



DNA familial testing: Civil liberties and civil rights concerns

Adam Schwartz
Senior Staff Counsel
ACLU of Illinois

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Good morning. On behalf of the ACLU's 20,000 members and supporters from across Illinois, thank you for inviting us to participate in this forum.

I will begin by describing the ACLU's civil liberties and civil rights concerns about forensic DNA databases in general. Then I will address our additional concerns about DNA familial testing in particular. We oppose familial DNA testing. Nonetheless, I will suggest some safeguards that might address some of our concerns. Finally, I will address the role of DNA in exonerating the innocent.

I. GENERAL CONCERNS ABOUT DNA TESTING

The ACLU has three principal concerns about forensic DNA databases in general: invasion of medical privacy, invasion of bodily integrity, and racial disparate impact.

A. Invasion of medical privacy

Our DNA contains our genetic blueprint. A person's DNA can be used to make predictions about their physical and mental health. Thus, it might be used by employers, insurers, and others for invidious genetic discrimination – against both the individual who supplied the DNA, and also their immediate family members, who have similar DNA.

For this discussion, our DNA might be divided into two parts. Our genes create proteins, and thereby copy and transmit our genetic blueprint. Our non-coding DNA does not do so. The vast majority of our DNA is non-coding.

The FBI's Combined DNA Index System – or CODIS – uses a small subset of human DNA. Specifically, it uses 13 short tandem repeat – or STR – alleles.¹ These are non-coding DNA.²

It has been suggested that the DNA in the FBI's CODIS system is medically irrelevant, and can only be used for identification purposes.³ This is incorrect.

As scientific knowledge about DNA has rapidly advanced, scientists have concluded that various kinds of non-coding DNA – previously thought to be “junk DNA” – in fact are medically relevant.

- Some non-coding DNA helps regulate the way that genes copy the genetic blueprint. For example, a recent Stanford University study found that certain non-coding DNA affected nearby genes associated with schizophrenia, diabetes, and arthritis.⁴
- Some non-coding DNA disrupts the way that genes are supposed to work, thereby causing disease. For example, “transposons” are non-coding DNA that change location within a DNA sequence, sometimes disrupting genes.⁵
- Some non-coding DNA correlate with certain kinds of genes. While there may or may not be a causal relationship, the correlation alone can be used to make predictions about an individual's health.⁶

In fact, scientific studies already indicate that at least four of the thirteen STR alleles in the FBI's CODIS system are non-coding DNA that correlate with, and in some cases are predictive of, medically important genes.⁷

For example, non-coding TH01 is located near a gene for insulin. The length of TH01 can indicate whether a person has the risky or protective version of this gene. Persons with the risky version are a few percent more likely to have diabetes. According to one of the scientists who discovered this correlation: “This marker is weakly linked to a shift in your predisposition to diabetes and the police should not be collecting that type of information.”⁸

Scientists have found other genetic health problems associated with the FBI non-coding alleles known as D8S1179,⁹ D18S51,¹⁰ and D21S11.¹¹

Given the great speed at which scientific knowledge about DNA is growing, there is a substantial and inherent danger that genetic scientists in the not-so-distant future will find more links between the non-coding DNA in the FBI's CODIS system, and the genes that impact an individual's physical and mental health.

Moreover, before police put a person's genetic profile into a DNA database, they first seize that person's complete DNA sample. This is the entire genetic blueprint. Police often keep the full

sample. In Illinois, the statute authorizing the creation of a forensic DNA database does not require the destruction of the full sample.¹² Storing the full sample creates any even greater danger that DNA collected for identification purposes might in the future be used to make medical predictions about particular individuals.

It might be argued that current Illinois law does not allow our DNA database to be used for medical predictions about particular individuals.¹³ But these limits might be lifted in the future by simply amending the statute. Our country has a long history of government creating databases for one purpose, and then using those databases for another purpose. To cite just one example, the federal census database was used to round up and intern innocent Japanese Americans during World War II.¹⁴

Moreover, wrongful disclosure and misuse of sensitive government databases is not uncommon. In the words of the preamble to the federal Privacy Act: “the opportunities for an individual to secure employment, insurance, and credit, and his right to due process, and other legal protections are endangered by the misuse of certain information systems.”¹⁵ This danger is exemplified by the “Filegate” scandal, in which the Clinton White House improperly obtained the confidential FBI files of nearly 1,000 people, including such prominent Republicans as former Secretary of State James Baker.¹⁶

A vast and growing number of people are subject to this medical privacy concern. Many of the first DNA databases were limited just to persons convicted of the most serious violent crimes. Today, Illinois includes persons convicted of any felony, violent or not.¹⁷ The FBI’s database now contains 9 million people, including 400,000 in Illinois.¹⁸ Some DNA databases are currently expanding to include persons convicted of misdemeanors, arrestees, and undocumented immigrants. Other groups that might in the future be added to the database are applicants for government jobs, benefits, and licenses. There are even advocates, such as former New York Mayor Giuliani, of universal DNA testing, including of newborns.¹⁹

B. Invasion of the body

The ACLU’s second general concern about forensic DNA databases is the physical invasion of bodily integrity. To obtain DNA, the government typically places a buccal swab in a person’s mouth, without their permission. If the person resists, the government may use force. The government then takes a part of a person’s body away from them, though admittedly it is a small part. Notably, the Illinois Constitution’s guaranty of the right to privacy includes strong protection from compelled surrender and testing of a part of one’s own body, above and beyond the significant protections of the U.S. Constitution.²⁰

It might be argued that government can avoid this coercive physical invasion by surreptitiously collecting the DNA that a person inadvertently sheds as they go about their business in public. For example, DNA might be obtained from the saliva on a discarded soda can. Courts are beginning to grapple with the legal ramifications of this practice. The ACLU supports strict legal limits on this practice. Otherwise, government can secretly seize the DNA of everyone, because we all constantly shed our DNA in public, involuntarily and unknowingly.

C. Racial disparate impact

The ACLU's third general concern about forensic DNA databases is racial disparate impact. African Americans and Hispanics are arrested, prosecuted, and convicted – often wrongly – at a far higher rate than Caucasians. One of the many studies that demonstrate this ongoing problem was published two months ago by a legislative task force known as the Illinois Disproportionate Justice Impact Study Commission.²¹ As a result, DNA testing of arrested and convicted persons disparately impacts racial minorities.

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In sum, the ACLU has three concerns about all forensic DNA databases: medical privacy, bodily integrity, and racial disparate impact.

II. PARTICULAR CONCERNS ABOUT FAMILIAL DNA TESTING

The ACLU has several additional concerns about familial DNA testing in particular.

A. Mission creep

First, familial DNA testing is a form of mission creep. The original purpose of the forensic DNA databases was to link convicted felons to past and future crimes. Familial DNA testing serves a new purpose: linking the relatives of convicted felons to crimes. The result is a massive expansion of the effective reach of forensic DNA databases: from the 9 million people now in the FBI's DNA database,²² to the tens of millions of additional people who are their parents, siblings, and children.

Courts upheld compelled DNA testing of convicted persons largely on the basis of their diminished expectation of privacy.²³ But the family members of these offenders are presumably innocent, and have no such diminished expectation of privacy.

B. Arbitrary classification

Second, familial DNA searches arbitrarily create two classes of people. On the one hand, there are relatives of convicted felons, who can become criminal suspects as a result of familial DNA testing. On the other hand, there are people who are not related to convicted felons, who cannot become criminal suspects due to familial DNA testing. Classifying people based on whether they are immediately related to criminals is a step backwards towards eugenics and corruption of blood.

Notably, being subject to a criminal investigation is burdensome. Police might question friends, neighbors, and co-workers. The cloud of criminal suspicion can disrupt work and family relationships. Familial DNA testing imposes this burden on the relatives of convicted persons, but not others.

C. Racial disparate impact

Third, familial searches can yield even more racial disparate impact.

One study, looking solely to disparate incarceration rates, concluded that 17% of the African American population is related to a person in the DNA database, compared to 4% of the white population. In other words, an African American person is four times more likely than a white person to be the subject of a criminal investigation as a result of familial DNA testing.²⁴

Another study, looking solely to different birthrates, likewise concluded that Hispanics are far more likely than Caucasians to be subject to criminal investigations due to familial DNA testing.²⁵

D. Disruption of family relationships

Fourth, family relationships can be disrupted by the criminal investigations that follow DNA familial testing. In some families, one or more members are not aware of their biological relationships. One estimate among genetic counselors is that 5% of the men on birth certificates are not the biological fathers of their children.²⁶ This might be the result of adoption or adultery.

III. SAFEGUARDS FOR FAMILIAL DNA TESTING

In light of all of these concerns, the ACLU supports a ban on familial DNA testing.²⁷ Forensic DNA databases are growing by leaps and bounds, measured by the kinds of persons included, the number of persons included, and the database functions. Now is the time stop our gradual slide down the slippery slope towards compelled universal DNA testing. Notably, Maryland by statute has banned familial DNA testing.²⁸

The ACLU is aware that familial DNA testing may come to Illinois over our objections. Thus, we suggest the following safeguards, which might begin to address some of our civil liberties and civil rights concerns. Some but not all of these safeguards have been adopted by various law enforcement agencies, such as California Attorney General and the Colorado Bureau of Investigation.²⁹

A. Judicial review of strict limits

First, there should be no familial DNA testing absent a judicial warrant, based on three findings. The unidentified perpetrator has committed a major violent crime, meaning murder, rape, or a crime of similar severity. There is a substantial basis to believe that the unidentified perpetrator will commit another major violent crime. And all other investigative leads have been exhausted.

No doubt this is a high threshold. But any DNA familial testing should be the exception, and not the rule. This standard would have allowed the DNA familial testing in California last year that led to the arrest of the person accused of being the infamous “Grim Sleeper” serial killer.³⁰

Judicial review is a critical check and balance, given all the civil liberties and civil rights concerns. Courts will readily be able to decide whether the past crime is sufficiently major, whether the danger of further crime is sufficiently substantial, and whether other investigative leads have been sufficiently exhausted. Warrants for wiretaps and physical searches raise similar considerations. DNA familial testing should be rare, so judicial review will not be cumbersome.

B. No inclusion of arrested persons

Second, the forensic DNA databases used in familial testing should be limited to DNA collected from persons convicted of felonies. It should not be extended to DNA collected from persons merely arrested, for several reasons. Tens of thousands of innocent people are wrongfully arrested every year, and never charged or convicted. For this reason, Illinois prohibits employment discrimination on the basis of an arrest.³¹ Moreover, arrests are based on a single police officer's conclusion, often unchecked and unreviewed, that there is probable cause. This is fundamentally unlike convictions, which are based on a jury's finding of guilt beyond a reasonable doubt, after trial. Further, as previously noted, there is an unjustifiable racial disparity in who is arrested.

Most courts to reach the question so far have held that compelled DNA testing of arrestees violates the privacy guaranty of the U.S. Constitution.³² Again, the Privacy Clause of the Illinois Constitution provides even stronger protection from forced bodily testing.³³

Thus, the ACLU of Illinois repeatedly has opposed legislation that would compel DNA testing of arrestees. Further, the ACLUs of California filed a lawsuit challenging that state's recently enacted statute compelling DNA testing on arrest. That case is now pending on appeal.³⁴

C. Supervisory review

Third, there should be no application to a court for a warrant to perform DNA familial testing, absent the highest level of supervisory review. The state police lab would need sign-off from the state police director. If the state police lab is performing the test for another agency, the lab would also need sign-off from that agency's head. This supervisory review will diminish the dangers to civil rights and civil liberties. Also, familial DNA testing should be sufficiently rare that such supervisory review will not be cumbersome.³⁵

D. Confirming a partial match

Fourth, upon the discovery of a partial match between a person who left DNA at a crime-scene and a person listed in a forensic DNA database, there should be further genetic testing to confirm whether these two persons are actually relatives. This might be done, for example, with Y-STR testing. This confirmatory testing should occur before police start to identify relatives of the known offender.³⁶

E. Protecting the investigated relatives

Fifth, there should be protections for persons who are criminally investigated because they are closely related to a known offender who partially matches the crime-scene DNA:

- Their shed DNA should not be surreptitiously collected, and they should not be compelled to surrender their DNA for testing, absent a judicial warrant based on probable cause. Notably, the Privacy Clause of the Illinois Constitution requires probable cause for a grand jury to subpoena hair.³⁷ Such probable cause would not be supplied solely by the fact that they are closely related to a known offender who partially matches the crime-scene DNA. Other considerations include opportunity and proximity.³⁸
- If police obtain their DNA, it should immediately be tested. A criminal investigation should not hang over their heads because of the backlog at our state's DNA labs.³⁹
- If police obtain their DNA, and they are not ultimately convicted, then police should promptly destroy both their full DNA sample and their database profile.

F. Legislative authorization

Sixth, familial DNA testing should not be undertaken by law enforcement in Illinois without explicit authorization from the General Assembly. This law enforcement technique raises important civil rights and civil liberties issues that should be resolved only through an open democratic process.

G. Transparency

Seventh, the government should annually report to the public the number of DNA familial tests undertaken in Illinois. For each test, the government should identify the investigative agency, the basis for the test, and the results of the test. Such transparency is necessary to ensure accountability.

IV. DNA AND PROOF OF INNOCENCE

The last issue that I will address today is the use of DNA to defend the falsely accused, and to exonerate the wrongfully convicted. Protecting the innocent from criminal punishment is a civil liberties value of the highest order. We salute the extraordinary work of the Center on Wrongful Convictions.⁴⁰ We are mindful that DNA has freed more than 250 wrongfully convicted persons, including 17 serving time on death row.⁴¹

For the ACLU, there is a critical distinction between voluntary and coercive DNA testing.

The ACLU supports the right of the accused or the convicted to volunteer their own DNA for comparison to the crime-scene DNA. Illinois law allows a convicted person to petition the court for such a comparison.⁴² If there is a non-match, the convicted person is entitled to an evidentiary hearing to explore their claim of actual innocence.⁴³ Voluntary DNA testing of the

accused or the convicted, and comparison of their DNA to the crime-scene DNA, does not require any coercive testing of a third-party.

In some cases, a non-match might conclusively prove innocence – for example, if there was known to be a single perpetrator acting alone. In other circumstances, a non-match might not prove innocence. In some cases, a non-match should prove innocence, yet the accused is nonetheless convicted (as in the Juan Rivera case) or jailed for years awaiting trial (as in the Jerry Hobbs case).⁴⁴

In some cases when voluntary testing and a non-match fail to free the innocent, coercive DNA techniques might do so. The charges against Jerry Hobbs were dropped, following the identification of the actual perpetrator as a result of forced DNA testing of an arrestee in Virginia.⁴⁵ And wrongly convicted Darryl Hunt was set free, apparently as the result of the identification of the actual perpetrator through familial DNA testing.⁴⁶

Nonetheless, the ACLU believes that these coercive DNA techniques come at too high a price. If coercive testing of arrestees and familial testing are good because they sometimes exonerate the innocent, then universal DNA testing would be even better, because it would be even more effective at exonerating the innocent. We should not start down this slippery slope.

The best lesson from these wrongful conviction cases is that our criminal justice system is plagued by systematic problems, such as coerced confessions, and excessive reliance on jailhouse informants. More coerced DNA testing will not solve the problems that cause false convictions.

CONCLUSION

I'll conclude by quoting two of our nation's leading federal appellate court judges. One trends progressive, and the other trends conservative. Both dissented from a decision upholding compelled DNA testing of certain probationers.

In the words of Judge Reinhardt:

[The FBI's DNA database] has the ability to identify an increasing amount of information about each of its profiled subjects as our understanding of DNA continues to develop at lightning speed. . . . The DNA "fingerprint" entered into CODIS likely has the potential to reveal information about an individual's genetic defects, [and] predispositions to diseases [W]e all have reason to fear that the nightmarish worlds depicted in films such as *Minority Report* and *Gattaca* will become realities.⁴⁷

And in the words of Judge Kozinski: "The time to put the cork back in the brass bottle is now – before the genie escapes."⁴⁸

ENDNOTES

¹ See FBI, “Fact sheet: CODIS and the National DNA Index System”; FBI, “CODIS: NDIS statistics.”

² See, e.g., John Butler, “Genetics and genomics of core STR loci used in human identity testing,” *Journal of Forensic Science*, Vol. 51, No. 2 (3/06).

³ See, e.g., 73 Fed. Reg. 21083, 21084 (4/18/08) (U.S. Department of Justice proposed rules under the DNA Fingerprint Act of 2005 allowing DNA seizure upon arrest, stating that the 13 core loci in CODIS “amount to ‘genetic fingerprints’ that can be used to identify an individual uniquely, but do not disclose an individual’s traits, disorders, or dispositions”); D.H. Kaye, “Science fiction and shed DNA,” 101 Nw. U. L. Rev. Colloquy 62, 62-63 (2006) (“any claim that the DNA profiles currently used for identification constitute ‘predictive medical information’ is false”).

⁴ See Ewan Callaway, “‘Junk’ DNA gets credit for making us who we are,” *New Scientist* (3/19/10) (describing a study by researchers at Stanford University and the European Molecular Biology Laboratory, of the genomes of 10 people, finding that variance in non-coding DNA affects the activity of nearby genes, and may account for risk of diseases such as schizophrenia, diabetes, and arthritis). See also, e.g., Richard Ingraham, “Landmark study prompts DNA rethink,” *Discovery Channel* (6/14/07) (describing a study by a consortium of 35 scientific groups, closely examining 1% of the human genome, and finding that much non-coding DNA previously thought to be “junk” in fact has “an essential role on regulating” genes); Colin Nickerson, “DNA study challenges basic ideas in genetics; genome “junk” appears essential,” *Boston Globe* (6/14/07) (same); “Function found for junk DNA,” *L.A. Times* (6/5/04) (describing a study by researchers at Harvard Medical School, of the yeast genome, finding that certain non-coding DNA “regulates” certain genes); Justin Gillis, “‘Junk DNA’ contains essential information,” *Wash. Post* (12/4/02) (describing a study by researchers at the Whitehead Institute for Biomedical Research, comparing human and mouse genomes, and finding that much non-coding DNA previously thought to be “junk” in fact provides “instructions” to genes and is relevant to human health).

⁵ See, e.g., “More variations in human genome than expected: Surprisingly common transposons or ‘jumping genes’ are shown to cause disease,” *Science Daily* (6/25/10) (describing a study by researchers at the University of Maryland School of Medicine, of the genomes of 76 people, finding that “transposons are very active in lung cancer genomes” and “could possibly be causing cancer tumor progression”); Christian Biemont, “Junk DNA as an evolutionary force,” *Nature*, Vol. 443 (10/06) (a survey of studies finding that certain transposons cause diseases like cancer, diabetes, and tumors). See also Leslie Pray, “Transposons, or jumping genes: Not junk DNA?” *Nature Educn.* (2008) (a survey of studies finding that certain transposons play a salutary role in regulating genes).

⁶ See, e.g., David Concar, “Fingerprint fear,” *New Scientist* (5/2/01) (describing a study by researchers at the University of Leicester, finding that certain non-coding DNA is located near the insulin gene, that its length can indicate whether a person has the risky or protective version of that gene, and that a person with the risky version is a few percent more likely to have diabetes than a person without it). See also John Stead et al., “Influence of allele lineage on the role of the insulin minisatellite in susceptibility to type 1 diabetes,” *Human Molecular Genetics*, Vol. 9, No. 20, pp. 2929-35 (2000) (the underlying study).

⁷ These are the CODIS loci known D8S1179, D18S51, D21S11, and TH01. See FBI, “Fact sheet: CODIS and the National DNA Index System” (identifying all 13 loci).

⁸ See David Concar, “Fingerprint fear,” *New Scientist* (5/2/01), discussing John D.H. Stead et al., “Influence of allele lineage on the role of the insulin minisatellite in susceptibility to type 1 diabetes,” *Human Molecular Genetics*, Vol. 9, No. 20, pp. 2929-35 (2000).

⁹ It correlates with genes that can cause kidney disease, cardiovascular disease, and neural tube defects. See John Butler, “Genetics and genomics of core STR loci used in human identity testing,” *Journal of Forensic Science*, Vol. 51, No. 2 (3/06) (hereafter “Butler survey about core STR loci”), discussing N.V. Morgan et al., “A novel locus for Meckel-Gruber syndrome,” *Human Genetics*, 111:456-61 (2002), and C.S. Fox, “Genome-wide linkage analysis to urinary microalbuminuria in a community-based sample,” *Kidney Int.*, 67:70-74 (2005).

¹⁰ It correlates with a gene that can cause Edward’s syndrome. See Butler survey about core STR loci, discussing H.R. Yoon et al., “Rapid prenatal detection of down and Edwards syndromes by florescent polymerase chain reaction with STR markers,” *Yonsei Medical Journal*, 43:557-66 (2002).

¹¹ It correlates with a gene that can cause Down’s syndrome. See Butler survey about core STR loci, discussing B. Pertl et al., “Rapid molecular method for prenatal detection of Down’s syndrome,” *Lancet*, 343:1197-98 (1994).

¹² 730 ILCS 5/5-4-3. Most states do not require destruction of the full sample after entry of the partial profile. Seth Axelrad, “Survey of state DNA database statutes” (2005) (survey for the American Society of Law, Medicine, and Ethics), at http://www.aslme.org/dna_04/grid/guide.pdf. Cf. Wisconsin Statutes § 165.77(2)(a)(ii) (requiring destruction of DNA samples “after analysis has been completed and the applicable court proceedings have concluded”).

¹³ 730 ILCS 5/5-4-3(f) (listing authorized uses). See also *id.* at -3(f-5) (imposing a fine on persons who intentionally use the DNA “beyond the authorized uses”).

¹⁴ See, e.g., J.R. Minkel, “The U.S. Census Bureau gave up names of Japanese-Americans in WWII,” *Scientific American* (3/30/07).

¹⁵ Pub. L. 93-579, § 2(a)(3).

¹⁶ See, e.g., Neil A. Lewis, “Clinton Apologizes Over Use of FBI to Get GOP Files,” *N.Y. Times* (6/10/96); Neil A. Lewis, “White House Got More Files Than Disclosed,” *N.Y. Times* (6/26/96); *Alexander v. FBI*, 971 F. Supp. 603, 607 (D.D.C. 1997) (FBI Director Louis J. Freeh subsequently acknowledged that this was an “egregious violation of privacy”).

¹⁷ 730 ILCS 5/5-4-3(a).

¹⁸ FBI, “CODIS: NDIS statistics” (as of September 2010).

¹⁹ Bruce Lambert, “Giuliani backs DNA testing of newborns for identification,” *N.Y. Times* (12/17/98).

²⁰ See, e.g., *In re May 1991 Will County Grand Jury*, 152 Ill. 2d 381 (1992) (interpreting the Privacy Clause of Section Six of Article I of the Illinois Constitution).

²¹ See Report of the Illinois Disproportionate Justice Impact Study Commission (12/10).

²² FBI, “CODIS: NDIS statistics” (as of September 2010).

²³ See, e.g., *Green v. Berge*, 354 F.3d 675 (7th Cir. 2004) (Easterbrook, J., concurring).

²⁴ Henry Greely, “Family Ties: The use of DNA offender databases to catch offenders’ kin,” 34 J.L. Med & Ethics 248, 258-59 (2006).

²⁵ Daniel Grimm, Note, “The demographics of genetic surveillance: Familial DNA testing and the Hispanic community,” 107 Columbia L. Rev. 1164, 1177-85 (2007).

²⁶ Steve Olson, “Who’s your daddy?” *The Atlantic* (7/07).

²⁷ See also Erin Murphy, “Relative doubt: Familial searches of DNA databases,” 109 Mich. L. Rev. 291 (2010) (arguing against familial DNA testing).

²⁸ Md. Code, Public Safety, § 2-506(d).

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http://www.denverda.org/DNA_Documents/Familial_DNA/CBI%20DNA%20Familial%20Search%20Policy%20Oct%202009%20-%20Signed.pdf.

³⁰ The California and Colorado policies are less restrictive. They require exhaustion of other investigative leads, and a crime posing a “serious” or “critical” or “significant” risk to public safety. But these policies do not define these terms, they do not explicitly limit DNA familial testing to cases with a substantial risk of further crime, and they do not define the kinds of predicate crimes. See Office of the California Attorney General, *California’s familial DNA search program identifies suspected “grim sleeper” serial killer* (7/7/10) (“Familial DNA searches are done rarely They are only allowed in major violent crimes when there is a serious risk to public safety and all other investigative leads have been exhausted.”); California Department of Justice, *DNA partial match policy* (4/24/08) (limiting familial DNA searches to cases with “critical public safety implications” where “all investigative leads have been exhausted”); Colorado Bureau of Investigation, *DNA familial search policy* (10/22/09) at §§ 2(a) and 2(e) (limiting familial DNA testing to cases with “significant public safety concerns” where “other investigative leads have been exhausted”).

³¹ 775 ILCS 5/2-103.

³² *Friedman v. Boucher*, 580 F.3d 847 (9th Cir. 2009); *U.S. v. Mitchell*, 681 F. Supp. 2d 597 (W.D. Pa. 2009); *U.S. v. Purdy*, 205 WL 3465721 (D. Neb. 2005); *In re C.T.L.*, 722 N.W.2d 484 (Minn. App. Ct. 2006). But see *Anderson v. Commonwealth*, 650 S.E.2d 702 (Va. 2007). Notably, the European Court of Human Rights in 2008 ruled that Great Britain violated European privacy guarantees by seizing DNA from arrestees. See, e.g., http://news.bbc.co.uk/2/hi/uk_news/7764069.stm.

³³ *In re May 1991 Will County Grand Jury*, 152 Ill. 2d 381 (1992).

³⁴ *Haskell v. Brown*, No. 09-4779 (N.D. Cal.)

³⁵ Colorado requires such supervisory oversight. Colorado Bureau of Investigation, *DNA familial search policy* (10/22/09) at §§ 1 and 1(b).

³⁶ California and Colorado requires Y-STR confirmatory testing. Colorado Bureau of Investigation, *DNA familial search policy* (10/22/09) at §§ 3(c); California Department of Justice, *DNA partial match policy* (4/24/08) at §§ I(4) and II(7).

³⁷ *In re May 1991 Will County Grand Jury*, 152 Ill. 2d 381 (1992).

³⁸ To obtain a suspect's DNA sample, Colorado requires a "court order" based on "articulable evidence," and "familial DNA alone shall not be the sole basis." Colorado Bureau of Investigation, *DNA familial search policy* (10/22/09) at § 5(e).

³⁹ See, e.g., "Illinois rape-test backlog," *Chi. Trib.* (5/1/09).

⁴⁰ <http://www.law.northwestern.edu/wrongfulconvictions/>.

⁴¹ http://www.innocenceproject.org/Content/Facts_on_PostConviction_DNA_Exonerations.php.

⁴² 725 ILCS 5/116-3.

⁴³ *People v. Dodds*, 801 N.E.2d 63, 71-72 (Ill. App. Ct. 1st Dist. 2003) (Burke, J.) ("We hold that once DNA testing is ordered and the results are favorable, at least in part, to a defendant, such as where a non-match is revealed, an evidentiary hearing is necessary to determine the legal significance of the results because such results would make a substantial showing of a constitutional violation. In other words, the trial court is obligated to conduct an evidentiary hearing to determine whether the DNA results would or would not likely change the results upon a retrial.").

⁴⁴ http://articles.chicagotribune.com/2010-07-12/news/ct-met-rivera-appeal-brief-20100712_1_dna-evidence-wrongful-convictions-girl-s-murder (Rivera was convicted despite a non-match); <http://archive.chicagobreakingnews.com/2010/12/ex-murder-suspect-they-didnt-care-who-they-had.html> (Hobbs spent years awaiting trial despite a non-match).

⁴⁵ http://articles.chicagotribune.com/2010-08-03/news/ct-met-hobbs-dna-test-on-arrest-20100803_1_hobbs-dna-hobbs-case-dna-samples/2.

⁴⁶ <http://www.dnaforensics.com/FamilialSearches.aspx#hunt>.

⁴⁷ *United States v. Kincade*, 379 F.3d 813, 849-51 (9th Cir. 2004) (en banc) (Reinhardt, J., dissenting, joined by Pregerson, Kozinski, and Wardlow, JJ.) (citations and internal quotations omitted).

⁴⁸ *Id.* at 875.