IN THE

Supreme Court of the State of California

THE PEOPLE OF THE STATE OF CALIFORNIA,
Plaintiff and Respondent,

v.

MARK BUZA,
Defendant and Appellant.

First Appellate District, Division Two, Case No. A125542
San Francisco County Superior Court, Case No. 207818
The Honorable Carol Yaggy, Judge

UNOPPOSED APPLICATION FOR LEAVE TO FILE AMICUS BRIEF AND BRIEF FOR AMICUS CURIAE GLOBAL ALLIANCE FOR RAPID DNA TESTING IN SUPPORT OF THE STATE OF CALIFORNIA AND REVERSAL

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Pursuant to California Rules of Court, Rule 8.520(f), amicus curiae The Global Alliance for Rapid DNA Testing respectfully submits this application to file the accompanying amicus brief in support of plaintiff and respondent, the People of the State of California . Both the State and appellant Mark Buza have represented that they do not object to the filing of this brief.

STATEMENT OF INTEREST

The Global Alliance for Rapid DNA Technology is a 501 (c)(3) non-profit association established to bring together members of the scientific, legal and commercial communities to discuss and develop Rapid DNA industry best practices, to educate members of criminal justice community as well as act as an educational resource for policy makers in the process of developing the necessary rules, regulations and legislation necessary to implement Rapid DNA Technology into the criminal justice system. Consisting of representatives from companies manufacturing the Rapid DNA instrumentation, Law enforcement agencies, companies developing the chemical reagents to be used in the instrumentation, software manufacturers as well as laboratories specializing in forensic DNA testing, the Global Alliance seeks to be a resource for the judicial community as well as an advocate for the use of DNA technology to more quickly and efficiently identify and convict the guilty while at the same time exonerating the innocent from wrongful arrest and conviction.

Consistent with the observation by the National Academy of Sciences in its 2009 report "Strengthening Forensic Science in the United States a Path Forward" that forensic DNA technology is the "gold standard" for the forensic sciences, the goal of the Alliance is to ensure that the development and integration of new Rapid DNA technologies into criminal justice systems does so while maintaining the same high standards of quality and reliability that have proved so important for the determination of truth in the criminal justice system.

In a collaborative effort to protect the reliability and quality of Rapid DNA technology the Alliance and its members have worked closely with representatives from the Department of Justice, The Federal Bureau of Investigation, Congress, the White House Office of Science and Technology Policy as well as with law enforcement and policy officials on the State and Local level to ensure that the appropriate processes and procedures are in place to maximize the potential of Rapid DNA technology and to both ensure privacy protections and maximizing Rapid's crime fighting impact.

NEED FOR FURTHER BRIEFING

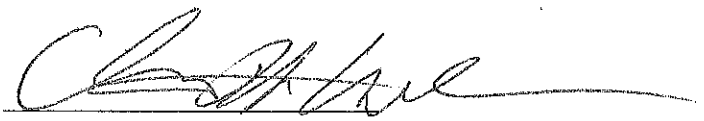
The Alliance is uniquely positioned to provide insight and information to the Court as to the current and future state of DNA technology and the speed at which forensic DNA testing can be accomplished in the very near future. Given the issues presented in this case, including the importance of the analogy to the constitutionality of taking fingerprints at arrest, the Alliance can provide vital information and argument. Leave to submit amicus curiae brief was granted by in the United States Supreme Court case of *Maryland v. King* (2013) ___U.S. ___, 133 S.Ct. 1958.

Pursuant to Rule 8.520(f)(4), the Global Alliance for Rapid DNA Testing states that no party or any counsel for a party authored the proposed amicus brief in whole or in part or made a monetary contribution intended to fund the preparation or submission of the brief: and that the following organizations have made monetary contributions intended to fund the preparation and submission of the brief on behalf of the Global Alliance for Rapid DNA Testing: Integenx, NEC of America

CONCLUSION

For the foregoing reasons, The Global Alliance for Rapid DNA Testing respectfully requests that this Court grant leave to file the accompanying amicus brief.

Respectfully submitted,



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INTRODUCTION

Forensic DNA identification serves precisely the same purpose as fingerprint identification and for nearly a century, it has been well established that the Fourth Amendment permits law enforcement officers to conduct forensic fingerprint analysis pursuant to a valid arrest for purposes of identification. See, e.g., *United States v. Kelly*, 55 F.2d 67, 6970 (2d Cir. 1932). Furthermore, Courts have confirmed the constitutionality of fingerprint identification upon arrest while also acknowledging the further utilization of fingerprints in "maintaining a permanent record to solve other past and future crimes." *Jones v. Murray*, 962 F.2d 302, 306 (4th Cir. 1992) And courts have universally agreed that this state interest in identification far outweighs any expectation of privacy that a person subject to a lawful arrest may have in his own identity. See, e.g., *Smith v. United States*, 324 F.2d 879, 882 (D.C. Cir. 1963) ("[I]t is elementary that a person in lawful custody may be required to submit to photographing and fingerprinting as part of routine identification processes.") (citations omitted).

The forensic DNA analysis at issue in this case is no different, for Fourth Amendment purposes, from fingerprint analysis. What ***is*** different is that DNA analysis is a better means of identification, one which protects the public from recidivistic criminals and protects the wrongfully accused from prosecution. And importantly, advances in DNA technology (referred to as Rapid DNA) which significantly increase the speed at which DNA can be analyzed further legitimize the analogy between the use of fingerprints as a constitutionally accepted law enforcement practice and the taking of DNA

Forensic DNA analysis is based on science and technology that make it an exceptionally valuable tool for identifying the suspected

perpetrator of a crime. Indeed, forensic DNA analysis enables law enforcement to determine a suspect's identity with near absolute certainty, and is therefore even more valuable and accurate than fingerprinting. At the same time, the science and technology underlying the forensic DNA analysis at issue here make it incapable of meaningfully revealing any other sensitive information contained in the suspect's DNA. Thus, like fingerprint analysis, forensic DNA analysis advances an exceedingly important state interest without intruding upon any cognizable privacy interest.

In failing to uphold the well-established need of law enforcement to insure the identification of those who stand before them, the Court of Appeal fails to recognize the legitimate and accurate analogy of fingerprint identification technology to DNA identification technology as well as the 1) legislative, regulatory and technology safeguards which apply to the application of DNA technology to the arrestee dynamic and 2) technology advances already being used in the US which will allow for DNA to be performed during in the booking process. Finally, the Court's opinion rests on an assumed potential of misuse, which has never formed the basis of a successful Fourth Amendment challenge and should not create one under the California Constitution here. (*United States v. Karo*, 468 U.S. 705, 712 (1984).) All of which subvert the specific will of the people of California as expressed in a law crafted to both maximize the identifying power ability of DNA while protecting individuals' civil rights and liberties.

Decades of jurisprudence stand firm on the idea that the identification of an individual upon arrest causes no constitutional violation. But while no constitutional violation can be deduced in the application of DNA technology to the arrest and booking dynamic, the failure to leverage a powerful yet well-regulated technology like DNA will

be counted very tangibly in the number of lives lost and people victimized who would not suffer but for that failure.

BACKGROUND

I. Forensic DNA Analysis Is An Extraordinarily Powerful Method For Identification.

It is now well established that "DNA testing has an unparalleled ability both to exonerate the wrongly convicted and to identify the guilty." *District Attorney's Office for Third Judicial Dist. V. Osborne,* 557 U.S. 52, 55 (2009). That is as far as the forensic DNA analysis at issue in this case extends. This analysis "is only useful for human identity testing," and thus does not disclose any other potentially private information about the person whose DNA is being analyzed. John M. Butler, *Fundamentals of Forensic DNA Typing 279* (2009) (hereinafter Butler, Fundamentals) (emphasis added); see also *Osborne*, 557 U.S. at 82 (Alito, J., concurring) (recognizing that Professor Butler "is said to have written the canonical text on forensic DNA typing") (internal quotation marks omitted). An overview of the science and technology on which the DNA analysis before the Court is based demonstrates why it is such a powerful tool for the purpose of identification - and only for that purpose.

A. California State Law, Federal Law and Federal Regulations All Serve to Limit the Use of DNA Samples

Consistent with the mandates of Federal enabling legislation, California law limits access to information obtained from biological material subjected to DNA testing to law enforcement personnel. (Cal.

Penal Code § 295.1.) And the DNA profiles developed may only be used for "identification or exclusion purposes." (*Id.* §299.5(i).) Anyone who misuses a sample is subject to criminal penalties including up to a year in prison. (*Id.)* To date, no one has been charged under that section, nor has any audit of a California CODIS lab revealed any violation of confidentiality or use restrictions.

California law also provides a procedure for expungement of DNA information if the underlying conviction is overturned, if charges against an arrestee are dismissed or result in acquittal, or if no charges are filed within the applicable time period. (Cal. Penal Code § 299.) Federal law includes a similar provision. (*See* 42 U.S.C. §14132 (d) (1) (A).)

The upload of DNA profiles from the California DNA database into the National CODIS system entails virtually no risk of misuse at the federal level. "CODIS records contain only an identifier for the agency that provided the DNA sample, a specimen identification number, and the name of the personnel associated with the analysis." (*United States v. Kincade,* 379 F.3d at 819 n.8.) Only the originating laboratory can identify an individual by name after the cold hit. (*See* 61 Fed. Reg. 37,495,37,496 (July 18, 1996) ("Since NDIS records contained in NDIS do not include personal identifiers of the individual from whom the DNA samples were collected, retrieval by personal identifiers of these record subjects is not possible.").) This means that even if someone who has access to the CODIS database, it is ***impossible*** to obtain the DNA profile of any specific person. The only information stored in CODIS consists of the identifying markers; it is impossible to use CODIS to match that information to a name.

Annual audit procedures ensure that all laboratories – both laboratories which perform DNA testing AND upload to CODIS and those

laboratories which only perform DNA analysis - adhere to CODIS requirements, including use and disclosure restrictions. (See *FBI, Standards for Forensic DNA Testing Laboratories* (https://www.fbi.gov/about-us/lab/biometric-analysis/codis/qas-standards-for-forensic-dna-testing-laboratories-effective-9-1-2011); *Quality Assurance Standards for DNA Databasing Laboratories* (https://www.fbi.gov/about-us/lab/biometric-analysis/codis/qas-standards-for-dna-databasing-laboratories-effective-9-1-2011.)

Those audit procedures, as in California, ensure "[t]he design and legal rules governing the operation of CODIS reflect the system's function as a tool for law enforcement identification, and do not allow DNA samples or profiles within the scope of the system to be used for unauthorized purposes." (73 Fed. Reg. 74,932, 74,933 (Dec. 10, 2008); *see also* 42 U.S.C. §§14132, 14133(b) –(c), 14135e.) Disclosing a DNA sample to one not authorized to receive it, or collecting a sample without authorization, is punishable by imprisonment for one year or a fine not to exceed $250,00. (42 U.S.C. § 14135e(c).) Law enforcement access to the federal index may be canceled for failing to meet the quality control and privacy requirements of federal law. (*See id.* §§ 14132(c), 14133(c), 14135e(c); 61 Fed. Reg. at 37,497 ("criminal justice agencies with direct access to NDIS must agree to…restrict access to DNA samples and data").)

B. Advances In Rapid DNA Technology Have Increased The Ability Of law Enforcement To Leverage DNA Profiles For The Identity Of Individuals Immediately Before Them.

The term "Rapid DNA analysis/technology" describes a fully automated (hands-free) process of developing a CODIS Core Short Tandem Repeat (STR) profile from a reference sample such as a buccal swab. (See

Testimony of Amy S. Hess, Executive Assistant Director, Science and Technology Branch, Federal Bureau of Investigations before the House Judiciary Committee, Subcommittee on Crime, Terrorism, Homeland Security, and Investigations, Washington, D.C. June 18, 2015. (https://www.fbi.gov/news/testimony/fbis-plans-for-the-use-of-rapid-dna-technology-in-codis) herein after Hess) The 'swab in—profile out' process consists of automated extraction, amplification, separation, detection, and allele calling without human intervention in the analysis stage. The objective for Rapid DNA technology is to generate a CODIS-compatible DNA profile and to search these arrestee DNA profiles within two hours against unsolved crime (forensic) DNA while an arrestee is in police custody. (Hess) Rapid DNA technology has been designed for use within and outside the forensic DNA laboratory, as the Rapid DNA instruments are self-contained machines that require no human intervention beyond the loading of the DNA samples and analysis cartridges into the machines.

Recognizing that increasing the speed at which forensic DNA analysis could be performed would significantly increase the ability of law enforcement to identify perpetrators and prevent the arrest or conviction of the innocent, the FBI established a Rapid DNA Initiative in 2006. (Hess) In 2008, the Department of Justice partnered with the Department of Homeland Security and the Department of Defense "on the development of point-of-collection DNA analysis for the production of CODIS DNA profiles (containing the 13 CODIS Core Loci) within a two-hour period" (Hess)

In 2010, the Criminal Justice Information Services' Advisory Policy Board (CJIS APB, a federal advisory committee established by the FBI) established a Rapid DNA Task Force, and the FBI's Rapid DNA Program Office was created within the FBI Laboratory Division to coordinate the

Laboratory and CJIS Division's Rapid DNA activities. (See also https://www.fbi.gov/about-us/lab/biometric-analysis/codis/rapid-dna-analysis)These groups have provided the FBI with recommendations that the FBI has adopted for Rapid DNA implementation, such as the use of the State Identification Number (SID) as the cornerstone identifier for Rapid DNA profiles and the addition of a data element to an individual's criminal history record to indicate whether there is a DNA profile already in CODIS, information which will assist states in determining if a DNA sample should be collected at arrest.

In its continuing efforts to ensure that the quality of DNA analysis remained the "gold standard" for forensic testing, the Scientific Working Group on DNA Analysis Methods (SWGDAM) empaneled a Rapid DNA Committee to review and evaluate whether additional quality measures were necessary to ensure the accuracy and reproducibility of the records produced by the Rapid DNA instruments. (Hess) Based upon recommendations received from SWGDAM, the FBI issued an addendum to the quality assurance standards for DNA Databasing Laboratories, required by Federal law, providing a foundation for implementation of Rapid DNA within an accredited forensic DNA laboratory. (See https://www.fbi.gov/about-us/lab/biometric-analysis/codis/rapid-dna-addendum-to-qas-final-effective-12-1-2014)

The goal was to manage the development of instrumentation which would provide law enforcement with an instrument which could ultimately be utilized in a booking station setting and would provide an identification of an individual using the certainty of a DNA profile. Those instruments now exist, have been validated and have already begun uploading DNA profiles in to the CODIS system. (See. B.L. LaRue, A. Moore, J.L. King, P.L. Marshall, B. Budowle, An evaluation of the RapidHIT system for

reliably genotyping reference samples, *Forensic Sci. Int. Genet.* 13 (2014) 104–111, and M. Holland, F. Wendt, Evaluation of the RapidHIT 200: an automated human identification system for STR analysis of single source samples, *Forensic Sci. Int. Genet.* 14 (2015) 76–85.)

Rapid DNA instruments are currently being utilized by the Arizona Department of Public Safety to both analyze swabs within 90 minutes and for upload into the CODIS system. (See Arizona DPS press release http://www.azdps.gov/media/news/View/?p=477) And in the United Kingdom, over 500 Rapid DNA profiles have been uploaded to the database there. (See release http://www.eei-biotechfinances.com/500th-rapidhit-dna-profile-uploaded-to-uk-national-dna-database/)

C. "Coding" and "Noncoding" DNA

The new Rapid DNA technology which enables law enforcement to confirm the identity of the individual in front of them during the arrest and booking process looks at the same DNA locations that have previously been declared constitutionally valid in every state in the country and by the U. S. Supreme Court.

DNA is a chemical substance that stores information used to replicate cells and produce proteins that are necessary for cells to function. *Butler, Fundamentals, supra,* at 19. DNA stores that information in a sequence of "bases," much as a book stores information in a sequence of letters. *Id.* at 20. The four bases that make up DNA are abbreviated by the letters A, C, G, and T. *Id.* DNA is composed of two strands, and the bases on one strand link to the bases on the other, forming "base pairs." *Id.* at 21. A always pairs with T, and C always pairs with G. *Id.*

The DNA used for standard forensic analysis is located within the chromosomes in the nucleus of the cell. *Butler*, *Fundamentals*, *supra,* at 23. (Some DNA, known as mitochondrial DNA, also exists outside the nucleus; that type of DNA is not pertinent here. See *id.* at 19.) Normal human cells contain 46 chromosomes, arranged in pairs. Half of the chromosomes are inherited from one's mother, and half from one's father. *Id.* at 23-24.

Chromosomes have "coding" and "noncoding" regions of DNA. Butler, Fundamentals, *supra,* at 25. The coding regions are known as genes, and the sequences of bases within these regions store the information that a cell uses to make proteins. *Id.* Approximately 5% of human DNA is made up of genes. *Id.* The remaining 95% of DNA is noncoding, and the sequences of bases in these regions do not store information used to make proteins. *Id.* These noncoding regions are sometimes referred to as "junk" DNA. *Id.*

At many positions - or "loci" - on the chromosomes, short sequences of bases are repeated. These loci are called "short tandem repeats," or "STRs." Butler, *Fundamentals*, *supra,* at 148. The number of repeats at a particular STR locus varies from person to person. For example, the sequence "GATA" might be repeated four times at a particular STR locus in one person's DNA, whereas the same sequence might be repeated five times at the same STR locus in another person's DNA. *Id.* at 148-49. Each potential number of repeats at an STR locus is known as an "allele." Thus, in the above example, four repeats would be one allele, and five repeats would be another allele. *Id.* at 25, 149. Each STR locus typically has 7 to 15 alleles - i.e., there are 7 to 15 different numbers of repeats that can be found at that locus. See U.S. Dep't of Justice, Nat'l Comm'n on the Future of DNA Evidence, *The Future of Forensic DNA Testing 17* (NCJ 183697, 2000), www.ncjrs.gov/pdffiles1/nij/183697.pdf.

STRs are useful for purposes of identification because (1) if two DNA samples have a different number of repeats at the same STR locus, then they necessarily came from different persons, and (2) the number of repeats at each STR locus is highly variable between persons. See Butler, *Fundamentals, supra,* at 148. Although two persons may share the same number of repeats at a single STR locus, as the number of loci examined increases, it becomes astronomically unlikely that two persons will share the same number of repeats at every locus. U.S. Dep't of Justice, Nat'l Comm'n on the Future of DNA Evidence, *supra,* at 25; see also *Osborne*, 557 U.S. at 62 (STR analysis often makes it "possible to determine whether a biological tissue matches a suspect with near certainty").

D. The CODIS Database

Standard forensic DNA analysis in the United States case measures the number of repeats of the base sequences at 13 predetermined STR loci. Butler, Fundamentals, *supra,* at 154. These are the loci included in the FBI's DNA database - known as the Combined DNA Index System, or CODIS - which uses a common set of loci to facilitate comparisons of DNA analysis across different jurisdictions. *Id.* at 154-55. These 13 "CODIS core loci" were chosen because they have extraordinary power to differentiate between individuals: The probability of a random match of every allele between two persons at all 13 loci is less than one in a trillion. *Id.* at 155.[1]

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[1] It is acknowledged that the FBI has announced plans to expand the number of CODIS approved loci to 21. That expansion however has explicitly directed that the new loci must not be "diagnostic of any known medical condition or disease status." (FBI, Planned Process and Timeline for Implementation of Additional CODIS Core Loci, https://www.fbi.gov/about-us/lab/biometric-analysis/codis/planned-process-and-timeline-for-implementation-of-additional-

The 13 CODIS core loci were also selected to protect individual privacy. "[T]he 13 CODIS core STR loci[ ] are in noncoding regions of the DNA and are not known to have any association with a genetic disease or any other genetic predisposition." Butler, *Fundamentals*, *supra,* at 279. Thus, "[w]ith the STR markers in use today, little to no information can be gleaned regarding ethnicity, predisposition to disease, or other phenotypic characteristics such as eye color, height, or hair color." *Id.* at 6; see also U.S. Dep't of Justice, Natl Comm'n on the Future of DNA Evidence, *supra,* at 35 ("The 13 STR loci ... are not associated with specific, observable traits."); U.S. Dep't of Justice, Fed. Bureau of Investigation, CODIS 2 (hereinafter FBI, CODIS) ("These regions of DNA have no known association with medical conditions, defects or physical characteristics."), http://www.fbi.gov/about-us/lab/codis/codis-brochure-2010. Indeed, a recent survey of the scientific literature confirmed that the 13 CODIS core loci "are not at present revealing information beyond identification." Sara H. Katsanis & Jennifer K Wagner, *Characterization of the Standard and Recommended CODIS Markers*, J. of Forensic Sci. 3 (2012).

To determine the number of repeats at each STR locus, modern DNA analysis uses a process known as the polymerase chain reaction ("PCR"). Butler, *Fundamentals*, *supra,* at 125. Invented in 1985 by Kary Mullis - who received the Nobel Prize in Chemistry for his work on PCR in 1993 - "PCR has revolutionized molecular biology with the ability to make hundreds of millions of copies of a specific sequence of DNA in a matter of only a few hours." *Id.* This copying process is critical to forensic DNA analysis because it allows law enforcement officers to analyze even small, low-quality samples of DNA found at crime scenes. *Id.*

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codis-core-loci For a discussion of the complete list of criteria, please refer to *Expanding the CODIS Core Loci in the United States,* D.R. Hares, Forensic Sci. Int. Genet. 6 (2012), e52-e54.)

A biological sample can be obtained either from a crime scene, or from a person who has been arrested or convicted, which is generally accomplished through the use of a swab applied to the inside of the cheek. The DNA is extracted from the sample, and the amount of human DNA in the sample (as opposed to DNA from other sources, such as bacteria) is measured. See generally Butler, *Fundamentals*, *supra,* at 99-124. PCR then uses chemical primers to target the sequences of bases at the STR loci to be analyzed, and uses multiple cycles of heating and cooling to produce millions of copies of those particular sequences. See *id.* at 126-27, 138-39. The 13 CODIS core loci can be amplified simultaneously in this manner using commercially available STR kits. *Id.* at 158.

The PCR process produces millions of DNA fragments containing the target STR sequences. These fragments are then separated so that the number of repeats in each sequence can be measured. Butler, Fundamentals, *supra,* at 175. The separation is achieved through a process called electrophoresis, which involves the application of an electric field to the DNA fragments. *Id.* at 176. When the fragments are placed in a gel - or, in newer instruments, a capillary filled with a gel-like substance - and the electric field is applied, the fragments move, and the smaller fragments move faster than the larger ones. See *id.* at 178, 180. Thus, the STR sequences with more repeats separate from the STR sequences with fewer repeats. Fluorescent dyes that are attached to the DNA fragments are then illuminated by a laser to measure how quickly each fragment has moved. See *id.* at 194-95. By comparing the speed at which a fragment in the sample has moved to the speed at which a fragment containing a known number of repeats would move, one can determine the number of repeats in the sample fragment. See *id.* at 207-11.

Ultimately, this process measures the number of repeats at each STR locus in the sample. This information is recorded in the form of a DNA profile, which consists of a series of 26 numbers. Those numbers represent the number of repeats at each of the 13 STR loci on the chromosomes inherited from the subject's mother, plus the number of repeats at each of the 13 STR loci on the chromosomes inherited from the subject's father. See Butler, *Fundamentals*, *supra,* at 205, 271. The DNA profile is then uploaded to the CODIS database. CODIS consists of several indexes, including (1) the forensic index, which contains DNA profiles developed from crime scene evidence; (2) the convicted offender index, which contains DNA profiles of individuals convicted of crimes; and (3) the arrestee index, which contains DNA profiles of arrested persons. FBI, CODIS, *supra,* at 2. CODIS does not contain names or other personal identifiers, and instead contains only the sequence of numbers constituting the DNA profile, a specimen identification number, and information identifying the agency and personnel associated with the profile. U.S. Dep't of Justice, Fed. Bureau of Investigation, Frequently Asked Questions (FAQs) on the CODIS Program and the National DNA Index System (hereinafter FBI, FAQs), http:// www.fbi.gov/about-us/lab/biometric-analysis/codis/codis-and-ndis-fact-sheet.

If the CODIS program finds that the uploaded DNA profile matches another profile in the database - i.e., the numbers of repeats are the same at each of the STR loci in the samples - the crime laboratories that submitted the samples exchange information and perform additional testing to verify the match. See FBI, FAQs, *supra.* Because the probability of a random match is infinitesimally small, a match between two samples in CODIS establishes with near certainty that both samples came from the same person. Law enforcement officers can utilize that information to conduct

additional investigation or bring additional charges. Alternatively, the absence of a match can be used to establish that a suspect is not connected to a particular crime.

Since its inception in the 1990s, CODIS has been extraordinarily successful in assisting law enforcement officers in identifying suspected perpetrators of crimes. As of September 2015, CODIS had produced over 295,000 "hits" which occur when - as in this case - "one or more forensic profiles are linked to a convicted offender, arrestee, or legal profile." FBI, CODIS, *supra,* at 1. Those CODIS hits subsequently aided in more than 282,175 criminal investigations. FBI, CODIS, *supra,* at 1.

ARGUMENT

I. From A Fourth Amendment Perspective, Forensic DNA Analysis Is No Different From Universally Approved Fingerprint Analysis.

Because the forensic analysis at issue in this case is an exceptionally valuable tool for identifying an arrestee - and does not disclose any other information about the person under arrest - it is no less valid under the Fourth Amendment than long-accepted forensic fingerprint analysis. (See *Maryland v. King* (2013) __U.S.__(133 S.Ct. 1958, 1980) The relevant question for each type of analysis is whether the analysis is "reasonable," which " 'is determined by assessing, on the one hand, the degree to which it intrudes upon an individual's privacy and, on the other, the degree to which it is needed for the promotion of legitimate governmental interests.' " *Samson v. California,* 547 U.S. 843, 848 (2006) (quoting *United States v. Knights,* 534 U.S. 112, 118-19 (2001)). This balancing test unambiguously favors the state with respect to forensic fingerprint analysis - and tips even further in the state's favor with respect to forensic DNA analysis.

A. It Is Well Settled That Taking And Analyzing Fingerprint Samples From Arrestees Is Constitutional.

The constitutionality of taking and analyzing fingerprint samples from persons subject to a lawful arrest has never been subject to serious doubt. Eighty years ago, in *United States v. Kelly,* 55 F.2d 67 (2d Cir. 1932), the Second Circuit found "no ground in reason or authority for interfering with [this] method of identifying persons charged with crime which," by that time, had "become widely known and frequently

practiced." *Id.* at 70. "Finger printing seems to be no more," the Second Circuit explained, "than an extension of methods of identification long used in dealing with persons under arrest for real or supposed violations of the criminal laws," and was "known to be a very certain means devised by modern science to reach the desired end." *Id.* at 69. Indeed, "[a]s a physical invasion it amounts to almost nothing," and thus fingerprint analysis "can really be objected to only because it may furnish strong evidence of a man's guilt." *Id.* at 70.

Courts have universally agreed with Kelly. In *Smith v. United States*, 324 F.2d 879 (D.C. Cir. 1963), for example, the D.C. Circuit deemed it "elementary that a person in lawful custody may be required to submit to photographing and fingerprinting as part of routine identification processes." *Id.* at 882 (citations omitted); see also, e.g., *Napolitano v. United States*, 340 F.2d 313, 314 (1st Cir. 1965) ("Taking of fingerprints in such circumstances is universally standard procedure, and no violation of constitutional rights."); *Floyd v. State*, 645 S.W.2d 690, 692 (Ark. 1983) (when a person is "legally in custody of the state[,] the giving of the fingerprints is a routine matter which is within the discretion of the police department"). Indeed, the leading treatise on the Fourth Amendment describes "the taking of the arrestee's fingerprints" as the "most obvious example" of the "types of inspection-of-the-body procedures which constitute such a minor intrusion that they ... are inherently reasonable when made incident to a lawful custodial arrest." 3 Wayne R. LaFave, *Search and Seizure: A Treatise on the Fourth Amendment § 5.3 (4th ed.)*. As a categorical matter, "[f]ingerprinting, as a routine part of the booking process, is justified by the legitimate interest of the government in knowing for an absolute certainty the identity of the person arrested, in knowing

whether he is wanted elsewhere, and in ensuring his identification in the event he flees prosecution." *Id.*

Although this Court has not expressly addressed the issue, the reasoning of its Fourth Amendment jurisprudence is in full accord with these lower-court decisions and unambiguously establishes that fingerprinting upon a valid arrest is consistent with the Fourth Amendment. In *Davis v. Mississippi*, 394 U.S. 721 (1969), for example, this Court held that fingerprints obtained at a police station pursuant to an unlawful detention were required to be suppressed, but recognized that fingerprinting itself "involves none of the probing into an individual's private life and thoughts that marks an interrogation or search." *Id.* at 727. Similarly, in *Hayes v. Florida*, 470 U.S. 811 (1985), this Court held that the Fourth Amendment requires probable cause before a person may be seized and transported to a police station for fingerprinting, but suggested that "a brief detention in the field for the purpose of fingerprinting, where there is only reasonable suspicion not amounting to probable cause," would be constitutional. *Id.* at 816.

Thus, both *Davis* and *Hayes* recognized the minimal invasion of privacy occasioned by fingerprinting. Moreover, the Court's decisions in both cases turned on the conclusion that the detentions at issue were invalid. If fingerprinting even upon a valid arrest were unconstitutional, however, the Court would have had no reason to analyze the legality of the detentions in *Davis* and *Hayes*. The two decisions therefore leave no doubt about the constitutionality of collecting and analyzing fingerprint samples from persons lawfully taken into custody.

B. The Constitutionality Of Forensic DNA Analysis Follows Inexorably From The Constitutionality Of Fingerprint Analysis.

The practical and legal considerations that establish the constitutionality of forensic fingerprint analysis as part of routine booking procedures are no less applicable to forensic DNA analysis.

Forensic DNA analysis conducted pursuant to a lawful arrest serves the same government interest as fingerprint analysis - it identifies the person in custody, and thus enables law enforcement officers to determine whether that person is linked to other criminal offenses. And forensic DNA analysis constitutes no greater intrusion on the privacy interests of an arrestee than fingerprint analysis because, as a matter of science and technology, forensic DNA analysis does not meaningfully reveal any information about a person apart from his identity. See eg, Butler, *Fundamentals*. Thus, the Second Circuit's description of forensic fingerprint analysis eighty years ago applies with equal force to forensic DNA analysis today: Forensic DNA analysis is "no more than an extension of methods of identification long used in dealing with persons under arrest for real or supposed violations of the criminal laws," and "can really be objected to only because it may furnish strong evidence of a man's guilt." *Kelly*, 55 F.2d at 69, 70.

The Court of Appeal rejects the analogy of fingerprint analysis and DNA analysis on essentially two grounds: That DNA profiles cannot possibly be used legitimately as an "identifier" because it takes too long to develop a DNA profile when DNA is taken, and, 2) that DNA is not really an identifier because it is ultimately used to match individual profiles to

evidence left at crime scenes also through the utilization of the CODIS software and access to the CODIS DNA database.

The Court states, "The collection and testing mandated by the DNA Act, however, does not serve this purpose, because DNA collected from an individual upon arrest cannot be used immediately to establish who that individual is." (*People v. Buza* 180 Cal.Rptr 3d 753, 775 (CA 2015) It states further, "Not only are DNA profiles neither necessary nor helpful for verifying who a person is at the time of arrest, the fact that DNA testing cannot be used to immediately verify a person's true identity confirms that the collection of a DNA sample at arrest has another purpose. Despite language in the DNA Act limiting the use of DNA to "identification purposes" (§295.1, subd. (a)), it is apparent that proposition 69 – which was entitled the "DNA Fingerprint Unsolved Crime and Innocence Protection Act (italics added) – was designed to permit an arrestees DNA to be used for investigative purposes. *Id*, 776. Both arguments ignore the history of fingerprint technology as well as its current application to crime fighting and the continued constitutionality of taking fingerprints in the context of both.

For more than 100 years, law enforcement officers collected the fingerprints of individuals upon arrest and prior to conviction. The constitutionality of that part of the booking process has been long established. (See *Anderson v. Commonwealth*, 650S.E.2d 702, 705 (Va. 2007); *United States v. Kincade*, 379 F.3d 813, 836 n. 31 (9th Cir. 2004) (en banc): *Jones v. Murray*, 962 F2d 302, 306 (4th Cir. (1992). And throughout the evolutionary history of fingerprint technology, the constitutional validity of taking fingerprints at arrest, including under the California Constitution, has not been overturned.

However, while current Livescan fingerprint technology allows law enforcement agencies to capture fingerprints and palm prints electronically as quickly as 27 minutes, that has not always been the case. Prior to the launch of the International Automated Fingerprint Information System, (IAFIS) on July 28, 1999, the processing of ten-print fingerprint submissions was largely a manual, labor-intensive process, taking "weeks or months" to process a single submission. Yet the fact that fingerprint processing took months, never constituted a successful challenge to the constitutionality of taking that particular biometric from an individual at arrest. [2]

As such, even absent the development of Rapid DNA technology, the fact that DNA analysis takes more than a few days to process, should not prevent it a standing equal to fingerprints in its lawful use as an identifier. And given the already validated Rapid DNA instrumentation, which will be implemented within two to three years (see testimony of FBI Director, http://www.c-span.org/video/?c4532528/honda-comey-rapid-dna-convo), DNA will soon stand on the same footing as fingerprint technology in the speed at which an identifying DNA profile can be developed.

The Appeal Court also suggests that because DNA is used as a crime solving tool in conjunction with its function as an identifier, that it

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[2] It should be noted that the reality of fingerprint analysis and comparison is that it still does not happen "instantaneously." For example, in California, "If a new incoming set of booking prints meets the threshold for similarity to an unsolved crime scene print, then those sets of prints are analyzed manually in a side-by-side comparison. If the latent print analyst determines from a visual on-screen comparison that there is enough similarity between the prints, then the analyst will pull the case folder and do a detailed print comparison and evaluation. Depending on the quality of prints, it typically can take two days or more for a report to be issued to the law enforcement agency submitting the prints in the case of a confirmed hit identification between booking prints and unsolved crime scene prints." See: (https://oag.ca.gov/bfs/prop69/faqs):

constitutes a violation of the California State Constitution. That position ignores the extent to which, under the IAFIS system, fingerprints can and are used for the exact same purpose: to match individuals' prints to prints developed from crime scene evidence. Again, this Court has never deemed the taking of fingerprints at arrest, even given the use of the IAFIS system to solve crime, to be an unconstitutional application of law enforcement authority under the California Constitution.

Numerous courts have recognized that forensic DNA analysis is analogous to forensic fingerprint analysis for purposes of the Fourth Amendment. The Third Circuit, for example, has "conclude[d] that a DNA profile is used solely as an accurate, unique, identifying marker - in other words, as fingerprints for the twenty-first century." *United States v. Mitchell*, 652 F.3d 387, 410 (3d Cir. 2011), cert. denied, 132 S. Ct. 1741 (2012). The Fourth Circuit has similarly recognized that "[t]he governmental justification for this form of identification ... relies on no argument different in kind from that traditionally advanced for taking fingerprints and photographs." *Jones v. Murray*, 962 F.2d 302, 307 (4th Cir. 1992). The Maryland Court of Appeals itself previously embraced this analogy in holding that the Fourth Amendment permitted forensic DNA analysis of convicted persons, recognizing that the purpose of a DNA profile "is akin to that of a fingerprint" because "[t]he DNA profile ... serves the purpose of increasing the efficiency and accuracy in identifying individuals." *State v. Raines*, 857 A.2d 19, 33 (Md. 2004); see also, e.g., *Boroian v. Mueller*, 616 F.3d 60, 66 (1st Cir. 2010) ("CODIS currently functions much like a traditional fingerprint database"); *Anderson v. Commonwealth*, 650 S.E.2d 702, 705 (Va. 2007) ("A DNA sample of the accused taken upon arrest, while more revealing, is no different in character than acquiring fingerprints upon arrest.").

In fact, the 21st century science and technology on which forensic DNA analysis is based render it a more powerful method of identification than fingerprint analysis because they enable law-enforcement officials to determine a suspect's identity to a degree of near-absolute certainty that was impossible to obtain through pre-DNA methods. See, e.g., *Mitchell*, 652 F.3d at 413 ("DNA profiling serves this interest [in identification] better than fingerprinting"); Sandy L. Zabell, Fingerprint Evidence, 13 J. L. & Pol'y 143, 178 (2005) (contrasting the objective nature of DNA analysis with the subjective nature of fingerprint analysis); see also *Osborne*, 557 U.S. at 62 ("Modern DNA testing can provide powerful new evidence unlike anything known before."). The state therefore has an even stronger interest in performing forensic DNA analysis pursuant to a valid arrest than in performing fingerprint analysis.

Accordingly, the constitutionality of the forensic DNA analysis in this case follows *a fortiori* from the constitutionality of forensic fingerprint analysis because DNA testing is a more powerful identification tool - and no more intrusive - than traditional fingerprinting. Indeed, because the two forms of forensic analysis are so similar for Article I Section 13 purposes, if the Court were to hold that the forensic DNA analysis at issue here violates Article I Section 13 of the California Constitution, it would inevitably create confusion as to whether fingerprint analysis, which has been a part of routine booking procedures for almost a century, remains permissible. That constitutionally unwarranted outcome would shake the very foundation of modern criminal investigation.

II. The Efforts Of Respondent And The Appeal Court To Distinguish Forensic DNA Analysis From Fingerprint Analysis Are Unavailing.

Although the U. S. Supreme Court has recently acknowledged that forensic DNA analysis is analogous to forensic fingerprint analysis under the Fourth Amendment, see *King* both the Appeal Court and Defendant have attempted to distinguish the DNA analysis in this case from fingerprinting on several grounds. None has merit.

A. It Is Irrelevant That Other Types Of DNA Analysis Could Potentially Be Performed On An Arrestee's Biological Sample.

The Court of Appeal asserted that, even recognizing that the DNA profiles developed for forensic purposes was derived from non-coding sequences, " The far greater danger to privacy lies in the DNA samples from which the CODIS profiles are developed, which... contain the entire genome." *Buza*, 180 Cal.Rptr 3d at 772. While citing various research currently being done on DNA samples, none of which come from arrestee samples, the Court noted with concern, " the DNA Act is silent as to how long these specimens and samples may be kept ... when it is possible to extract even more personal and private information than is now the case." Buza, 180 Cal.Rptr 3d at 772.

To be sure, sensitive genetic information can be extracted from a DNA sample. But that information cannot be extracted using the forensic DNA analysis at issue in this case because that analysis is limited to the examination of the 13 CODIS core loci, which are located in the noncoding regions of the chromosomes. (*Butler* supra). Analyzing those loci thus does

not meaningfully reveal any sensitive genetic information - much less produce a "vast genetic treasure map."

Under the Fourth Amendment, a minimally invasive search is not unconstitutional simply because law enforcement officers also have the opportunity to conduct a more invasive search. Indeed, the U. S. Supreme Court has "never held that potential, as opposed to actual, invasions of privacy constitute searches for purposes of the Fourth Amendment." *United States v. Karo*, 468 U.S. 705, 712 (1984). "A holding to that effect," the Court explained in Karo, "would mean that a policeman walking down the street carrying a parabolic microphone capable of picking up conversations in nearby homes would be engaging in a search even if the microphone were not turned on." *Id.* But "[i]t is the exploitation of technological advances that implicates the Fourth Amendment, not their mere existence." *Id.* (emphasis added). Thus, it is irrelevant for purposes of the Fourth Amendment that state officials could conduct a DNA analysis different from the one at issue in this case that would reveal sensitive genetic information.

Given the issues in the case at hand however, there is an even more relevant example than that of the parabolic mic referenced in Karo. While the Court of Appeal goes to great lengths to differentiate between fingerprints and DNA, it fails to recognize that fingerprints themselves contain DNA . By the nature of *Locard's Principle* The residue of sweat and oil that is left on the surface of a fingerprint when the pressure is applied to create the print contains a significant amount of DNA itself. [3] In fact, the swabbing of

[3] Locard's exchange principle is a concept that was developed by Dr. Edmond Locard (1877-1966). Locard speculated that every time you make contact with another person, place, or thing, it results in an exchange of physical materials. He believed that no matter where a criminal goes or what a criminal does, by coming into contact with things, a criminal can leave all sorts of

fingerprints on crime scene evidence for the collection of biological material for DNA testing purposes is a well-studied forensic technique.[4] DNA often proves more valuable than fingerprinting at a crime scene because, while a fingerprint is only valuable to identify an individual if that print is pristine enough to develop a requisite number of identifying ridge features, a smudged print, useless in the IAFS database system, may yield a valuable DNA profile. (See Fingerprints as Evidence for a Genetic Profile: Morphological Study on Fingerprints and Analysis of Exogenous and Individual Factors Affecting DNA Typing. *J Forensic Sci,* May 2003, Vol. 48, No. 3)

The print cards which have been used for decades and stored indefinitely, likely also contain the DNA of the individual who pressed his or her palm, fingers and thumbs to that paper. Even in the context of a livescan print taking process, a simple swab of the glass reader would most likely yield enough skin cells to produce a DNA profile. As such, if the Court's analysis is based on the potential illicit uses of DNA, by logical extension, fingerprints yield the exact same danger as a cheek swab taken at arrest. Neither the jurisprudence, logic, nor the technological realities argue successfully for a distinction between fingerprints and DNA profiles.

B. There Is No Scientific Evidence That Sensitive Genetic Information Can Be Gleaned From The DNA Analysis At Issue Here.

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evidence, including DNA, fingerprints, footprints, hair, skin cells, blood, bodily fluids, pieces of clothing, fibers and more. (http://www.forensichandbook.com/locards-exchange-principle/)

[4] See also: *Using DNA to Solve Property Crimes,* United States Department of Justice, National Institute of Justice, for a discussion of a 5 site study examining the efficacy of DNA examination at crime scene versus the collection of fingerprints. (http://www.nij.gov/topics/forensics/evidence/dna/property-crime/pages/solving-crimes.aspx)

As there is no precedent for considering a myriad of future discoveries related to a technology, as contrasted with the use specific to the case at hand, the court is left to consider here the issue of the 13 core loci and what can be gleaned only from those loci with current technology. Generalized assertions regarding "non-coding" or "junk" DNA have no relevance here. As explained above, 95% of human DNA is noncoding. See supra p. 4. Although there may be, as a general matter, DNA sequences within noncoding regions that have a biological function, there is no scientific basis for concluding that the 13 CODIS core loci used for standard forensic DNA analysis have any biological function or are associated with any particular traits, and thus might reveal any private information apart from one's identity.

To the contrary, a recent study confirmed that "there is no evidence that any particular repeat genotypes are indicative of phenotype." *Katsanis & Wagner, supra,* at 3. In other words, there is no evidence that the number of repeats at an STR locus is indicative of an observable human trait. Thus, "[t]he utility of the CODIS profile itself ... is limited to identification purposes at this time." *Id.* Professor Butler's recent textbook similarly explains that, "[w]hile there has occasionally been some debate in the literature regarding potential linkage of human identity testing markers to genetic disease states, this is really a non-issue." John M. Butler, *Advanced Topics in Forensic DNA Typing: Methodology 226* (2012) (hereinafter Butler, Advanced Topics). The 13 CODIS core loci, Professor Butler explains, still "are not known to have any association with a genetic disease or any other genetic predisposition," and thus remain useful only "for human identity testing." *Id.* at 240.

It is equally irrelevant that, as scientists have long recognized, there is some potential that the 13 CODIS core loci could be used to analyze the

inheritance of medical conditions within a family. See, e.g., Butler, *Advanced Topics*, *supra,* at 228 (citing C.P. Kimpton et al., Report on the Second EDNAP Collaborative STR Exercise, Forensic Sci. Int'l (1995)). This analysis is possible because, on a chromosome, an STR locus may be positioned near a gene that causes a particular medical condition, and a particular STR sequence and the gene may therefore tend to be passed together from parent to child. See, e.g., Cal. Dep't of Justice, Office of the Attorney Gen., BFS DNA Frequently Asked Questions, Searching the CAL-DNA Data Bank and CODIS, http:// oag.ca.gov/bfs/prop69/faqs. "However, this use of STRs for family linkage studies is different than associations of specific alleles in a general population." Butler, *Advanced Topics*, *supra,* at 228. That is, a person's forensic DNA profile, standing alone, cannot be used to predict whether that person has a certain medical condition or other trait. And the CODIS database itself, which does not contain information linking family members, cannot be used for this sort of analysis. See *id.*; Scientific Working Group on DNA Analysis Methods, SWGDAM Executive Board Considerations for Claims that the CODIS Core Loci are "Associated" with Medical Conditions/Diseases 3-4 (Sept. 17, 2012), http://www.swgdam.org/SWGDAM_State_v_Abernathy.pdf.

Accordingly, there is no scientific evidence that information apart from identity can currently be gleaned from the 13 CODIS core loci. Katsanis & Wagner, *supra,* at 3. To be sure, scientific advances are difficult to predict, and it cannot be stated with absolute certainty that the 13 CODIS core loci are "forever immune from any implications for potentially sensitive or medically relevant information." *Id.* Even if such implications might someday be found, however, they likely would be short-lived. See Butler, *Advanced Topics*, *supra,* at 228 ("the relatively high mutation rate of STRs means that even if any linkage existed at one time between a

specific allele and a genetic disease state, this linkage would likely not last beyond a few generations"). And, in any event, "Fourth Amendment cases must be decided on the facts of each case, not by extravagant generalizations." *Dow Chem. Co. v. United States*, 476 U.S. 227, 239 n.5 (1986). Thus, speculation that the 13 CODIS core loci might, at some unknown time in the future, be found to reveal sensitive genetic information cannot give rise to a Fourth Amendment violation in this case. See, e.g., *Boroian*, 616 F.3d at 69 ("the possibility that junk DNA may not be junk DNA some day does not significantly augment [the] privacy interest in the present case") (internal quotation marks and ellipsis omitted).

CONCLUSION

For the reasons set forth above, as well as for the reasons set forth in the brief of the People of the State of California, The Global Alliance for Rapid DNA Testing respectfully requests that the Court reverse the judgement of the Court of Appeal. There is no legitimate privacy interest posed by arrestees who wish to conceal their identities and no violation presented by the DNA technology applied in this case. There are however very real interests in the lives and liberties of victims that will be violated in most tangible ways if criminals who would otherwise be positively identified through DNA technology are not, and those individuals are left to continue their criminality.

Respectfully submitted,

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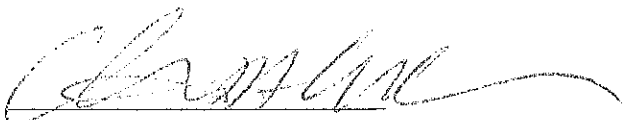
CERTIFICATION

Pursuant to California Rules of Court, rule 8.360(b), I certify that this Brief of Amicus Curiae DNA Saves in Support of the State of California and Reversal uses a 13-point Times New Roman font and contains 7,577 words, not including the tables of contents and authorities, the caption, signature blocks, or this certification.



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