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STATE OF CONNECTICUT *v.* TERRANCE POLICE
(SC 20528)

Robinson, C. J., and McDonald, D'Auria, Mullins,
Kahn, Ecker and Keller, Js.

Syllabus

Convicted, on a conditional plea of nolo contendere, of the crimes of robbery in the first degree and assault in the first degree, the defendant appealed, challenging the trial court's denial of his motion to dismiss the information. In 2012, the victim was shot and robbed by an unknown assailant while she was standing near her car in a parking lot. The police thereafter conducted a search of an area near the crime scene and recovered various items, which were submitted to the state forensic science laboratory for testing. In its DNA report, employees at the laboratory concluded that the DNA found on each item consisted of a mixture of DNA profiles and that the victim was not a source of or contributor to the mixed profiles. Following the release of video surveillance footage that captured images of the suspect fleeing the crime scene, an anonymous caller contacted the police and reported that the suspect in the video footage looked like his cousin, the defendant, and that the defendant had told relatives that he had shot the victim. As part of their investigation, the police compared the DNA profiles generated from the crime scene evidence with those in a database that contains the DNA profiles of convicted felons. Because the police had been erroneously informed that the defendant's DNA profile was in the database, when the database search did not return a match, the police ceased their investigation of the defendant. In April, 2017, approximately six months before the expiration of the applicable five year statute of limitations ((Rev. to 2011) § 54-193 (b)), the police applied for a John Doe arrest warrant, alleging in an accompanying affidavit that there was probable cause for the statute of limitations to be tolled pending the arrest of an unknown male responsible for the assault and robbery of the victim, and allegedly identifiable through the DNA profiles obtained from the crime scene evidence and general descriptions given by the victim and witnesses to the attack. The trial court signed the John Doe arrest warrant on the basis of the information contained in the affidavit. In April, 2018, more than five months after the statute of limitations had expired, the mother of the defendant's child contacted the police and reported that the defendant had confessed to her that he was the assailant. The police, pursuant to a search warrant, then obtained a DNA sample from the defendant, which they submitted to the state forensic science laboratory. The laboratory retested the crime scene evidence and compared the defendant's DNA with the new DNA profiles generated from the retesting. In supplemental DNA reports, employees at the laboratory concluded, inter alia, that it was at least 100 billion times more likely that the defendant was a contributor to the mixed DNA profiles than if they had originated from all unknown individuals. In May, 2018, the defendant was arrested pursuant to the John Doe arrest warrant and charged with robbery and assault in connection with the attack of the victim. Thereafter, the defendant filed a motion to dismiss the information, claiming, inter alia, that the John Doe arrest warrant did not satisfy the particularly requirement of the fourth amendment to the United States constitution and, therefore, that the issuance of that warrant in April, 2017, did not toll the statute of limitations. In denying the defendant's motion to dismiss, the trial court, specifically relying on one or both of the 2018 supplemental DNA reports, concluded that the John Doe arrest warrant identified the defendant with "nearly irrefutable precision" and, therefore, satisfied the particularity requirement of the fourth amendment. After the trial court accepted the defendant's conditional plea of nolo contendere, the defendant appealed, claiming, inter alia, that the trial court improperly had denied his motion to dismiss the information because a John Doe arrest warrant that identifies a suspect on the basis of a general description and mixed partial DNA profiles violates the particularity requirement of the fourth amendment

and, therefore, cannot serve to toll the statute of limitations applicable to the charged crimes. *Held:*

1. The record was adequate for review of the defendant's unpreserved claim that a John Doe arrest warrant that identifies a suspect through mixed partial DNA profiles violates the particularity requirement of the fourth amendment; there was no merit to the state's claim that, insofar as the defendant did not raise his claim in the trial court, the state was deprived of the opportunity to present evidence that might have established that the defendant's DNA profile would have been included in one of the 2012 mixed partial profiles if they had been compared, because, in determining the validity of an arrest warrant, the only information that a reviewing court properly may consider is that which was presented to the judicial authority that issued the warrant, which must either appear in the warrant itself or be incorporated by reference therein, and, in the present case, the record included the John Doe arrest warrant and, therefore, contained all of the facts necessary for this court's review of the defendant's claim.
2. This court having concluded that the John Doe arrest warrant at issue failed to satisfy the particularity requirement of the fourth amendment, the trial court improperly denied the defendant's motion to dismiss the information: although a John Doe arrest warrant that describes a suspect by reference to his or her unique DNA profile generally can satisfy the particularity requirement of the fourth amendment, the John Doe arrest warrant in the present case, which identified the suspect on the basis of a general physical description that could apply to any number of people and on the basis of mixed partial DNA profiles that were not positively known to include the suspect's unique DNA profile, and which failed to state the statistical rarity of any of the profiles, did not describe with particularity the person responsible for the attack of the victim and, therefore, did not toll the applicable statute of limitations; moreover, contrary to the state's contention, the trial court improperly relied on one or both of the 2018 supplemental DNA reports in determining that the 2012 DNA report, which the police had relied on to establish probable cause for the John Doe arrest warrant, identified the suspect with the particularity required by the fourth amendment, as the 2018 reports were not contained in the John Doe arrest warrant or incorporated therein by reference; accordingly, the judgment of conviction was reversed and the case was remanded with direction to render judgment dismissing the information.

Argued November 17, 2021—officially released May 10, 2022

Procedural History

Substitute information charging the defendant with the crimes of robbery in the first degree and assault in the first degree, brought to the Superior Court in the judicial district of Stamford-Norwalk, where the court, *Blawie, J.*, denied the defendant's motion to dismiss the information; thereafter, the defendant was presented to the court, *White, J.*, on a conditional plea of nolo contendere; judgment of guilty, from which the defendant appealed. *Reversed; judgment directed.*

Pamela S. Nagy, supervisory assistant public defender, with whom, on the brief, was *Mark Rademacher*, assistant public defender, for the appellant (defendant).

Timothy J. Sugrue, assistant state's attorney, with whom were *Richard J. Colangelo, Jr.*, former chief state's attorney, and, on the brief, *Paul J. Ferencek*, state's attorney, and *Jennifer F. Miller*, assistant state's attorney, for the appellee (state).

Opinion

KELLER, J. This appeal presents a significant issue of first impression not only for this state but, to our knowledge, the rest of the country as well: whether a John Doe arrest warrant that identified the suspect on the basis of a general physical description and several mixed partial DNA profiles to which the suspect may or may not have been a contributor, and that did not state the probability that a random person would match any of those profiles, satisfies the particularity requirement of the fourth amendment to the United States constitution for purposes of commencing a prosecution within the applicable statute of limitations.

After he was charged with one count each of robbery in the first degree and assault in the first degree, the defendant, Terrance Police, filed a motion to dismiss the information on the ground that the charges were time barred by the five year statute of limitations set forth in General Statutes (Rev. to 2011) § 54-193 (b).¹ The trial court denied the motion, and, subsequently, the defendant entered a plea of nolo contendere conditioned on his right to appeal. The trial court thereafter sentenced the defendant to ten years of imprisonment on each count, five of which were mandatory, to run concurrently, for a total effective sentence of ten years of imprisonment. On appeal,² the defendant claims, inter alia, that a John Doe arrest warrant that identifies the suspect on the basis of a general description and several mixed partial DNA profiles is void for lack of particularity and, therefore, cannot commence prosecution for purposes of satisfying the statute of limitations. We agree and, accordingly, reverse the judgment of the trial court.

The following facts, as found by the trial court, and procedural history are relevant to our resolution of this appeal. On the afternoon of October 10, 2012, Norwalk police officers responded to reports of a robbery and shooting outside of the Stop and Shop supermarket on Connecticut Avenue in Norwalk. Upon arrival, they found the victim in the parking lot, suffering from a gunshot wound to the abdomen. The victim reported that she had been standing near her car looking at her phone when an unknown black male, whom she described as approximately eighteen to thirty years old with a medium build and a light beard, wearing jeans and a dark hooded sweatshirt, attacked her. The victim informed the police that her assailant had opened the driver's side door of her car, pushed her inside, and, during a struggle, shot her in the abdomen with a small silver handgun. Fearing for her life, the victim surrendered her wedding and engagement rings, as well as an iPhone with a pink Kate Spade phone case, to the suspect, who then fled on foot with the victim's belongings toward a nearby Best Buy store.

The police subsequently obtained footage from several video surveillance cameras in the area, all of which captured images of the suspect fleeing the scene. The footage depicts the suspect wearing a dark colored zip up hooded sweatshirt and using his left hand to pull the hood over his head. The police thereafter conducted a search of the area behind the Best Buy store, where they recovered a sweater and a dark blue zip up hooded sweatshirt with a Kate Spade cell phone case in the pocket, which the victim later confirmed belonged to her. From the same area, the police also recovered a small, silver .22 magnum five shot revolver containing two spent shell casings and three live rounds. The recovered items were later sent to the state forensic science laboratory (laboratory) for testing. The laboratory issued its DNA report on December 21, 2012. It concluded that the various pieces of crime scene evidence were found to have on them mixtures of DNA for which there were multiple contributors and, notably, that the victim was eliminated as the source of, or as a contributor to, those mixed profiles.

In an effort to identify the perpetrator, the police released the video surveillance footage to the public. On December 29, 2012, an anonymous caller contacted the police and stated that the man seen in the video footage looked like his cousin, the defendant. Although the defendant had denied any involvement in the crime to his mother, the anonymous caller indicated that the defendant had told other relatives that he had shot the victim. In investigating this tip, the police were informed, albeit erroneously, that, in 2008, in connection with a prior felony conviction, a sample of the defendant's DNA had been obtained and entered into the Combined DNA Index System (CODIS).³ The police thereafter submitted the DNA profiles generated from the crime scene evidence to CODIS for comparison, but there were no matches. Upon receiving the results of the search, the police contacted the laboratory to ensure that the database was current, and the laboratory indicated that it was. Because the CODIS search failed to identify the defendant as a contributor to any of the DNA profiles, and because the police were under the impression that the defendant's DNA was in CODIS, the police ceased their investigation of him. The police nevertheless continued their investigation of the crime by conducting weekly searches of both the Connecticut and national DNA databases and by pursuing other potential suspects. Although all investigative leads were exhausted by July, 2013, the police continued to conduct periodic searches through CODIS, each time yielding a negative result.

On April 6, 2017, approximately six months before the expiration of the five year statute of limitations, the Norwalk police applied for a John Doe arrest warrant, alleging in the sworn affidavit that there was probable

cause for the statute of limitations to be tolled pending the arrest of an unknown male responsible for the 2012 assault and robbery of the victim, a person allegedly identifiable through the DNA profiles obtained from the crime scene evidence and general descriptions given by the victim and witnesses to the attack.⁴ On May 1, 2017, the trial court signed the John Doe arrest warrant on the basis of the information contained in the affidavit.

Approximately one year later, on April 2, 2018, the Norwalk police received a phone call from a woman who reported that she had seen the video footage released to the public years prior and recognized the perpetrator as her child's father, the defendant. The woman informed the police that the defendant also had confessed to her that he committed the 2012 assault and robbery of the victim. Given this new development, Sergeant Paul Podgorski of the Norwalk Police Department contacted the laboratory and spoke with forensic science examiner Jessica Best. Best explained that, although the defendant's DNA was in CODIS,⁵ it was possible that no match was ever made to the DNA found at the crime scene because of the low quality of the defendant's sample and because the DNA profiles generated from the crime scene evidence were mixtures of the DNA of several different individuals.⁶ Best therefore recommended a direct comparison with a sample of the defendant's DNA via a buccal swabbing. Accordingly, the police drafted a search warrant for the defendant's DNA, which the trial court signed on April 6, 2018.

On April 13, 2018, approximately six months after the statute of limitations had expired, the laboratory retested the crime scene evidence and compared the defendant's DNA against the new DNA profiles generated from the retesting. In a supplemental DNA report, the laboratory concluded as follows: (1) The results from the inside sleeve cuffs and neck hem of the sweatshirt were consistent with the DNA profile being a mixture of four contributors, with the profile being at least 100 billion times more likely to occur if it originated from the defendant and three unknown individuals than if it originated from four unknown individuals; (2) the results from the right handle of the .22 magnum handgun were consistent with the DNA profile being a mixture of three contributors, with the profile being at least 100 billion times more likely to occur if it originated from the defendant and two unknown individuals than if it originated from three unknown individuals; and (3) the results from the inside sleeve cuffs and neck hem of the sweater were consistent with the DNA profile being a mixture of four contributors with the profile being at least 100 billion times more likely to occur if it originated from the defendant and three unknown individuals than if it originated from four unknown individuals.⁷ The rest of the results were either inconclusive or excluded the defendant.

On May 4, 2018, the police arrested the defendant pursuant to the 2017 John Doe arrest warrant. After his arrest, the defendant filed a motion to dismiss the information, claiming, inter alia, that the state had failed to bring the charges against him within the applicable five year statute of limitations. Specifically, the defendant argued that (1) “it is the role of the legislature, not the courts, to determine the statutes of limitations and any exceptions thereto,” (2) “the state’s use of a John Doe DNA arrest warrant to satisfy the statute of limitations thwarts the intent and purpose of the statute and does not meet the particularity requirement of the fourth amendment to the United States constitution [or] the reasonable certainty requirement under Connecticut law,” and (3) “the court should not be guided by cases from other jurisdictions that have allowed [the use of] John Doe DNA [arrest] warrants to toll the statute of limitations, because those cases concerned charges of serious sexual assaults, [whereas] the charges in the present case are for robbery and assault.”

In response, the state argued that a John Doe DNA arrest warrant tolls the statute of limitations when “it meets the particularity requirement of the fourth amendment to the United States constitution, as well as the reasonable certainty requirement under Connecticut law.” The state argued that these requirements were met in the present case “by the combination of the DNA evidence with (1) a detailed and consistent physical description of the accused, (2) the description of the suspect’s attire, (3) the fact that the affidavit state[d] that the suspect was wearing a dark colored sweatshirt and had touched the victim’s cell phone [case], and (4) [the fact that] DNA evidence belonging to the suspect was found on each of [those] items of evidence.” Finally, the state argued that the trial court should follow the majority of jurisdictions that have previously considered the issue and allowed the use of John Doe DNA arrest warrants.

An evidentiary hearing on the defendant’s motion to dismiss was held before the trial court, after which the court issued a memorandum of decision and denied the motion. Relying on the April, 2018 supplemental DNA report,⁸ the court concluded that the John Doe arrest warrant satisfied both the particularity requirement of the fourth amendment and the reasonable certainty requirement under Connecticut law. Specifically, the court stated that the John Doe arrest warrant “identif[ied] the defendant with ‘nearly irrefutable precision,’ despite the initial use of the John Doe pseudonym,” such that “there was essentially no possibility that the DNA profile of the perpetrator originated from another human being.” In reaching its determination, the court specifically relied on the fact that “[t]he DNA report in the John Doe arrest warrant indicated that for both the discarded sweatshirt and [the] handgun, a mixture of

four persons was detected. The [laboratory] opined that it was at least 100 billion times more likely that the DNA profile came from the defendant and three other unknown individuals, rather than from four unknown individuals. The DNA report also indicated that for the victim’s cell phone [case] that was tested, a mixture of three persons was detected. The [laboratory] opined that it was at least 1.2 billion times more likely that the DNA profile came from the defendant and two other unknown individuals, instead of [from] three unknown individuals.” On the basis of this information, and “[i]n accordance with the holdings from a majority of jurisdictions that have previously considered this issue, the court [concluded] that the extraordinarily detailed DNA profile [was] sufficient to meet the particularity and reasonable certainty requirements under Connecticut law.”⁹ As discussed more fully hereinafter, however, the DNA report on which the trial court relied in denying the defendant’s motion to dismiss was not, as that court indicated in its memorandum of decision, “the DNA report in the John Doe arrest warrant” The DNA report referenced in the arrest warrant application; see footnote 4 of this opinion; contained no statement as to the statistical rarity of the mixed partial DNA profiles listed therein, which is the probability that a random person chosen from the general population would have those profiles. The 2012 DNA profiles were also qualitatively different from the 2018 DNA profiles, which were generated using more sophisticated DNA testing procedures.

On November 4, 2019, the defendant entered a plea of nolo contendere, conditioned on his right to appeal, on one count of robbery in the first degree in violation of General Statutes § 53a-134 (a) (2) and one count of assault in the first degree in violation of General Statutes § 53a-59 (a) (1). The trial court accepted the plea and thereafter sentenced the defendant to a total effective sentence of ten years of imprisonment.

On appeal, the defendant claims that the trial court improperly denied his motion to dismiss the information because an arrest warrant identifying a suspect by a general description and reference to several mixed partial DNA profiles, of which the defendant may or may not have been a contributor, violates the particularity requirement of the fourth amendment to the federal constitution and the reasonable certainty requirement under state law. Because the defendant’s claim is unreserved,¹⁰ he seeks review pursuant to *State v. Golding*, 213 Conn. 233, 239–40, 567 A.2d 823 (1989), as modified by *In re Yasiel R.*, 317 Conn. 773, 781, 120 A.3d 1188 (2015). The state responds that the record is inadequate for review of the defendant’s claim, and, therefore, it fails under the first prong of *Golding*. In addition, the state argues that, even if the record is adequate for review, the defendant still cannot prevail because the DNA profiles, “coupled with the other identifying information

in the [arrest] warrant, satisfied the fourth amendment's particularity requirement." We agree with the defendant.

In *Golding*, this court held that "a defendant can prevail on a claim of constitutional error not preserved at trial only if *all* of the following conditions are met: (1) the record is adequate to review the alleged claim of error; (2) the claim is of constitutional magnitude alleging the violation of a fundamental right; (3) the alleged constitutional violation . . . exists and . . . deprived the defendant of a fair trial; and (4) if subject to harmless error analysis, the state has failed to demonstrate harmlessness of the alleged constitutional violation beyond a reasonable doubt." (Emphasis in original; footnote omitted.) *State v. Golding*, supra, 213 Conn. 239–40; see also *In re Yasiel R.*, supra, 317 Conn. 780–81 (modifying third prong of *Golding* to exclude the term "clearly" and clarifying that *Golding* review is available for first impression questions). "The first two [prongs of *Golding*] involve a determination of whether the claim is reviewable [and] the second two . . . involve a determination of whether the defendant may prevail." (Internal quotation marks omitted.) *State v. Armadore*, 338 Conn. 407, 437, 258 A.3d 601 (2021).

In arguing that the record is inadequate for review, the state asserts that, because the defendant did not argue in the trial court that a John Doe arrest warrant that identifies a suspect through mixed partial DNA profiles violates the particularity requirement of the fourth amendment, the state was deprived of the opportunity to present evidence that might have established that the defendant's DNA profile would have been included in one of the 2012 mixed partial profiles had they been compared. The state's argument is unavailing because, in determining the validity of an arrest warrant, the only information that a reviewing court properly may consider is that which was presented to the judicial authority that issued the warrant, which must appear either on the face of the warrant or be incorporated by reference therein.¹¹ See, e.g., *Aguilar v. Texas*, 378 U.S. 108, 109 n.1, 84 S. Ct. 1509, 12 L. Ed. 2d 723 (1964) ("[i]t is elementary that in passing on the validity of a warrant, the reviewing court may consider *only* information brought to the magistrate's attention" (emphasis in original)); *United States v. Jarvis*, 560 F.2d 494, 497 (2d Cir. 1977) ("[t]o comply with . . . the fourth amendment the name or a particularized description of the person to be arrested *must appear on the face of the 'John Doe' warrant*" (emphasis added)), cert. denied, 435 U.S. 934, 98 S. Ct. 1511, 55 L. Ed. 2d 532 (1978); *id.* ("[t]he warrant requirement exists in order to permit a neutral magistrate to make the decision whether to authorize arrest, rather than leaving this decision up to the prosecutor or officer"); *State v. Colon*, 230 Conn. 24, 34, 644 A.2d 877 (1994) ("in determining the adequacy of an affidavit in support of a . . . warrant, the information to establish probable cause must

be found within the affidavit’s four corners”).

In *State v. Browne*, 291 Conn. 720, 970 A.2d 81 (2009), this court explained that “[t]he protections afforded by the particularity [requirement of the fourth amendment] focus primarily on, and restrict the process of, *issuing* a warrant. . . . This focus makes sense in light of the chief purpose of the [requirement], which is to prevent general searches by requiring a neutral judicial officer to cabin the scope of the search to those areas and items for which there exists probable cause that a crime has been committed. . . . It does this in two steps. The police or other law enforcement officer who is seeking the warrant must submit to the judicial officer a precise description of what is sought to be seized, so that the judicial officer can determine whether a valid law enforcement purpose would be served by the seizure of all items fitting the description. The description is then written into (or attached to or otherwise incorporated in) the warrant in order to make sure that the law enforcement officer who executes the warrant stays within the bounds set by the issuer.” (Citations omitted; emphasis in original; internal quotation marks omitted.) *Id.*, 729–30. Because the sufficiency of the description of the person to be seized is determined by the judicial officer at the time of the issuance of the warrant, the state’s contention that the record is inadequate for review of the defendant’s claim is without merit.¹² “To the extent that there are gaps in the record created by the unpreserved nature of [a] claim, they affect the defendant’s burden of establishing the existence of a constitutional violation under the third prong of *Golding*, rather than the reviewability of the claim under the first prong.” *State v. Gray*, 342 Conn. 657, 669–70, 271 A.3d 101 (2022).

In light of our determination that the record is adequate for review, and because the second prong of *Golding*—whether the unpreserved claim is of constitutional magnitude—is clearly satisfied; see *State v. Browne*, *supra*, 291 Conn. 729; we turn to *Golding*’s third prong, namely, whether the claimed constitutional violation in fact exists. We conclude that it does.

The following legal principles guide our analysis of this issue. Section 54-193 (b) provides in relevant part that “[n]o person may be prosecuted for any offense . . . for which the punishment is or may be imprisonment in excess of one year, except within five years next after the offense has been committed.” We recently explained that “§ 54-193, like other criminal statutes of limitation, is remedial in nature. The purpose of a statute of limitations is to limit exposure to criminal prosecution to a certain fixed period of time following the occurrence of those acts the legislature has decided to punish by criminal sanctions. Such a limitation is designed to protect individuals from having to defend themselves against charges when the basic facts may

have become obscured by the passage of time and to minimize the danger of official punishment because of acts in the far-distant past. Such a time limit may also have the salutary effect of encouraging law enforcement officials promptly to investigate suspected criminal activity. . . . Indeed, it is because of the remedial nature of criminal statutes of limitation[s] that they are to be liberally interpreted in favor of repose.” (Internal quotation marks omitted.) *State v. A. B.*, 341 Conn. 47, 56, 266 A.3d 849 (2021).

“Thus, although the precise length of any statutory limitation period is necessarily somewhat arbitrary, such statutes nevertheless reflect the will of the legislature that, at least in the absence of special or compelling circumstances, the limitation period shall serve as a firm bar to prosecution. . . . It is also well established that statutes of limitations are not primarily concerned with demonstrable prejudice. . . . Instead, after the passage of the specified period of time, evidence of prejudice becomes less important than the virtues of predictability, repose, and societal stability. See, e.g., *United States v. Marion*, 404 U.S. 307, 322, 92 S. Ct. 455, 30 L. Ed. 2d 468 (1971) ([S]tatutes [of limitations] represent legislative assessments of relative interests of the [s]tate and the defendant in administering and receiving justice; they are made for the repose of society and the protection of those who may [during the limitation period] . . . have lost their means of [defense]. . . . These statutes provide predictability by specifying a limit beyond which there is an irrebuttable presumption that a defendant’s right to a fair trial would be prejudiced. . . .)” (Citation omitted; internal quotation marks omitted.) *State v. A. B.*, supra, 341 Conn. 64.

“In *State v. Crawford*, 202 Conn. 443, 521 A.2d 1034 (1987), this court held that the issuance of an arrest warrant within the limitation period set forth in . . . § 54-193 (b) commences a prosecution for purposes of satisfying that statute of limitations, so long as the warrant is executed without unreasonable delay.” *State v. A. B.*, supra, 341 Conn. 49. In the present case, it is undisputed that the John Doe arrest warrant was issued within the five year limitation period specified in § 54-193 (b). The issue we must decide is whether that warrant was void ab initio for failure to comply with the particularity requirement of the fourth amendment.¹³ The particularity requirement of the fourth amendment, which provides that “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; “categorically prohibits the issuance of any warrant except one particularly describing the place to be searched and the persons or things to be seized. The manifest purpose of this . . . requirement was to prevent general searches. By limiting the authorization to

search [and seize] to the specific areas and things for which there is probable cause to search, the requirement ensures that the search will be carefully tailored to its justifications, and will not take on the character of the wide-ranging exploratory searches the [f]ramers intended to prohibit. Thus, the scope of a lawful search is defined by the object of the search and the places in which there is probable cause to believe that it may be found.” (Footnote omitted; internal quotation marks omitted.) *Maryland v. Garrison*, 480 U.S. 79, 84, 107 S. Ct. 1013, 94 L. Ed. 2d 72 (1987). This requirement “makes general searches . . . impossible and prevents the seizure of one thing under a warrant describing another. As to what is to be taken, nothing is left to the discretion of the officer executing the warrant.” (Internal quotation marks omitted.) *Andresen v. Maryland*, 427 U.S. 463, 480, 96 S. Ct. 2737, 49 L. Ed. 2d 627 (1976); see also *Payton v. New York*, 445 U.S. 573, 583, 100 S. Ct. 1371, 63 L. Ed. 2d 639 (1980) (“[i]t is familiar history that indiscriminate searches and seizures conducted under the authority of ‘general warrants’ were the immediate evils that motivated the framing and adoption of the [f]ourth [a]mendment”).

In applying this provision, courts universally have held that “an arrest warrant that correctly names the person to be arrested is . . . constitutionally sufficient and need not contain any additional identifying information.” (Internal quotation marks omitted.) *Rivera v. Los Angeles*, 745 F.3d 384, 388 (9th Cir.), cert. denied, 574 U.S. 1061, 135 S. Ct. 870, 19 L. Ed. 2d 730 (2014), quoting *White v. Olig*, 56 F.3d 817, 819 (7th Cir. 1995); see also, e.g., *Wanger v. Bonner*, 621 F.2d 675, 682 (5th Cir. 1980) (“the inclusion of the name of the person to be arrested [in] the arrest warrant constitutes a sufficient description to satisfy the fourth amendment requirement that the person to be seized be described with particularity”). In *West v. Cabell*, 153 U.S. 78, 14 S. Ct. 752, 38 L. Ed. 643 (1894), the United States Supreme Court considered the particularity requirement as it related to an arrest warrant that incorrectly named the arrestee. The plaintiff in error, Vandy M. West, challenged the legality of his arrest on a warrant issued for the arrest of “James West,” a name that he had never gone by. *Id.*, 85. Adhering to the common-law principle that “a warrant for the arrest of a person charged with [a] crime must truly name him, or describe him sufficiently to identify him”; *id.*; the court held that the warrant for the arrest of “James West,” without further description, was constitutionally invalid for the arrest of a “Vandy M. West.” *Id.*, 85, 88.

Since *West*, numerous courts have addressed the fourth amendment particularity requirement as it relates to the validity of arrest warrants. “Generally, arrest warrants either describing the suspect only as ‘John Doe’ or inaccurately naming an individual without some other identifying description have been ruled insuffi-

cient under the naming requirement of the [f]ourth [a]mendment. See, e.g., *United States v. Doe*, 703 F.2d 745, 747–48 (3d Cir. 1983) (holding that an arrest warrant describing the suspect only as ‘John Doe [also known as] Ed’ was constitutionally insufficient and that an officer’s personal knowledge of that suspect did not cure the insufficiency) . . . *People v. Montoya*, 255 Cal. App. 2d 137 [143, 63 Cal. Rptr. 73] (1967) (holding that ‘John Doe’ warrant, which described suspect as ‘white male adult, [thirty to thirty-five years old, five feet ten inches, 175 pounds] dark hair, medium build’ lacked adequate specificity) [cert. denied, 390 U.S. 1007, 88 S. Ct. 1255, 20 L. Ed. 2d 109 (1968)]. But see *United States v. Ferrone*, 438 F.2d 381, 389 [3d Cir.] ([w]e hold that the physical description of [the defendant], coupled with the precise location at which he could be found, was sufficient and the John Doe warrant was, therefore, valid . . .’) [cert. denied, 402 U.S. 1008, 91 S. Ct. 2188, 29 L. Ed. 2d 430 (1971)]; *Blocker v. Clark*, 126 Ga. 484 [487, 54 S.E. 1022] (1906) (noting that a ‘John Doe’ warrant may be valid if it includes other identifying information such as occupation, personal appearance, or place of residence).” *State v. Burdick*, 395 S.W.3d 120, 126–27 (Tenn. 2012); see also *McIntyre v. State*, 142 App. Div. 2d 856, 858, 530 N.Y.S.2d 898 (1988) (arrest warrant identifying suspect as “JOHN DOE—White Male Slim Build—Approx. 17-18 years old” deemed facially defective).

“The advent of DNA analysis introduced a new layer of consideration, not only as to the particularity requirements of the [f]ourth [a]mendment, but also as to statutory provisions and procedural rules requiring that a suspect be described with ‘reasonable certainty.’” *State v. Burdick*, supra, 395 S.W.3d 127. Although an issue of first impression for this court, courts that have considered the constitutionality of a John Doe arrest warrant that described the suspect by reference to his unique DNA profile overwhelmingly have held that it satisfies state and federal constitutional particularity requirements.¹⁴ See *State v. Neese*, 239 Ariz. 84, 87–88, 366 P.3d 561 (App. 2016) (filing of “John Doe” indictment that identified defendant by his unique DNA profile satisfied particularity requirement and, therefore, commenced criminal prosecution within statute of limitations), review denied, Arizona Supreme Court, Docket No. CR-16-0067-PR (September 20, 2016); *People v. Robinson*, 47 Cal. 4th 1104, 1129, 1137, 1142–43, 224 P.3d 55, 104 Cal. Rptr. 3d 727 (arrest warrant incorporating by reference complaint describing suspect as “‘John Doe, unknown male’” with unique thirteen loci DNA profile adequately identified defendant under fourth amendment, thereby timely commencing prosecution), cert. denied, 562 U.S. 842, 131 S. Ct. 72, 178 L. Ed. 2d 49 (2010); *State v. Belt*, 285 Kan. 949, 960, 179 P.3d 443 (2008) (“a warrant identifying the person to be arrested for a sexual offense by description of the person’s unique

DNA profile, or incorporating by reference an affidavit containing such a unique profile, can satisfy constitutional and statutory particularity requirements”); *Commonwealth v. Dixon*, 458 Mass. 446, 452–54, 938 N.E.2d 878 (2010) (John Doe indictments incorporating suspect’s unique DNA profile and additional physical description “unassailably fulfil[led] the constitutional requirement that an indictment provide ‘words of description [that] have particular reference to the person whom the [c]ommonwealth seeks to convict’ ” and, therefore, sufficiently identified defendant and tolled statute of limitations); *State v. Carlson*, 845 N.W.2d 827, 829, 831–34 (Minn. App. 2014) (arrest warrant identifying defendant as “John Doe” and by unique fifteen loci DNA profile obtained from blood found at scene of burglary described defendant with particularity and reasonable certainty, and, thus, commenced prosecution within limitation period), review denied, Minnesota Supreme Court, Docket No. A13-0416 (June 17, 2014); *People v. Martinez*, 52 App. Div. 3d 68, 69–71, 855 N.Y.S.2d 522 (“John Doe” indictment for attempted rape and other charges sufficiently identified defendant and satisfied constitutional right to notice when indictment contained defendant’s particularized DNA profile taken from semen sample), appeal denied, 11 N.Y.3d 791, 896 N.E.2d 103, 866 N.Y.S.2d 617 (2008); *State v. Danley*, 138 Ohio Misc. 2d 1, 4–6, 853 N.E.2d 1224 (Com. Pl. 2006) (arrest warrant for rape and aggravated robbery against “John Doe” that identified suspect by gender and unique DNA profile was sufficient to commence criminal action and to toll statute of limitations); *State v. Burdick*, supra, 395 S.W.3d 128 (“John Doe” arrest warrant that identified suspect in aggravated rape case by his unique DNA profile satisfied particularity requirement of fourth amendment for purposes of commencing prosecution within statute of limitations); *State v. Younge*, 321 P.3d 1127, 1130–33 (Utah 2013) (information charging “ ‘John Doe unknown male’ ” with aggravated sexual assault and robbery and identifying assailant by unique DNA profile was valid and commenced underlying prosecution within statute of limitations); *State v. Dabney*, 264 Wis. 2d 843, 854, 663 N.W.2d 366 (App.) (arrest warrant for sexual assault identifying suspect as “John Doe” and setting forth unique DNA profile obtained from evidence recovered from victim was sufficiently particular and identified defendant with reasonable certainty), review denied, 266 Wis. 2d 63, 671 N.W.2d 850 (2003); annot., A. Weisman, “Validity of DNA Indictments,” 29 A.L.R.7th 601, 604–28, § 3 (2018) (citing cases).

As the Massachusetts Supreme Judicial Court stated in *Commonwealth v. Dixon*, supra, 458 Mass. 446, “[when] a general John Doe indictment, bereft of any particularity, must fail as generally anonymous, the converse is true of a DNA indictment: it prevails as precisely eponymous. A properly generated DNA profile is a string of

code that exclusively identifies a person's hereditary composition with near infallibility. See National Research Council (NRC), *The Evaluation of Forensic DNA Evidence* [(1996), p. 2] (technology for DNA profiling has progressed to the point where the reliability and validity of properly collected and analyzed DNA data should not be in doubt). Unlike [a] general John Doe indictment . . . an indictment of a person identified by a DNA profile accuses a singular and ascertained, but simply unnamed individual. Probably more than proper names or physical characteristics, DNA profiles unassailably fulfil the constitutional requirement that an indictment provide words of description [that] have particular reference to the person whom the [c]ommonwealth seeks to convict. . . . A DNA profile is not merely a word of description . . . it is, metaphorically, an indelible bar code that labels an individual's identity with nearly irrefutable precision. See [id., pp. 2, 7, 9].” (Citations omitted; footnote omitted; internal quotation marks omitted.) *Commonwealth v. Dixon*, supra, 453; see also *People v. Robinson*, supra, 47 Cal. 4th 1134 (“[f]or purposes of the [f]ourth [a]mendment, we conclude that the arrest warrant in question, which described the defendant by his [thirteen] loci DNA profile and included an explanation that the profile had a random match probability such that there was essentially no chance of its being duplicated in the human population except in the case of [a] genetically identical sibling, complied with the mandate of our federal [c]onstitution that the person seized be described with particularity”).

We agree with the many courts that have held that “a warrant identifying the person to be arrested for [an] . . . offense by description of the person's unique DNA profile, or incorporating by reference an affidavit containing such a unique profile, can satisfy constitutional . . . particularity requirements.” *State v. Belt*, supra, 285 Kan. 960; see id., 960–62 (arrest warrants identifying suspect in sexual assault cases as “John Doe” and listing only two DNA loci common to all humans lacked particularity for purposes of commencing prosecution within statute of limitations). In all of those cases, however, the DNA used to describe the suspect was from a single source sample collected directly from an individual's body or bodily fluids, which is “[the] type of DNA evidence that has been referred to as the gold standard.” B. Stiffelman, “No Longer the Gold Standard: Probabilistic Genotyping Is Changing the Nature of DNA Evidence in Criminal Trials,” 24 *Berkeley J. Crim. L.* 110, 114 (2019). “When one . . . speaks of [this type of evidence], what's described is a single source sample, usually from blood, semen, or saliva. A profile is deduced from the sample, a profile is obtained from a suspect, and a comparison is made. The analyst then calculates how rare that profile is, based on databases estimating the frequency of the specific genetic markers in a given population. The analyst then testifies as to both the

rarity of the profile and whether the two profiles match. The numbers are usually staggering, such that, if testing was done properly, and the population-based genetic modeling reliable, the matching suspect is almost undeniably the source of that DNA evidence sample.” (Footnote omitted.) *Id.* “[T]his type of DNA evidence . . . is such powerful evidence, that not only has it been used to convict the guilty, it has led to hundreds of exonerations across the country.” *Id.*

In the present case, however, the DNA evidence used to describe the suspect was not a single source sample known to have come from the perpetrator. Rather, it was “touch DNA,” also known as “trace DNA,” from multiple sources that might or might not have come from the perpetrator—something the police simply had no way of knowing when they applied for the John Doe arrest warrant.¹⁵ Notably, the state has not identified a single case, and our research has failed to uncover one, in which mixed partial DNA profiles from touch DNA provided the description of a suspect in a John Doe arrest warrant. Touch DNA “is a term used to describe DNA that is left behind just by touching an object Notwithstanding its name, however, touch DNA does not necessarily indicate a person’s direct contact with the object. Rather, according to [experts], abandoned skin cells, which make up touch DNA, can be left behind through primary transfer, secondary transfer, or aerosolization.” (Internal quotation marks omitted.) *State v. Dawson*, 340 Conn. 136, 153, 263 A.3d 779 (2021). Even when a person touches an object, “DNA is not always detectable, meaning that it is possible to have someone touch an object but not leave behind detectable DNA because . . . some people leave more of their skin cells behind than others, i.e., some people are better ‘shedders’ of their DNA than others. There are also other factors that affect the amount of DNA left on an object, such as the length of contact, the roughness or smoothness of the surface, the type of contact, the existence or nonexistence of fluids, such as sweat, and degradation on the object.” *Id.*, 154.

As a result, touch DNA “poses potential problems that are not present, or are less often present, with DNA obtained from evidence consisting of bodily fluids” 7 C. Fishman & A. McKenna, *Jones on Evidence* (7th Ed. 2019) § 60:9, p. 785. For example, “[t]ouch DNA will often be available in much smaller quantities than DNA extracted from blood, semen, or hair”; *id.*; and “the presence of touch DNA may often be far less probative of a defendant’s guilt than DNA derived from bodily fluids.” *Id.*, p. 787. Indeed, “trace samples lack the clarity of the more straightforward DNA evidence that can lead to a clear match to a specific individual. An object is found at or near a crime scene. A technician swabs the object to test for that DNA. These trace samples are usually quite small, there is often more than one person’s DNA, and the evidence is of a much poorer

quality.” B. Stiffelman, *supra*, 24 Berkeley J. Crim. L. 115. “When dealing with such small amounts of DNA, there is much greater ambiguity as to how the DNA ended up on the object. For example, the DNA could have been left by someone who touched the object, or even by someone who touched the person who then touched the object. . . . In short, small amounts of DNA can be easily transferred and [travel]. Because of this, finding someone’s DNA on an object is less significant to a determination of guilt or innocence of a suspect.” (Footnote omitted.) *Id.*, 115–16.

Complicating the matter further, as previously indicated, the DNA profiles in the present case were mixed partial DNA profiles. “A DNA profile is determined by looking at different locations on a genetic chain. The current standard, based on [Federal Bureau of Investigation] protocols, is to look at [twenty-two] specific locations on the genetic chain. A person has, at most, two distinct genetic markers (alleles) at any location—one from her mother and one from her father. A person will often have the same genetic marker from both [her] mother and [her] father, so a single location on an individual DNA profile can have either one or two alleles. If there are three alleles at a location, then the sample contains DNA from more than one person.” *Id.*, 114.

A mixed sample is “very common with forensic samples and . . . can occur for a variety of reasons . . . [including] if [the sample is from] an object that multiple people have touched, especially if [the object is] something that is found in a public place” (Internal quotation marks omitted.) *State v. Dawson*, *supra*, 340 Conn. 155. “[T]he conclusion that [a] sample [is] a mixed sample [is] based on the fact that there [are] alleles present at certain loci that [match] the evidentiary profile but [do] not match the defendant’s known profile.” *Id.*, 156. When a mixed source DNA profile is produced, “examiners can draw three types of conclusions: inclusion, exclusion, and inconclusive. . . . [E]xaminers [also] generate a statistic—called a likelihood ratio—that helps give weight to [their] conclusions. A likelihood ratio is a mathematical comparison of two different explanations for the DNA evidence that supports the strength of the inclusion.” (Internal quotation marks omitted.) 7 C. Fishman & A. McKenna, *Jones on Evidence* (7th Ed. January, 2022 update) § 60:26, quoting *United States v. Caldwell*, 963 F.3d 1067, 1071–72 (11th Cir.), cert. denied, U.S. , 141 S. Ct. 836, 208 L. Ed. 2d 410 (2020). “The combined probability of inclusion is employed when there is a mixed DNA profile, which indicates the presence of genetic material from two or more contributors. . . . This method takes all of the observed data and considers all possible profiles that could produce that data. Then, it generates a statistic, which expresses the probability that a random person would have any of those generated profiles.” (Citation

omitted; internal quotation marks omitted.) *State v. Rodriguez*, 337 Conn. 175, 190–91, 252 A.3d 811 (2020), quoting B. Stiffelman, *supra*, 24 Berkeley J. Crim. L. 128. “A statistic is necessary to understand the significance of the inclusion as a potential contributor. . . . [W]ithout the probability assessment, the jury does not know what to make of the fact that the patterns match: the jury does not know whether the patterns are as common as pictures with two eyes, or as unique as the Mona Lisa.” (Internal quotation marks omitted.) *People v. Pike*, 53 N.E.3d 147, 165 (Ill. App. 2016), appeal denied, 89 N.E.3d 761 (Ill. 2017).

We note, finally, that, “[w]hen some [locations on the genetic chain] yield full results and some do not, the incomplete pattern of alleles is sometimes referred to as a partial profile.” 7 C. Fishman & A. McKenna, *Jones on Evidence* (7th Ed. 2019) § 60:25, p. 854. “When a comparison is made between the suspect’s or complainant’s DNA and a partial profile of crime-relevant DNA at . . . only a few sites, the odds of a random match can be much higher and the inference that the source of the known sample was also the source of the unknown sample much weaker.” (Internal quotation marks omitted.) *Id.*, pp. 854–55.

In the present case, the arrest warrant affidavit did not alert the judicial authority to the fact that the DNA profiles did not include the perpetrator’s unique DNA profile but, rather, were mixed partial profiles generated from the touch DNA of at least four different individuals, three of whom evidently had no involvement in the crimes at issue whatsoever. Nor did it apprise the judicial authority of the statistical probability that any person chosen at random from the general population would have those DNA profiles. See *State v. Rodriguez*, *supra*, 337 Conn. 190 (“a match means little without statistical evidence that will allow the fact finder to determine the strength of the match and, thus, the strength of the inferential fact that the defendant is the person whose DNA is present in the actual evidentiary sample”); National Research Council, *DNA Technology in Forensic Science* (1992) p. 74 (“[t]o say that two patterns match, without providing any scientifically valid estimate (or, at least, an upper bound) of the frequency with which such matches might occur by chance, is meaningless”). In light of the foregoing, we agree with the defendant that no judge reasonably could have concluded that the DNA profiles listed in the arrest warrant affidavit described the person responsible for the crimes, much less with the particularity required by the fourth amendment.

In arguing to the contrary, the state asserts that the DNA profiles “[were] not the only identifying information in the warrant. It also contained a physical description of the perpetrator, which included his height, race, general age, and attire.” As previously indicated, although

the arrest warrant application contained no description of the suspect; see footnote 15 of this opinion; the affidavit that accompanied the arrest warrant application stated that the victim had described the suspect as a black male, approximately five feet eleven inches to six feet tall, between eighteen and thirty years old, with a medium build and a light beard, and that another witness had described the suspect as a light-skinned black male, approximately six feet tall, in his mid-twenties, with a slender build, and no or very little facial hair.¹⁶ The state has failed to cite a single case in which such vague physical descriptions, which in Connecticut could potentially apply to thousands of individuals, was held to satisfy the particularity requirement of the fourth amendment; nor has our independent research uncovered any such case.

The state contends nonetheless that the particularity requirement is satisfied in this case in light of the trial court's finding that a subsequent comparison of the defendant's DNA with the DNA profiles generated in 2018 "revealed that there was essentially *no possibility* that the DNA profile of the perpetrator originated from another human being." (Emphasis in original; internal quotation marks omitted.) In furtherance of this argument, the state asserts that "[i]t is of no moment that [the] information [on which the trial court relied in making this finding] was derived from a subsequent, more sophisticated DNA testing procedure." To the contrary, it is of critical importance that the trial court relied on information from outside the four corners of the arrest warrant in determining whether the warrant satisfied the particularity requirement of the fourth amendment. See, e.g., *Aguilar v. Texas*, supra, 378 U.S. 109 n.1 ("[i]t is elementary that in passing on the validity of a warrant, the reviewing court may consider *only* information brought to the magistrate's attention") (emphasis in original); *United States v. Jarvis*, supra, 560 F.2d 497 ("[t]o comply with . . . the fourth amendment the name or a particularized description of the person to be arrested *must appear on the face of the 'John Doe' warrant*" (emphasis added)).

In arguing to the contrary, the state cites to language in *State v. Belt*, supra, 285 Kan. 949, which, as previously discussed, held that John Doe arrest warrants that failed to describe or incorporate by reference the suspect's unique DNA profile failed to satisfy the particularity requirement of the fourth amendment. *Id.*, 962. In reaching its determination, the court in *Belt* stated that "[the omitted] genetic information was necessary to provide an evidentiary baseline for probable cause. The fact that it would need to be verified scientifically once [the] defendant was seized did not eliminate the need for this baseline to be drawn in the warrant in the first place." *Id.* The state fails to explain how this language—or any other statement in *Belt*—supports its contention that the trial court properly relied on the 2018 DNA

reports in determining whether the *2012 DNA report*, which the Norwalk police relied on to establish probable cause for the John Doe arrest warrant, identified the suspect with the particularity required by the fourth amendment.

In light of the foregoing, we conclude that, to satisfy the particularity requirement of the fourth amendment, the affidavit accompanying a John Doe DNA arrest warrant application must contain information assuring the judicial authority issuing the warrant that the DNA profile identifies the person responsible for the crime on the basis of his or her unique DNA profile and should include information as to the statistical rarity of that DNA profile. See, e.g., *Commonwealth v. Dixon*, supra, 458 Mass. 453 (“[u]nlike [a] general John Doe indictment . . . an indictment of a person identified by a DNA profile accuses a singular and ascertained, but simply unnamed individual” (citations omitted)); see also M. Chin et al., *Forensic DNA Evidence: Science and the Law* (2019) § 9.8, p. 9-11 (“[John] Doe arrest warrant premised on the suspect’s DNA profile should include . . . [t]he actual DNA alleles possessed by the perpetrator . . . on a locus-by-locus basis . . . [and] [t]he rarity of the perpetrator’s DNA profile should be expressed statistically on the face of the warrant, as well as in the warrant affidavit, to establish the particularity of the identification and [to] assure the magistrate that there will be no discretion on the part of law enforcement in the execution of the warrant”). Otherwise, the judicial authority cannot fulfill its gatekeeping role of preventing the harms that the particularity requirement was intended to prevent, namely, the issuance of general warrants and “the seizure of one thing under a warrant describing another.” (Internal quotation marks omitted.) *Andresen v. Maryland*, supra, 427 U.S. 480.

Finally, we note that our decision today in no way diminishes the probative value of DNA in the determination of guilt or innocence. See, e.g., *State v. Rodriguez*, supra, 337 Conn. 203 (*Kahn, J.*, concurring) (recognizing “powerful tool” that DNA has become in determining “from blood, skin, sweat, semen, hair, or other DNA-containing cells . . . the likelihood that an individual is reasonably tied to a crime scene, victim, weapon, or other object”). Nor should it be read to imply that the 2012 mixed partial DNA profiles would not have been probative of the defendant’s guilt if the case had gone to trial. It could be that those profiles were adequate for an expert to determine (1) that they included the defendant’s DNA profile, and (2) the probability that a random person would also be included, thus allowing the state to argue that they tied the defendant to the crime. See, e.g., *People v. Pike*, supra, 53 N.E.3d 170 (“[n]ormally the probability of inclusion is admissible, even if that probability is rather high”); *People v. Smith*, 978 N.E.2d 324, 333, 337 (Ill. App. 2012) (holding that expert testimony that probability of inclusion for partial

profile from handgun was approximately one out of eleven, and, therefore, that defendant could not be excluded from 9 percent of population that could have contributed to DNA mixture was properly admitted and that weight of testimony was matter for jury to decide), appeal denied, 982 N.E.2d 774 (Ill. 2013). We have simply concluded that a John Doe arrest warrant that identifies a suspect on the basis of a general physical description that could apply to any number of people and mixed partial DNA profiles that are not positively known to include the suspect's profile, and that fails to state the statistical rarity of any of the profiles, does not satisfy the particularity requirement of the fourth amendment and, therefore, does not commence a prosecution for purposes of satisfying the applicable statute of limitations.¹⁷

The judgment is reversed and the case is remanded with direction to render judgment dismissing the information.

In this opinion the other justices concurred.

¹ General Statutes (Rev. to 2011) § 54-193 (b) provides in relevant part: "No person may be prosecuted for any offense . . . for which the punishment is or may be imprisonment in excess of one year, except within five years next after the offense has been committed."

Hereinafter, unless otherwise indicated, all references to § 54-193 in this opinion are to the 2011 revision of the statute.

² The defendant appealed to the Appellate Court, and we transferred the appeal to this court pursuant to General Statutes § 51-199 (c) and Practice Book § 65-2.

³ In furtherance of their investigation, the police obtained the prison records of the defendant, which incorrectly indicated that a sample of his DNA was obtained in 2008 pursuant to General Statutes § 54-102g, which provides that persons convicted of a felony in Connecticut must submit to the taking of a DNA sample for inclusion in the CODIS database, which is a searchable statewide index of the DNA profiles of convicted felons that contains approximately 116,000 DNA profiles as of 2019.

⁴ Paragraph 20 of the John Doe arrest warrant application, which set forth the DNA profiles, stated as follows: "That, on January 11, 2013, Sergeant Orr received a DNA [d]atabase [s]earch [r]eport from the [laboratory] (laboratory case number ID12-001734). The report contained the results of the amplified items with Identifiler Plus Alleles Detected. For item listed as #6-S1 (Swab tips - inside sleeve cuffs and neck hem of sweatshirt) Identifiler Plus Alleles Detected were identified as D8S1179: 12, 13, 14; D21S11: 30; D7S820: 9, 10; CSF1PO: 12; D3S1358: 15, 16; TH01: 7; D13S317: 11, 12; D16S539: 9, D2S1338: 20, 21; D19S433: 11, 15.2; vWA: 16; TPOX: 11; D18S51: 16; AMEL: X, Y; D5S818: 11; and FGA: 24. For item listed as [#6-S2] (Swab tips - outside of cell phone-type cover) Identifiler Plus Alleles Detected were identified as D8S1179:12, 13, 14, 15; D21S11: 30, 31; D7S820: 9, 10; CSF1PO: 10, 12; D3S1358: 14, 15, 16; TH01: 7, 8; D13S317: 11, 12; D16S539: 9, 11; D2S1338: 19, 20, 21; D19S433: 11, 15.2; vWA: 15, 16, 18; TPOX: 9, 11, 12; D18S51: 16, 17; AMEL: X, Y; D5S818: 9, 10, 11, 13; and FGA: 23, 24, and 26. For item listed as #6-S3 (Cutting - left pocket of sweatshirt) Identifiler Plus Alleles Detected were identified as D8S1179: 12, 13, 14, 15; D21S11: 28, 30, 30.2, 31, 35; D7S820: 8, 9, 10, 11, 12; CSF1PO: 7, 10, 11, 12; D3S1358: 14, 15, 16, 17; TH01: 6, 7, 8; D13S317: 10, 11, 12; D16S539: 9, 10, 11, 12, 13; D2S1338: 17, 18, 20, 21, 22, 26; D19S433: 11, 12, 13, 13.2, 14, 15.2; vWA: 14, 15, 16, 17, 18; TPOX: 6, 8, 9, 11, 12; D18S51: 13, 15, 16, 20, 21; AMEL: X, Y; D5S818: 11, 12, 13; and FGA: 22, 23, 24, 25, 26, and 29."

The John Doe arrest warrant application provided no interpretative guidance as to the meaning of the results of the DNA database search report set forth in paragraph 20. Independent research by this court informs us that the number-letter combinations that appear in the report refer to certain loci on the DNA molecule that are present in all human beings. See M. Chin et al., *Forensic DNA Evidence: Science and the Law* (2019) § 2.2, pp. 2-2

through 2-4 (“[DNA] is a large molecule coiled up tightly inside the nucleus of most cells in the human body. . . . [E]ach cell that contains DNA . . . has two copies of each autosome and two sex chromosomes. . . . Each human chromosome contains coding and [noncoding] regions. . . . [Non-coding] regions of DNA . . . are sequences of bases that do not translate into information for protein synthesis. A number of these [noncoding] regions are of specific interest in forensic DNA typing, and have been chosen as the standardized markers used for identification purposes. . . . These [noncoding] regions (or ‘loci’) are represented in all human DNA molecules, but there is a high degree of variability in type between unrelated individuals. . . . Between individuals and in human populations, different alleles can exist at given locations (loci) on the DNA molecule. These differences are called polymorphisms, and are the reason forensic DNA identification is possible. The most common forensic DNA test in use today targets a core set of [thirteen] loci that are highly variable between individuals” (Citations omitted.)); see also National Institute of Standards and Technology, FBI CODIS Core STR Loci, (last modified August 26, 2015), available at <https://strbase.nist.gov/fbicore.htm> (last visited May 4, 2022) (stating that thirteen core loci for CODIS purposes are CFS1PO, FGA, THO1, TPOX, VWA, D3S1358, D5S818, D7S820, D8S1179, D13S317, D16S539, D18S51, and D21S11). The corresponding numbers set out after each locus are the alleles found at those locations. See 7 C. Fishman & A. McKenna, *Jones on Evidence* (7th Ed. 2019) § 60:26, p. 856 (“DNA from a single individual can have no more than two alleles at each locus. This follows from the fact that individuals inherit chromosomes in pairs, one from each parent. An individual who inherits the same allele from each parent (a homozygote) can contribute only that one allele to a sample, and an individual who inherits a different allele from each parent (a heterozygote) will contribute those two alleles. Finding three or more alleles at [any given] locus therefore indicates a mixture of DNA from more than one person.” (Internal quotation marks omitted.)). Because a majority of the loci listed in paragraph 20 contain more than two alleles, it is apparent that the DNA profiles were generated from a mixture of the DNA of multiple individuals.

⁵ At this point, the police and the laboratory personnel were still operating under the mistaken impression that the defendant’s DNA was in the CODIS database.

⁶ The defendant contends, and our independent research confirms, that the DNA mixtures at issue would not have been sufficient for entry into the CODIS database. See Federal Bureau of Investigation, National DNA Index System (NDIS) Operational Procedures Manual (2021) § 4.2.1.5, p. 41, available at <https://www.fbi.gov/file-repository/ndis-operational-procedures-manual.pdf/view> (last visited May 4, 2022) (“[a] forensic mixture DNA records submitted to NDIS shall not have more than [four] alleles at any locus”); see id., § 4.2.1.7, p. 42 (“[f]orensic mixture and forensic partial DNA records submitted to NDIS shall . . . have a minimum of [eight] of the [o]riginal CODIS [c]ore [l]oci and satisfy a statistical threshold for match rarity of one in ten million at moderate stringency (moderate match estimate)”).

⁷ The laboratory later issued another supplemental DNA report on April 16, 2018. Its conclusions in this report differed slightly from those in the April 13, 2018 supplemental DNA report. Specifically, it concluded: (1) The results from the outside of the victim’s cell phone case were consistent with the DNA profile being a mixture of three contributors, with the profile being at least 1.2 billion times more likely to occur if it originated from the defendant and two unknown individuals than if it originated from three unknown individuals; and (2) the results from the right handle of the .22 magnum handgun were consistent with the DNA profile being a mixture of two contributors with the profile being 30,000 times more likely to occur if it originated from the defendant and one unknown individual than if it originated from two unknown individuals.

⁸ There is some confusion as to whether the trial court relied on the April 13, 2018 supplemental DNA report or the April 16, 2018 supplemental DNA report. See footnote 7 of this opinion. The defendant contends that the trial court improperly relied on the April 16, 2018 supplemental DNA report, “which was not in evidence and was not relied on by the parties at the hearing.” The state argues that the court appears to have relied on both reports. As we explain more fully hereinafter, however, it makes no difference which of the 2018 supplemental DNA reports the court relied on because it properly could rely on neither. See, e.g., *State v. Colon*, 230 Conn. 24, 34, 644 A.2d 877 (1994) (“in determining the adequacy of an affidavit in

support of a . . . warrant, the information to establish probable cause must be found within the affidavit's four corners").

⁹ The court also rejected the defendant's argument that the information must be dismissed because the police "knew the defendant's identity based [on] the anonymous tip from December 29, 2012, but failed to use reasonable diligence to investigate further." Specifically, at the hearing on the motion to dismiss, defense counsel argued that the police never sought to interview the defendant or his family members on the basis of the December tip, never followed up with the tipster, even though they had his cell phone number, and, apparently, made no effort to confirm the tip through normal investigative techniques, such as by ascertaining if the victim could identify the defendant in a photographic array. The trial court rejected this argument, concluding that any preaccusation delay on the part of the police was justified. Specifically, the court stated that the failure of the police to apprehend the defendant sooner was attributable to the misinformation they had received indicating that the defendant's DNA was in CODIS, not to a lack of due diligence on their part in pursuing an investigation. The defendant challenges this determination on appeal, arguing that the preaccusation delay violated his right to due process. See, e.g., *State v. Roger B.*, 297 Conn. 607, 614, 999 A.2d 752 (2010) (To establish due process violation on the basis of preaccusation delay, "the defendant must show both that actual substantial prejudice resulted from the delay and that the reasons for the delay were wholly unjustifiable, as [when] the state seeks to gain a tactical advantage over the defendant. . . . [P]roof of prejudice is generally a necessary but not sufficient element of a due process claim [Additionally] the due process inquiry must consider the reasons for the delay as well as the prejudice to the accused." (Emphasis omitted; internal quotation marks omitted.)). We do not address this claim in light of our determination that the John Doe arrest warrant failed to describe the defendant with the particularity required by the fourth amendment.

¹⁰ The defendant argues that his claim is preserved because "[t]he issue of whether the John Doe [arrest] warrant met the constitutional particularity and statutory reasonable certainty requirements was argued in the trial court and decided by [that] court" and, further, because "[t]he parties discussed . . . *State v. Belt*, [285 Kan. 949, 179 P.3d 443 (2008)], which rejected the John Doe warrant in that case because it had only two loci [that were] present in one in 500 people," and the trial court distinguished that case in its memorandum of decision. As previously indicated, however, the defendant's motion to dismiss was premised on three arguments, none of which challenged or even mentioned the quality of the DNA profiles in the arrest warrant application. It is axiomatic that, to preserve a claim at trial, the defendant must "alert the trial court to the specific deficiency now claimed on appeal"; *State v. Carter*, 198 Conn. 386, 396, 503 A.2d 576 (1986); which, in the present case, the defendant failed to do.

¹¹ Although the defendant did not raise the issue in the trial court or on appeal to this court, we would be remiss not to note that the John Doe arrest warrant in this case contained no description of the suspect; nor did it incorporate by reference the descriptions set forth in the arrest warrant affidavit. It simply authorized the arrest of "Doe, John" for "[r]obbery 1" and "[a]ssault 1." See *State v. Browne*, 291 Conn. 720, 733–34, 970 A.2d 81 (2009) ("most [federal] [c]ourts of [a]ppeals have held that a court may construe a warrant with reference to a supporting application or affidavit if the warrant uses appropriate words of incorporation, and if the supporting document accompanies the warrant" (internal quotation marks omitted)); *id.*, 737 ("when the warrant application and affidavit are placed under seal to protect the identity and safety of a confidential informant, it is, in our view, well within constitutional limits to determine the particularity of the warrant in light of the supporting documentation *as long as it is incorporated explicitly by reference [in the warrant]*" (emphasis added)); *State v. Belt*, 285 Kan. 949, 961–62, 179 P.3d 443 (2008) (John Doe arrest warrants that failed to include or incorporate by reference suspect's unique DNA profile did not satisfy particularity requirement of fourth amendment because, in part, "there was no reason the [s]tate could not have particularly described the perpetrator's unique DNA profile in the warrants or their supporting affidavits").

¹² In arguing to the contrary, the state cites *State v. Brunetti*, 279 Conn. 39, 56, 901 A.2d 1 (2006), cert. denied, 549 U.S. 1212, 127 S. Ct. 1328, 167 L. Ed. 2d 85 (2007), in which this court held that the record was inadequate for review of the defendant's unpreserved claim that the search of his parents' home violated the fourth amendment because it was conducted

without the consent of both parents. The defendant in *Brunetti* argued on appeal that the record was adequate for review because, in ruling on his motion to suppress, the trial court stated that it was “clear that at least . . . one of the parents . . . declined to [sign the] consent to . . . search [form].” (Internal quotation marks omitted.) *Id.* The defendant argued that “this statement perfected the record for review because it “[constituted] a finding, supported by [the] evidence,’ that the defendant’s mother had declined to consent to the search.” *Id.* We disagreed, explaining that “the act of declining to *sign* a consent to search form is not tantamount to a refusal to *consent* to the search”; (emphasis in original) *id.*; and, therefore, although it was clear from the record that the defendant’s mother declined to sign the form, “we [did] not know, because the record [did] not reveal, whether [she] (1) declined to sign the form but orally consented to the search, (2) acquiesced in her husband’s consent to the search, (3) affirmatively refused to consent to the search, or (4) took some other position regarding the search. All we know is that she did not sign the consent to search form. Consequently, any conclusion regarding the defendant’s mother’s position concerning the search . . . would be purely speculative.” (Footnote omitted.) *Id.*, 58. In the present case, by contrast, the record contains all of the facts necessary for our review of the defendant’s claim regarding the sufficiency of the description of the suspect in the John Doe arrest warrant. As we explained, those facts are limited to those that are apparent on the face of the warrant or incorporated by reference therein.

¹³ “Whether a warrant is sufficiently particular to pass constitutional scrutiny presents a question of law that we decide *de novo*.” (Internal quotation marks omitted.) *State v. Buddhu*, 264 Conn. 449, 467, 825 A.2d 48 (2003), cert. denied, 541 U.S. 1030, 124 S. Ct. 2106, 158 L. Ed. 2d 712 (2004). For the same reason that he claims the John Doe arrest warrant lacked particularity under the fourth amendment, the defendant argues on appeal that the warrant also failed to comport with the reasonable certainty requirement under state law. See Practice Book § 36-3 (“[a] warrant shall be signed by the judicial authority and shall contain the name of the accused person, or if such name is unknown, any name or description by which the accused can be identified with reasonable certainty”). Because this unreserved state law claim is not subject to *Golding* review, we decline to address it.

¹⁴ Those courts have done so because, “for purposes of identifying a particular person . . . a DNA profile is arguably the most discrete, exclusive means of personal identification possible. A genetic code describes a person with far greater precision than a physical description or a name.” (Internal quotation marks omitted.) *State v. Dabney*, 264 Wis. 2d 843, 854, 663 N.W.2d 366 (App.), review denied, 266 Wis. 2d 63, 671 N.W.2d 850 (2003).

¹⁵ That the police had no way of knowing, when they sought the John Doe arrest warrant in this case, whether the perpetrator’s DNA profile would match any of the DNA profiles listed in the arrest warrant application is demonstrated by the fact that the 2012 DNA report excluded the victim as a source of any of the touch DNA found on the tested items, including the DNA found on the victim’s own cell phone case, which ultimately was determined to be a mixture of the DNA of three people. The victim also was excluded as a source of the DNA found on the front, driver’s side door handle of her vehicle.

¹⁶ The arrest warrant affidavit also provided a third description of the suspect given by another witness, which largely mirrored the victim’s very general description of the suspect.

¹⁷ Like the Massachusetts Supreme Judicial Court, “[w]e are not unmindful of the arguments of the defendant and others that DNA indictments may vitiate some of the important public policy purposes that our statutes of limitations serve”; *Commonwealth v. Dixon*, supra, 458 Mass. 458; and create a risk that criminal trials, “in cases [in which] a DNA sample can be indicted as a placeholder, [are conducted] decades and decades after [the] commission of [an] offense [for which the legislature has imposed a five year statute of limitations].” *Id.* As that court stated, however, there are constitutional, statutory, and procedural safeguards to protect defendants against any such delays. *Id.*, 458–59. For example, this court recently reaffirmed that “the issuance of an arrest warrant within the limitation period set forth in . . . § 54-193 (b) commences a prosecution for purposes of satisfying that statute of limitations, so long as the warrant is executed without unreasonable delay.” (Emphasis added.) *State v. A. B.*, supra, 341 Conn. 49. Whether a delay is reasonable “is a question of fact that will depend on the circumstances of each case. If the facts indicate that an accused consciously eluded the authorities, or for other reasons was difficult to apprehend, these factors

will be considered in determining what time is reasonable. If, on the other hand, the accused did not relocate or take evasive action to avoid apprehension, failure to execute an arrest warrant for even a short period of time might be unreasonable and fail to [satisfy] the statute of limitations.” (Internal quotation marks omitted.) *Id.*, 58. As the Massachusetts Supreme Judicial Court noted, “[i]t is in the first instance for the [l]egislature to determine whether [existing laws] . . . are inadequate to protect putative defendants indicted by their genetic identity, but unable to be identified by name before the expiration of [the applicable statute of limitations]. If so, they may revisit the statutory scheme that we conclude permits the practice.” *Commonwealth v. Dixon*, *supra*, 459.
