

**GENETICS AND PUBLIC POLICY CENTER
AT JOHNS HOPKINS UNIVERSITY**

GenePOPS

“A PERFECT MATCH? DNA IN LAW ENFORCEMENT”

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(edited for clarity)

KATHY HUDSON: Good afternoon. And welcome to today's Genetics Perspectives on Policy Seminar series. My name is Kathy Hudson and I am the director of the Genetics and Public Policy Center at Johns Hopkins University. The mission of the Genetics and Public Policy Center is to help policymakers and the public better understand and respond to the challenges and opportunities raised by advances in human genetics. We host this GenePOPS – Genetics Perspectives on Policy Seminar series – to explore a broad range of issues and areas that are touched by advances in human genetics. And we're delighted today to have this seminar, "A Perfect Match: DNA and Law Enforcement."

We have four experts joining us today. And they'll address a number of questions about whether we have the infrastructure to rapidly and accurately evaluate DNA evidence, and talk about the impact of DNA forensics, both in getting the bad guys off the street, and also in making sure that those wrongly incarcerated are freed in a timely way. We're going to talk also about the real or perceived threats to civil liberties and privacy interests of new DNA forensic technology.

So before I introduce our speakers, I'd like to ask everybody to please turn off anything that buzzes or beeps or rings. And also, to let you know that we are videotaping this seminar for broadcast later on our Web site. And we're pleased that CSPAN is also broadcasting this live as well. So please don't bump into the cameras.

So our four panelists will each speak for seven to 10 minutes, and then we'll open it up for your comments and questions. And I'll introduce all four of the speakers, and then they'll go in the order in which I introduced them. The first is Gregg LaBerge, who is the scientific director and bureau commander of the Denver Police Department Crime Laboratory. Before he was promoted to be director and bureau commander, he was responsible for the operations of forensic biology in the DNA section of the laboratory and helped build one of the most successful DNA laboratories in the country. He has taught at the National Forensic Science Technology Center and around the world. And he is currently a student himself, earning his Ph.D. in human genetics at the University of Colorado Health Sciences Center.

Our second speaker is Mitch Morrissey, who is the district attorney from Denver. So we have two from Denver and two from New York with us today. He has worked for more than two decades in the D.A. office there, and prosecuted the first trial involving DNA evidence in Denver. He is a graduate of the University of Denver College of Law, and he'll talk about some of the legal issues surrounding the use of DNA databases.

Our third speaker is Tania Simoncelli. She is the science director in the technology and liberty program for the ACLU. She speaks and publishes on a range of

issues, and has published most recently a number of articles looking specifically at how DNA forensic databases may challenge some of our fundamental liberties. She has worked as a researcher and an analyst for a number of non-profit environmental and social justice organizations, including the Environmental Defense Fund at the Center for Genetics and Society. And she earned her M.S. at the University of California, Berkeley, and she'll talk about privacy issues today.

And then last is Steve Saloom. He is the director of the policy department at the Innocence Project. He formerly served as the first director of the National Association of Criminal Defense Lawyers State Legislative Network, and he earned his J.D. at the University of Connecticut Law School. He'll speak today about the use of DNA in exonerating those incorrectly convicted and incarcerated.

So with that, we'll get started with Gregg.

GREGGORY LABERGE: Good afternoon. My name is Gregg Laberge. Thank you very much for the invitation and the introduction. I'll give a brief talk on forensic genetics of DNA database expansion, and specifically the CODIS database as it sits today, and where we think it will go in the future.

The CODIS database is made up 13 markers in your human genome that are called short tandem repeat markers, or STRs. They are on almost every chromosome in the genome, with the exception of chromosome five that houses two of them, but they're far enough apart that they're not linked. So when forensic scientists run a sample – a forensic sample – from a crime scene, they're running it for 13 of these markers, including a gender marker called amelogenin. That together forms a DNA profile, and that is what is loaded into the CODIS database. It's called the core 13 CODIS loci. So we're only looking at 13 markers, but together as a total, they have a discriminating power that is individualizing in its capacity to pick people.

When they get results from the equipment they work on, this is what a DNA profile looks like to the forensic scientist when they're interpreting it. This would be from a single source, female – you only see the X chromosome here to the left – and then each of these are heterozygous, or two different types. So this would be DNA coming from the mother and then from the father. So you're getting two different markers from each parent. Up here, on the upper left is an example of a homozygote, or someone who got a 17 marker, identical from each parent. So those are the two types of things you see in a profile.

Taken together, all of this information is constituting a DNA profile. The bottom is a ladder or an internal standard that allows us to assign a name to each one of those markers, which is called an allele. The CODIS system is similar to the automated fingerprint identification system, which has been used for years in the United States. And this system compares fingerprints regionally. Right now, it's not fully integrated nationally. It has regional databases.

CODIS functions where each local laboratory develops profiles from forensic samples or from convicted offenders, depending on the mandate of the state, and they upload those DNA profiles to a state laboratory. So there are 50 state laboratories, and there are a large number of local laboratories that contribute to the state. Each state then loads DNA profiles to the national system called NDIS. CODIS started in 1990 as a pilot project with only 14 states participating, and in 1994, the DNA Identification Act allowed the FBI to establish a national databank. And that databank went into effect in October of 1998.

The main indices – the two indexes that are the most important to forensic laboratories – are the offender index, which contains the DNA profiles from convicted offenders – and each state has laws that govern which type of offenders based on which types of offenses go into those state databases, which are then uploaded to the national system. As of July, there are 4.7 million convicted offender profiles. The second is the forensic index, which houses all of the forensic science samples that are run by crime labs and loaded that makes it to the national system that qualify. Currently, there's about 183,000 profiles in that.

As a comparison to the U.K., it has 215,000 forensic profiles, and a total of 3.4 million profiles. Now, that sounds smaller than the U.S. database, but as a percentage, it houses 5.2 percent of its total population versus half a percent for the United States. This is a slide, from the CODIS Web site, which shows the number of investigations aided in each state in the United States. And typically, the larger the database, the more investigations are aided.

We talk in the near term about how this database can be expanded. And what's currently happening is most states are trying to move to an all-felons database where, if you're convicted of a certain violent felony, or all felonies, you are included in the database as a convicted offender. There are states also looking at all arrestees legislation, and I'll have slides that follow on that. There is some local legislation that is changing, where misdemeanors of a sexual type in some cases are included in the local database. But those would not necessarily go to the state or the national system, depending on the state law.

This is an example taken from Washington state figures, the difference between what we call small all felons and true all felons legislation. If you just look at felons serving time in prison, that would be 5,600 annually in the state of Washington. If you expand the database to include felons serving time in jail in Washington state, it's about 15,000. Adding juveniles adds another almost 8,000; people on community corrections, which are typically in your community and potentially offending, 840; retroactive people from prison, another 6,100; retroactive jail, close to 1,800 – a little bit over 1,800; probation and parole, 10,300. And so this slide really shows the impact of legislation, which drives the database. So in true all felons legislation, you'd have 42,000 in the first year, versus 5,600 annually.

All felon states in 1999 – there were six states. This is taken from Smith, Allen, Wayne. Six states had all felons; today, it's 45 states. You see the progression in the database. Arrestee legislation is just starting – 2006 and 2007, 11 states introduced it; in 2007, 26 states. So that's moving it. Now, that's introduced – it does not mean it passed. Arrestee legislation is now not passing in many states. There are other states that are enacting legislation in 2007. But that's only four.

This database expansion through all felons, all arrestees has increased the number of investigations, aided it exponentially. And this graph shows from 2001 to 2007 a dramatic increase in investigations aided. And a New York state study showed that with existing legislation in New York that included all sex offenders, when that legislation was changed to all arrestees, the number of hits went up exponentially. And the important thing to note is that the sex offenses were the most impactful. Most of the cases that were solved by database expansion were sex offenses. And the second was burglary.

The greatest challenge for U.S. law enforcement – and my lab is no exception – is getting the backlog of cases into the database. We've been very good nationally at getting convicted offenders in, but we still struggle getting case samples in to help us solve those cases. In the U.K. right now, it's all people of any recordable offense go into the national database as part of their processing of prisoners. And we envision, further out three to five years, using the CODIS database potentially for allele DNA searches.

There are plans for a mitochondrial database, the use of Y-STRs that come only from the male, and tracking that. There has been talk about an immigration DNA database. When I moved here from Canada, I gave fingerprints and that's included in a national fingerprint database. There's talk now of using a DNA database for the same reason. And any local legislation, as I've mentioned.

If you look out five to 10 years, there is some talk about how when you load a DNA profile into CODIS, it's searched once a week at your state or your national level. There are plans to have it so that when you load your sample in, to have that immediately searched nationwide. So there's no waiting to it; you're not waiting six days from the time that you put the sample in. So that would be real time and immediate search capabilities.

The other thing that could be done in the future is relating Y-STR and mitochondrial DNA accurately to names and geography. That may be about 10 years ahead. And then, potentially all military personnel are now giving DNA samples or blood samples, but the DNA is not being run. So there are plans potentially for using that.

The other thing would be DNA databases based on privilege. For example, all of our police officers in Denver have to give fingerprints, which is standard for most police agencies. And we're considering making providing a DNA sample a condition of employment. Just in case they contaminate a crime scene, we need to know that so we're not uploading the profile thinking we have evidence. And then there is the argument

about, should the DNA database include all people in a population. And Tony Blair, before he left office, made the claim that he felt that that's the way the U.K. database, or the NDAD, in the U.K. should go.

If you look further out, say 15 years, we can envision – and this is only a vision; this is not saying that this is being worked on by federal agencies or even my agency – but just looking ahead from what I do for a living, DNA, fingerprints, photos, vehicle registrations, and all other types of data could be linked together in relational databases, so that if I have a DNA profile, I can immediately know your driving record, your military record, a financial profile. Those are looking ahead as databases are merged.

The other thing that we could do is look for rarer markers. So if we have a rare marker come up in a DNA profile, can we relate that to geography in the U.S. where families may be having offspring in a certain area of the U.S. and be able to focus our investigation in a certain region?

The other thing, I think, that is quite far out, is any medical condition databases. If we're looking for someone who needs, say, for example, certain kinds of medication that is specific to a disorder, if we trace that via a pharmacy, we may be able to look for that. Roadside DNA profiling at every police stop, and again, universal databases. That's what I have: A very quick tour through DNA.

MITCHELL MORRISSEY: I'm Mitch Morrissey. I'm the elected district attorney of Denver. I think there was some mention that I've been involved in doing DNA work almost 20 years now. DNA was first used in forensics in about 1987 in the U.K. We first used it in Colorado – in fact, I see a friend of mine that was on that case – back in 1989. So we've been involved in this for quite some time. We actually got our own crime lab that included DNA work in the mid-'90s. And some of the work we've been doing is trying to expand the use of the database, and have been confronted in our cold case project with some legal issues around using the database in a way that we'd like to.

Any time that you're DNA databasing, of course, you've got to take in the constitutional considerations. The Fourth Amendment controls the kind of search that we're talking about. And of course, the touchstone of the Fourth Amendment is that you're doing it reasonably.

So if you're collecting, analyzing, preserving, and storing DNA evidence, the Fourth Amendment is the place you look to determine – is what you're doing reasonable and constitutional? And so every state in the union now has some form of DNA statute. Gregg alluded to the difference between a convicted felon statute – some states require that [those included in the database] be convicted felons of only certain offenses, very violent offenses; some have evolved to include all convicted felons. In Colorado, just recently we passed a statute that allows us to take DNA from all convicted felons. There was a time where you had to go to the penitentiary in our state before they would take

your DNA. Now, any convicted felon, no matter what the sentence as, has to give their DNA.

This is just an example of a couple of the database statutes in the United States. These are federal statutes. And again, in 2000, there was a federal statute passed. That statute described the type of federal offenses where you could take DNA. In 2004 that was then broadened and expanded to include all convicted felons. And that information, of course, has to be expunged if the person is acquitted or the case is reversed or dismissed.

And like I said, every state has these types of statutes. And most of these statutes have been challenged, either in federal court or in state court. And the majority – these two statutes, when they've been challenged, they have been upheld by the federal districts and the federal courts of appeals throughout the land. The disclosure in the 2004 act, there are limited purposes that you can disclose the DNA profiles involved. That would be to law enforcement agencies, to judicial proceedings, to defense attorneys that need it to work on the defense of the defendant.

And then, there is some aspect – and most statutes have this – where they allow research. But in the situation in the 2004 act, for research you have to take out all identifying information. So if they're going to turn over DNA or DNA profiles for any kind of research work, there is no way to identify the individuals that are in the database.

In most statutes – and this is just an example – there are criminal penalties or sanctions for the improper disclosure of DNA or DNA profiles. In the federal statute, you can get up to a \$250,000 fine. And then, there is one-year imprisonment, and that's a potential for every single profile disclosed. In any statute that you create where you create a database in statute, there should be these kind of limitations put in, so there are sanctions for improper disclosure of those samples.

Now, Gregg talked about how there's been a move in some states to go to arrestees. And the reason that the courts uphold these statutes is that arrestees have a diminished privacy right. So when I talk about the tests that are applied here to databases, it doesn't necessarily apply to a citizen who hasn't come in contact with law enforcement, either as an arrestee or as a convicted felon. What they find is that an arrestee has a reduced or diminished privacy rights. Therefore, they look at what it is that the state is trying to do. What is the intrusion that they're talking about?

What we're talking about, in Colorado at least, we don't take blood samples. What we take is a cheek cell swab. So we swab the cheek cells and we take that. And the courts have ruled that that is a minimal intrusion into somebody's privacy. And then, is there a legitimate state interest involved in collecting this DNA for the purpose of databasing? And the state interest is usually to identify somebody that's involved in a crime, in future crimes and past crimes. Much like the booking process, when you have somebody that gets arrested for any kind of an offense, you want to know who it is that you have; you want to know what their criminal history is; and then DNA is also real

good for knowing what future crimes they are involved in, if you have them placed into a database. And again, the rules that I am talking about here as far as databasing goes apply to people that have come in contact with law enforcement. Of course, the analysis under the Fourth Amendment would be different if we were talking about people just in the general population.

The last thing that I wanted to touch on briefly is the idea of familial DNA searches and partial match investigations. Because of our cold case work in Denver, we were kind of thrust into this partial match investigation situation in that we had three partial matches in our cold case project. And in order to run those leads down, we had to engage in a conversation with the powers that be in the United States as far as the database is concerned.

What we found in our partial match investigation is that information could not be shared with us by the states that were involved. We were able to work for months and get the national policy changed. And then, we got the information that we needed from two of the three states and we were able to run those leads down.

As far as familial DNA searching, that's done in the U.K. That's done in England. They have had great success with about 140 major investigations of sexual predators or murderers involved in leaving their DNA. What they're able to do, they recognize the fact that you can identify or you can at least get leads towards relatives that may be in your database and that was one thing that we're asking and moving toward with our work in Denver. That's all I have. I'd be willing to answer any of your questions afterwards. Thanks.

TANIA SIMONCELLI: I want to thank Kathy Hudson and the staff at the Genetics and Public Policy Center for holding this important seminar today.

There's no question here, and I think every person here on this panel, I would bet, would agree that DNA has been a very highly useful tool, both for convicting the guilty and establishing innocence. That's not what is on the table here. It's worth noting, actually, that neither of those purposes even requires a database at all.

Now, a database for sure, as it has been established can help those purposes, but actually to use DNA for investigative purposes, you don't even actually need a database. So in the last 20 years, as we've seen, since DNA was introduced into the criminal justice system, we've seen an extraordinary explosion in the power of police to collect and retain our DNA. As we heard, starting in the early '90s, the federal government and some states began collecting and permanently storing DNA from violent sex offenders.

Since then, we've seen these databanks expand again and again and again, first to anyone convicted of any violent crime, then to all felons, and in many states to juveniles and to those convicted of misdemeanors. For sure, we have been on an incredible slippery slope as the databanks have expanded to evermore categories of convicted

individuals and from what Gregg just said, I'm learning that we're in for an even bigger slippery slope down the line.

But what I want to talk about is, I think, something even fundamentally more problematic, which is that in the last few years we have entered into a whole new era of forensic DNA, one where scores of innocent people are getting roped into the criminal justice system by way of their DNA, and there are basically four main ways that this is happening.

The primary way is through the expansion of the DNA databanks to arrestees that we just heard about. Ten states and the federal government, through the Violence Against Women Act Reauthorization Bill that was approved last year, have expanded their DNA databanks beyond convicted persons to include people who are merely arrested.

Secondly, familial searching, a technique you just heard about, where relatives of individuals in the database become targets for investigation on the basis of partial DNA matches that occur between crime scene evidence and one or more individuals who are in the database.

Thirdly, we're seeing an increasing use of DNA dragnets or DNA sweeps, where police round up large groups or numbers of people who live in the vicinity of a crime where they don't otherwise have a suspect, and ask them to voluntarily provide their DNA. And there have been a lot of problems around this – people trying to get their DNA back when they've been excluded from a crime and the police insisting on holding on to it.

And finally, we're seeing a lot more surreptitious DNA sampling, where police obtain a DNA sample from an individual without their knowledge or consent by following them around, picking up a coffee cup that they leave behind, or a cigarette butt, or in some cases even creating a ruse, like in the case with John Athen in the state of Washington, where police enticed him to send back a letter and they actually pulled a DNA sample off the back of the envelope where he had licked the flap.

So what these practices all have in common -- expansion of the databanks for arrestees, familial searching, DNA dragnets, and surreptitious DNA collection -- is that they all involve targeting innocent people. People who have never been convicted of a crime and in some cases never even suspected of a crime. So why should we be concerned?

Well, I'm going to try to lay out three primary areas of concern. First, the obvious privacy problems here. Let's make it clear: When someone is on the database, it's not just those 13 STRs that Gregg showed you that are being retained. When someone is on the database, their biological sample that is in the form of their saliva sample or their blood sample is also being permanently retained by the government. And there's a lot of information in that biological sample. Unlike a fingerprint, DNA can

reveal all sorts of information about whether we have or are predisposed to now more than thousand different genetic conditions, which the Center has talked about; who our parents are, or aren't; our ancestry; and even some complex and potentially stigmatizing behavioral traits, such as aggression and alcoholism.

So long as the biological samples are retained, there is no guarantee that these samples will not be accessed for other purposes. And we just heard from Gregg that there's interest on the part of law enforcement to go ahead and access those samples for Y-STR sampling, for mitochondrial DNA sampling, for maybe doing some kind of medical database. So, the other thing is, when you're on the database, you're also being subjected to life-long genetic surveillance. Your DNA profile is routinely being compared. In a sense, you're an automatic suspect for any future crime. And as Mitch pointed out, the courts have generally agreed that this is acceptable for people who have been convicted of crimes, on the notion that those individuals have a lesser expectation of privacy.

Now, whether you agree or not with that line of reasoning – and a lot of people don't agree with it – it clearly doesn't apply to innocent people, whether they're arrestees or family members of people on the database. And this is why, in fact, the Minnesota Court of Appeals – which, to my knowledge, is the only court that has so far heard a case on arrestee tests on expansion of the database for arrestees – actually struck down the Minnesota statute, and also why the governor of South Carolina, a few months ago, vetoed similar legislation.

But privacy is not the only concern that I want to talk about here. A couple of months ago, a professor by the name of Harry Levine, who's a sociologist at Queens College, presented some remarkable data during his testimony before the New York State Assembly. For the past two years, Professor Levine has been looking at arrestee rates, low-level marijuana possession arrest rates in New York City. And it turns out, for the last 10 years about 100 people get arrested every single day for low-level marijuana possession. But it also turns out that the marijuana arrest rates for blacks to whites are eight to one in New York City.

Now, you might think that's okay because maybe blacks use, you know, eight to one times more likely to use marijuana than whites. But it actually turns out that U.S. government statistics have consistently shown that for all categories of age ranges, marijuana use among blacks is significantly lower than for whites, sometimes about half.

So let's be very clear about what we're doing here. If we expand our databanks to arrestees, we are essentially creating a massive government database and databank comprised mostly of people of color. And that unfounded racial bias is going to be further exacerbated by the technique of familial searching.

And finally, expanding DNA collections to innocent people is not likely to make us safer. At best, I think we're looking at a situation of diminishing returns as we broaden the scope of testing to people less and less likely to commit crimes where DNA

evidence is even available. The crimes for which DNA evidence is available tend to be crimes where biology is left, for example in rapes and murders.

But furthermore, we could actually undermine criminal justice. While DNA in theory is more reliable than other investigative techniques, it's not infallible and mistakes in fact can occur and have occurred in DNA collection and analysis. So, two quick examples: a few years ago, a man by the name of Josiah Sutton was released from prison after serving five years for a rape he could not have committed. And it turned out that the lab analyst at the Houston Crime Lab had misinterpreted the DNA analysis and reported that his DNA was included in the profile of a semen sample found at the crime scene when it actually was not.

And this case of course blew open a two-year investigation of the Houston Crime Lab that ultimately resulted in the closing of the lab and has called into question more than 600 cases, and actually has resulted in releasing another man, George Rodriguez, who has served 17 years in prison. You may have read about that in the *New York Times* this morning.

It would be nice to think that Houston is the exception here, but in fact, more than a dozen crime labs have been investigated for widespread problems over the last few years. So it would be absolutely irresponsible to further expand our databases given those sorts of problems. Heedless expansions of our databanks will only increase the error rates, the rates of these types of errors, as lab technicians are burdened with insurmountable backlogs. And it would be absolutely tragic if in our enthusiasm for DNA, we ended up creating a whole new round of wrongful convictions, the very sorts of miscarriages of justice that we're aiming to set right with DNA.

We all want to solve crime, but permanently retaining DNA from innocent people shifts the purpose and function of this useful tool from one of investigation to one of surveillance. I think if we don't take care now to draw some very clear boundaries, we're going to end up with a massive surveillance database, losing any and all privacy in our DNA and undermining the public's trust in DNA and law enforcement. And I think, just to sum up, I think we should, in the very least, insist on the following protections.

First, law enforcement should only be able to collect DNA from a person where either they have a warrant supported by probable cause, or they have obtained truly informed voluntary consent, which means no surreptitious sampling; it means no DNA dragnets where the people aren't told the fate of their samples. Secondly, uploading a profile should be limited, in the very least, to those convicted. Period. No arrestees. People who are arrested are innocent in the eyes of the law. Thirdly, the biology of uploaded offenders should be destroyed to make sure that that scenario that you heard from Gregg is not – that's not how we want to go. We don't want to see further investigation and further mining of our DNA. Thank you.

STEPHEN SALOOM: Good afternoon, my name is Stephen Saloom. I'm the policy director at the Innocence Project. And you've probably heard of our work. If you

haven't, we're the ones who use – we do a lot of things, but – we use DNA to focus on the convictions in the United States, the 207 convictions proven wrongful by post-conviction DNA testing.

These DNA exonerations have come from us and from others, but what we do at the Innocence Project, and particularly in the policy department, is we look at each DNA exoneration not only as the tragedy it represents in this person's life, but also as an opportunity, an opportunity to learn how we can prevent future wrongful convictions, and not just future wrongful convictions in the serious crimes for which DNA is probative, but in all sorts of crimes across the criminal justice system.

DNA enables this because it's only with DNA that we have the certainty that we have a wrongful conviction. Exonerations have happened throughout really our U.S. history, but they've seemed isolated, they've been contested afterward, but with DNA we know we got it wrong, so we can go back and figure out how that happened and learn from that.

And what does that have to do with DNA databases? I will tell you that the Innocence Project supports – we absolutely recognize the value of DNA as an identification tool; it's incredible. Also, because of our close work with DNA in the criminal justice system, we know that there are only a limited number of crimes for which DNA is probative. They tend to be the crimes in which the perpetrator will have left some biological material, some significant or relatively significant biological material. It tends to be more serious felonies: sexual assaults, violent assaults, murders, and the like, although DNA is being used to solve some other forms of crime as well.

But the point there is that there are only a limited number of crimes for which DNA is useful, is probative enough to show innocence or guilt. And I say all that because the recent debates, I'll say over the past three, five years about DNA databases – at times, you get a sense that this is some kind of silver bullet that can solve all crimes. And while DNA can solve certain very serious crimes, there are a lot of crimes for which it's not of any use; it's not probative at all. And this should inform our approach to the DNA database debate. DNA databases are very useful, particularly when you take and database the DNA of those convicted of having committed the types of crimes for which DNA is probative.

That's why the Innocence Project supports felon databases. Databases are not useful, however, for the other, let's say 90 percent of crimes committed in this country. They also don't help us figure out the lessons learned from the DNA exonerations. You have to take those as a whole, and when you try to go back and look, say, what did we learn from the wrongful convictions proven by DNA, we've learned a number of things. One of those things is that DNA databases can be helpful in solving crimes, but there are a number of other important lessons that we've learned from DNA exonerations. And I want to talk about both of these things today.

The ultimate question is, how do we use DNA to its greatest potential for justice? And the answer, I think, comes in two parts. Number one, how do we most effectively use DNA in the criminal justice system? And number two, how do we incorporate the lessons learned from DNA exonerations to increase the accuracy of criminal investigations, to strengthen criminal prosecutions, and to protect the innocent.

First, I want to talk about how we most effectively use DNA. Databases are useful, but when we focus on simply expanding databases, we – I've found that in states across the country, and really nationally, we've missed a large part of the point. When you have a certain key population, which many states now have, that is, of the convicted felons in your databases, there are diminishing returns when you expand further and further.

The better focus, the better way to solve crimes, is to process crime scene DNA more promptly. If you're not going to test the crime scene DNA for a year because you're backlogged trying to collect from other convicted offenders or arrestees, your priorities are in the wrong place. You are really foregoing an opportunity to better solve crimes. You look to the U.K., and they have a crime scene DNA turnaround time of roughly a week. And that, experts will tell you, is the most efficient way to use DNA databases to solve crime. You need to properly collect it from the crime scenes, promptly create the profiles, and you also need to preserve and catalogue your crime scene evidence.

Preservation of evidence is a long-standing practice, fairly scattershot throughout the country, but it's generally been done in preparation for appeals and the like. But with DNA, preservation of evidence has become a whole – there's a new paradigm for preserving evidence. And what we have to do around the country is catch up to that paradigm, because not only can preserved DNA enable us to go back and see if the person convicted of a crime was actually innocent or guilty of that crime they've been convicted of, but, at least as importantly preserved biological evidence can help law enforcement solve serial crimes within a jurisdiction or across jurisdictions. Preserved DNA can help us solve the old, cold cases that otherwise have stymied law enforcement throughout the country.

You'll see that the federal government is starting to look at this and considering further grant programs for this. The problem is that most states are not ready to properly preserve their biological DNA evidence. And even when they have preserved it, often we find at the Innocence Project, they can't find the DNA evidence that's been saved. So it's critically important that instead of simply focusing on DNA databases, we need to think about preserving the evidence in a manner where we can find it, where law enforcement can find it when they need to solve a cold case, so that a petitioner with a credible claim of innocence can access that evidence to prove his innocence.

Another serious concern is, what are we doing when we get a DNA database hit? There was an article in last year's *Journal of Law, the American Society of Law, Medicine, and Ethics*. Dr. Frederick Bieber had written it. He serves on the advisory

boards of the Armed Forces DNA Identification Laboratory of the U.S. Department of Defense, the Department of Forensic Science of the Commonwealth of Virginia, and the National DNA Database of Canada. He is a database proponent. But I want to quote from this article for you.

He says, “Despite the benefits, in hundreds of cases, DNA samples are never collected and administrative and laboratory logjams delay prompt database searches. Furthermore, hundreds of DNA database matches languish without any follow-up by law enforcement or prosecutors. These prevent or delay DNA matches and therefore can leave the public in grave risk of potential harm from recidivistic offenders who otherwise could have been apprehended and convicted if the process functioned more effectively.

“Data compilations on meaningful metrics of success are critically lacking. This leaves legislators and policy analysts with inadequate data on which to judge the overall effectiveness of DNA databanking programs. To improve effectiveness of DNA databanks in meeting the stated goals of enhancing public safety, data collection and research are urgently needed. Tracking database hits and prioritizing case management must become a top priority.”

More succinctly put, by California prosecutor Rock Harmon, DNA expert – he says, “For years we’ve kept pretending that if we just dump money into the crime labs, all the problems will be solved. What’s happening right now isn’t that surprising. The labs are producing an untold number of DNA hits and they’re piling up behind everyone.”

And this gets to my next point. We need to be thinking about how we’re using the DNA in the criminal justice system, how we’re using the databases. It’s not enough just to collect them and talk about hits. What we have to do is oversee them, make sure that we’re using the DNA that we have as effectively as possible.

I read this news every day around the country. There are backlogs around the country that are impeding the labs’ and the prosecutors’ and the police’s ability to solve the cases when the information is sitting right there. Partially it’s because, politically, it sounds great to rack up the hits and to tell everyone we’re going to collect the DNA from offenders as if, you know, it’s some magic solution to crime problems.

What we have to do is think about how we’re using these databases to the greatest effect to protect the public, to solve important crimes, and to also make this information available to those who might be able to prove their innocence through DNA or through a comparison of crime scene DNA to a database when in fact they’re claiming innocence.

I want to touch on a couple of things. I went longer than I thought. I see my minutes are running out. There are a lot of privacy concerns that Tania talked about earlier. A DNA profile is made up, as Gregg told you, from 13 loci, a very minute number, a minute amount of information in your DNA. If you kept the DNA profile and destroyed the biology related to it, you wouldn’t have to have an elaborate set of penalties for misuse; you wouldn’t have to worry about people stealing the government

information, which we've heard about happening time and time again in the past year or two with laptops being stolen or Pentagon systems being hacked into. You would simply prevent that from happening.

In the database system as well, that Gregg was explaining, the CODIS system, there's a local, state, and federal database system. At the local level, the Innocence Project has documented, in New York for example, that they're creating their own local databases that consist of the DNA of all sorts of people who were not convicted of any crimes, who in some cases were not arrested of crimes. In some cases, these local databases have the DNA of crime victims and that is being run in searches on a regular basis. If you have an appropriate oversight board, you can ensure that these things aren't happening.

And the one point I'll just leave you with on this, to summarize, is that we can solve crimes by comparing crime scene evidence effectively against the databases, following through on those hits, and finding the real perpetrator. But there are numerous other lessons about how to increase the accuracy of criminal investigations, strengthen prosecutions, and protect the innocent. And that is eyewitness identification reform, oversight of the crime labs, recording custodial interrogations, requiring corroborating evidence when you're relying on an incentivized informant to testify against somebody else, and a host of other ways that we have identified by reviewing wrongful convictions proven by DNA that contribute to wrongful convictions across the board. DNA has provided us with an incredible opportunity to reform and improve the accuracy of our criminal justice system. If we focus just on databases, we're missing a large part of the point. Thank you.

HUDSON: Before we open it up to your questions and comments, I want to give the panel an opportunity to react to each other's presentations or ask each other a question if you have them. And if not, I will ask a question. Do you have a question, Gregg, or a comment, or a response?

LABERGE: Yeah, I have a very quick comment. One of the things about the databank that I haven't heard mentioned at pretty much any presentation, that I'm going to mention now, is – I work for a police department, so we're very close to the investigations that the department is conducting.

And in cases of sexual assault, for example, if we don't know who the perpetrator is and we have no matches on the database, what we'll often do – one of the questions that I often get asked is if they have a suspect that is developed by an eyewitness account or something else, one of the things they will ask me is, is he on CODIS? And if the answer is, yes, he's on CODIS, they stop looking at that suspect immediately.

So the database can actually be used to match people, but also to exclude people immediately that are on the system, because you'd assume that if your DNA profile from your sexual assault evidence is in there, it would have hit or it would have matched the true perpetrator at the national level or even at the local or state level. So that's actually

one of the questions I get quite often from investigators, is how do we know if this guy is on the database? We refer them to the state to ask is that person's DNA on there or not? So, at the state level we do it. We haven't done it on the national level.

HUDSON: Anybody? So let me ask a couple of questions. Tania, you mentioned the case involving errors that were made in the laboratory. Do we have any sense of how frequently laboratory errors are taking place in forensic laboratories? And as a second part, what are the systems that we have in place that are either required or voluntary, and how great is the participation in those programs, to make sure that forensic laboratories have the right quality control in place and are getting the right answer reliably all the time?

SIMONCELLI: We don't have a very good idea of what the error rate is because it's very difficult to measure because... but one thing that would really help us measure is if double-blind proficiency testing was actually required in the laboratories to try to get a sense of what the real false-positive rates are in DNA testing.

You know, there have been – I mean, it hasn't just been the Houston crime lab. There have been a few other cases. There was an interesting case, actually, in Washington where there was a hit against the database to a juvenile offender and luckily for this kid, the case involved was actually an old rape case where the kid would have had to have committed the crime when he was like two or three years old. So the police knew that something must be wrong here.

It turns out that his DNA sample, the juvenile sample, was stored in the same laboratory as this crime scene sample and the crime scene sample actually got contaminated with his DNA. Imagine a case where it wasn't an old rape case. How would we know? How would we know? So many cases now, people are being convicted solely on the basis of DNA evidence because people think it's infallible – because people think it's so accurate. And actually, if it's done right, it should be pretty accurate. But how would we know that that mistake had occurred if there wasn't this weird discrepancy with the age of the kid?

HUDSON: Gregg, do you want to talk about quality?

LABERGE: Yes. In order for a laboratory to be on CODIS, to be connected to the system using it actively, there is a program called the Quality Assurance Standards for CODIS that exist to be on NDIS, to be on the national DNA NDIS system. Every laboratory in the nation who is connected to CODIS is audited every two years by an external entity against those standards. It's supposed to be every two years, and then those audit findings are replied to by the laboratory.

One of the hallmarks of that program is that a quality system exists for oversight of the testing and the interpretation, and guidelines for uploads of those samples. And every time an audit occurs, five cases from every analyst randomly selected are chosen

by the auditors and audited as part of those bi-annual audits. So that's the existing system.

HUDSON: Is that proficiency testing, or a repeat test, or...

LABERGE: No, it actually involves a case file review of active cases. They also review the proficiency testing records of the analysts to be sure that that analyst has been tested independently of the others on the techniques that they're using in the crime labs. So that's another part of the audit, is the proficiency test as well as the actually case review of five or more cases. I mean, if you're on an audit and you see an issue on the fifth case, you may ask to see five more. That's the discretion of the auditor. It's a pretty well-done system, mainly through the National Forensics Science Technology Center, and also, ASCLD/LAB in the United States. So quality measures exist. Quality assurance does exist and there's external oversight that exists.

HUDSON: But in the laboratory, is the technician participating in proficiency testing required or is it voluntary? Is there an accrediting body that you are accredited by but some labs aren't, or is everybody meeting the same equal high standard?

LABERGE: In order to be on CODIS you have to meet, at a minimum, the quality assurance standards set out by the FBI in October of 1998. And each individual who participates in the testing of the sample must be proficiency tested on whatever they do. So they may do the entire analysis. They may only do a portion, but there still has to be proficiency testing records for the parts that they've done, which may be the whole.

SALOON: In addition, as a result of congressional legislation from a couple of years ago, there is a requirement now that states that received federal forensics aid under the Coverdale Program, have to have a government entity and process in place to investigate upon any allegation of serious negligence or misconduct affecting the integrity of forensic results in their state. So on top of the quality assurances that each lab might have set up, either through ASCLD or through its own process – or in some cases that they don't have set up, because I'm sure that Gregg's is one of the better labs in the country, I've come to understand that – but not every lab offers such a guarantee of quality.

But at least Congress did step in so that when we do now identify that an error has happened in the lab, there is at least an independent expert investigation that will go on so that we can make sure that we know why it happened, how it happened, and more importantly, what we need to do prevent it in the future and to maintain the public confidence in the integrity of forensic evidence.

In Texas, they created a forensic science commission, which they recently funded for this very reason, because of that Houston lab debacle. There was a concern that when the lab came in with evidence of guilt the jurors would have lost their faith in that evidence and might not even convict when they had the goods on somebody. So it's important that the government is stepping up its quality assurance and its investigative

efforts to make sure that we are comfortable with the forensic quality of evidence coming up.

HUDSON: Let me follow up with another question about who's in the system. So various states are passing and, in some cases, overturning laws to include arrestees. What happens to an arrestee's DNA after the trial and after – if they're not convicted, if they're found innocent, does their DNA stay in the system or can they get it out, and what's the variability there? And then a sort of part two to that question is, for kids who are arrested as juveniles, what happens when they reach majority and what happens to their police records and what happens to their DNA records? And I'm going to ask Mitch to weigh in first.

MORRISSEY: It's different depending on what statute you're looking at. Different states allow different types of offenses in that are felonies. Some allow juveniles in. Some allow arrestees in. It depends on the statute. Almost every statute that I've seen has allowed for expungement of a DNA sample if it's an arrestee's sample, if there's no charges brought, if the person is acquitted then they can move the court to have their DNA taken out of the database.

HUDSON: So they would have to go to court to get their DNA taken out.

MORRISSEY: Right. Just like you do to have to get your criminal record sealed. You go to court in a civil matter, you pay a fee, and you go in and try to get your record sealed. The same is true with DNA. If it's a convicted felon statute, for instance, like in Colorado, that person can go into court and asked that their DNA be expunged from the DNA database.

HUDSON: But Mitch, isn't there a difference between having your criminal records sealed, in which case you have been found guilty of an offense versus being an innocent person who is arrested and asking that your DNA come out? There are different segments of our population who tend to come into contact with police more frequently than others. Homeless people, those who are mentally ill, et cetera. And for those people to just be opted in because they're having an encounter with the police, and then have to go to court, which usually requires a lawyer, seems to be a heavy burden to get out of the system when you probably shouldn't have ever been in.

MORRISSEY: Well, most of the expungement statutes include deferred judgments that end up being dismissed, dismissed cases, those types of things. And in our state – and I can't comment about any other state – most of the time the person that goes in and asks for it to get expunged is not represented by counsel. It is not a complicated situation. So I don't believe that necessarily every state in the United States will go to an arrestee situation. I think that there will be some states where the state constitution may very well prohibit an arrestee-type statute. We certainly don't have one in Colorado, although I think our state constitution would allow us to have one. We just haven't run one yet.

I think one of the important things to note is that we're talking about serious cases here. Ninety percent of the crimes we saw with DNA, women are the victim of those crimes, and the 10 percent that are left are kids. These are not crimes of men on men. These are crimes of men on women and children. And so when you talk about the importance of taking a sexual predator off the street or a serial murderer of women, of children off the street, that's what we're talking about here. And because we keep good record of criminals, you can do a study of – okay, if we have an arrestee statute, when would this individual's DNA have been put into the system and when would we have had a hit?

And I'll tell you when you look at those studies – and there's one that's been done out of Illinois, and we've done one in Denver – where you're looking at, three women would not have been murdered if his DNA had been taken when he was arrested as opposed to when he got convicted. Seventeen women would not have been raped if on his first arrest we would have taken his DNA instead of waiting for his first felony conviction and sometimes only for a rape.

And when you look at those kinds of studies – and legislators look at those – they really have something to weigh there because you're looking at somebody that got murdered. Somebody that got raped and you can prevent those things from happening if you take their DNA when they're arrestees. But, you know, I can't even tell you in my state if we'll ever have an arrestee statute, but that is certainly something that you should take into account when you talk about databases being felon databases as oppose to arrestee databases.

HUDSON: And just really quickly, can you tell me what happens to kids' DNA when they reach the age of majority?

MORRISSEY: In Colorado, kids can only go into our database under very limited circumstances with certain types of offenses and they, like adults, have the opportunity to have the DNA expunged. I believe when they hit the age of 18.

HUDSON: Tania.

SIMONCELLI: Yes, so Mitch what you just said about – we're talking about serious crimes. That's the whole point of what I'm saying. That's precisely why we want to limit the databases and not be expanding to arrestees and not be putting, you know, endless numbers of people into these databases when we should be focusing, if anything, on processing rape kits. Every time we expand these databases, we're creating huge backlogs. So let's get our priorities straight. That's why I'm proposing that we absolutely limit these databases at the point of people who are innocent.

Another point, let's make it clear, in most states when you arrest somebody, if you have a warrant for their arrest, you can take their DNA. If you want to compare that DNA to a crime for which that person is being arrested for, there's nothing to keep the

police from collecting that DNA. And in fact, in many states they can run a one-time keyboard search against their database once they have that DNA.

I'm not opposed to that if they have a warrant for their arrest. What I'm opposed to is that that is not the point at which somebody should have their DNA permanently retained in the databank. Unless or until that person is convicted of a crime, they are innocent and the Fourth Amendment tells us that the taking of DNA is a search and that the holding, the permanent retention of that DNA, should not happen unless somebody is convicted of crime.

LABERGE: May I ask you a question real quick? I'm an immigrant to the United States. I'm now a citizen, okay. I've committed no crimes but when I came to the United States, I gave a full set of 10-print card and palms to the FBI on a live scan machine in Denver. That 10-print card for me, being an immigrant, was uploaded to the FBI's national database and compared against opened crimes.

Now, I'm sitting here because there were no crimes that matched my fingerprints because I've committed no crimes. However –

MORRISSEY: At least never left any prints. (Laughter.)

LABERGE: But the point being that my fingerprints, those of Mr. Morrissey's fingerprints from being a lawyer in Colorado, teachers, other individuals of positions of trust, including all of my employees in the crime lab and every police officer at the Denver Police Department, their prints are put into AFIS and compared to open crimes.

If you get a match do you ignore it? The answer is no, they don't. Had I matched a fingerprint in the federal database, I'm sure there would have been an FBI agent at my door asking me why my fingerprint matched. So I wasn't even arrested. I was just processed through the normal immigration process but I was compared to criminal databases and am daily, actually. It wasn't just a one time search. That search continues today and I came here in '92 so how many millions of times has it been searched?

SIMONCELLI: Well, just because yours – you have been implicated in anything... Even though your fingerprints are on file doesn't mean other mistakes might happen. But fingerprints, first of all – I mean, the ACLU has a lot of concern about how fingerprints are used, especially around school teachers and when they're used in non-law enforcement purposes. But regardless, DNA is not a fingerprint. Again, we're not just talking about the 13 STRs that are in the database. We're talking about the retention of the biology and if they would agree to destroy, let's talk about why don't we destroy the biological evidence? Not the biological evidence – (laughter) the offender biology.

And the reasons I've heard, are, A, that they want to be able to go back and – the quality assurance kind of argument. You want to be able to go back. But if you get a hit against the database, it's absolutely required, so far as I know in every single state, that you get a fresh DNA sample.

LABERGE: That's true.

SIMONCELLI: You cannot bank the whole case just on – and that's a good safeguard. I agree with that safeguard. So you don't need the biological sample. You don't need it.

HUDSON: Unless you want to do what Gregg suggested.

SIMONCELLI: Unless you want to do what Gregg suggested. Let's think about the familial searching thing, which I'd also like for us to talk some more about. Let's imagine all 15 million people arrested every single year are now in the database. And believe me, there is a very serious campaign, mostly being promoted by Applied Biosystems, the company that's making a lot of money off of testing DNA, to expand all state databases to arrestees.

Fifteen million people get arrested in the United States every single year. Right now we've got 4.8 million offender profiles, not even just offenders, but with some innocent people who've been arrested now, in the CODIS database. So where was I going with this? (Laughter.)

LABERGE: The size results in success. Let's not forget it. And one of the things that both of you said –

SIMONCELLI: No, no, no.

MORRISSEY: – both of you said something that I think that – you mentioned that it is used in sexual assaults, murders, and ag assaults and things like that. That is true. But in Denver, recently in the last 18 months, we started running DNA on burglaries and we started running DNA on a lot of burglaries. And I'll tell you, within the first four months of that project our hit rate was about 85 percent. It's now sitting at about 55 percent so we're catching burglars. They're leaving blood. They're leaving saliva. They're leaving some touch samples, which we don't do much of – hairs, things like that, where we're actually taking them off the street as habitual criminals.

And my argument is if you look at sociological data, we're preventing further crimes by catching them now while they're doing burglaries instead of after they sexually assault someone or murder someone. And I think, right now, we're preventing a large number of crimes by taking those people off the street.

SALOOM: And those are – just to flush this out a little bit more. Those are felonies. In your state burglary is a felony, correct? So these are folks that would be in the database by virtue of that. Part of the concern –

LABERGE: That's why we get the hit.

SALOOM: Right. Right. A concern from the Innocence Project perspective about the expansion of databases too far, and familial partial matches and the like, is the risk that presents to an innocent person because if you're in this database, you're kind of a usual suspect. You've done something wrong before, and there's this mentality that okay, we're catching you early.

LABERGE: But that's policing.

SALOOM: Just a second. And what we've seen when you look back at, how do these wrongful convictions happen, proven by DNA evidence, where we know for sure that a mistake happened? It's a natural psychological phenomenon, but it's tunnel vision. You have a sense that it's a certain person and you start building an argument against that person. And that's basic policing and that's understood, and it's human and it's not perfect but the point –

LABERGE: There's another great example.

SALOOM: – no, but the point is that we run a risk. As your databases get bigger, you have more of a chance for a coincidental match but you also have more of a chance –

LABERGE: No, you don't.

SALOOM: – but you're indiscriminately taking DNA from a crime scene – if there's a cigarette butt, a soda can or something, and if you have most of the population in your database, you're going to have a lot of false leads.

LABERGE: And those cases don't get filed, frankly.

SALOOM: Excuse me?

LABERGE: They don't get filed or they don't get run because we make decisions as we –

SALOOM: I hope not. Well, that's great but you're counting.

LABERGE: Now, wait a minute.

SALOOM: That's the imperfect part of the process. I'm saying you're opening yourselves up to false leads. And really, the concern of the Innocence Project is how this becomes an indiscriminate look for DNA related to somebody and how that can, itself, lead to a wrongful conviction.

LABERGE: Remember there's a lot of steps between a DNA hit and a conviction.

SALOOM: I understand that.

LABERGE: The way you're saying it is that a DNA hit equals conviction. It does not.

SALOOM: No, no, no, no, no. Clearly that was my point in the presentation.

LABERGE: A DNA hit leads to a lead. That lead may be proven completely irrelevant.

SALOOM: Right.

LABERGE: And we've seen that. I've had sexual assault cases where we've gotten a hit. We run it down and it ends up being a consensual partner of the victim. No case is filed. The lead ends. The next thing you have to realize is how policing is done. If I have a victim of a burglary or sexual assault and the woman says, I think the guy looks like this guy, one of the first things we do in a police department is we sit them down with a huge book of photographs – a database, right – and they flip through this book and they say, I think it might be him or it might be him. So what do you think the police do? Do you think they go and look into the two people she pointed at and it may or may not lead to a lead that could be productive? Sometimes it does and sometimes it doesn't, but you're still looking at your usual suspects. That goes back 200 years.

SALOOM: Hang on one second here. The major cause in 75 percent of the wrongful convictions proven by DNA evidence, it was a witness misidentification.

LABERGE: But it's still a lead.

SALOOM: So how about this? We know that, especially when so many jurisdictions have not reformed their eyewitness I.D. procedures. So you have an eyewitness misidentification, and then because we have all arrestees' DNA in the database, you have that corroborated with a piece of DNA from the crime scene. Maybe not something as clean as a rape but if you're investigating some other crime then all of a sudden you might have stray DNA, eyewitness misidentification, bad guy anyhow, tunnel vision, wrongful conviction. So I'm just saying if you overwhelm yourselves in the system, you're leading yourself –

MORRISSEY: Are you saying that [an innocent person misidentified by an eyewitness] is going to be at the crime scene? It's so astronomically impossible that your example makes no sense.

SALOOM: Well, then I think the people in your jurisdiction need to really think about what you're saying here when it comes to wrongful convictions, because it happens. We've seen it happen.

LABERGE: We've exonerated a guy who was picked out by an eyewitness. We ran the DNA and it didn't match the guy. He spent two days in jail where we got the DNA done. We kicked him out. We found the real suspect.

SALOOM: And that's great.

LABERGE: The fact is, yes, we agree eyewitness isn't the greatest evidence, but we're talking investigation, not conviction.

SALOOM: I understand. What I'm saying –

HUDSON: Okay, let me jump here for just second because I am sure, since we all agree now on a few key principles – (laughter) – I think we might want to give people in the audience an opportunity to, A.) make a comment; or B.) ask a question. So come on up. Oh, and please identify who you are and where you're from.

Q: Hi, I'm Lisa Foreman-Neil and I'm with the National Center for Biotechnology Information, part of the National Library of Medicine, and in my previous life I was Mitch Morrissey's first expert witness in his first case. So having all those years under my belt, I'd like to bring it back to a very basic policy question about expanding the DNA databases, expanding the use of forensic DNA, some of the things that Gregg talked about, because I think there's an enormous intersection where public health and public safety need to talk to each other about some of these issues.

The basic thing that I want to bring it back to is that when forensic DNA was introduced and legislation was created, one of the major selling points of the kind of forensic investigations that DNA was going to be used for was that the markers that were being used had absolutely no biological significance that anybody knew, and they were going to be used as the sort of anonymous markers strictly because they had no medical importance that anybody knew. They had no function that anyone could point to any physical characteristics. And all of that is referred to in the language of all of the DNA forensic legislation that's come down the pike.

The policy question is if we are going to step away from that, when are we going to have the public conversation, or is this the beginning of the public conversation – and I hope that it is, about moving away from those very basic issues, which is how the system was displayed and presented in the first place. And I'm not necessarily saying we shouldn't move away from that, but I think that we need to have these kinds of public discourse if we are going to be moving beyond what we originally said we were using these markers for.

HUDSON: Thank you. Tania.

SIMONCELLI: I think that's a really good comment because I think what we're seeing is – what I was trying to say before – the 15 million people arrested every year, the scenario I was trying lay out, we've been talking about some states starting to engage in

familial searching. Well, imagine now that the 15 million people arrested every year are having their DNA put into the database. There will be presumably some overlap of those samples so – some huge amount of people.

So now when you run your crime scene sample, you're not going to get one or two or 10 or 15 partial matches; you're going to get thousands because your DNA database is huge. How will you narrow down thousand partial matches because you don't want to go out and investigate the relatives all thousand people – at least I would hope not because that would really be an invasion of privacy. Well, the easiest way to do it would be to actually go back, pull the samples, and run more tests, see what else you can dig out in the DNA and we just heard that there's some interest in Y-STR markers and mitochondrial DNA.

We were promised that this was only going to be used for identification and that only these 13 STRs were going to be looked at. We're moving beyond that. There's no public discussion about whether or under what circumstances that should happen. And the problem is we are making policy in this area. The notion of reasonableness is, 'we got the guy.' Wow, we got the guy using familial searching so let's do it all the time. But that is a terrible way to make policy. If 'we got the guy' is your standard for reasonableness, that will justify absolutely anything. You know, we might as well not even have this discussion. We may as well succumb to just a total surveillance society, and I don't think that's how we should do it. I think we should have the discussion.

MORRISSEY: Well, Lisa, I think we're having the discussion.

HUDSON: We're starting the discussion.

MORRISSEY: And there have been a lot of issues raised around DNA and how there are backlogs and we could do a better job in following up hits, and all those kinds of things. But what we're talking about in familial DNA searching is not expending another dime to take any more DNA from anyone else. What we are proponents of is using the DNA database for one of those purposes that we all talked about when all these statutes were put in place, and that is the identification of criminals or the identification of innocent people.

But it's the identification part of all these database statutes that familial searching and partial matching investigations falls under. It's the identification of an individual. If you take an identical twin, for instance, which we have many – I know in the Virginia database there are hundreds. Now, when I get a database hit and I know that the individual is in prison, then I'm going to go looking for his identical twin. And I've yet to hear anybody in the discussion of familial searching or partial match investigation give me a constitutional Fourth Amendment violation where a policeman collects DNA at a crime scene and that's compared to DNA that is legally in a database and you identify a potential relative and you go and talk to that individual. Where is there a violation?

If the person won't talk to you, if you set up a surveillance camera in their front room, if you kick down their door, then you have a problem. But up until the time that type of behavior starts to happen, there is no problem with the Fourth Amendment and I believe that familial searching and partial match investigations falls squarely under the purpose for which these databases were created.

SALOOM: May I just say, this isn't a debate about the constitutionality of familial searching. Number one, we're not prepared to have that. I don't know that the nation is actually ready to have that legal argument yet. We're getting there on the databases. But number two, this is a matter of policy. What do we want to do? What is the best use of our resources? What is the best use of resources to identify the guilty? What's the best use of our resources to protect the innocent and to prevent a whole lot of people from hassles?

And so, the question is still open, I think, Mitch, as to whether or not this is constitutional but that's not the debate that we're having.

HUDSON: That's right.

SALOOM: Now, I think before we get to the constitutionality, we need to be talking about what do we, as a society, want to do for ourselves to keep ourselves protected, to keep our police investigations as accurate as possible, to strengthen our prosecutions and to protect the innocent? That's what we need to be focused on, and I don't care if it's databases or any other issue. We need to be looking at, what are the lessons learned from DNA exonerations and from DNA convictions about how to most effectively use this to accomplish those things.

LABERGE: What's a DNA conviction?

SALOOM: A conviction based on DNA evidence.

HUDSON: Let me follow up with one quick comment. I think Lisa's comment about how do we weigh public safety and public health? – I think one of the implications that is provocatively raised by your slide, which I appreciate you adding back in because I think it's a great slide – of where are we going with this technology? If we expand, allow law enforcement ever and ever greater reach into existing DNA resources, for example, medical DNA collections or research DNA collections, we're going to have impacts that we didn't anticipate.

We're going to have people who all of a sudden are going to know about that and might think twice before they sign up for the next biomedical research study. So I think we need to think about what – in addition to just getting the bad guys, what other ramifications will these kinds of policies have for us as a society?

Q: Hi, I'm Susannah Baruch from the Genetics and Public Policies Center. And I have a question about contamination, which was raised briefly. In the Genetic

Nondiscrimination Act, which is currently pending in Congress, which essentially forbids employers and insurers from using people's genetic information against them, there is an exception for forensic labs that says, if you're collecting genetic information of your employees to make sure that there has not been contamination, that's okay.

So my question is, is this an exception that is important? Is it something that labs are doing to ensure that there isn't contamination? And if it is, is that kind of precaution something that should be done at every step along the way with samples to make sure that employee contamination is not an issue?

HUDSON: Beyond the laboratory.

LABERGE: I can give you an example from my agency. We have DNA from all of these crime lab staff, including the crime scene investigators who collect the evidence. It's in a staff index, which does not leave my laboratory. So it's not uploaded to the state or to the national system because it is from staff. However, all of our profiles that come from evidence is searched routinely against that staff index just in case, especially when you're talking touch samples or things, not like semen or blood or saliva directly, to make sure that we're not putting someone from our crime lab into the national system calling it a forensic sample, number one. And number two, thinking that we have evidence of a perpetrator when in fact we have contamination from a crime scene investigator or from an analyst. So we keep it local.

Now, we've thought about expanding it to the homicide bureau or to the sex crimes bureau, to detectives that handle evidence less than my crime scene investigators, but nonetheless handle evidence. We haven't pushed it yet because we've started to have that discussion within our agency about policy. And one of the things being considered is, should it be like fingerprints, a condition of employment because any police officer can collect evidence.

We haven't crossed that bridge yet with the union. I had some pushback from the union when I did it with my crime scene investigators. But when we explained to them that it was to prevent us thinking we have evidence or uploading a profile that we thought was from a perpetrator when it was from a crime scene investigator to the national system, they agreed immediately that it was in the best interest of the agencies. So that's where we sit with it.

I think that there are people considering it. We have about 1500 officers in Denver on the street that would introduce 1500 samples to my lab, which would take time to process and they're not as labor-intensive as a case, but that's a consideration.

Q: I'm Richard Willing, a reporter at *USA Today* and homozygous at five loci.
(Laughter)

Quick informational question and then one that would, as they say in court, call for a conclusion. Mr. Morrissey's experience with near match searching is an interstate

experience. In other words, his database in Colorado compared to other states. I wonder if anybody knows whether intrastate searching is being done and if so, what its results are?

Second question, five million DNA samples in our national database, which of course is an interlocking lattice of 50 state databases and the federal databases – 50,000 investigations aided, somewhat fewer number of hits. This sort of one percent yield is consistent even as the number of hits rises dramatically per Gregg LaBerge's slide. It's also consistent state to state – from rather low in Colorado, where 99.5 times out of 100 you don't get a hit, to somewhat higher in New York, where you get a hit about 97 percent of the time.

I'm just wondering whether, given the cost, and if I buy the Simmoncelli theoretical – theoretical, but privacy costs, actual dollar costs, several billion dollars to build this, begins every year to service it, and the policy considerations, all the crimes that we don't know whether or not the hits are even resulting in solutions to, given those costs, whether one percent is a acceptable yield on our DNA system?

LABERGE: I can answer. See if I can remember the –

Q: The first one was, is anybody doing intrastate near match searching?

LABERGE: Not yet but it's being considered, that I know of.

MORRISSEY: Colorado allows it. In fact, we have a policy. We had a serial rapist in our city and in the course of that, we exhausted every lead that we had. We went to our state lab. We asked them to do a low-stringency search and to provide us with DNA samples, not with the names of the individuals. They did provide us with 27 individuals' DNA. We used Y-STR DNA testing and exonerated those 27 men, which meant we didn't know their name so there was no violation of their privacy and we did not waste another second looking into them. So we saved those resources as them being potential suspects.

The state of Missouri would allow this. North Carolina and South Carolina, to my understanding. Colorado allows it. And it's important to understand that partial match investigations have exonerated people that are in the penitentiary for rape and murder. There is an example out of North Carolina. Darryl Hunt was exonerated and but for the partial match investigation, if the state did not allow that, Darryl Hunt would still be in the North Carolina penitentiary serving a life sentence. Because it was not until Willard Brown, who was implicated through a partial match investigation, confessed to the rape and murder, that Darryl Hunt was released.

The judge had already determined that he was not going to let Darryl Hunt out because Darryl Hunt was not the rapist. DNA proved he was not the rapist, but the judge kept him in prison because he could have been the murderer. And until this partial match investigation was concluded and Willard Brown confessed that he was in fact the

murderer, was Darryl Hunt released. So that's an example of a partial match investigation that exonerated somebody that should never have been in prison.

LABERGE: But that's not familial searching.

MORRISSEY: No, it's a partial match investigation.

HUDSON: Yes, it's different. Tania, we've got about two minutes. So if you want to briefly respond and then we'll wrap up.

SIMONCELLI: Well, I just want to say that's actually the perfect case to point out that we shouldn't have needed a partial match to get Darryl Hunt out of prison; he should have never been there in the first place. The DNA excluded him from that crime and speaks to a much larger problem in our criminal justice system than DNA, which has to do with racial bias and everything else that went into that case. But on a broader note, again, we can't make policy decisions on these individual cases. You can justify anything based on an individual case, like I tried to say before.

And the issue with familial searching, if you start doing familial searching routinely, you've effectively expanded the database to get another category of innocent people, people who just happen to be relatives of the people in the database. That's the fundamental problem.

LABERGE: I'd like to answer the second part of your question. If you don't want to use cases as a means to continue DNA databases, let me answer number two. We looked at the cost effectiveness of DNA on a burglary project, for example, and we looked at the average losses per residential burglary and the average police response per case. Right now, we're sitting at 55 percent hit rate, okay. Of the cases and the 60 people that we identified and were later convicted or later charged, the number of cases that were prevented, when you calculated it, \$1 spent on DNA yielded \$34 of preventive cost that would have come later. So to me, that means policy should be used based on those kinds of statistics if it's cost effective.

HUDSON: All right, we're going to have to wrap up now and I'd like to ask you all to join me in thanking our very provocative and interesting speakers.

(Applause.)

(END)