Genetics and Criminal Law: Ethical Considerations

Introduction:

DNA analysis is now regularly incorporated as part of the forensic investigation of crime scenes. But the use of DNA analysis has raised a number of issues, including the appropriateness of scope, the potentiality of abuse, and the social inequities espoused by the legal system in regards to this information. This article will provide an overview of some of these issues by examining:

- 4^{TH} Amendment issues
  - 4^{TH} Amendment
  - Unreasonable search and seizure
  - Does the taking of DNA lead to unreasonable search and seizure?
    - Prior convicts
    - Criminal suspects
- DNA dragnetting
  - The first dragnet
  - The first DNA-based exculpation
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  - Genetic dragnetting within the United States
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  - Property issues
    - Police retainment of genetic samples
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  - Innocence Protection Act
    - Kirk Bloodsworth: first death row inmate to be exonerated via DNA testing after his conviction
  - Operator Bias, Incompetence

        - Josiah Sutton and the Houston Police Crime Laboratory
        - Administrative culture at Houston PCL
        - Operator bias
    - Observer Effects
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        - Safeguards
- Universal Databanks
    - General Issues
    - Privacy
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- Equal Protection, Physical Profiling and Racial Disparities
    - 14TH Amendment
    - The Equal Protection Clause, racial profiling, and the role of genetics based testing:
        - Antidote to racial profiling?
        - Counterpoint
    - Racial Disparities

I. 4th Amendment Issues:

a. The 4th Amendment of the United States Constitution protects:

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

b. Unreasonable search and seizure:

i. Simply stated, this amendment is intended to protect individuals from unreasonable searches and seizures. The 4th Amendment protects our general presumption regarding our expectations of both privacy and autonomy regarding our own bodies. We commonly assume that we will not, or at least should not be, detained or searched for logically irrelevant reasons. For example, imagine that you've been stopped by a police officer because you've been jaywalking. You're polite, sober, psychologically sound, and completely compliant with the officer. You've broken no other laws. It wouldn't be reasonable, or legally permissible for the officer to subsequently demand that he strip search you for the possession of cocaine and require that a sample of your blood be entered into a comprehensive DNA databank for criminals.

ii. The strip search, under these facts, would be among other things a violation of your 4th Amendment rights. With certain invasive searches the police or governmental authority is required to have: 1) probable cause to search, and 2) specificity regarding the extent of the search as well. Here, both prongs are violated.

c. Status of DNA:

i. Does the taking of your DNA constitute an unreasonable search and seizure? The general answer to this question depends on whether or not you, as an individual, are included within certain legal categories of persons. We will focus on two cases: where one is 1) a criminal suspect within a presently ongoing criminal investigation or 2) a prior convict.

ii. Prior Convicts:

1. As a prior convict, the status of whether or not one must provide genetic samples to be entered into DNA databases is now in question. In October of 2003, the 9th Circuit Court of Appeals ruled that requiring these samples "amounts to an illegal invasion of privacy because they are taken without legal suspicion that the convicts were involved in other crimes" (http://www.cbsnews.com/stories/2003/07/18/national/main563965.shtml). Consequently, the court found the "3-year-old law that requires federal prisoners to give blood samples for the FBI's DNA database" to be unconstitutional (Id). The 9th Circuit covers Arizona, California, Hawaii, Oregon, Idaho, Washington state, Montana, Nevada and Alaska – however this ruling could have national repercussions as well, as "the decision, if it survives appeal, could also nullify state laws that require the taking of blood from inmates" (Id). According to Monica Knox, a deputy public defender of Los Angeles, "Most states have similar laws… this [ruling] could gut those" (Id).

iii. Criminal Suspect:

1. The application of 4th Amendment standards of search and seizure for most criminal suspects within a presently ongoing investigation is relatively straightforward – if there is probable cause and a valid warrant that fulfills the requirements of particularity and specificity regarding the search and seizure, then the search and seizure is permissible. Thus, DNA samples from blood, hair, and other excretions can be taken involuntary from otherwise uncooperative criminal suspects in order to better determine an individual's potential innocence or culpability.

II. **DNA Dragnetting**:

a. When DNA evidence can materially link a particular individual to a crime, law enforcement authorities both in the United States and elsewhere have asked relatively large groups of individuals to provide DNA samples on a "voluntary basis." This investigative process is commonly known as DNA dragnetting, where a DNA search of a large group of individuals is

conducted without warrants (Laurie Stroum Yeshulas 8 Suffolk J. Trial & App. Adv. 133)

b. **First Dragnet**:
    i. The first DNA dragnet occurred in 1987, in Leicester England, where "[o]fficers investigating the rape and murder of two teenage girls took consensual blood samples from more than 5,000 people throughout three nearby villages" (http://www.nrps.com/dna/default.eht). In this case, a 27-year-old baker in Leicestershire, England, Colin Pitchfork also became the first murderer convicted on DNA evidence (Id). However the 5,000+ DNA samples which were analyzed via the dragnet did not directly lead to the discovery of the perpetrator. The perpetrator was discovered after an individual was overheard bragging about he had submitted a blood sample for a friend; upon police questioning it was discovered that this blood sample was provided for Colin Pitchfork. http://www.forensic.gov.uk/forensic/news/casefiles/pitchfork.htm Pitchfork's DNA matched that of the crime scene and he was sentenced to life for the two murders in 1988 (Id).

c. **First Exculpation**:
    i. Of note is the fact that this was also the first case where DNA evidence exculpated a suspect from a crime. Rodney Buckland, a 17 year old who was taken in for questioning subsequently "confessed to the murder of one of the girls" but DNA testing showed that Buckland could not be a genetic match for either of the crimes (http://echo.forensicpanel.com/2000/9/18/guiltinnocence.html).

d. Other European cases:
    i. In what has perhaps been the largest DNA dragnet to date, in 1998 police in northwestern Germany obtained "16,400 DNA samples before matching a local mechanic with DNA left at the scene of a rape and murder" (Richard Willing. USA Today September 16, 1998, Wednesday, FINAL EDITION**:** NEWS; Pg. 1A). In this case, the perpetrator Ronny Rieken "was among the thousands of men in the region who voluntarily supplied samples for DNA testing" (http://www.scafo.org/library/140404.html). Local police "used newspaper announcements to summon men from the suspected age group of 18 to 30 to have their mouths swabbed with cotton to collect saliva samples" (Id).

    ii. In 2002, in south-east England as part of "Operation Orb," DNA swabs of over 3,000 men were taken in an attempt to identify a serial rapist (http://news.bbc.co.uk/2/hi/uk_news/england/2374907.stm) Antoni Imiela was eventually accused of the crime – but the arrest

was made not via information received by the dragnet, but by tips received by authorities after a composite sketch of the perpetrator was broadcast to the public (http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2002/12/04/nrape04.xml).

e. **United States**:

i. The United States has also seen a number of DNA dragnets. DNA dragnetting was conducted in the case of Julie Busken, a woman who in 1996 was found raped and murdered in Oklahoma. (http://www.kcstar.com/item/pages/home.pat,local/3accb6a0.531,.html) The most viable evidence available for identifying the perpetrator of Busken's crime was from the genetic code obtained from semen found in Busken's car. In 2001, Oklahoma City police tested 200 men living close to Busken or possessing a criminal history of violence, but despite the dragnet, no match was found. (Id.)

ii. DNA dragnets have also occurred outside of Dade County, Florida; in and around San Diego and Los Angeles, California and in Ann Arbor, Michigan (Laurie Stroum Yeshulas 8 Suffolk J. Trial & App. Adv. 133, 133-34). Most recently, in 2003 police in Louisiana preformed a genetic dragnet involving samples from over 1,000 men in order to attempt to identify a serial killer; but in this case the suspect Derrick Todd Lee was apprehended by genetic testing that was conducted on Lee regarding another crime unrelated to the murders, or the dragnet. (http://www.wfaa.com/sharedcontent/dallas/tsw/stories/053103dntextswfill.af1b7.html)

f. **Voluntariness:**

i. During the 2003 Louisiana dragnet, Shannon Kohler, one of the men asked to provide samples, initially refused to give a DNA sample to the local police force. Though providing a DNA sample was theoretically "voluntary" – Kohler's refusal sparked suspicion for the local law enforcement authorities, thus providing the grounds for a court order to be publicly filed compelling Kohler to submit a DNA swab http://www.csmonitor.com/2003/0221/p03s01-usju.html. The individuals targeted in this DNA dragnet were largely based on anonymous phone calls and when these individuals, like Kohler, refused to undergo testing they were subsequently required to do so by court order, regardless of whether they fit aspects of the profile that had been constructed of the murderer (Id). Although Kohler drove a car that was not similar to the one described by

witnesses and could prove by phone records that he was at home during the murders, the swab was taken, tested, and found to be negative (Id).

ii. If the refusal of a request can motivate a court order requiring compliance, is the request then *truly* voluntary? Legally speaking, situations can be considered voluntary even if individuals psychologically feel as if they have no other alternative but to comply with the police. David Kaye, Regents' Professor of Law at Arizona State University writes that "the law is clear that a person can consent to a warrantless search of a car, or a house, or to having the police take a sample of bodily fluids. The mere fact that the failure to consent might arouse suspicion is not so coercive as to make consent involuntary" (http://www.law.asu.edu/?id=8608). However, critics of this position would claim that unless a viable and actual alternative is available, there is no "voluntary" choice. As refusal for voluntary DNA testing has almost invariably led to involuntary DNA testing (via court order) there seems to be no viable alternative for the individuals who are asked to submit a genetic sample.

g. **Property issues:**

i. Police Retainment:

1. Can the police keep the information obtained via a genetic dragnet so that the information obtained from the samples can be entered into a generalized DNA databank for later use by law enforcement authorities? The answer to this question may depend on the how we characterize the *scope* of the voluntary submission to DNA testing. For example, did the officials inform the tested individuals that the samples could possibly be retained and used in a more generalized databank in the investigation of other crimes? If so – the scope of the consent would seem to permit the admission of the information. But if not – then legally we enter into somewhat amorphous territory. The Supreme Court of the United States has not yet ruled on either the constitutionality of DNA dragnetting or whether contested samples may be kept as part of a comprehensive databank. Different states have had different responses to the issue of genetic sample retainment and generalized DNA database inclusion. **(*Link to (I)(e), regarding the 9th Circuit Court's argument against the permissibility of further databank use**)

2. Officials in the Louisiana dragnet of 2003 have not decided what to do with the information obtained (http://www.grandforks.com/mld/grandforks/news/5983437

.htm). Some police departments in other dragnet DNA searches have discussed the possibility of keeping the voluntary samples as part of a more generalized DNA database. Shannon Kohler, however, is suing to have his DNA information destroyed by the Louisiana police department (Id). The case is still pending.

ii. Return/destruction of information:

1. As of May of 2003, the ACLU was aware of only one case where an individual has successfully sued "for the return of his genetic sample" (http://www.detnews.com/2003/nation/0305/31/nation-179315.htm). This case involved an individual named Blair Shelton, who in 1995 provided a genetic sample "during an investigation into a series of rapes in Ann Arbor, Michigan" (http://www.detnews.com/2003/nation/0305/31/nation-179315.htm). In this case, police had little information about the perpetrator, "besides the fact that he was black" (Id). The police responded by repeatedly questioning men in the Ann Arbor area who appeared to be black and asking for their genetic samples. (Id). Shelton, an African-American, reportedly felt coerced into giving a sample, and stated that "he lost a job because police came to his workplace and told his employers that he was a suspect in the investigation" (Id). After testing exculpated him as the perpetrator, Shelton wanted his genetic information returned or destroyed – and the Michigan Supreme Court agreed that this was his right. The Michigan Supreme Court ruled that Shelton's information – and the information of all suspects who have been "cleared of wrongdoing" - should be returned or destroyed under the "state law that says police cannot keep DNA records of innocent people" (Id). Different states, however, may have different legal provisions, and consequently the status of voluntarily submitted DNA seems to be an open issue dependent on the formulation of respective state laws.

h. **Databank entry with arrest**:

i. In a variation of this theme – there is some question as to the permissibility of testing and submitting the DNA of persons to state and national databanks after they have been arrested, but not convicted. For example, in Virginia "anyone simply arrested… for a violent crime or certain burglaries must be tested. Some 600 samples have poured into Virginia's forensics lab" (http://www.cnn.com/TRANSCRIPTS/0301/25/nac.00.html).

Although the law does state that "if the person arrested is later acquitted, found not guilty or charges dropped, the law does require that their DNA be erased from the system but some worry that may not always happen" (Id). Virginia anticipates "legal challenges to its new DNA testing law, although none have yet been filed" (Id). (See also section e: 9th Cir. Ct.'s argument against the permissibility of further databank use) (*link to (V), regarding universal databanks).

i. **Efficacy:**
   i. Another troubling aspect about the trend towards DNA dragnetting is that in the United States in the majority of the cases where a DNA dragnet has been used, the dragnet itself has not helped in identifying the perpetrator. Lisa Hurst, "who monitors DNA issues for the law firm of Smith Alling Lane in Tacoma, Wash., says few dragnets have led directly to arrests" (http://www.usatoday.com/tech/2003-05-28-dna-dragnet_x.htm). For example, "in 1994 and 1995, the Metro-Dade police in the Miami suburbs took more than 2,000 DNA samples in search of the strangler of six prostitutes, and initially focused on three possible matches before each man was ruled out" (http://www.refuseandresist.org/police_state/art.php?aid=498). Ultimately the suspect was apprehended "after neighbors found a prostitute bound and gagged in his apartment while he appeared in court on an unrelated robbery charge" (Id)
   ii. According to the New York Times, in 1998 "the police in Prince George's County, Md., sought DNA samples from 400 male workers at a county hospital where an administrator had been raped and strangled" (http://www.refuseandresist.org/police_state/art.php?aid=498). The article stated that "union members complained that the police were bullying employees into agreeing and were singling out maintenance workers" (Id). Despite these complaints the dragnet continued; ultimately, however, a genetic match was not established and the case "remains unsolved" (Id).

   iii. In one of the few examples of successful DNA dragnetting in the United States, Israel Moret was identified as being the perpetrator of a rape against a bedridden victim (http://www.eagletribune.com/news/stories/19990114/LN_001.htm). However, this dragnet was somewhat localized in terms of scope as the victim was an immobile and comatose patient in a nursing home; consequently the victim had contact with a relatively restricted group of men. Moret was among the "33 men, almost all staffers at the Town Manor Nursing Home who offered

blood samples to investigators for DNA testing shortly after the 24-year-old woman gave birth" (Id).

j. **Cost**:
   i. Given the relatively low success rate of genetic dragnets in the United States one might wonder whether these dragnets are an excessively expensive allocation of resources in the course of a criminal investigation. In 1997, Sunny Sudweeks was killed in Costa Mesa, California (http://www.dodgeglobe.com/stories/040201/nat_genetics.shtml).' The police department has had an ongoing DNA dragnet concerning her case for at least four years, and as of 2001, the Costa Mesa Police Department had requested genetic samples from 188 people (Id). According to the Los Angeles Times, "[a]t about $400 per analysis, the four-year Sudweeks dragnet has cost an estimated $75,000" (Id). The case remains unsolved.
   ii. Proponents of dragnetting respond by saying that the problem is simply a matter of scope – as more individuals are included into the database, the possibility of correctly identifying a genetic match for DNA left at a crime scene becomes higher. As of 2003, Virginia state police were reporting that they were getting "about a hit a day (successfully finding a DNA match for suspects) by checking the DNA of criminal suspects with the CODIS data base" (http://www.law.asu.edu/?id=8608). **(*Link to (V), regarding universal databanks)**

k. **CODIS:**
   i. The Combined DNA Index System was established by Congress in 1994 and is administrated by the FBI (http://www.privacilla.org/government/codis.html). It is intended to enable "federal, state, and local crime labs to exchange and compare DNA profiles electronically, thereby linking crimes to each other and to convicted offenders" (http://www.fbi.gov/hq/lab/codis/program.htm).

l. Privacy:
   i. Scope of databank inclusion
      1. But this returns us to the issue regarding the scope of DNA databases: can and should DNA databases include information from individuals who are exonerated as suspects from an initial dragnet? Would the retention of those samples amount "to an illegal invasion of privacy because they are taken without legal suspicion that the convicts were involved in other crimes" (http://www.cbsnews.com/stories/2003/07/18/national/main563965.shtml)? Or, is it simply better public policy to

keep DNA databanks as comprehensive as possible? **(* Link to (V), regarding universal databanks)**

ii. Proponents for inclusion: (***Link to (V)(b), regarding privacy and universal databanks).**

1. Proponents for databank inclusion argue that with extensive and even possibly even universally comprehensive DNA databanks, criminal investigations could be conducted with greater speed and efficiency. **(*Link to (V), regarding universal databanks).** Furthermore, they argue that the screening would be limited to 13 markers on the genetic code – which would be acceptable in terms of accuracy, yet limiting in terms of the amount of information actually obtained. Those 13 markers that are used for evaluation *should* be markers that at very least, are not presently known to be associated with any medical predispositions, thus further protecting the privacy of the individuals.
2. At present, the genetic markers that are typically examined in forensic analysis are in fact alleles, and not genes, per se, as "these alleles are non-coding, non-regulatory DNA sequences" (Daniel Kaye, 10 Cornell J.L. & Pub. Pol'y 455, 461). Apparently these allele markers "reveal information that is no more intimate than the particular blood serum enzyme that an individual happens to have, the pattern of blood vessels in the retina of the eye, or the whorls and ridges in a fingerprint" and as such the alleles "disclose nothing about the individual's susceptibility to diseases, bodily structure, or mental functioning" (Id, at 461-62).

iii. Considerations against inclusion: (***Link to (V)(b), regarding privacy and universal databanks).**

1. This question of privacy is a thorny one. How can we be completed assured that the samples given will not also be analyzed for factors other than correspondence to genetic material present at a crime scene? What are the provisions (and penalties) – if any - for obtaining and distributing confidential information regarding an individual's genetic code? For example, there is some scientific clamor (albeit controversial) about the existence of genes related to violence and aggression (Matthew Jones, 52 Duke L. J., 1031, 1039-41); the existence of genes marking some predisposition to breast cancer (http://www.lbl.gov/Education/ELSI/screening-main.html); and the identification of genes accurately determining the existence of Huntington's disease within individuals (http://www.hdsa.org). How can we be assured that genetic information regarding aspects of our health will not be

wrongly accessed by the persons who are in positions of authority with this information? And are there any deterrents, both procedural and legal, to prevent these types of abuses from occurring?

2. Some states "expressly prohibit the use of more informative loci" (Daniel Kaye, 10 Cornell J.L. & Pub. Pol'y 455, FN 22). For example, Vermont state law states that the analysis of forensic databank DNA "is not authorized for identification of any medical or genetic disorder" (Id). Vermont also clearly articulates damages if these laws are broken. In addition to civil damages, any one who intentionally violates these provisions "shall be imprisoned not more than one year, or fined more than $10,000, or both (20 Vt. Stat. Ann. 1941 (c)).

iv. Sanctions and governmental vs. private action:

1. But absent your DNA being analyzed by governmental authorities in states where these sanctions exist, it appears that in the United States it is not a crime to "merely" analyze someone's DNA without their consent. For example, imagine that you're a local celebrity. The trash that you've placed outside on the curb has been raided, and some private individual has taken the dental floss that you've discarded and has sent it to a laboratory for a thorough analysis of your genetic information. Would you have any legal recourse? Has your DNA been stolen, your privacy violated? Although you may *feel* like DNA has been stolen, it may be difficult to be able to receive any damages for your loss. Whether or not you have legal recourse will depend heavily on the formulation of your respective state's civil and criminal statutes – and the majority of state statutes are silent upon this matter (D.H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 435). In the UK, however, "the theft and testing of an individual's DNA is set to become a criminal offence… as part of a raft of proposed government measures aimed at embracing the potential of genetic technology in medicine, while protecting the rights of individuals" (http://www.newscientist.com/news/news.jsp?id=ns99993865).

v. Administrative faith?

1. Proponents of DNA dragnetting and database inclusion argue that these issues of privacy are already evident with medical and legal records – and that if the appropriate standards and safeguards are in place (i.e., only examining

parts of the genetic code which are not related to the identification of particular characteristics such as propensity towards cancer, etc.) then those privacy concerns become significantly more minimal. But critics argues that this puts much faith in the administrative capacities of police systems which have on occasion been characterized by corruption and incompetence.

III. Misuse

a. Administrative reliability and the "Rampart" scandal:

i. DNA evidence is highly influential – and the results of a DNA test can sometimes become highly prejudicial regarding the innocence or guilt of the accused. DNA testing may be able to determine the genetic blueprint of a particular individual to a high degree of accuracy, but DNA testing is also susceptible to abuse. Like many other forms of evidence obtained, analyzed and ultimately presented at trial, the accuracy of the evidence depends in large part on the reliability of the persons who are physically in contact with and are responsible for the administration of the evidence (such as the investigators at a crime scene who collect evidentiary samples, the persons who have access to the police evidence lockers and the forensics specialists who subsequently analyze the materials). However, police officers and forensics specialists can make mistakes and behave unprofessionally – and at worst, they can be incompetent or even corrupt. In 2002, the City Council of Los Angeles agreed to pay in settlement negotiations $300,000 to Jorge Sisco-Aguilar, who claimed that the police had framed him "for illegal firearms possession and cocaine possession" (http://www.lindesmith.org/law/police/index.cfm?printpage=1). This was one of numerous settlements which arose from the Los Angeles Police Department's "Rampart" scandal, where officers stole materials from police evidence lockers, planted evidence such as drugs and weapons on innocent persons, and wrote false police reports (Id). As a result of investigations arising out of the Rampart scandal, "over a hundred convictions were overturned" and the police officers involved "were indicted on corruption charges, including torture, murder, drug dealing, and framing innocent people (Id). The unit's criminal behavior became known as the 'Rampart Way,' a term referring to a predominantly poor, immigrant neighborhood in East Los Angeles patrolled – and during that time controlled – by the officers" (Id).

b. While the extent of the Rampart police unit's malfeasance may not be typical of police departments throughout the United States the danger of placing too much faith in the reliability of the persons in positions of authority is evident. This situation becomes more problematic when we recognize that the individuals targeted for prosecution are also often

indigent and they may not have the resources both financially and socially to effectively combat these injustices.

IV. Genetic Testing: Conclusiveness and Reliability

a. Conclusiveness and guilt:

i. The common conception that DNA evidence is infallible, is simply not true ((17 ND J .L. Ethics & Pub Pol'y 269,271). "DNA evidence can be conclusive only as to one factual issue"– that factual issue being "whether or not the evidence originated with the defendant" (17 ND J .L. Ethics & Pub Pol'y 269,280). For example, "semen might be present on an alleged victim's clothing or a bedsheet without occurrence of penetration, or it could be found in a vaginal swab despite consensual sex" (Id). Thus, though DNA evidence can conclusively prove innocence, **"it is not logically sufficient to prove guilt**'" (Id, bold added). It is vital that jurors and the public understand this difference – and ideally an accused party will have access to a competent attorney who can make this distinction clear.

b. **Accidents**:

i. Accidents do happen. Some commentators have faith that "in instances where samples were mishandled, switched or otherwise contaminated before they reached the laboratory or during testing, 'a defendant might succeed in raising a reasonable doubt about the reported results of the DNA tests" ((17 ND J .L. Ethics & Pub Pol'y 269,271, citing Edward J. Imwinkelried & D.H. Kaye, D.N.A. Typing: Emerging of Neglected Issues, 76 Wash. L. Rev. 413 (2001)). But again, the individuals targeted for prosecution are also often indigent and they may not have the resources both financially and socially to effectively combat these wrongs.

ii. Raymond Easton and mistaken DNA identification:

1. There are, in fact, cases where mistaken DNA identification has occurred. The first reported case of mistaken DNA identification occurred in the UK. In 1999, Raymond Easton, "a 49-year-old man living in Swindon in the advanced stages of Parkinson's disease, was charged with a burglary in Bolton 200 miles away. Even though he could barely dress himself, he was still arrested" (http://observer.guardian.co.uk/crime/_story/0,13260,942076,00.html). Easton had provided a DNA sample to the police several years earlier following a domestic dispute, and that sample had remained within the DNA database. During trial, it was stated that, "[t]he odds of the arrestee's DNA being wrongly matched against that of the crime

scene were said to be one in 37 million" (http://www.forensic-evidence.com/site/EVID/EL_DNAerror.html). The first test involved the examination of 6 loci – but when the DNA was then examined again at the request of Easton's solicitor, using a retest involving 10 loci the results "showed an exclusion at the additional four loci" – thus exonerating Easton from the crime (Id).

2. Furthermore, despite the fact that the prosecution stated that the odds of the DNA being wrongly matched were 37 million to one: "It should be understood that that calculated frequency is an estimate, and can be off by an order of magnitude in either direction…. In other words, despite the statistical calculation of 1 in 37 million on six loci, that does NOT mean that the six loci cannot match more than one person in 37 million. According to population geneticists, it is indeed possible to have the six loci match in perhaps many dozens of individuals whose DNA is contained in a databank of 700,000" (http://www.forensic-evidence.com/site/EVID/EL_DNAerror.html).

iii. Typographical Errors:

1. More rudimentary errors have occurred in DNA labs as well, thus presenting inaccurate results. In 2002, an audit of the Las Vegas Metro Police's DNA lab found "a typographical error that wrongfully accused a man of two rapes" (http://www.lasvegassun.com/sunbin/stories/archives/2002/may/23/513486431.html?sotolusson). Lazaro Sotolusson's name was placed on another man's DNA information which, when placed in a placed in a computer database, matched that of two unsolved rape cases. Lazaro was "charged for multiple felonies, including sexual assault and first-degree kidnapping in connection with the assaults on the two juveniles" (http://www.reviewjournal.com/lvrj_home/2002/Apr-18-Thu-2002/news/18551966.html). In the preliminary hearing, one of the female victims identified Sotolusson as the perpetrator, and "authorities said the DNA evidence indicated the odds that Sotolusson was not the offender were 1 in 600 billion" (Id). Sotolusson was jailed for approximately one year while awaiting trial (Id). The Clark County Public Defender Office, which had attorneys representing Sotolusson, hired their own forensic scientist, Norah Rudin, who discovered the clerical errors (Id). One

of the attorneys working on the case, Brigid Hoffman, noted "We were lucky the public defender had the resources to hire an expert as good as Norah Rudin" (Id). **(*Link to (III)(b))**

iv. Switched samples:

1. Other errors involving the switching of genetic samples have "led to false incrimination in rape cases in Philadelphia and San Diego" http://www.aclu.org/Privacy/Privacy.cfm?ID=15049&c=129. A list of cases involving forensic DNA errors, along with transcripts of court testimony can be accessed at the following site: http://darwin.bio.uci.edu/~mueller/error%20rates.html
2. In 1993, a jury in Tulsa Oklahoma convicted Timothy Durham for sexually assaulting a juvenile and he was sentenced to 3000 years in prison (http://www.aclu.org/Privacy/Privacy.cfm?ID=15049&c=129). Although Durham had been able to provide 11 alibi witnesses who were able to place Durham in a different state on the date and time of the attack, the state prosecuted its case "almost entirely on a DNA test, which showed that Durham's genotype matched that of the semen donor" (Id). Durham's post-conviction DNA testing, however, "showed that he did not share the DQ-alpha genotype found in the semen," and "he was also excluded at several other genetic loci in multiple tests" (http://scientific.org/articles/JFS%20excerpt.htm). The error that occurred in the initial forensic analysis was one of "misinterpretation" (Id). The laboratory had failed to fully separate "the male and female DNA from the semen stain, and the combination of alleles from the two sources produced a genotype that could have included Durham's" (http://www.aclu.org/Privacy/Privacy.cfm?ID=15049&c=129). Durham served 4 years in prison before being released in 1997 (Id).

c. Innocence Protection Act:

i. In the future, the availability of resources for post-conviction DNA testing might become more accessible. The Innocence Protection Act (IPA) of 2003 was introduced in the 107th Congress on October 1, 2003, as a component of a larger bill called the Advancing Justice Through DNA Technology Act (HR 3214) (http://www.innocenceproject.org/legislation/index.php). This bill would "grant any inmate convicted of a federal crime the right to petition a federal court for DNA testing to support a claim of innocence. It also encourages states - with the power of the purse -

to adopt adequate measures to preserve evidence and make postconviction DNA testing available to inmates seeking to prove their innocence" (Id).

1. In November, 2003, the Advancing Justice Through DNA Technology Act (HR 3214) passed the House of Representatives with a vote of 357-67 and is "presently pending before the Senate" (http://www.innocenceproject.org/legislation/index.php).

ii. Kirk Bloodsworth:

1. The IPA would "establish the Kirk Bloodsworth Postconviction DNA Testing Program, which would provide $25 million to help states defray the costs of post-conviction DNA testing under the act" (http://www.innocenceproject.org/legislation/index.php). This program "is named after Innocence Project client **Kirk Bloodsworth**, who, in 1993, became the first death row inmate in the nation to be exonerated by post-conviction DNA testing" (Id).

d. Operator Bias, Incompetence:

i. Josiah Sutton, and the Houston Police Crime Laboratory:

1. There are also cases where errors in the analysis of the DNA are the result of incompetence and misrepresentation. In 1999, then 16 year old Josiah Sutton "was convicted of rape based largely on DNA tests performed by the Houston Police Crime Laboratory." (http://www.chron.com/cs/CDA/ssistory.mpl/special/crimelab/1812821). Sutton was in prison for over 4 years, when his case was analyzed by reporters from Houston television station KHOU, who were investigating rumors that "had circulated for years about bad work by the HPD crime laboratory." (http://www.scientific.org/archive/Sutton%20Press%20Release.htm). The reporters contacted Professor William Thompson of the Department of Criminology, Law & Society at the University of California, Irvine, Thomspon, who has worked on issues of forensic DNA evidence for over 15 years (Id). Thompson uncovered the error by using more sophisticated testing methods than those employed by the Houston Police Crime Lab, and the results exculpated Sutton from having committing the crime (Id). But according to Thompson, the prosecutor and the laboratory additionally "misrepresented the DNA evidence in several respects" (Id). Thompson stated: "The testimony left the

impression that the DNA evidence uniquely and definitively identified Sutton as one of the rapists…. If police picked any two black men off the street, the chances that one of them would have a DNA profile that 'matched' the semen sample as well as Sutton's profile is better than one in eight" (http://www.scientific.org/archive/Sutton%20Press%20Release.htm).

ii. Administrative culture at Houston PCL:

1. Even more problematic was the finding that the problems in the laboratory were not merely the accident of one careless analyst, but were instead administratively widespread. According to Thompson, "the laboratory failed to run essential scientific controls, failed to document their work adequately, and engaged in a variety of practices that were create a risk of error," (http://www.scientific.org/archive/Sutton%20Press%20Release.htm). Furthermore, the analysts were consistently overstating the statistical significance of their findings in both written reports and in courtroom testimony (Id). Thompson additionally stated that:
2. "In at least two instances the laboratory reports appeared to be inconsistent with the underlying scientific data. **It appeared that DNA analysts were stretching and distorting their findings to help get a conviction**" (http://www.scientific.org/archive/Sutton%20Press%20Release.htm, emphasis added).
3. As a result of this investigation and the allegations made against the Houston Police Crime Laboratory, the DNA section of the HPC Lab was audited in December of 2002 (http://www.scientific.org/). The audit, which confirmed Thompson's findings, subsequently caused police officials to suspend DNA testing at the lab (http://www.scientific.org/archive/Houston's%20Troubled%20DNA%20Crime%20Lab%20Faces%20Scrutiny.htm). 369 samples of DNA previously analyzed by the HPC Lab were to undergo retesting at independent laboratories; but, "evidence in more than 20 cases slated for DNA retesting is missing, the Houston Police Department said Monday [November 3, 2003], giving few other details" (http://www.khou.com/crimelab/stories/khou031103_ds_MissingDNA.16df2048.html). However, as of December 18, 2003, approximately 1/3 of the retesting (128 or 369 samples) had been completed (http://www.khou.com/crimelab/stories/khou031218_ds_D

NARetest.b653d9f5.html). The results obtained "by three private labs have confirmed police analysis in a majority of the cases," however, "additional retesting is under way in about two dozen cases returned thus far" (Id).

iii. Operator bias:
    1. Some of the errors involved in the Houston Police Crime Laboratory scandal seem to have been influenced by operator bias **(*Link to (IV)(d)(ii)(2)*).** Although "current DNA tests rely heavily on computer-automated equipment, the interpretation of the results often requires subjective judgment" (http://bioforensics.com/articles/champion1/champion1.html). Consequently, in situations where the results are not entirely dispositive, the prejudices of analysts can improperly weigh into their interpretation of the evidence (Id).

iv. Observer Effects:
    1. Although operator bias is sometimes conscious and intentional, it is perhaps less pervasive than errors arising from "observer effects." The study of observer effects is based on a fundamental "principle of modern psychology" which claims that "the desires and expectations people possess influence their perceptions and interpretations of what they observe" (D. Michael Risinger, Michael J. Saks, et. al., 90 Cal. L. Rev. 1, 6 (2002)). Studies in modern psychology have shown that suggestion can be powerful in shaping an individual's expectation of what the truth *should* be. Unfortunately, sometimes forensic scientists simply "refuse to take appropriate steps to "blind" themselves to the government's expected (or desired) outcome when interpreting test results" (http://bioforensics.com/articles/champion1/champion1.html). In some ways, however, this is an understandable position, as it is standard practice among many within law enforcement to provide "domain-irrelevant" information to forensic analysts (D. Michael Risinger, Michael J. Saks, et. al., 90 Cal. L. Rev. 1, 33 (2002)).
    2. Lab notes:
        a. Consequently, some analysts are, indeed, influenced in ways that compromise their ability to objectively assess the scientific information. The effects of this improper influence are sometimes evident in lab notes, when analysts have written comments regarding the case that are irrelevant and likely prejudicial regarding the genetic testing

(http://bioforensics.com/articles/champion1/champion1.html). For example:

b. A forensic scientist, involved in analyzing the DNA of a particular case wrote:

"Suspect-known crip gang member — keeps 'skating' on charges-never serves time. This robbery he gets hit in head with bar stool — left blood trail. [Detective] Miller wants to connect this guy to scene w/DNA …" " (D. Michael Risinger, Michael J. Saks, William C. Thompson, & Robert Rosenthal, The Daubert/Kumho Implications of Observer Effects in Forensic Science: Hidden Problems of Expectation and Suggestion. 90 Cal.L.Rev. 1, 36, FN 165 (2002))).

c. In a separate case, where the defense attorney "had suggested that another individual besides the defendant had been involved in the crime, and might have left DNA, the DNA laboratory notes include the notation: 'Death penalty case. Need to eliminate [other individual] as a possible suspect.'" (http://bioforensics.com/articles/champion1/champion1.html).

d. Unfortunately, according to some commentators, "such cases are by no means uncommon" (Risinger, Saks, et al., 90 Cal.L.Rev. 1, 37 (2002)).

3. Safeguards:
   a. Some argue that with an appropriate number of safeguards, such as a three tiered-system of peer review, the likelihood of compromising the validity of the forensic information would be minimized. Many DNA testing laboratories presently do have peer review involving multiple scientists – but even in these situations, there have been documented problems with "conformity effects," where people agree with the generalized opinion to be "in step with their peers" " (Risinger, Saks, et al., 90 Cal.L.Rev. 1, 19 (2002)). In addition, greater safeguards mean greater costs in terms of time, work, and money involved – but as "virtually all other fields of science have determined that the risk of harm due to observer effects is so great, and the need for valid findings is so important, that the

increased costs are worth paying in order to gain the benefits that proper testing procedures bring" (Risinger, Saks, et al., 90 Cal.L.Rev. 1, 52 (2002)). At very least, the possibility for standards incorporating blind testing and evidence line-ups (where there are multiple specimens, some of which are "foils") should be considered in order to minimize the potential for errors based on intentional and subliminal prejudice (Risinger, Saks, et al., 90 Cal.L.Rev. 1, 45-50 (2002)).

V. Universality:

a. A number of legal scholars have posited the construction of a "universal" DNA database in order to aid in the identification of both victims and perpetrators of crimes (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413; Allison Puri, 24 B.C. Int'l & Comp. L. Rev. 341 (2001); John P. Cronan, 28 Am. J. Crim. L. 119 (2000)). **(*link at (II)(l)(ii), regarding increased speed in identification of perpetrators; (II)(j)(ii), regarding increased efficacy of identification of perpetrators).** A universal genetic database would seek to have coverage that was as inclusive as possible for the entire population, as opposed to solely testing and retaining samples of individuals who have been convicted for certain crimes. The 9th Circuit Court has recently ruled that it is impermissible to take and retain the DNA information of prior convicts for criminal databanks, for it is an illegal invasion of privacy as the information is taken without legal suspicion that the convicts were involved in other crimes **(*link at (I) (c)(ii)(1)*).** One could argue that similar criticisms could be levied upon any attempt to create a population-wide genetic database. A similar rationale was stated by Justice Utter of the Washington Supreme Court, as to why a universal DNA databank should be prohibited:

i. "We should be appalled, I hope, if the State mandated non-consensual blood tests of the public at large for purposes of developing a comprehensive… DNA databank. The Fourth Amendment gauranty (sic) against unreasonable searches and seizures would mean little indeed if it did not protect citizens from such oppressive government behavior" (Rebecca Sasser Peterson, Note: DNA Databases: When Fear Goes Too Far, 37 Am. Crim. L. Rev. 1219, 1238, citing State v. Olivas, 856 P.2d 1076, 1094 (Wash, 1993) (Utter, J., concurring)).

b. Privacy: But are there ways in which the invasion of privacy could be minimized to the extent that the intrusion is overwhelmingly outweighed by the public benefit? **(*link at (II)(l), regarding privacy issues, generally; (II)(l)(ii) regarding arguments about the scope of genetic evaluation).** What are the privacy interests that are being encroached

upon by mandating universal DNA database inclusion? Some analysts divide the privacy interests into two broad categories:

i. During the physical extraction of the genetic sample: Generally – individuals have some privacy intrusion with the physical taking of the samples. But commentators like Cronan argue that the benefit to the state/society outweighs the comparatively minimal nature of the intrusion (Cronan, 28 Am. J. Crim. L. 119, 147). Cronan contends that the physical extraction of the genetic sample should be concurrent with the process of birth. According to Cronan, "extracting blood from the infant is part of the delivery process. At no other point in life is taking a genetic sample a routine procedure that does not constitute any added personal intrusion" (Id. at 137) For immigrants, Cronan posits a system where the collection of genetic samples would be integrated with the process of issuing VISAs (Id. at 138).

   But despite Cronan's arguments, "there is no doubt that blood samples taken from infants by governmental edicts would 'constitute searches of "persons" and depend antecedently upon seizures of "persons"'" (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 442, citing, Schmerber v. California, 384 U.S. 757, 767 (1966)). Kaye and Smith instead posit a future where DNA could be "acquired by applying a sticky pad to the infant's skin to acquire some exfoliating, epidermal cells without even a scratch" (Id at 442). This situation might be more like the warrantless acquisition of fingerprints, which is permissible under the Fourth Amendment because "fingerprints are an identifying factor readily available to the world at large" (Id, citing, Palmer v. State, 679 N.E.2d 887, 891 (Ind. 1997))

ii. Profiling of the sample and indexing to the databank: After the information has been extracted and typed using markers that have no known correspondence to "health or other physical or metal traits and propensities" **(*Link to (II)(l)(ii), regarding arguments about the scope of genetic evaluation)** the sample would then be destroyed, as law enforcement agencies should not need, nor be permitted "to handle, much less retain, the samples" (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 438). The ideal model would be to construct a mechanism which would both "extract an identifying profile and destroy the sample at the same time" thus protecting the privacy of individuals to the greatest extent possible regarding the content of their DNA (Id). Of course, if an individual turned up as a match with DNA left at a crime scene more analysis and investigation should be completed in order to more fully determine the likelihood of the individual actually committing the crime. As discussed previously, the

sampling procedures for genetic information leave some margin of error. **(* Link to (II)(l)(iii), regarding arguments about the scope of genetic evaluation).** "Because scientists do not read the entire DNA, looking for any and all variations, two samples conceivably could appears as exact matches but actually differ in some other portion of the strand" (Allison Puri, 24 B.C. Int'l & Comp. L. Rev. 341, 347-48) **(* Link to (IV)(b)(ii), regarding Raymond Easton's case)**. Furthermore, as seen in the Houston Police Crime Laboratory scandal, laboratory reliability is critical. **(*Link to (IV)(d)(i), regarding the Houston PCL).** As such, it is important for jurors and the public at large to understand more critically the benefits and limitations of genetic analysis, and "proper weight must be applied to apparent matches" (Allison Puri, 24 B.C. Int'l & Comp. L. Rev. 341, 349).

iii. But even if minimal physical intrusion and proper administrative measures were taken regarding the acquisition and use of DNA for universal databanks, some critics argue that a substantial intrusion of privacy exists nonetheless, in terms of assessing our own human dignity. By submitting our DNA into governmentally mandated databanks we create a "nation of suspects," where our potential criminality is always already presumed. Some commentators counter that "[p]rivacy is an important value, but the privacy threat from digital records of DNA types reveal nothing about a person's nature or status is not self-evident" (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 446). Thus, according to this argument the matter is not so much about the construction of an adversarial relationship between a government and its citizens, but rather, about constructing a more efficient means of administration regarding the identification of individuals within a large society. Furthermore, they claim that,"[e]stablishing a system that has the ability to link individuals to crime scenes to the greatest possible extent without probing their minds or invading their homes or possessions does not make everyone a "suspect" in any meaningful or problematic sense" (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 446)

c. Financial Cost: **(* Link to (II)(j), regarding financial costs in genetic dragnetting).** Even if everyone was willing to voluntarily submit genetic samples for a universal databank, what would be the approximate financial costs for this undertaking?

   i. In 2000, genetic testing cost about $4000 per case (involving inmates who had been convicted and had been required to submit genetic samples for database entry) (Jerilyn Stanley, 32 McGeorge L. Rev. 601, 613). As of December 26, 2003, the DNA retests on 128 cases involved in the Houston Police Crime Lab scandal have cost the city of Houston more than $1.1 million "and with less

than $240,000 remaining from more than $1 million in contracts awarded to three private labs to retest evidence, according to the city controller's office, the effort promises to cost more into the new year" (http://www.chron.com/cs/CDA/ssistory.mpl/special/crimelab/2321052). **(*Link to (IV)(d)(i), regarding the Houston PCL).**

ii. Presently there already exists a backlog, due to lack of funds and staff, of 750,000 samples nationwide "waiting to be profiled and entered into databases" (Lindsy A. Elkins, 17 ND J.L. Ethics & Pub Pol'y 269, 293).

iii. According to the FBI, at present a universal genetic databank is simply cost prohibitive, but it is likely that as technology advances, "the cost of DNA will decrease" (Lindsy A. Elkins, 17 ND J.L. Ethics & Pub Pol'y 269, 294).

VI. Equal Protection, Physical Profiling and Racial Disparities:

a. The 14th Amendment of the United States Constitution states,
   i. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws (section 1).

b. The Equal Protection Clause, Racial Profiling, and the role of genetics based testing:
   i. This section of the 14th Amendment is commonly known as the Equal Protection Clause. In short, it mandates that "the laws of a state must treat an individual in the same manner as others in similar conditions and circumstances" (http://www.law.cornell.edu/topics/equal_protection.html). Racial profiling has come under scrutiny in the courts as potentially violating this clause. However, the use of race in identifying a particular perpetrator does not automatically trigger an Equal Protection claim; rather, the "purposeful intent to discriminate must be present before there is a violation of equal protection in a racial setting" (Lindsy A. Elkins, 17 ND J .L. Ethics & Pub Pol'y 269, 287).
   ii. Antidote to racial profiling?
      1. As a policy matter, racial profiling is, to put it mildly, a controversial subject. Yet, some commentators claim that with the use of genetic information, "DNA analysis could serve as an antidote to racial profiling in that reliance on genetic information in crime scene samples could correct tendencies to pursue one group disproportionately" (Lindsy A. Elkins, 17 ND J .L. Ethics & Pub Pol'y 269, 271). Elkins writes, " No group is singled out for special treatment, and no is penalized because of hostility toward

race. If police make investigative use of racial information whenever that information is useful, then all racial groups are treated alike; none is stigmatized or disadvantaged in the enforcement of laws that apply with equal force to members of every race" (Id at 297)

iii. Counterpoint

1. Elkins argues that by looking at "population specific alleles" one can determine "the ethnic populations that are our traditional races" (Lindsy A. Elkins, 17 ND J .L. Ethics & Pub Pol'y 269, 283). But this raises some perplexing questions. Many Americans are a mixture of "traditional races" – and in terms of appearance, many Americans do not fit stereotypical models of racial categorization. Furthermore, Elkins acknowledges that "[p]olicy implications could include the exacerbation of racism by 'reinventing in statistical and molecular terms the arbitrary social apparatus of… the 'One Drop Rule'" (Id at 285, citing Eric T. Juengst, 75 Chi.-Kent L. Rev. 61, 75 (1999)).
2. S. Malia Fullerton, a postdoctoral research fellow in anthropology, has written on the use of "race" as a "research variable in biomedical research" (http://www.personal.psu.edu/faculty/s/m/smf15/BtS_readings_page.htm).
    a. According to Fullerton, within academia the notion that "biologically-distinct human races" *do not exist* is widespread. (http://www.personal.psu.edu/faculty/s/m/smf15/BtS_readings_page.htm). However, in the field of bio-medical research there is disagreement regarding the claims of some scientists who argue that race and genetics can be accurately linked. Nicholas Wade writes in the New York Times, that:
        i. "in a special issue on race published by the journal Nature Genetics, several geneticists wrote that people can generally be assigned to their continent of origin on the basis of their DNA, and that these broad geographical regions correspond to self-identified racial categories, such as African, East Asian, European and Native American. Race, in other words, does have a genetic basis, in their view. But researchers from Howard University, a center of African-American scholarship, argued in the same journal that there was no biological basis for race and that any apparent link between

genes and disease should be made directly, without taking race into account," (http://www.nytimes.com/2004/11/14/weekinreview/14nick.html?oref=login).

ii. According to the Wade, "Most geneticists agree with the Howard researchers that the underlying genes, not race as such, is what is important for understanding disease." (http://www.nytimes.com/2004/11/14/weekinreview/14nick.html?oref=login).

b. Furthermore, Fullerton writes that some of the studies that have been used by geneticists to link genetic traits with racial ones have been used by anthropologists to prove the opposite. Fullerton writes:

i. "Genetic differences identified between different racial groups are then applied in an explanation of differences in disease risk or treatment response (in order to address the public health policy aims of reducing US ethnic health disparities by 2010). Ironically, this approach is defended by reference to anthropological studies of human genetic variation, **many of which have previously been interpreted as providing support *against* the existence of discrete biological races"** (http://www.personal.psu.edu/faculty/s/m/smf15/BtS_readings_page.htm).

ii. According to Fullerton, "The dilemma of taking account of genetic variation at the population level, without investing genetic differences with unmerited explanatory power, has provoked active and on-going debate in the human genetics community, as well as in US society more generally" (http://www.personal.psu.edu/faculty/s/m/smf15/BtS_readings_page.htm).

c. Racial disparities:

i. At present there are significant disparities regarding race and conviction rates of certain crimes. There is much contention as to the rationale behind these trends. Are certain racial groups simply committing more crimes – or are these crimes more vigorously prosecuted when the perpetrators are of minority descent? How do social, economic and cultural considerations factor into the

interactions between the perpetrator, the police and the prosecutors? Regardless of how we answer these questions, and whether any of these claims are able to rise to Equal Protection status, the fact remains that there are racial inequities within the criminal justice system, and "[t]here can be no doubt that any database of DNA profiles will be dramatically skewed by race if the sampling and typing of DNA becomes a routine consequence of criminal conviction. Without seismic changes in Americans' behavior or in the criminal justice system, nearly 30% of black males, but less than 5% of white males will be imprisoned on a felony conviction at some point in their lives" (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 452). Kaye and Smith note that, "If legislation were to authorize DNA sampling for traffic offenses as well, then a majority of the entire population might eventually find its way into the database" – in which case, might it not be more effective to simply make the databank universal? Kaye and Smith conclude by stating that a population-wide database obviously could not abolish all the racial inequities within law enforcement (Id at 459). They write:

1. "[E]ven the most inclusive database will not cure the racial distortions that result from selectively enforcing drug laws against African Americans or from enforcing even-handedly drug laws that have a disparate impact on these citizens. But… [we should not] deny its power to mitigate what has become a crippling problem. It is simply more fair and more useful to include DNA identification profiles from all whites as well as from all other groups than it is to amass databases predominately consisting of the DNA profiles of African Americans and other minorities" (D. H. Kaye & Michael E. Smith, 2003 Wis. L. Rev. 413, 459).

Bibliography forthcoming