by the Government.[149] The Court reasoned that the respondents' reclamation efforts did not change the fact that "the land was taken when it was taken and an obligation to pay for it then arose."[150] In the case of IGG, the fact that investigative agencies do not maintain permanent access to the user's genetic profile does not preclude a finding of a Takings Clause violation. Reclamation of the genetic profile does not change the fact that the profile was used. Thus, database users are still entitled to compensation for access to their private property.

147. United States v. Commodities Trading Corp., 339 U.S. 121, 123 (1950).

148. Ark. Game & Fish Comm'n v. United States, 568 U.S. 23, 33 (2012) (quoting First Eng. Evangelical Lutheran Church v. Cnty. of L.A., 482 U.S. 304, 321 (1987)).

149. United States v. Dickinson, 331 U.S. 745, 751 (1947).

150. *Id.*

V. COMPENSATION SCHEMES AND LEGISLATION SOLUTIONS TO IGG

A. Compensation for the Use of Genetic Profiles

Compensation schemes are one of the more straightforward avenues for addressing Takings Clause violations that may arise in the use of IGG. This is especially true given Takings Clause issues do not arise until there is a failure to mete out compensation for government takings of property. Compensation solutions also function as providing the best outcomes for both investigators and owners of genetic profiles. The IGG practice can continue without Fifth Amendment concerns, and consumer genetics users may be more inclined to opt into law enforcement searches if they knew compensation was available. The following compensation schemes can be created on either a federal or state level.

1. Flat Compensation Based on Price of Genetic Testing Kits

It is difficult to put a price on the worth of genetic material. On a basic level, one might liken the value of a genetic profile to the cost of paying for a genetic testing kit. Following this rationale, an IGG compensation scheme could pay the owners of genetic profiles the cost of the genetic testing kit. These costs differ between genetic testing companies. Here I will examine 23andMe, AncestryDNA, and FamilyTreeDNA.

23andMe offers three separate services.[151] The cheapest service, Ancestry + Traits, is $99 and gives a minimum of 80 total reports on Ancestry Composition, Ancestry Detail Reports, Haplogroups, and trait reports.[152] The next testing kit, Health + Ancestry, is $199 and includes the previous reports in addition to Health Predisposition reports, Carrier Status Reports, Wellness Reports, and Family Health History.[153] The final testing kit, 23andMe+ Membership, is currently $169 plus $29 per year.[154] This kit includes everything in the previous kits, Pharmacogenetics reports, and ongoing new features added to

151. *Choose the Service that's Right for You*, 23ANDME, https://www.23andme.com/compare-dna-tests/?sub=ver2&cabt=NAo (last visited Mar. 24, 2021).

152. *Id.* Trait Reports "explore how your DNA influences your appearance and senses, from eye color to taste preferences." *Understanding DNA Traits Reports*, 23ANDME, https://customercare.23andme.com/hc/en-us/articles/221782088-Understanding-DNA-Traits-Reports (last visited Mar. 24, 2021).

153. 23ANDME, *supra* note 151.

154. *Id.*

the site.[155] AncestryDNA is slightly different and cheaper than 23andMe. First, AncestryDNA also has a $99 testing kit that is on par with 23andMe's $99 kit.[156] The only other kit AncestryDNA offers is $119 and includes reports on how the user's genetics could influence their personal traits.[157] FamilyTreeDNA is completely different from the previous two services. FamilyTreeDNA offers single tests and bundle tests.[158] The single tests range from $79 to $449.[159] The FamilyTreeDNA's $79 dollar test is similar in capability to 23andMe and Ancestry DNA's $99 test.[160] However, the more expensive tests provide in-depth sequencing of maternal or paternal DNA.[161] Family Tree DNA's bundle testing ranges from $198 to $487.[162] These bundles include various combinations of single tests.[163]

The pricing of genetic testing kits varies based on the company offering the testing and the amount of information requested by the consumer. The more sensitive and/or complex the information requested, the more expensive the testing kit will be. For the purposes of IGG, the consumer's genetic profile need only have family matching capabilities.[164] As discussed in the previous paragraph, family matching capabilities are available in the cheapest kits offered by consumer genetics services. Thus, depending on which service is utilized by law enforcement, the baseline DNA testing kit amount could be used in a compensation scheme to satisfy the Takings Clause. For example, if a law enforcement official utilized FamilyTreeDNA for IGG purposes and located one match in relation to a criminal suspect, the owner of the profile could be compensated $78 for the use of their profile in solving a crime.

155. *Id.*

156. *Know Your World from the Inside*, ANCESTRY, https://www.ancestry.com/dna/ (last visited Mar. 24, 2021).

157. *Id.*

158. *Explore: Your DNA Story*, FAMILYTREEDNA, https://www.familytreedna.com/products (last visited Mar. 24, 2021).

159. *Id.*

160. *Do You Know What You Are Made of?*, FAMILYTREEDNA, https://www.familytreedna.com/products (last visited Sept. 10, 2021); ANCESTRY, *supra* note 156; 23andMe, *supra* note 147.

161. FAMILYTREEDNA, *supra* note 160.

162. *Explore: Deep Ancestry*, FAMILYTREEDNA, https://www.familytreedna.com/products (last visited Sept. 10, 2021).

163. *Id.*

164. *See* McDermott, *supra* note 11 (providing a big-picture example of a typical IGG process that only requires familial matching, eventually producing a "filtered down list of candidates" to law enforcement).

On the positive side, this flat scheme is likely the most stable. Compensation amounts can be easily identified based on the prices offered by the consumer genetics testing service. On the negative side, this structure can invite inequity. The genetic profiles that are developed for the baseline services offered by these testing companies are the same. However, a user on FamilyTreeDNA may be compensated $75 for the use of their data, while a 23andMe user is compensated $99. Therefore, it can be inequitable for users to receive different amounts in compensation for providing the same exact benefit to investigative agencies who utilize their genetic profiles.

2. Sliding Scale Compensation Based on the Value of Genetic Profiles

Another way to compensate the owners of genetic profiles would be to structure compensation schemes on the potential value, or usefulness, of the genetic profile. In a non-law enforcement context, biological material, which includes genetic information, has the potential to create hundreds of thousands of dollars in revenue.[165] Furthermore, as we have seen in the case of Henrietta Lacks, genetic material can carry unique attributes that heighten the value of the material for research purposes.[166] It is a fact that some genetic profiles carry more worth on the basis of their usefulness for various purposes. In the context of IGG, a genetic profile may also be more useful for a few reasons. First, the genetic profile could be a close match to the criminal suspect, requiring less analysis in determining the criminal suspect's identity. Second, the genetic profile may be tied to multiple criminal suspects, thus making the profile useful in solving multiple crimes. Third, the unknown criminal suspect may be elusive or have committed serious crimes that render their capture of utmost impor-

165. *See* Alexandra Witze, *Wealthy Funder Pays Reparations for Use of HeLa Cells*, NATURE, https://www.nature.com/articles/d41586-020-03042-5 (last updated Oct. 30, 2020) ("In 1951, doctors took cancerous cells from Lacks without her consent, and later created the HeLa cell line, which today supports a multibillion-dollar biotechnology industry."); *see also* Leigh M. Harlan, *When Privacy Fails: Invoking a Property Paradigm to Mandate the Destruction of DNA Samples*, 54 DUKE L.J. 179, 198 (2004) ("Biotechnological and genetic research further commodifies body parts, generating billions of dollars of economic gain from the use of information and materials gleaned from biological laboratory studies.")

166. "Mrs. Lacks' cells were unlike any of the others [Dr. George Grey] had ever seen: where other cells would die, Mrs. Lacks' cells doubled every 20 to 24 hours." *The Legacy of Henrietta Lacks*, JOHNS HOPKINS MED., https://www.hopkinsmedicine.org/henriettalacks/index.html (last visited Sept. 20, 2021). Mrs. Lacks' cells were the first that could be "easily shared and multiplied in a lab setting." *Id.* *See* Witze, *supra* note 165 (stating that the HeLa cell line now "supports a multi-billion-dollar biotechnology industry.").

tance to law enforcement officials, and any information aiding in their capture increases in value. In conclusion, compensation schemes for IGG could operate on a sliding scale on the basis of usefulness to law enforcement.

In regard to usefulness based upon the strength of the genetic connection between a criminal suspect and a consumer genetic profile, the closer the genetic match to a criminal suspect, the higher the compensation level for the owner of the genetic profile. Thus, a baseline amount for genetic compensation could be the cost of the genetic testing kit, and upward and downward departures from the baseline amount can be made based on the strength of the connection. Marc McDermott, a member of the National Genealogical Society, described matches within the 2nd cousin range and closer as being a "reasonably simple" scope of investigation for IGG.[167] Therefore, compensation could increase incrementally from the 2nd cousin range to matches that are as close as parents, siblings, or children. Parents, children, or siblings matches can be the ceiling of this sliding scale compensation scheme. When dealing with matches that are weaker than the 2nd cousin range, compensation can decrease to account for the increased complexity of identifying criminal suspects.

As for genetic profiles that are tied to multiple criminal suspects, this information likely would not be readily apparent unless an investigative agency has multiple alleged perpetrator profiles on a consumer genetics database. In the event such a connection is not readily apparent, compensation for these users could increase with each connection to a new criminal suspect. Thus, a similar sliding scale as in the previous paragraph could be useful. There, baseline compensation is provided for the first useful genetic match, and upward departures from the baseline could be available for each successive useful genetic match related to a criminal suspect.

Finally, usefulness based upon the notoriety of the criminal suspect can function similar to public reward systems for information on elusive criminals. Here, consumer genetics database users may be more involved in the IGG process. Investigative agencies could send out an alert to a database's users for assistance with identifying an

167. McDermott, *supra* note 11; *see* Daniel Kling, Christopher Phillips, Debbie Kennet & Andreas Tillmar, *Investigative Genetic Genealogy: Current Methods, Knowledge and Practice*, FORENSIC SCI. INT'L: GENETICS, Jan. 2021, at 1, 8, https://doi.org/10.1016/j.fsigen.2021.102474 (stating that "[s]econd cousins are considered to be the 'sweet spot' where identification should be possible" in the investigative genetic genealogy process).

elusive subject. This alert could petition users to opt into law enforcement searching, and viable genetic matches would be able to receive an above-baseline compensation amount that has been designated by the investigative agency.

B. Legislation to Protect Individuals

1. Federal Legislation

Another possible solution to Takings Clause violations would be federal legislation addressing the use of IGG. As of February 2021, the Department of Justice has not released any rule or regulation addressing IGG since the Interim Policy that was issued in 2019.[168] A final policy can be issued by the Department of Justice that addresses compensation available for consumer genetics database users involved in IGG searches.

Furthermore, federal legislation could be introduced to establish a federal fund for paying individuals compensation for the use of their genetic data in IGG. A federal funding program could alleviate pressure on states that may have a great use for IGG but cannot afford compensation out of a state-backed funding system. This funding can also incentivize states to create legislation that generally addresses IGG and establishes compensation schemes for IGG.

2. State Regulation

The second solution under the umbrella of regulation involves state regulation of IGG. State regulation is more suited to reaching law enforcement agencies that are not under the umbrella of the Department of Justice and its funding. Some states, such as New York, Maryland, Washington, and Utah have already introduced legislation addressing IGG and the steps that need to be taken by law enforcement before IGG can be used to not only identify criminal suspects but identify victims of crime as well.[169] Other states could follow suit and begin drafting and enacting legislation to address the practice as well. Future legislation can set out to establish the above-described compensation schemes for IGG, to create penalties for accessing genetic profiles unlawfully, and/or to invest in genealogy training for police laboratories.

168. U.S. DEP'T OF JUST., *supra* note 83.
169. *See* discussion, *supra* Section III.B.

A state compensation scheme could be uniquely developed to meet the needs and abilities of a particular state in developing funding for investigative genealogy. States are better equipped to understand their own funding structures and may have different agency needs when it comes to the utilization of IGG. For example, State A may not need to designate as many funds towards IGG compensation as State B due to the lower violent crime rates and the lower number of unsolved crimes in the state. A beneficial addition to a compensation scheme would be an annual report on IGG usage similar to the one required in Maryland's House Bill 240.[170] This report could include (1) the number of times IGG and related documentation were requested; (2) the number of times IGG was granted; (3) the number of putative perpetrators that were identified through IGG; (4) the cost of IGG procedures; etc.[171] These are all important factors in maintaining an updated measure of the importance of IGG in a particular state and considering whether IGG is worth the money and effort.

It is imperative that states establish penalties for violating the procedures necessary to utilize IGG. These penalties can help ensure government officials do not violate the property rights of consumer genetics database users by making fake profiles to obtain investigative leads. Finally, it may also be beneficial for states to invest in training and licensing current labs (specifically labs that already examine police evidence) in IGG. This regulation is also based on Maryland House Bill 240.[172] Given that "there are no official genetic genealogy qualifications and no organization which can testify to an individual's ability to work on IGG cases,"[173] this is another avenue where states can uniquely develop training and licensing systems suited to the needs of the state. This training would function to dispel the need to use third-party laboratories to conduct IGG analyses, lessening the burden on the database user's property.

C. Prohibition of IGG

The most restrictive solution would be to place a total prohibition on using IGG to identify criminal suspects. This is the least favorable option given the vital role IGG can play in solving cold cases and violent crimes. However, because of the difficulty in structuring and es-

170. H.B. 240, 2021 Gen. Assemb. § 17-105(A) (Md. 2021).
171. *See id.*
172. *Id.* at § 17-104.
173. Kling et al., *supra* note 167, at 7–8.

tablishing compensation schemes to satisfy the Takings Clause, it may not be feasible to adequately value the sensitive genetic information that us is held on a consumer genetics database. Thus, if an adequate compensation scheme cannot be developed, law enforcement should not be able to circumvent the Fifth Amendment by using IGG. Therefore, a total prohibition would be appropriate.

VI. CONCLUSION

Law enforcement utilization of consumer genetics profiles for the purpose of identifying criminal suspects without compensation is a violation of the Fifth Amendment Takings Clause. Consumer genetics profiles are private personal property. IGG constitutes a public use of this private personal property. Without a compensation scheme being developed to address the use of consumer genetic profiles in this manner, both state and federal law enforcement agencies run the risk of violating individuals' Fifth Amendment rights. Compensation schemes can be developed to address the risk of constitutional violations posed by IGG, however, the onus is on the states and/or federal government to take the steps necessary to codify these schemes and foster the continued legal valuation of genetic material in this country.