No. A22-1823

State of Minnesota
In Supreme Court

State of Minnesota,

Respondent,

vs.

Michael Allan Carbo, Jr.,

Appellant.

BRIEF OF *AMICI CURIAE* AMERICAN CIVIL LIBERTIES UNION AND AMERICAN CIVIL LIBERTIES UNION OF MINNESOTA

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INTEREST OF *AMICI CURIAE*[1]

The American Civil Liberties Union ("ACLU") is a nationwide, nonprofit, nonpartisan organization dedicated to the principles of liberty and equality embodied in our federal and state constitutions and civil rights laws. The ACLU of Minnesota is the ACLU's statewide Minnesota affiliate. Both organizations have a longstanding interest in ensuring that constitutional protections for privacy are not eroded by the advance of technology.

[1] Pursuant to Rule of Civil Appellate Procedure 129.03, *amici* state that no counsel for a party authored the brief in whole or in part and no other person or entity, other than the *amici curiae*, their members, or their counsel, made a monetary contribution to the preparation or submission of the brief.

INTRODUCTION

Our DNA contains our entire genetic makeup, revealing intensely personal information like whether an individual has rare genetic disorders or is likely to develop breast cancer or sickle cell anemia. When combined with other personal information, DNA can reveal whether a person was adopted or comes from a family with a history of miscarriages or early mortality.

Despite the sensitivity of this information, we cannot avoid leaving behind carbon copies of our entire genetic code wherever we go. In less time than it takes to order a coffee, most humans shed nearly enough skin cells to cover an entire football field.[2] The only way to avoid leaving a DNA trail in places accessible to law enforcement would be to never leave home or to take outlandish precautions.

Given the revealing nature of DNA and how involuntarily we shed it, the Fourth Amendment and, independently, Article I, Section 10 of the Minnesota Constitution require a warrant for collecting and searching the DNA of a free person.

Here, without a warrant, the State secretly collected Mr. Carbo's DNA from his personal trash and then analyzed that DNA for criminal investigative purposes. Mr. Carbo was not under arrest or in government custody when his DNA was collected and analyzed. Rather, he was a free person who possessed the full measure of constitutional rights, and thus the warrant requirement attached.

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[2] *See* Erin Murphy, *Inside the Cell: The Dark Side of Forensic DNA* 5 (2015).

This case is very different from those relied on by the State below. *See* Index #78, at 5–6.[3] DNA is unlike physical items thrown out in the trash or otherwise abandoned, both because of the breadth of the sensitive information it can reveal about us and because we have no choice but to shed it on whatever items we use, so cases like *Greenwood v. California*, *Abel v. United States*, *State v. McMurray*, and *State v. Opquist* do not apply. Although this Court has held that the State may search a person's trash put out for collection without a warrant, that doctrine does not extend to the analysis of DNA collected off trash.

Accepting the State's argument in this case would give law enforcement carte blanche to collect the DNA of any Minnesotan—or *every* Minnesotan—without any court oversight. Once officers collected some item of a person's trash, they could extract and analyze the DNA unavoidably attached to it without any analysis under, or limitation from, the Fourth Amendment or, independently, Article I, Section 10 of the Minnesota Constitution. The State's approach is not limited to suspects of crimes, nor is it limited to the generation of "short, tandem, repeat" ("STR") profiles. As Justice McDermott of the Iowa Supreme Court recently wrote, if free persons "have no legitimate expectation of privacy in the 'bread-crumb trail of identifying DNA matter' we leave behind," the government would not be impeded from "includ[ing] everyone" in its "national repository of criminal offenders' DNA profiles." *State v. Burns*, 988 N.W.2d 352, 397 (Iowa 2023) (McDermott, J., dissenting) (citation omitted).

[3] All "Index" citations are to the correspondingly numbered document on the district court's docket for this action: Court File No. 69HI-CR-20-549.

Given recent technological advances in DNA analysis and the acute privacy implications of allowing the government to freely access our entire genome, this Court should reject the State's effort to extend older cases, decided in very different contexts, to bless the warrantless search at issue here. *See Riley v. California*, 573 U.S. 373, 386 (2014) (rejecting "mechanical application" of older rule to new context involving privacy-invading technology); *Maryland v. King*, 569 U.S. 435, 465 (2013) (recognizing that advances in DNA analysis could "present additional privacy concerns" and therefore require greater Fourth Amendment protection). The Fourth Amendment and Article I, Section 10 of the Minnesota Constitution may permit the government to seize an item a person discards, but they require a warrant to extract and analyze the sensitive DNA we unavoidably and involuntarily leave behind on virtually every item we touch.

ARGUMENT

I. DNA Contains Our Most Private and Personal Information, and We Cannot Avoid Shedding It Wherever We Go.

A. DNA Reveals Highly Personal and Sensitive Information.

A DNA sample contains our entire genetic makeup. This genetic information is deeply private. It can reveal intensely sensitive information about us, including our propensities for certain medical conditions; our ancestry; and our biological familial relationships, including previously unknown parentage. Private companies purport to be able to use our DNA to identify our eye, hair, and skin colors;[4] to determine whether we

[4] Parabon Snapshot, https://snapshot.parabon-nanolabs.com (last visited June 1, 2023); GEDmatch, https://www.gedmatch.com/ (last visited June 1, 2023).

are lactose intolerant or prefer sweet or salty foods;[5] and to discover the likely migration patterns of our ancestors and the identities of unknown family members.[6]

Two types of DNA analysis are available to law enforcement. The first generates a single nucleotide polymorphism ("SNP") profile, which focuses on hundreds of thousands of locations across the genome "where people differ" the most.[7] This is the kind of profile generated in 2019 from the crime-scene sample in this case. SNPs "may be responsible for the diversity among individuals, . . . the most common familial traits such as curly hair, interindividual differences in drug response, and . . . diseases such as diabetes, obesity, hypertension, and psychiatric disorders."[8] They can be used to infer phenotype (*i.e.*, appearance) of a person, as was done in this case, as well as numerous other sensitive details.

The second type of DNA analysis—the one used by law enforcement to analyze the DNA sample taken from Mr. Carbo's trash—measures how many times STR sequences occur at designated locations (called "loci") on the genome.[9] STR profiles—which are used

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[5] *Compare DNA Tests*, 23andMe, https://www.23andme.com/compare-dna-tests (last visited June 1, 2023).

[6] *What to Expect from your AncestryDNA*, Ancestry, https://support.ancestry.com/s/article/What-to-Expect-from-AncestryDNA (last visited June 1, 2023)

[7] *Single Nucleotide Polymorphisms (SNPs)*, Nat'l Human Genome Rsch. Inst., https://www.genome.gov/genetics-glossary/Single-Nucleotide-Polymorphisms (last visited June 1, 2023).

[8] Barkur S. Shastry, *SNPs: Impact on Gene Function and Phenotype*, 578 Methods Molecular Biology 3 (2009), https://pubmed.ncbi.nlm.nih.gov/19768584/.

[9] *See* Murphy, *Inside the Cell* at 7–8.

in the CODIS database[10]—are created from a relatively small number of loci, yet analysis of even those fragments increasingly yields highly sensitive facts about a person, including medical characteristics, familial relationships, and physical traits. One study that examined the STR profiles stored in CODIS was able to identify information about individuals' ancestry, which may in turn be used to reveal information about their physical appearance based on assumptions about race and ethnicity.[11] Another study suggested that the profiles maintained in CODIS can now be linked to SNP profiles.[12] And recent research indicates that it is possible to infer medical conditions from the CODIS loci. In 2020, researchers surveyed literature associating physical traits and medical characteristics with forensic STRs; they found 57 studies that documented a link with a total of 50 unique traits, including schizophrenia, Parkinson's disease, and Down syndrome.[13] Research published last year by the National Academy of Sciences supports this conclusion, finding "six significant correlations" between the CODIS core loci and the expression of neighboring

[10] CODIS is "the generic term used to describe the FBI's program of support for criminal justice DNA databases as well as the software used to run these databases." Fed. Bureau of Investigation, *Frequently Asked Questions on CODIS and NDIS*, https://www.fbi.gov/services/laboratory/biometric-analysis/codis/codis-and-ndis-fact-sheet (last visited June 1, 2023).

[11] Bridget Algee-Hewitt et al., *Individual Identifiability Predicts Population Identifiability in Forensic Microsatellite Markers,* 26 Current Biology 935, 939 (2016), https://doi.org/10.1016/j.cub.2016.01.065.

[12] Michael Edge et al., *Linkage Disequilibrium Matches Forensic Genetic Records to Disjoint Genomic Marker Sets*, 114 Proceedings of the Nat'l Acad. of Scis. 5671, 5675 (2017), https://www.pnas.org/content/114/22/5671.

[13] Nicole Wyner, et al., *Forensic Autosomal Short Tandem Repeats and Their Potential Association With Phenotype*, Frontiers in Genetics (Aug. 6, 2020), https://www.frontiersin.org/articles/10.3389/fgene.2020.00884/full.

genes, some of which have been connected to medical characteristics, including psychiatric conditions such as depression and schizophrenia and a number of severe skin and platelet conditions.[14]

New data aggregation techniques from genetic genealogy databases (like GEDmatch) and direct-to-consumer genetic testing services (like Ancestry.com) have only increased the amount of sensitive information that can be gleaned from our genetic material. *See* Index #74, ¶ 3. For example, although GEDmatch's 1.3 million users encompass only about 0.5% of the U.S. adult population, research shows that, because people share genetic information with their relatives, that data alone could be used to identify a significant proportion of Americans.[15] When this genetic data is combined with birth, death, marriage, and other public records, the resulting web of familial relationships can expose a wealth of private information: adoptions, hidden infidelities, a high risk of early mortality, or a family history of certain diseases.

[14] Mayra M. Bañuelos, et al., *Associations Between Forensic Loci and Expression Levels of Neighboring Genes May Compromise Medical Privacy*, PNAS (Sept. 27, 2022), https://www.pnas.org/doi/10.1073/pnas.2121024119.

[15] Jocelyn Kaiser, *We Will Find You: DNA Search Used to Nab Golden State Killer Can Home in on About 60% of White Americans*, Science (Oct. 11, 2018), https://www.sciencemag.org/news/2018/10/we-will-find-you-dna-search-used-nab-golden-state-killer-can-home-about-60-white (noting database's ability to identify 60% of white Americans).

B. We Cannot Avoid Shedding DNA as We Go About Our Daily Lives.

Wherever we go, we constantly shed staggering numbers of skin cells, which include our DNA.[16] The average person loses between 40 and 100 hairs per day,[17] a single sneeze spews about 3,000 cell-containing droplets into the world,[18] and merely touching a surface with one's fingertip causes DNA to be deposited there.[19] Indeed, a person involuntarily sheds roughly 50 million DNA-containing cells *each day*. With every discarded coffee cup, crumpled tissue, plastic straw, cigarette butt, soda can, piece of gum, and drifting flake of dandruff, people unavoidably and involuntarily leave a copy—and often many thousands of copies—of their genetic blueprint.

Law enforcement agencies understand the constancy with which people shed their DNA. Forensic analysts are trained to avoid contaminating evidentiary DNA samples through shedding of their own genetic material by wearing elaborate personal protective equipment, including laboratory coats, gloves, face masks or shields, and hair covers.[20] The ability of forensic investigators and others to collect DNA from everyday items has improved dramatically in recent years, meaning investigators are now able to detect,

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[16] *See* Murphy, *Inside the Cell* at 5.

[17] *See* Sheldon Krimsky & Tania Simoncelli, *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties* 117 (2012).

[18] *Id.*

[19] A.A. Oleiwi et al., *The Relative DNA-Shedding Propensity of the Palm and Finger Surfaces*, 55 Sci. & Justice 329, 329 (2015).

[20] Scientific Working Group on DNA Analysis Methods, *Contamination Prevention and Detection Guidelines for Forensic DNA Laboratories* § 2.3 (2017), https://1ecb9588-ea6f-4feb-971a-73265dbf079c.filesusr.com/ugd/4344b0_c4d4dbba84f1400a98eaa2e48f2bf291.pdf.

collect, and analyze even trace amounts of DNA, and labs can isolate and analyze DNA from tiny samples. *See, e.g.*, Transcript at 1876. Recent advances in "eDNA" research, for example, have allowed forensic experts to extract and analyze a person's DNA "from beach sand samples recovered from human footprints," from "air samples from rooms with humans present," and even in a "sterile veterinary hospital environment." *See* Elizabeth Anne Brown, *Your DNA Can Now Be Pulled from Thin Air. Privacy Experts Are Worried.,* N.Y. Times (May 15, 2023) (hereinafter, "Brown, *Your DNA*"), https://www.nytimes.com/2023/05/15/science/environmental-dna-ethics-privacy.html.

Considering the unavoidability of shedding DNA-containing cells as we go about our lives, this capability means that, without constitutional protections, every person's genetic code—and all the private and sensitive information it reveals—is vulnerable to collection, search, and exploitation at the government's whim.

II. The Fourth Amendment Protects Against Warrantless Searches and Seizures of Involuntarily Shed DNA.

The extraction and analysis of a free person's DNA constitutes a Fourth Amendment search, and the extraction and retention of DNA constitutes a Fourth Amendment seizure. In light of the substantial privacy interests at stake, the government must therefore obtain a warrant before collecting and analyzing an individual's unavoidably shed DNA.

A. Extraction and Analysis of Our DNA Is a Fourth Amendment Search.

Given the "vast amount of sensitive information that can be mined from a person's DNA," *United States v. Amerson*, 483 F.3d 73, 85 (2d Cir. 2007), this Court and others have already recognized that the extraction and the ensuing analysis of an individual's

DNA sample for criminal investigation purposes are searches under the Fourth Amendment. *State v. Johnson*, 813 N.W.2d 1, 7 (Minn. 2012); *King*, 569 U.S. at 446 (holding that DNA collection constituted a Fourth Amendment search); *see also United States v. Davis*, 690 F.3d 226, 246 (4th Cir. 2012). This is true whether the DNA is collected directly from a person's body, or from an item with which they have had contact. *Davis*, 690 F.3d at 246. And the analysis of the biological sample constitutes a separate search from the initial extraction. *See Skinner v. Ry. Labor Execs.' Ass'n*, 489 U.S. 602, 616 (1989) ("The ensuing chemical analysis of the sample to obtain physiological data is a further invasion of the tested [individual's] privacy interests."). Thus, the State's extraction and its subsequent analysis of Mr. Carbo's DNA sample constituted searches under the Fourth Amendment.

B. Extraction and Retention of Our DNA Is a Fourth Amendment Seizure.

The State's warrantless extraction and retention of Mr. Carbo's DNA interfered with his possessory rights in his DNA and thus constituted an unreasonable seizure prohibited by the Fourth Amendment. "A seizure deprives [an] individual of dominion over his or her person or property." *Horton v. California*, 496 U.S. 128, 133 (1990). Government interference with an individual's property rights is a seizure, even if the owner's privacy was not violated. *See Soldal v. Cook Cty.*, 506 U.S. 56, 62–64, 68 (1992).

One of the most crucial property rights is the right to exclude others. *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 436 (1982). This right may be violated even if the owner retains an exact copy of the property seized if it means the owner is unable to control subsequent uses of their information. *See, e.g.*, *United States v.*

Jefferson, 571 F. Supp. 2d 696, 703 (E.D. Va. 2008) (copying contents of a person's documents interferes with the person's sole possession of the information contained in those documents); *Caldarola v. Cty. of Westchester*, 343 F.3d 570, 574 (2d Cir. 2003) ("Fourth Amendment seizure has long encompassed the seizure of intangibles [such as a person's image] as well as tangibles.").

The State's extraction and analysis of Mr. Carbo's DNA interfered with his ability to control and exclude others from accessing his private genetic information. Once the State isolates a DNA sample, *all* the data in that sample is in the government's possession and outside the individual's control. This seizure is not momentary; DNA profiles are entered into state and federal databases accessible to all manner of law enforcement agencies and officials, making those profiles subject to search again and again in future investigations.

C. Searching and Seizing Our Involuntarily Shed DNA Requires a Warrant.

Law enforcement's collection and analysis of involuntarily shed DNA do not meet any exception to the general rule that searches and seizures demand a warrant, given the "very strong privacy interests" in DNA information. *Amerson*, 483 F.3d at 85; *see also, e.g.*, *King*, 569 U.S. at 481 (Scalia, J., dissenting) (noting the "vast (and scary) scope" of DNA collection); *State v. Medina*, 102 A.3d 661, 691 (Vt. 2014) (explaining DNA "provide[s] a massive amount of unique, private information about a person that goes beyond identification of that person"); *People v. Buza*, 413 P.3d 1132, 1152 (Cal. 2018) (court was "mindful of the heightened privacy interests in the sensitive information that can be extracted from a person's DNA").

The U.S. Supreme Court's decision in *Maryland v. King* is not to the contrary. *King* permitted limited use of DNA testing, *post-arrest*, to serve "the need for law enforcement officers in a safe and accurate way to process and identify the persons and possessions they must take into custody." *King*, 569 U.S. at 449. *King* emphasized that the government's interest in identification is connected to the "routine administrative procedure[s] at a police station house incident to booking and jailing the suspect." *Id.* (quoting *Illinois v. Lafayette*, 462 U.S. 640, 643 (1983) (quotation marks omitted)). And it highlighted the diminished privacy rights of the individuals being searched—people who have been arrested and charged with a crime. 569 U.S. at 443, 462.

In contrast, the DNA evidence here was obtained as part of the normal law enforcement process of gathering evidence to investigate crime, which is squarely governed by the Fourth Amendment's warrant requirement. *See Carpenter v. United States*, 138 S. Ct. 2206, 2221 (2018) ("[W]arrantless searches are typically unreasonable where a search is undertaken by law enforcement officials to discover evidence of criminal wrongdoing" (quotation marks and citation omitted)); *Ferguson v. City of Charleston*, 532 U.S. 67, 83–85 (2001). Here, police gathered DNA evidence from a person outside the custody or control of the State, who, as such, possessed the full measure of Fourth Amendment rights. *Davis*, 690 F.3d at 245 (when it comes to DNA searches, "a court's constitutional analysis may differ depending on whether the person is an arrestee or a 'free person'"). *See also Griffin v. Wisconsin*, 483 U.S. 868, 874 (1987) (noting "the absolute liberty to which every [free] citizen is entitled").

King also relied heavily on the Court's understanding of the DNA analysis involved there: the processing of "13 CODIS loci," which were understood to "come from noncoding parts of the DNA that do not reveal the genetic traits of the arrestee." 569 U.S. at 451, 464. Since *King*, however, CODIS testing has expanded to 20 loci, and experts have discovered that these parts of our DNA provide genetic information beyond just identity. *See* Section I(A); *see also, e.g.*, Andrea Roth, *"Spit and Acquit": Prosecutors as Surveillance Entrepreneurs*, 107 Cal. L. Rev. 405, 414 (2019). As the Supreme Court itself recognized in *King*, these technological advances "present additional privacy concerns," *King*, 569 U.S. at 465, and therefore "a new Fourth Amendment analysis will be required." *Buza*, 413 P.3d at 1152 (citing *King*). As the Supreme Court has repeatedly explained in Fourth Amendment cases, "the rule the Court adopts 'must take account of more sophisticated systems that are already in use or in development.'" *Carpenter*, 138 S. Ct. at 2218 (quoting *Kyllo v. United States*, 533 U.S. 27, 36 (2001)). Scientific advances mean that the list of private facts about a person that can be deduced from their DNA is ever-growing.

To the extent the government may argue that it only intended to *identify* Mr. Carbo through collection and analysis of his DNA, and not to learn other private facts about him, that is irrelevant for Fourth Amendment purposes. Irrespective of its intended use, the State here had access to *all* of Mr. Carbo's genetic information, which could be used now or in the future. Indeed, because the State argues a person has wholly abandoned all interest in genetic material once it has been thrown in the trash, nothing would limit the State in future searches to a specific use of that DNA nor to the particular loci at issue here. Furthermore,

as the U.S. Supreme Court has made clear in several cases decided after *King*, the Fourth Amendment is concerned with the *entirety* of the private information revealed to police through a search—not just the pieces of information the government ultimately considers useful. *See, e.g.*, *Birchfield v. North Dakota*, 579 U.S. 438, 464 (2016) (holding that seizure of a driver's blood sample during blood alcohol testing is a search in part because it "places in the hands of law enforcement authorities a sample that can be preserved and from which it is possible to extract information beyond" what the government claims to seek); *Carpenter*, 138 S. Ct. at 2212, 2217 (considering the myriad "privacies of life" that *could be* revealed by the entirety of the data as compared to the small portion of that data the government considered inculpatory). The same principle applies to government collection of DNA. When law enforcement collects an individual's DNA, it gains access to that person's entire genetic blueprint. *See, e.g.*, *Thompson v. Spitzer*, 307 Cal. Rptr. 3d 183, 199 (Cal. Ct. App. 2023) ("[A] DNA sample contains a trove of personal information."). That violates reasonable expectations of privacy under the Fourth Amendment.

III. Article I, Section 10 of the Minnesota Constitution Independently Protects "Ordinary Citizens" Against Warrantless Searches and Seizures of Involuntarily Shed DNA

A. Article I, Section 10 Offers Robust Protections Against Warrantless Searches and Seizures, Independent of the Fourth Amendment.

The Court need not even reach the Fourth Amendment question because Article I, Section 10 of the Minnesota Constitution independently offers robust protection against warrantless searches of a free person's DNA. The Court recognizes that "[i]n all cases, [it] employ[s] . . . independent judgment in interpreting the Minnesota Constitution." *City of*

Golden Valley v. Wiebesick, 899 N.W.2d 152, 157 (Minn. 2017). And, as is the case here, "[i]n the absence of controlling Fourth Amendment precedent," the Court is not tasked with determining whether to read the Minnesota Constitution "more broadly" than the Fourth Amendment. *State v. Leonard*, 943 N.W.2d 149, 156 n.9 (Minn. 2020). Rather, the Court invokes its independent "responsibility to 'safeguard for the people of Minnesota the protections embodied in our constitution.'" *Id.* at 155 (quoting *State v. Askerooth*, 681 N.W.2d 353, 362 (Minn. 2004)).

The Court consistently has relied on the state constitution in condemning warrantless searches that violate Minnesotans' expectations of privacy. *See, e.g.*, *Leonard*, 943 N.W.2d at 160 (requiring reasonable suspicion to search hotel registry); *State v. Davis*, 732 N.W.2d 173, 181 (Minn. 2007) (requiring reasonable suspicion to execute search with dog sniff outside apartment); *State v. Fort*, 660 N.W.2d 415, 419 (Minn. 2003) (finding a search of a passenger upon a routine traffic stop exceeded the scope of the stop); *Ascher v. Comm'r of Pub. Safety*, 519 N.W.2d 183, 184 (Minn. 1994) (holding unconstitutional the use of temporary road blocks to search for alcohol impairment).

In reaching such decisions, the Court reviews the text of the Minnesota Constitution, relevant Minnesota case law, related opinions in federal and sister-state courts, and policy considerations. *See Kahn v. Griffin*, 701 N.W.2d 815, 829 (Minn. 2005). Applying those considerations here, the Court should conclude the warrantless search of a free person's DNA violates the Minnesota Constitution.

B. Warrantless DNA Searches Violate Minnesotans' Reasonable Expectations of Privacy and Require a Warrant.

The Court already recognizes that "the taking of [a] biological specimen . . . for criminal identification purposes constitutes a search within the meaning of the U.S. and Minnesota Constitutions." *Johnson*, 813 N.W.2d at 7. This protection extends both to the collection of the specimen *and* to the analysis of the DNA and creation of a DNA profile. *See State v. Jackson*, 741 N.W.2d 146, 152 (Minn. Ct. App. 2007) (noting that "*further* invasion occurs when [a DNA] sample is submitted to chemical analysis to create a DNA profile" (emphasis added) (citing *Skinner*, 489 U.S. at 616)); *see also State v. Hardy*, 577 N.W.2d 212, 215 (Minn. 1998) ("A search occurs whenever government agents intrude upon an area where a person has a reasonable expectation of privacy."); *see also Burns*, 988 N.W.2d at 392 (McDermott, J., dissenting) (noting that "extraction and analysis of [a person's] DNA is a search separate and apart from the seizure of the [item it is unavoidably shed on], with distinct Fourth Amendment considerations that go with it"). Thus, even if the initial search of Mr. Carbo's trash did not violate Article I, Section 10, the Court must undertake a separate analysis to determine whether the creation of a DNA profile violated that provision. *See* Index #78, at 9 (Mr. Carbo objecting to the search of the DNA, in addition to objecting to a search of the trash).[21]

[21] In a variety of contexts, the government's search of private information using modern technological capabilities is subject to greater constitutional constraints than the initial seizure of the information. In *Riley*, for example, the U.S. Supreme Court allowed police to seize a person's cell phone incident to arrest, but prohibited police from searching the information stored in it without a warrant. 573 U.S. at 403. Likewise, courts routinely permit police to seize entire hard drives pursuant to a warrant permitting search for only

Except under narrow exceptions, searches under Article 1, Section 10 of the Minnesota Constitution require a warrant, and warrantless searches are "presumptively unreasonable." *State v. Shriner*, 751 N.W.2d 538, 541 (Minn. 2008). The state bears the burden of establishing the validity of a warrantless search or seizure, *see State v. Fitzgerald*, 562 N.W.2d 288, 288 (Minn. 1997), and that inquiry turns in large part on whether the subject of the search has a diminished expectation of privacy. *See, e.g.*, *State v. Bartylla*, 755 N.W.2d 8, 17–18 (Minn. 2008) (allowing warrantless extraction of DNA from a person only after the defendant had been convicted of a serious crime and was in police custody).

Prior to conviction of a serious crime, ordinary Minnesotans maintain a particularly strong expectation of privacy in their genetic material, and the state's interest in extracting, storing, and using that data cannot overcome the presumption under Article I, Section 10 that warrantless searches are unreasonable. As this Court has noted, the "taking of DNA samples for identification purposes implicates two privacy interests: (1) an expectation of privacy in one's bodily integrity, and (2) an expectation of privacy in one's identity." *Johnson*, 813 N.W.2d at 7–8. Accordingly, "an ordinary citizen[]"—that is, an individual who is not yet charged with a crime or already subsumed within the criminal legal system—has a "high expectation of privacy in his or her DNA." *Id.* at 9 n.11.

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particular information, but require police to obtain another warrant before searching for information outside the scope of the initial warrant. *E.g.*, *People v. Hughes*, 958 N.W.2d 98 (Mich. 2020). And of course, as the Supreme Court has explained, the "collection and subsequent analysis of . . . biological samples must be deemed [separate] Fourth Amendment searches." *Skinner*, 489 U.S. at 618.

Minnesotans' privacy interest in their DNA is reflected in state statutes and other sources of law. Under Minnesota law, "[u]nless otherwise expressly provided by law, genetic information about an individual . . . may be collected by a government entity . . . or any other person *only with* the written informed consent of the individual." Minn. Stat. § 13.386 subd. 3 (emphasis added). One carve-out "expressly provided by law" is to obtain a warrant before collecting or analyzing a person's DNA. *See* Minn. Stat.§ 626.07 (2022) (stating a "search warrant may be issued" when "the property or things to be seized consist of . . . any evidence which . . . tends to show that a particular person has committed a crime"). Another permits DNA collection upon conviction for "committing or attempting to commit a felony" or "any offense arising out of the same set of circumstances" as a felony conviction. Minn. Stat. § 609.117 subd. 1(1) (2022).[22]

Even in those limited circumstances when the State may collect DNA information, Minnesota law provides that DNA samples must be held as "private data" by the Bureau of Criminal Apprehension ("BCA"). *See* Minn. Stat. § 299C.155 subd. 3 (2022). And state law further recognizes the sensitivity of DNA by protecting against misuse of genetic

[22] Minnesota law is more protective than the statute at issue in *King*. *See* Minn. Stat. § 609.117 subd. 1(1) (2022); *see also In re Welfare of C.T.L.*, 722 N.W.2d 484, 492 (Minn. Ct. App. 2006) (rendering unconstitutional a separate provision of the statute that authorizes law enforcement to collect DNA from "[persons] who have appeared in court and have had a judicial probable cause determination on a charge of committing" any one of a list of specific crimes).

information by health insurance companies and employers. Minn. Stat. § 72A.139 subd. 3 (2022); Minn. Stat. § 181.974 subd. 2 (2022).[23]

These laws confirm Minnesotans' strong expectations of privacy in their DNA, and none of the Court's cases involving reduced expectations of privacy justify dispensing with the warrant requirement here. The Court has never held that a person who has not been charged with any crime, even if suspected of wrongdoing, has a diminished expectation of privacy that would justify a warrantless search. That is because the State's interest in "exonerating the innocent, deterring recidivism, identifying offenders of past and future crimes, and bringing closure for victims of unsolved crimes," *Bartylla*, 755 N.W.2d at 18, does not outweigh an "ordinary citizen's" expectation of privacy in their identity, much less the other information that can be revealed by DNA. *Johnson*, 813 N.W.2d at 9 n.11. Even where the Court has permitted warrantless collection and analysis of DNA for identification purposes, it has only done so post-conviction, *e.g.*, *Id.* at 9, 11 (holding that "*incarcerated prisoners* have less of a privacy expectation than probationers, parolees, or conditional releasees" (emphasis added)); *Bartylla*, 755 N.W.2d at 17, and it has

[23] In addition to informing Minnesotans' expectation of privacy against nonconsensual seizure and analysis of their DNA, these legal protections may, also or alternatively, create a property interest that separately invokes Article I, Section 10 protection. *See Carpenter*, 138 S. Ct. at 2272 (Gorsuch, J., dissenting) (explaining that sources of positive law granting "substantial legal interests in . . . information, including at least some right to include, exclude, and control its use," may "rise to the level of a property right" warranting Fourth Amendment protection); *see also* William Baude & James Y. Stern, *The Positive Law Model of the Fourth Amendment*, 129 Harv. L. Rev. 1821, 1825–26 (2016) ("Fourth Amendment protection, in other words, is warranted when government officials either violate generally applicable law or avail themselves of a governmental exemption from it.").

"distinguish[ed]" the situation where individuals were "charged but not yet convicted of a crime." *Johnson*, 813 N.W.2d at 10 (addressing individual who was convicted of misdemeanor arising out of same set of circumstances as felony charge). Here, where the defendant was an "ordinary citizen" not subject to charge or arrest, his expectation of privacy in his genetic information outweighed the state's interests in the warrantless search.

Fundamentally, "most Minnesotans would be surprised and alarmed if the sensitive . . . information found in" their DNA "was readily available to law enforcement without any particularized suspicion of criminal activity." *Leonard*, 943 N.W.2d at 158. Even more concerning, if "ordinary" Minnesotans have "no legitimate expectation of privacy in the 'bread-crumb trail of identifying DNA matter,'" nothing would be in place to stop the government from "includ[ing] everyone" in its DNA databases. *Burns*, 988 N.W.2d at 397 (McDermott, J., dissenting) (citation omitted). Thus, to "safeguard for the people of Minnesota the protections embodied in our constitution," *Askerooth*, 681 N.W.2d at 362, the Court should hold that the government's warrantless analysis of DNA violated the state constitution.

IV. The Abandonment Doctrine Does Not Apply to Unavoidably Shed DNA.

The trial court erred in concluding that when individuals abandon their trash, they also intend to abandon the *genetic material* inadvertently deposited on items in the trash. *See* Appellant's Addendum at A-13 to A-15. To be sure, the U.S. and Minnesota Supreme Courts have held people have no reasonable expectation of privacy in garbage left out for collection because they knowingly exposed their trash to any member of the public. *California v. Greenwood*, 486 U.S. 35, 40 (1988); *State v. McMurray*, 860 N.W.2d 686,

693–94 (Minn. 2015); *State v. Oquist*, 327 N.W.2d 587, 591 (Minn. 1982). The courts similarly have held that people have no privacy or property interest in items they knowingly abandon. *See Abel v. United States*, 362 U.S. 217, 239 (1960); *Hester v. United States*, 265 U.S. 57, 58 (1924); *Askerooth*, 681 N.W.2d 353; *State v. Krech*, 403 N.W.2d 634, 636 (Minn. 1987). But the principles articulated in these cases—often referred to as the "abandonment doctrine"—do not apply to the DNA unavoidably deposited on discarded items.

Applying the abandonment doctrine to permit warrantless extraction and analysis of DNA that people unavoidably leave behind would "untether the rule from the justifications underlying" the doctrine. *Riley*, 573 U.S. at 386 (quoting *Arizona v. Gant*, 556 U.S. 332, 343 (2009)). The key rationale of the abandonment doctrine is that people voluntarily expose an item to public view by abandoning it. *See Greenwood*, 486 U.S. at 40–41. But that rationale fails when it comes to DNA, for two reasons explained below. First, because people cannot avoid depositing their DNA on items they touch, they do not voluntarily abandon it. Second, that lack of voluntariness matters even more considering the extraordinary privacy interest in our DNA, which is categorically greater than the privacy interest in the physical items on which it happens to be deposited.

A. Unavoidably Shed DNA Is Not Voluntarily Abandoned.

The DNA we unavoidably shed on items we later discard is not "voluntarily" shared in any meaningful sense. Application of the abandonment doctrine hinges on an individual's "voluntary relinquishment, surrender, or disclaimer of a known property right." *Bd. of Trs. of First Congregational Church v. Cream City Mut. Ins. Co.*, 96 N.W.2d

690, 693–94 (Minn. 1959) (defining "abandonment"). Voluntariness is a question of action and intent, the latter of which may be inferred from a person's "conduct and the nature and situation of the property." *Zephier v. Agate*, 957 N.W.2d 866, 872 (Minn. 2021) (citations omitted); *see also Shepard v. Alden*, 201 N.W. 537, 539 (Minn. 1924) ("There must be an actual relinquishment of the property, accompanied by an intent to part with it permanently, so that it may be appropriated by any one finding it or having it in his possession."). Thus, in *Abel*, the U.S. Supreme Court emphasized that warrantless seizure of the items in question was permitted only because the suspect "*chose* to leave some things behind in his [hotel] room, which he *voluntarily* relinquished." 362 U.S. at 239 (emphases added).

Unlike physical items, however, the contents of DNA are never actually visible to the public; sophisticated technology is required to extract genetic information from a sample. It is simply not reasonably foreseeable that any member of the public will use items in a person's trash (*i.e.*, a drinking straw, coffee cup, or used tissue) to obtain a sample of their DNA, and send that sample to a lab to be analyzed. Some courts, given the sensitivity of genetic information, have even found nonconsensual collection or use of genetic information to be tortious. *See Peerenboom v. Perlmutter*, No. 2013-CA-015257 (Fla. 15th Cir. Ct. Jan. 23, 2017) (suit stated claim for conversion and civil theft of genetic information after surreptitious collection of DNA from a discarded water bottle to obtain identity information); *see also Cole v. Gene by Gene, Ltd.*, 2017 WL 2838256, at *4 (D. Alaska June 30, 2017) (protections under Alaska's Genetic Privacy Act "prohibit[ing] the unauthorized disclosure of DNA information" "bear a close relationship to the common law torts of conversion of property and invasion of privacy").

Moreover, as the U.S. Supreme Court recently made clear in *Carpenter*, when it comes to advancing police technological capabilities, voluntariness under the Fourth Amendment cannot be assumed. Like the abandonment doctrine, the third-party doctrine at issue in *Carpenter* applies to information that is "voluntarily conveyed." *United States v. Miller*, 425 U.S. 435, 442 (1976). But as the Court explained in *Carpenter*, the third-party doctrine does not extend to cell phone location information because it "is not truly 'shared' as one normally understands the term." 138 S. Ct. at 2220. That is because cell phones "are 'such a pervasive and insistent part of daily life' that carrying one is indispensable to participation in modern society." *Id.* (quoting *Riley*, 573 U.S. at 385). And once a person carries a cell phone, location information is logged "by dint of its operation, without any affirmative act on the part of the user . . . . Apart from disconnecting the phone from the network, there is no way to avoid leaving behind a trail of location data." *Id.*[24]

Similarly, because we shed DNA constantly, *see supra* Section I(B), "[t]here is no way to avoid leaving behind a trail" of DNA, and "[a]s a result, in no meaningful sense does the [individual] voluntarily 'assume[] the risk' of turning over a comprehensive dossier" of genetic information. *Carpenter*, 138 S. Ct. at 2220 (last alteration in original); *see also Burns*, 988 N.W.2d at 393 (McDermott, J., dissenting) (stating "the doctrine of abandonment doesn't apply to DNA that a person involuntarily and unavoidably sheds in the course of daily life"). A person attempting to avoid depositing DNA in their wake

[24] The cases from other states permitting warrantless search of involuntarily shed DNA cited by the government in its brief in the district court, Index #80, at 2, all predate *Carpenter*, and contravene *Carpenter*'s instruction that in the face of government exploitation of modern technologies, voluntariness of exposure cannot be assumed.

would have to take drastic steps and forgo many basic human activities—essentially never leaving their home and avoiding touching any items that might later end up in their recycling or trash.

The question therefore is not whether Mr. Carbo should have cleansed his DNA from his trash or found an alternative method of disposal. *Contra* Appellant's Addendum at A-14 ("Defendant abandoned all interest and expectation of privacy when he placed his trash in the apartment complex's shared garbage dumpster."). Rather, the question is whether society expects Minnesotans to shoulder the impossible burden of ensuring that no microscopic bit of biological material is ever left behind as they go about their daily lives. The implications of adopting the government's rule would be staggering. It would force us to wash, scrub, sterilize, or burn everything we touch or throw away. It would require each of us to carry a cordless vacuum to hoover up skin cells or hairs our bodies shed or, alternatively, it would force us to wear full-body protective suits, hair coverings, gloves, and respirators to avoid leaving behind any trace of DNA altogether. *See supra* Section I(B); *but see* Brown, *Your DNA* (reporting that researchers "could successfully collect airborne human DNA even from people wearing gloves and surgical masks and gowns"). Society simply does not expect people to take such measures to avoid a government agent seizing and searching their private genetic information.

The U.S. Supreme Court has repeatedly made clear that the Fourth Amendment does not require people to take extraordinary measures to protect themselves from invasive modern surveillance techniques. In *Kyllo*, the Court rejected the dissent's suggestion that people should be required to add extra insulation to their homes to avoid thermal-imaging

surveillance. *Compare Kyllo*, 533 U.S. at 29–40, w*ith id*. at 45 (Stevens, J., dissenting). In *Carpenter*, the Court made clear that people need not "disconnect[] the[ir] phone from the network . . . to avoid leaving behind a trail of location data." 138 S. Ct. at 2220. Other courts have applied this principle in a variety of contexts. *E.g. Commonwealth v. Mora*, 150 N.E.3d 297, 306 (Mass. 2020) (people not required to erect high walls around homes to avoid warrantless long-term video surveillance by police cameras surreptitiously installed on utility poles). Accepting the government's position would require people to take impractical and extraordinary steps to avoid searches and seizures of their genetic information. The Fourth Amendment and Minnesota's Article I, Section 10 require no such thing.

B. The Privacy Interest in DNA Is Categorically Greater than the Privacy Interest in Physical Items on Which It Is Deposited.

Moreover, the privacy interest in unavoidably shed DNA is of a different magnitude than the interest in physical items abandoned in public or placed in the trash. As detailed above, and as the Supreme Court has explained, analysis of bodily fluids can reveal "a host of private medical facts about [a person]" and thus implicates strong privacy interests. *Skinner*, 489 U.S. at 617; *see supra* Section I(A).

Of course, examining physical items a person knowingly abandons can sometimes reveal private information. But the privacy interest in DNA is categorically greater because it *always* contains and reveals the full scope of a person's medical, familial, and other genetic information. Comparing the seizure of a person's trash to the search of genetic information deposited on it is "like saying a ride on horseback is materially

indistinguishable from a flight to the moon." *Riley*, 573 U.S. at 393. Our genetic information "implicate[s] privacy concerns far beyond those implicated by" the visual inspection of a physical item on which it might be deposited. *Id.*

In part because the intrusion on privacy is so great, the extraction and analysis of DNA deposited on an abandoned item is a separate event, under the Fourth Amendment and Article I, Section 10, from the seizure or visual inspection of the item itself. *See supra* Sections II(A), III(B). Accordingly, although seizure of a physical item containing a person's DNA may fall within the abandonment doctrine, testing that DNA to reveal genetic information does not. *Davis*, 690 F.3d at 226. A warrant is required.

CONCLUSION

For the foregoing reasons, *amici* respectfully urge the court to hold that the Fourth Amendment, and, independently, Minnesota's Article I, Section 10 prohibit the State from extracting and analyzing a free person's involuntarily shed DNA without a warrant.

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CERTIFICATE OF COMPLIANCE

I hereby certify that this brief conforms to the requirements of Minn. R. Civ. App. P. 132.01, subds. 1 & 3, for a brief produced in a proportional font. By automatic word count, the length of this brief is 6,997 words. This brief was prepared using Microsoft Word Version 16.73.

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