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THE HAZARDS OF ELECTRONIC VOTING:

FOCUS ON THE MACHINERY OF DEMOCRACY

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WEDNESDAY, FEBRUARY 7, 2007

United States Senate,

Committee on Rules and Administration,

Washington, D.C.

The Committee met, pursuant to notice, at 10:01 a.m.,

in Room SR-301, Russell Senate Office Building, Hon. Dianne

Feinstein, Chairman of the Committee, presiding.

Present: Senators Feinstein, Nelson, Pryor, Bennett,

and Lott.

Staff Present: Howard Gantman, Staff Director;

Veronica Gillespie, Elections Counsel; Adam Ambrogi,

Counsel; Christopher Shunk, Director of Administration and

Policy; Matthew McGowan, Professional Staff; Mary Jones,

Republican Staff Director; Matthew Petersen, Republican

Chief Counsel; Shaun Parkin, Republican Deputy Staff

Director; and Michael Merrell, Republican Counsel.

OPENING STATEMENT OF CHAIRMAN FEINSTEIN

Chairman Feinstein. This meeting of the Rules

Committee will come to order, and we will make our opening

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statements, the Ranking Member and myself, and hopefully by

the time we are concluded, the two opening witnesses will

be here. If they are not here, we will proceed with the

second panel at that time.

I would like to thank my Ranking Member, Senator

Bennett, for joining me today at the first of what I expect

will be a series of hearings on voting and election issues.

I would also like to extend a warm welcome to the witnesses

who have joined us today. Collectively, they represent

considerable knowledge and experience on voting and

elections.

It is my belief that we are at a historic juncture in

our Nation's voting history. One-third of voters cast

their ballots in the 2006 midterm election using new

electronic voting machines, and problems arose in various

jurisdictions throughout the country. The most serious

problem occurred in Sarasota, Florida, where there was an

undercount of 18,000 votes in the congressional election,

and I think on one ballot issue as well. At this time,

officials have been unable to account for what happened to

these votes because there is no independent record.

Just last week, Florida Governor Charlie Crist

announced plans to abandon the electronic touch screen

voting systems used in many of Florida's counties and adopt

a system of casting paper ballots counted by scanning

machines. Other States are considering similar plans, and

I believe it is time that Congress also considers necessary

safeguards for all Federal elections.

Last year, the Election Assistance Commission's

Technical Guidance Development Committee recommended the

development of an independent means of ballot verification,

but the process now underway may take several years or

more. The timing could leave this upcoming presidential

election and perhaps even the next presidential election

without adequate safeguards.

Now, there are those who will say it is impossible to

adopt meaningful security and verifiable requirements for

the 2008 election. But one has to only look at what

happened in Sarasota to see how dangerous it might be to

wait.

In Sarasota, we had an election with 18,000 undervotes

when the difference between the two candidates was only 369

votes. Imagine what would happen if a similar undercount

occurred in a swing State election in the presidential

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contest and there was no independent means of verification,

no way to determine if there was a foul-up in the machines

or perhaps some software maliciously programmed to alter

the results.

Knowing what we know now, I do not believe we can

afford to wait and not require a voter-verified paper

record of each voter's vote.

Yes, there will be those who will testify today and at

future hearings that the electronic count is largely

accurate, and it will be very difficult for election

officials to change rapidly. But as is the case now in

Florida, a growing number of States are recognizing the

danger of relying on these electronic systems without an

independent verification that is subject to random manual

audits.

Governor Crist and other State officials across the

country are recognizing that the best way to safeguard

security and ensure voter confidence is with an independent

paper record. And I believe that the time has come for

Congress to help ensure that we have such a record in all

Federal elections.

So I look forward to the advice that the witnesses

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will provide to the Senate as we closely review this issue,

and now I welcome the comments of our Ranking Member,

Senator Bennett, and then I am delighted to see our first

two witnesses are here, and then we will introduce them and

proceed.

OPENING STATEMENT OF SENATOR BENNETT

Senator Bennett. Thank you very much, Madam Chairman.

I appreciate the opportunity to be here, and I congratulate

you formally on the first public meeting of the Committee

on your appointment as the Committee's Chair.

Chairman Feinstein. Thank you.

Senator Bennett. Let me point out that Utah has a

voter verification paper system, and I used it for the

first time to vote in the 2006 election. So I have that

degree of personal experience with it.

Let me also point out that the screen design out that

the screen design outlining instructions on to how to use

the machine is very important. When I went to vote in

Utah, I had a hard time understanding what I was supposed

to do. When I went to vote in Utah, I had a hard time

understanding what I was supposed to do. Before, I had

always gone in and punched the card or made the X on the

paper ballot. I am old enough to remember those. And I

was about to go to the election officials and say, "Wait a

minute. There is something wrong. I put my card in, and

the screen doesn't come up." Then I realized I was putting

my card in the wrong way.

I know about the concern in Florida. I have looked at

the screen design for the ballot, and I found it confusing,

and I can understand the arguments of those who say that

the screen design contributed significantly to the

undervote. This is not limited to technology related to

voting. When I go online to pay my bills, rather than with

a check, there are some displays online that are very easy

to follow. For my electric bill, I almost have to be

reinstructed every month because I forget from month to

month how it is I get into the place where I pay the bill

electronically. I think the person that developed the

software designed the screen, and I recommend that they get

somebody from the Marketing Department to redesign the

screen so that you can understand it and know where you

need to go.

The point of all of this is that this is a very

valuable hearing, it is an important hearing, but we should

not focus solely on the technology because the machines are

idiots; they do not think. They do exactly what they are

told, and if they are told to do something stupid, they do

something stupid. If there is something confusing

programmed into them, they do not correct it; they just

leave it confusing. We, therefore, must be a little

careful about saying that optical scan machines are the way

to go, because an optical scan system assumes a degree of

accuracy on the part of the voter who is wielding the

pencil. We all have the visions of hanging chads from

Florida in 2000. We are running the risk of seeing the

vision of dots in the wrong place or Xs where there should

be filled-in spaces or circles or rectangles, or circles

around names where there should not be circles. We are

expecting technology to solve the problem that in many

cases are caused by inaccurate, confusing ballot design, or

simple human error. It is essential to remember that

having well-developed procedures and able personnel in

place to safeguard against voter confusion, system

breakdowns, and election fraud is just as important, if not

more so, that the particular voting technology used.

    With those caveats, I join you, Madam Chairman, in

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welcoming our witnesses, and look forward to the hearing.

Chairman Feinstein. Thank you very much, Senator Bennett, and I welcome your participation in this as a co-partner, and we will proceed.

I would like to ask the witnesses if they could possibly confine their comments to 5 minutes so we might be able to go back and forth with some questions. And I would like to begin with recognizing the distinguished Senator from Florida, who, among his other talents, is a former astronaut and, I have recently learned can do 60 push-ups military style. And I think that is somewhat of a record in the Senate.

Senator Bennett. Strom Thurmond.

Chairman Feinstein. Senator Bennett said, "Strom Thurmond," but somehow I don't think so.

In any event, welcome, Senator Nelson, and we would be pleased to hear your comments.

STATEMENT OF HON. BILL NELSON, A UNITED STATES

SENATOR FROM THE STATE OF FLORIDA

Senator Bill Nelson. Thank you, Madam Chair, Senator

Bennett. I am going to depart from my prepared remarks to

comment that, unfortunately, it is the Senator from Florida

that has to come in front of this Committee again. We went

through this painful process in the 2000 Presidential

election, and here we are going through it again in the

Sarasota election that you just outlined, Madam Chairman.

Senator Bennett, yes, sometimes the machines do what

we tell them to do. But we need to know how they were

instructed to function, to get in the black box. And then,

sometimes those machines may not do what we tell them to

do, and that is where we have to have a process by which we

can verify whether or not that machine malfunctioned.

Now, with regard to getting into the black box, we

have been through this drill in Florida before I came to

the Senate with regard to insurance companies' programs for

determining the rates that people were to be charged for

hurricane risk. And the insurance companies have these

models, which, with a hurricane of a certain velocity, of a

certain wind speed, hitting at a certain direction on a

particular part of the coast, those models can determine

what is the amount of economic damage; ergo, how much is

going to be the charge for that particular hurricane wind

risk.

But when it comes to wanting to challenge the

insurance company on their model, they do not want you to

go inside the black box because that is proprietary. So

when I, as the former Insurance Commissioner, proposed that

we have a State university create a model, no, no, they do

not want that independent verification.

So if we are going to use electronic boxes, then we

ought to have the ability to go in to see what the program

is and to see whether or not it has been tampered with.

And so, too, we need the opportunity to verify in case that

machine malfunctioned. And that is what you will hear all

the testimony--I am not going to read you all of this.

That is what you are going to have all the testimony about

what happened in Sarasota. I can tell you very personally

what happened in Sarasota. The top of the screen is my

race. Then there is the congressional race. Right below

it is the Governor's race. Way on down the ballot is a

bunch of series of ballot initiatives.

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Typically what happens, by voting at the very first

race and by the time you get to the bottom of the ballot,

there is a huge fall-off. There is a fall-off for voting

for judges. There is a fall-off for voting for ballot

initiatives. Not this time. Eighteen thousand people in

Sarasota County alone, one county, voted less in the

congressional race than my race and less than the

Governor's race, which was the third race on the ballot;

and, surprisingly, on a ballot initiative at the very end

of the ballot, 18,000 people more voted for that ballot

initiative than voted for the congressional race.

Now, obviously something is wrong. Maybe it was

ballot placement, as you have suggested. The confusion

that it came up on the second panel without clear

instructions at the top that that was the congressional

race before they got to the Governor's race, which was the

next on the screen. But 18,000? And, oh, by the way, that

happened to be in Democratically leaning precincts where

the 18,000, most of the undervotes, went. So we are

talking about here basically the underlying confidence of

our democracy.

You remember something that President Johnson said:

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"The vote is the most powerful instrument ever devised by man." And since I see the 5 minutes is up, I will stop there. But I could go on and on.

So the long and short of it, I am filing a bill. I don't know if it is exactly like Rush's that basically is going to say we have got to have some kind of paper verification so that if you have a question like this, if a voting district is going to use this electronic machine, that you have a way in the case of the Sarasota congressional election, you have got a way to go back and check it, particularly if the courts keep saying, as the Florida courts thus far have--and it is on appeal--that you cannot go in the black box to see if somebody tampered with the program.

And I would just close, Madam Chairman, by saying that you are right. I want to give kudos to Governor Charlie Crist. He is a newly elected Republican Governor. He did what was unexpected because he knows how the confidence of people in Florida is being completely undermined now that we have gone through this on two separate elections--a Presidential election and a congressional election. And the clock is ticking because we have got a Presidential

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election less than 2 years away.

Thank you.

[The prepared statement of Senator Bill Nelson

follows:]

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Chairman Feinstein. Thank you very much, Senator Nelson.

Before introducing Congressman Holt, I would just like to recognize the presence of Christine Jennings. She is here and she was the losing candidate in that 18,000 undervote. We are very pleased to have you here.

And now I would like to introduce Congressman Rush Holt. Just this week, he introduce H.R. 811. That is a bill that would require a voter-verifiable paper ballot trail. We have been working with him and his staff to produce a similar piece of legislation in the Senate, and I believe that work is going very well, and we ought to have it done very shortly.

Congressman Holt, we are delighted to hear from you.

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STATEMENT OF HON. RUSH D. HOLT, A REPRESENTATIVE

IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. Holt. Thank you, Madam Chair, Senator Bennett, Senator Pryor. I am pleased to be before you today to talk about one of the most important issues before the country because it gets at the heart of our democracy.

A democratic government works only if we believe it does, and the confidence in the mechanism of our Government has been shaken badly. This issue of verifiable voting is something I have been working on for a number of years now, and election after election--local, State, and national-- more and more examples keep piling up of the need, the urgent need for legislation to give voters a sense that they are in control, that their vote counts and that their vote will be counted.

The cloud that hangs over us is not just from Florida, not just from Florida's 13th Congressional District, but that certainly is Exhibit A before us today. Not only are the reasons for what went wrong there unexplained, I would argue they are unexplainable because the software that counted the votes remains concealed and there is no independent voter-verified record confirming the intention

of each voter.

Doubts linger. Losers do not believe the results.
Millions of Americans, we find now, dismiss the actions of
their elected officials, saying, well, they were not really
elected, anyway. We see that from top to bottom in our
Government. And that cynicism-breeding sentiment could be
the undoing of our Government.

We want to maintain the principles of secrecy and
security, and, of course, accessibility and accuracy. But
somewhere along the way we lost the principles of
reliability and auditability. And many of us in the House
of Representatives have introduced legislation this week to
deal with that, to restore the reliability and auditability
to the process.

Our legislation, introduced this week with more than
160 bipartisan cosponsors--and, by the way, it is growing
by the hour. It is well past that number of cosponsors
now. This legislation would require a voter-verified,
durable paper ballot for every vote cast to serve as the
vote of record in all recounts and audits. It would
require random, routine audits in a percentage of
precincts. It would require that voters be given paper

emergency ballots upon machine failure. It would ban the use of wireless devices and undisclosed software and Internet connections to the voting machines. It would preserve and enhance the accessibility requirements of the Help America Vote Act.

This legislation is very carefully drawn. It is endorsed in principle by the Carter-Baker Commission on Federal Election Reform, the Brennan Center for Justice of New York University School of Law, the National League of Women Voters, Common Cause, People for the American Way, VoteTrustUSA, the Electronic Frontier Foundation, numerous newspapers, including just this week the New York Times, the Washington Post.

Our bill is very carefully drawn. Every detail of our legislation has gone through meticulous review, not only by Members of Congress but by lawyers, Secretaries of State, public interest groups, advocates for voters with physical disabilities, election reform advocates, civil rights organizations.

We think that this bill will deal with one of the most important problems we face. Of course, there are many other issues that have to do with elections, how

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provisional ballots are counted, whether felons should be

allowed to vote, whether we have a holiday on election day.

There are any number of issues that you could list that we

might want to consider, but the most important task and the

most easily solvable task in front of us right now is to

establish--or re-establish the principle of auditability

and reliability in our elections.

I am very pleased to work with you, Madam Chairman, on

this legislation, and I hope we can get this passed and

implemented in time for the next Federal elections, which,

as we all know, are coming soon.

Thank you.

[The prepared statement of Mr. Holt follows:]

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Chairman Feinstein. Thank you very much, Congressman

Holt, and I am hopeful that we will have a bill to

introduce within a week. I think you have done a great

service. You have been dedicated to this and prodigious,

and I think 160 cosponsors is significant. So I want to

thank you for your action.

And, Senator Nelson, if you--you know, you are a

Floridian. You have been through these two elections now.

I think you are very astute. If you had to analyze what

happened in the Sarasota undercount, what do you believe

the actual problem was?

Senator Bill Nelson. I think the ballot design is one

problem, but I don't think that that is the whole problem.

When you compare the undervotes in the congressional race

in the other counties in the congressional district, there

was a significant difference.

Now, I do not have this information specifically, but

I think your Rules Committee majority and minority staff

ought to check where were the undervotes in Sarasota County

and are they correlated. For example, is it in an area

predominantly of senior citizens? And--go ahead, Madam

Chairman.

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Chairman Feinstein. I was just going to say, Do they correlate with that ballot initiative where there was the drop of 18,000 votes? If they did, there would be something wrong with the machine, it would seem to me.

Senator Bill Nelson. Now, the ballot initiative, remember, had 18,000 more votes than the congressional race.

Chairman Feinstein. That is right, yes.

Senator Bill Nelson. And the point of my story there is typically you have voter drop-off as you go on and on, on races like judges that are not nearly as high visibility, nor on ballot initiatives that are very complicated. You have a lot of drop-off from the number of votes from those that vote at the very top of the ballot on the Senate, the congressional, the Governor's race, the cabinet races and so forth.

Chairman Feinstein. What was that ballot initiative? And did it win?

Senator Bill Nelson. Well, there were five or six ballot initiatives.

Chairman Feinstein. That specific one with the 18,00--

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Senator Bill Nelson. I cannot tell you off the top of my head, but I don't think that is--we can find that answer. I don't think that is relevant to this. It is just to say that it is curious that what normally is voter behavior, where there is less--if you are going to have undervotes, that you would expect it further down the ballot on complicated things like ballot initiatives, when, in fact, this race was one of the most high-profile races. They spent I don't know how much money on TV in the Tampa market, which is a very expensive market, and constant TV, constant assaults. That may have been another reason for some people not voting because they were turned off because of the negative. But you cannot count--why weren't the voters in the other counties turned off? They were receiving the same television messages.

So there was something different that happened in Sarasota County with a huge number--I think it is 15-percent fall-off of the ballots in the race right underneath my race, which was the Senate race, the congressional race, and that fall-off of ballots then to come to the next race, which was the Governor's race.

Chairman Feinstein. The question that I was aiming

for, unless the machine was in some--machines were in some

way programmed to switch, because you had that plus vote,

and then you had a drop-off vote. If they were programmed

to do that--I find it a very strange anomaly that in one

case you get the plus-up and in the other case you get a

dramatic drop, both of the same amount.

Senator Bill Nelson. Well, now, it is not a plus-up.

It is just the fact--if I am confusing you about the ballot

initiative, it was a huge number of votes, more voted for

the ballot initiative close to the end of the ballot than

did the congressional race. Now, that is not normal human

behavior. So that would suggest that there is some reason

for this undervote of 18,000 in one county. So what is it?

Ballot position and the instructions on that second screen

could be one. It could be voter behavior in those

particular precincts because maybe those voters were not as

attuned to what Senator Bennett was talking about in

confusion with the instructions.

But that does not explain all of it. So the only

other explanation is something happened in that black box

of the program which the courts have not allowed us to get

to, or there was a malfunction in the machine. But there

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is no way to verify that. So let's don't go through this

again anywhere in the country.

Chairman Feinstein. Thank you very much. My time is

up.

Senator?

Senator Bennett. Thank you very much. I do not want

to spend a lot of time on the Sarasota thing because that

is an issue that the House of Representatives ought to deal

with. Under the Constitution, the House of Representatives

has the right to determine the election of its Members, as

the Senate has the right to determine the election of our

Members. And I trust the House, I trust the House

Committees to deal with this. But I appreciate raising it

because it is a legitimate issue for us to look at in terms

of future elections.

As I say, I have looked at the screens to prepare

myself for the hearing, and I found that my eye went

immediately to the Governor's race on the second screen,

and I did not notice the House race. And, interestingly

enough, there was a hospital board election later down the

ballot where the screen placement was similar to, if not

identical to, the screen placement of the House race. And

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I am told that the drop-off for the House race was 13

percent and the drop-off for the hospital board race was 10

percent.

So there was some impact of where you were placed on

the screen and how the ballot was designed. And I would

hope that election officials all over the country, as they

deal with these things in the future, will have a little

marketing expertise here. I would suggest a focus group

prior to the ballot, prior to the election, where people

sit around, are shown the screen and see if in the focus

group there is a degree of confusion and see if it does

correlate with age or education or some other control

verification to make sure that those who use these screens

have that kind of understanding.

As I say, we in Utah use this. We have a verifiable

paper trail, so I am obviously not opposed to that. But I

think somebody would have discovered that the instructions

that confused me could have confused some others and said,

Oh, well, we will redesign this around this. But my point

is that technology alone and changing the technology alone

will not produce the sense of confidence that we need to

have in our elections.

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Senator Nelson, you referred to Lyndon Johnson. I am old enough to remember that he was referred to around here as "Landslide Lyndon" because he was elected to the Senate by 87 votes. And if you go back and read Lyndon Johnson's history, in all probability he was elected to the Senate a couple of years earlier, but he made the mistake of releasing his vote totals too early in the day, which allowed his opponent to then manufacture a sufficient number of votes to defeat him. His biographers have described this. It is a very exciting kind of tale.

The second time he ran for the Senate, he made sure that his people did not release how many votes they had until the other side released how many votes they had. And as the pressure built up, well, what is the result from that county, and finally his opponent would release a number, and then his supporters knew what number they had to top that number, and then his opponent's supporters knew what number they had to come up with in the corresponding counties, and then Congressman Johnson knew what numbers he had to come up with in his county. And it went on, and the biographers said no one will ever know who really won that election. But in the end, the Johnson supporters outwaited

his opponents, and Landslide Lyndon was elected to the

Senate of the United States by 87 votes.

My time is up, the Chairman has told me. I will get

back to this. We need to pay as much attention to the

human factor--which apparently was not a factor in

Sarasota, Florida--but election officials who will

corruptly change the result no matter how elegant the

technology may be.

Thank you.

Chairman Feinstein. Thank you, Senator.

Senator Pryor?

Senator Pryor. Thank you, Madam Chair. Actually, I

just came to listen, and I do not have any questions today.

But I know that this is a very serious issue. Like Senator

Nelson said, this goes to the core of our democracy, our

right to vote, our right to be heard and express ourselves

at the ballot box. And to me it is not rocket science. I

mean, we have a lot of good technology and all that, and

whether we have to go back to a more old-fashioned way of

voting or whatever, I am open to those possibilities. But

it is just very, very important that we as a Nation get our

voting right. And over the years, for whatever reason, we

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have had these problems.

So certainly I thank you and the Ranking Member for having this hearing today. Thank you.

Chairman Feinstein. Thank you very much, Senator.

Mr. Holt. If I may follow up briefly on that.

Chairman Feinstein. Yes, Congressman.

Mr. Holt. Of course, this is not all about the Florida 13th, but the Florida 13th congressional race really gets at the heart of what this is about, because if things stand as they are now, no one will ever know whom the voters intended to send to represent them in the House.

As you have heard, in Sarasota County there were nearly 15 percent of the votes undervotes. In the neighboring counties, it was a couple percent, a more typical amount. It may have been ballot design. It may have been something mechanical because there are affidavits that people touched the screen and touched it several times and touched it harder and tried to get it to respond. It may have been software. It may have been innocent error. We cannot rule out fraud.

But this is different than Florida 2000. At least in Florida 2000, there was an effort to look at the evidence--

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hanging chads, dimpled chads, and so forth--to determine

voter intent. In Florida 2006, the election judges cannot

make any determination about voter intent because there is

nothing tangible. There is no durable paper record left.

What they saw on the screen, what the voters saw on the

screen, is long gone.

And so this legislation should have the opportunity

for the voter herself or himself to verify the vote because

in a secret ballot only the voter can verify that her

intentions are recorded properly. And it should have a

durable record that can be used for audit and, in fact,

would be used for audit.

In answer to your earlier question, one of the richest

ironies of all of this is, as this debacle was taking place

in the Florida 13th Congressional District in Sarasota

County, the voters of Sarasota County were approving a

ballot initiative to do away with electronic voting

machines. They, as in so many cases, were ahead of us.

They understood that the way things were now, it left them

with a sense of powerlessness, distrust, and cynicism.

Chairman Feinstein. Thank you, Congressman.

I would like to welcome the former Chairman of the

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Committee, Senator Lott. Do you have questions of this

panel?

Senator Lott. Madam Chairman, I just was interested

in their comments and hearing the testimony today. Thank

you for having the hearing.

Senator Bill Nelson. Madam Chairman, may I respond to

Senator Pryor?

Chairman Feinstein. Yes, certainly.

Senator Bill Nelson. In a democracy you have to have

unwavering faith that your ballot is going to be counted,

but that is not all, that it is going to be counted as you

intended it. And that is the crux of the matter here

today.

Chairman Feinstein. Thank you very, very much.

I just want to say one thing. I think the point that

you made, Congressman Holt, is a very good one, that there

is no way of going back if you do not have access to what

Senator Nelson called the black box. And I have a hard

time understanding how we can support systems where there

is no transparency, there is no effort to check back.

I mean, I remember the days in San Francisco of the

big iron monster voting machines with the levers. There

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was always a way to check back. And it seems to me that way of checking back is critical.

I am going to ask that the GAO and the National Institute of Standards and Technology really conduct a top-to-bottom investigation of these particular machines. And hopefully the county will respond and cooperate, because I think we have to get at it. If there was a problem with the black box, I think we have to know it. And I think the people of the county are entitled to know it.

In any event, thank you so much for your testimony. It is helpful.

Chairman Feinstein. We will proceed with the second panel, if I might, now. And as they come up, I will begin to introduce them.

The first witness will be David Becker. He is a substitute witness. Lowell Finley, the Deputy Secretary of State of California, was going to testify, but he has an acute case of stomach flu and could not come. And Mr. Becker had actually worked with him in this area, and Mr. Becker is the senior staff attorney at People for the American Way. He is responsible for issues regarding voting rights and election reform. He recently left the

Justice Department after serving for 7 years as senior trial attorney in the Voting Section of the Department's Civil Rights Division.

Dr. Brit Williams is Professor Emeritus of Computer Science and Information Systems at Kennesaw State University. He has been conducting certification evaluations of computer-based voting systems for the State of Georgia since 1986.

And, finally, Dan Wallach. Dr. Wallach is as associate professor in the Department of Computer Science at Rice. He is the Associate Director of Accurate, a research center funded by the National Science Foundation that studies technological and policy issues with voting systems.

Gentlemen, you each have 5 minutes, and you will see the computer-driven timing system in front of you. So we will proceed with David Becker. David, if you would begin, please.

STATEMENT OF DAVID J. BECKER, SENIOR COUNSEL,

PEOPLE FOR THE AMERICAN WAY FOUNDATION

Mr. Becker. Madam Chairman, Ranking Member Bennett, Senators, good morning and thank you for the opportunity to speak with you today regarding this important subject.

As the Chairman said, I am senior counsel for People for the American Way Foundation. I am responsible for our voting rights and election reform work, and prior to that I served for 7 years in the Voting Section of the Justice Department as a senior trial attorney. In that capacity, I monitored dozens of elections nationwide and have observed thousands of voters casting ballots on all manner of equipment. Today, I speak on behalf of the 1 million members and activists of People for the American Way and our Foundation and will submit more extensive written testimony for the record.

Unauditable electronic voting machines have likely left a trail of disenfranchised voters throughout the country, but nowhere have the dangers of these devices been felt more deeply by voters than in Sarasota County, Florida. People for the American Way Foundation currently serves as co-counsel for a group of Republican, Democratic,

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and unaffiliated voters in Sarasota County, and I serve as

People For's lead counsel in this litigation.

The facts as they occurred in Sarasota are

illustrative of the problems resulting from the use of

unauditable electronic voting machines, problems that must

be corrected in time for the 2008 elections.

As you, Madam Chairman, and Senator Nelson have

pointed out, in the November election Sarasota County used

paperless, unauditable electronic voting machines. The

race to succeed Katherine Harris in Florida's 13th

Congressional District was on the ballot, and it was

arguably the most contested race in Sarasota County.

Nevertheless, Sarasota County's voting machines failed to

register a vote for approximately 18,000 voters in that

race, more than one out of every seven voters who attempted

to vote on these machines.

Even though almost 15 percent of the voters in

Sarasota County saw their votes disappear in this election,

the State certified the winner by a margin of only 369

votes, less than 0.2 percent of the total vote. Meanwhile

dozens of voters submitted sworn testimony that the

machines changed or flipped their votes or required

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multiple attempts to register their votes or completely

failed to register their votes at all.

Experts who testified in this litigation unanimously

confirmed what we feared: that the failure to register

18,000 votes in a hotly contested congressional race could

not be consistent with the will of the voters and likely

changed the outcome of the election.

All the experts agree that the rate of lost votes in

Sarasota County in the 13th District race was clearly

extraordinary and anomalous, if not unprecedented. Experts

in the field agree that we could normally expect to see 2.5

percent of the ballots fail to indicate a vote in this

race, so the unusually high number of votes that

disappeared cannot be attributed to voters choosing not to

vote in that race. Indeed, only 2.5 percent of paper

absentee ballots in Sarasota County failed to indicate a

vote in this race, and rates in surrounding counties that

include the 13th District were also around 2.5 percent.

Sarasota County's paperless electronic machines had a lost

vote rate six times higher. As further demonstration of

this point, as Senator Bennett pointed out, Sarasota

County's machines registered more votes in the race for

hospital board than in the race for Congress.

The county and the election machine manufacturer would have us believe that one out of seven voters who voted on the machines chose not to vote in this race or that they were simply so confused that they could not register their votes properly. This assertion is simply ludicrous. Even the most confusing elections in recent memory have not resulted in the number of lost votes we saw in this race. For instance, the notoriously confusing butterfly ballot in Palm Beach County, Florida, in 2000 resulted in only around 5 percent of the ballots failing to be counted in the Presidential race. And remember, these machines are supposed to remind each and every voter before they finalize their vote if they have skipped a race.

All experts in the Sarasota case agree that machine error cannot be ruled out as a cause of the excessive number of lost votes. Even the expert for the voting machine company admitted this, while others testified that machine error is the likely cause of a substantial portion of the lost votes. To know for sure, of course, the machines must be examined by independent experts, which election officials and the voting machine company continue

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to oppose, even though an investigation would likely either

confirm or refute the possibility that machine error led to

the disenfranchisement of these thousands of Sarasota

County voters.

Finally, the experts agree that had the voters' intent

been properly recorded in Sarasota County, there is little

doubt that the outcome would have been different. The

expert for the voting machine company has stated that there

is essentially a 100-percent chance that the candidate whom

the State of Florida certified as the winner would have

been defeated if the rate of lost votes was consistent with

what election experts would expect and what it was in other

counties. The company expert agreed with the other experts

that if even only a small fraction of the lost votes was

due to machine error--say 2,000 of the votes--the official

outcome of the election would likely have been reversed.

Since the machines in use in Sarasota County were

paperless, unauditable machines, there is no way to

determine to what precise degree the voters' intent

diverged from the tallies prepared in secret inside the

machines. If there had been verifiable paper trails

produced at the time of voting, we could compare those to

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the computer tallies and determine not only the likely

source of the problem but also the true winner of the race.

Sadly, because Sarasota County did not require these

trails, the only remedy that could possibly restore the

constitutional rights of voters in Sarasota is a re-vote.

Madam Chairman, we are particularly grateful for your

leadership on the issue of voting technology. With the

country facing an election in 2008 which will decide

control of the Congress and the Presidency, the need for

election reform in this country is urgent.

I thank you, and I will be happy to answer any

questions.

[The prepared statement of Mr. Becker follows:]

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Chairman Feinstein. Thank you very much. Thank you for sticking to the time limit.

Dr. Williams?

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STATEMENT OF BRITAIN J. WILLIAMS, PROFESSOR

EMERITUS, KENNESAW STATE UNIVERSITY

Mr. Williams. Madam Chairman, Senator Bennett,

Senator Pryor, I would like to thank you for this

opportunity to speak before you on this matter. I have

worked in the field of computer-based voting systems for

about 20 years now, and I am very pleased to be able to

share my experience with you.

In my written testimony, I have given you extensive

background information, but here I am going to go directly

to some recommendations that I think the Committee would be

interested in.

Computers were first used to tally elections in 1964,

and the computers used in the early mainframe punch card

voting systems, the computers used in the mini-computer

punch card voting systems, and the computers used in the

current optical scan voting systems are just as vulnerable

to attack by hackers as the computers in the current DRE

voting systems. However, in the entire 43-year history of

using computers to tally elections, there has not been a

single incident of an attempted hacker attack against a

computer in a voting system. Now, this is probably due in

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large part to the fact that the computers are not attached

to networks, so in order to hack a voting system computer,

you have not only got to be a competent computer hacker,

you have got to be willing to commit breaking and entering.

If we review the various anomalies that appear in

elections, it leads us to the conclusion that voting

systems' problems rarely come from hacker attacks on the

computer but, rather, from mostly accidental but

occasionally deliberate actions of candidates and their

supporters, election officials, poll workers, and voters.

So I am going to leave the discussion of hackers to others

and direct my remarks toward more human factors.

First of all, I would like to talk a little bit about

training. At a previous congressional hearing, I was asked

what I thought was the most important thing you could do to

secure a voting system, and my answer was train the poll

workers. A trained poll worker can overcome almost any

problem that arises in a precinct, but a poorly trained

poll worker will likely exacerbate the problem.

We have available extension documentation and training

materials related to the various aspects of defining and

conducting elections. There is an old saying that it is

necessary to get the milk down to where the cats can get at it, and the same thing applies here. We need to get this training material down to the people that need it, and so I would like to encourage the Committee to provide the EAC with the responsibility and the funds required to provide assistance to States in setting up training programs and facilities for all aspects of elections--election administrators, defining ballots, defining and setting up elections, formatting ballots, managing polls, et cetera.

Let's turn our attention now to voter-verified paper audit trails. There are two universally accepted reasons for the requirements for a voter-verified paper audit trail. One is they can be used to audit the electronic results. The second is it gives the voter assurance that her ballot has been recorded correctly.

According to recent information, 22 States require voting machines to produce VVPATs, and several other States and the Federal Government are considering such legislation. Some of this legislation states that, under certain conditions, the VVPAT becomes the ballot of record. This requirement has the potential for unintended consequences.

There is substantial evidence that the VVPATs produced by the currently available DRE voting stations do not possess the reliability and accuracy required of a ballot. In every election where VVPATs have been produced by the current voting systems, there has been a percentage of those ballots that were unreadable, some as high as 10 percent. And if the VVPAT becomes the official ballot of record, then these people become disenfranchised.

On hand-counted paper ballots, when lever machines were introduced in the 1930s and 1940s, they were hailed as a great innovation in elections for the simple reason that they eliminated the need to hand-count paper ballots.

Am I doing that?

Chairman Feinstein. I do not think so, unless you have a BlackBerry close to the microphone.

Mr. Williams. No.

There is no historical or legal precedent for an election to have two separate official ballots, and several States have State laws and at least one pending Federal legislation will require that under certain conditions the VVPATs will become the ballot of record. This leaves us open for the courts to rule that this will become the

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official ballot, period, and put us back to the position we

were in in the 1930s of having to manually hand-count paper

ballots.

I would say, just in closing, about source code, if I

could have about another 30 seconds on this business of

open source code.

Chairman Feinstein. Please proceed.

Mr. Williams. All Government agencies and business

sectors have certain programs that they consider mission

critical. None of those agencies allow that software to go

into the public domain for an obvious reason: that

anything in the public domain is vulnerable to attack from

everything from teenage hackers to foreign terrorists.

Now, on the other hand, there is a need for people

with a legitimate need to know to be able to have access to

this source code. So I am very concerned about the

possibility of making voting system software universally

open source code, but I do think there should be a

provision where some agency, possibly the EAC, could

certify an individual that applied to see that source code

as having a need to know.

[The prepared statement of Mr. Williams follows:]

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Chairman Feinstein. Thank you very much, Dr. Williams.

Dr. Wallach?

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STATEMENT OF DAN S. WALLACH, ASSOCIATE PROFESSOR

OF COMPUTER SCIENCE, RICE UNIVERSITY

Mr. Wallach. Chairman Feinstein, Ranking Member

Bennett, Senator Nelson, it is a pleasure to be here today,

and I am honored to have the chance to talk to you about

voting systems.

It is important to understand just how much we are

asking from these electronic voting systems. Of course, we

can accuracy, efficiency, and accessibility. But we also

need hardening against attacks and recoverability after

attacks or other problems might have occurred. We need

anonymity so voters can freely express their opinions

without fear of bribery or coercion. And, most

importantly, we need transparency such that voters,

observers, the candidates, and everybody else can convince

themselves of the correctness of the election outcome.

Achieving all of these things is an impressive

engineering feat and, unsurprisingly, some of these newer

voting systems have experienced problems. We have heard a

lot today about Sarasota County, and I am not going to

repeat everything that we have heard. But I will discuss

some of the different theories that can explain what went

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on. My written testimony goes into more detail on this, so today I am going to focus on two. First, human error.

There is no question that human beings make mistakes, and maybe it is the ballot layout, maybe it is the angle of view to the screen, maybe it is the presence of two or more races on the same screen versus having them on separate screens--any of these things could possibly cause humans to make mistakes.

Of course, having one in seven voters making a mistake, that is a significant number, and as we heard earlier, the example everyone refers to, the butterfly ballot in Florida in 2000, 5 percent of the voters on that system apparently had this problem. So we are talking about 15 percent in Sarasota County. That is a significantly larger number.

The other thing--and the reason why I am here--is the discussion of software bugs. Perhaps the voting machines used in Sarasota had latent mistakes or errors in their software that survived the testing and certification process. Perhaps there was something specific to the ballot design in Sarasota County that induced these machines to fail where otherwise they might succeed. And

perhaps that failure converted genuine votes into

undervotes.

Unfortunately, we do not have enough information today

to be able to determine which of these hypotheses or what

combination of them explains the anomaly that we have all

seen. For example, the vendor--in this case, ES&S--has

publicly described software bugs in some later versions of

their software, and this was a letter they sent to the

North Carolina Secretary of State or Elections or

something, and they said that, in certain cases, 2 to 3

percent of the write-in vote boxes would disappear. So the

write-in vote option would simply not be present for 2 to 3

percent of the voters. That is a different bug, but

perhaps it is related. And that is a newer version of the

software. Florida is using an older one. Perhaps a

similar issue occurred in Florida. It is not implausible

that the software could have errors and that those software

errors could induce the undervote rate that we have seen.

A significant issue in Florida and elsewhere is that

our voting system vendors have vigorously resisted attempts

to allow independent experts such as myself to examine the

inner workings of their systems. And whenever those such

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analyses have been performed, they inevitably find significant problems. For example, in a paper I co-authored with some people at Johns Hopkins, we found significant problems in a voting machine from a different vendor--Diebold--including a flaw that would allow a voter to cast more than one vote. Subsequent work has confirmed our findings and has found significant other problems as well.

Every major voting system vendor maintains that an open discussion of their flaws would somehow make it easier for hackers and terrorists to compromise their voting system. This is sometimes called "security through obscurity," and it just does not work. This obscurity allows vendors to hide inadequate designs behind a veil of trade secrecy rather than feeling pressure to implement stronger systems that would withstand public scrutiny. A system should be built such that it works even if everybody knows how it works. You should not need to hide behind a veil of secrecy.

"Fear not," we are told, because these voting machines are certified. In Conroy v. Dennis, a lawsuit in Colorado, myself and Professor Doug Jones, a professor at the

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University of Iowa, were asked to read these certification

documents, which themselves are considered trade secrets.

We found that the certification process for these machines

is wildly inadequate and would not be able to discover

important security or reliability concerns. In short, they

just did not show you--where they should have done

significant analysis, they did either very little or none

at all. I talk about this more in my written report, and

for time, I am going to leave that on the table.

I support legislation such as Representative Holt's

bill that we heard about earlier today that would require

electronic voting machines to have voter-verifiable paper

trails and for those paper trails to be audited after the

election is over. Moreover, we need to consider whether

trade secrets in the voting system industry are

appropriate. I do not advocate for putting the software in

the public domain. I think it is perfectly reasonable for

vendors to continue to own their software with copyright

and patent. But I think that trade secrecy goes completely

against the needs for transparency which our elections

depend on.

Thank you.

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[The prepared statement of Mr. Wallach follows:]

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Chairman Feinstein. Thank you very much.

I would like to acknowledge the presence of Senator
Nelson, who has joined us, and we will begin with
questions. Senator, are you ready? Why don't you go
ahead. You go first this time. I will go second.

Senator Bennett. All right. Mr. Williams, I found
your testimony very interesting, and I think I pick up a
unanimity here among all three of you that you ought to be
able to get into the software without compromising ultimate
security, without putting it into the public domain. It
would seem to me that an expert like Dr. Wallach is not
going to tell what he discovers to a terrorist or to a
hacker, and, therefore, allowing him to look at the
software in a controlled situation where it cannot get out
is, in fact, not a dangerous kind of thing.

Mr. Williams, would you agree with that?

Mr. Williams. Yes, indeed. This may be overstated,
but I said at the top of the show that I have been
evaluating these voting systems for 20 years.

Chairman Feinstein. Could you push the talk button on
your mike, please?

Mr. Williams. Is it working now?

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Senator Bennett. Yes, there you go.

Mr. Williams. Okay. I have had the source code for every voting system that I have evaluated, so right now, when you can demonstrate a need to know, like if you are a State evaluating a voting system with the intent to purchase it, you can get access to that source code.

Senator Bennett. I think the whole Sarasota thing would be well served if someone like Dr. Wallach were to look at it and say, well, yes, I found this situation in these machines.

Mr. Williams. Right. And I do not think anyone would have any heartburn with--I do not think it should be just on Dr. Wallach appearing and saying, "I am Dr. Wallach, and I want the source code."

Senator Bennett. Yes.

Mr. Williams. I think that the EAC or your Committee or some agency should review the credentials of the people--

Senator Bennett. Sure.

Mr. Williams. --and initiate that. And I also will go further and say that when that review is over, that source code should be returned.

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Senator Bennett. Yes.

Mr. Williams. There should be non-disclosure agreements, that we should protect the integrity of that. We want to review it, but we also want to protect its integrity.

Senator Bennett. Okay. We are on the same page there.

Now, I was interested in your comment that the printers fail, and if I wrote it down correctly, you said that 10 percent of the paper ballots were unreadable.

Mr. Williams. There were at least two instances in this past election where upwards of 10 percent of those VVPATs--

Senator Bennett. Up to 10 percent, and that happens to be pretty close to the undercount that we had in Sarasota. Not with the congressional race but for the hospital board race, there were 10 percent of undervotes in that race. So if I understand you correctly, we are looking ahead to a situation where the court says, well, there can really be only one official ballot. And if it is going to be the paper trail, then the whole next set of hearings we have here is on the question of how to make the

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machines more reliable so that the paper ballot is always
readable.

Mr. Williams. Yes.

Senator Bennett. And we are back into the same kind
of swamp we are in now.

Mr. Williams. Right. I have no problem with using
the VVPATs to audit the electronic record. I have a lot of
problem with a situation where they become the ballot--

Senator Bennett. Where they become the official
ballot in the recount.

Thank you very much. I appreciate the clarification.

Chairman Feinstein. Thank you, Senator.

I would like to ask each one of you these. There has
been a lot of discussion about the problems of paper. My
understanding is that most Americans use an optical scan
paper ballot and these ballots have a high degree of
reliability.

Could you discuss the issues related to security of a
paper-based system, please? Dr. Wallach?

Mr. Wallach. Thank you. I believe the number is
about 50 percent of Americans in the 2006 election voted on
some form of optical scan paper ballot, whether it was

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scanned in the precinct or whether it was scanned
centrally.

Security-wise, the main concern is that somebody might
steal a ballot box, that sort of thing, but ballot boxes
are large objects. You can have people follow them around.
They are much more tamper-resistant in that respect than an
electronic voting cartridge, which you can put in your
sleeve.

Likewise, a hand-marked paper ballot, wherever it is
scanned, has the property that the voter marked it with
their own hand, and that creates a tangible record. It
creates this voter-verifiable paper record, which is
exactly what we want. And that has these nice properties
that no matter how--you do not need to trust the computer
that does the tabulation. If you do not trust it, you can
have a different computer do the tabulation. If you do not
trust that, you can count them by hand, whether by sampling
or by counting every one. And that creates an important
hedge, an important mitigation against the risks of
computer--whether it is--not just malicious computers, but
computers simply having bugs and failing to operate
correctly.

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Chairman Feinstein. Thank you.

Dr. Williams, do you have a comment on that?

Mr. Williams. Sure. The computer in an optical scan ballot scanner is just as vulnerable to mishaps, mis-programming, and hackers as any other computer. So you would still want to take that paper ballot and do an audit--one, two, three, whatever is appropriate--of your electronic record.

Now, optical scan readers are not 100 percent fail-safe. If you take a set of ballots, an actual set of ballots, and read them through an optical scan reader and then take those same set of ballots and read them back through that same scanner, you will get slight differences in the results. So it is not 100 percent accurate due to idiosyncracies of read heads and so forth and so on.

The biggest problem with going to all optical scan is that your handicapped, your visually impaired voter loses the ability to vote independently again. In places like Colorado that are making widespread use of vote centers, you cannot run a vote center with optical scan ballots because it is logistically impossible to have that complete set of everybody's ballot in every vote center. Those are

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the trade-offs.

Chairman Feinstein.   Thank you.

Would you like to comment?

Mr. Becker.   Yes, I would, Madam Chairman.   The

advantage of paper or paper trails to purely electronic

voting with no paper trails is a matter of simply physical

security; whereas, when we are talking about electronic

voting without verifiability, we are talking about not only

physical security where we have to make sure that no one is

having access to the machines, but then also electronic

security.   And, therefore, there is a big advantage to

having a physical paper trail or paper ballot where we can

train poll workers, as we have done for centuries, to make

sure the physical integrity of where they reside is

maintained.

Chairman Feinstein.   Thank you very much.   My time is

up.

Senator Nelson?

Senator Nelson.   Thank you, Madam Chair.

You talk about human frailty and the human element,

but you have not really talked much about fraud, at least

not since I have been here.   What are the opportunities for

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fraud with the computer-based ballots versus paper ballots?

Dr. Wallach?

Mr. Wallach. There are two main kinds of fraud that people like to discuss, and the phrase they will use is "retail versus wholesale fraud." Retail fraud is, you know, whether--either at the level of the individual voter, perhaps, in the case of the Diebold system, we found a way that a voter could cast more than one vote. That would be an example of retail fraud.

Wholesale fraud would be if you could get into the computer that was doing the tabulation and swing large numbers of votes with a relatively small amount of effort.

When you are dealing with an electronic voting system where there is no paper anywhere in the system, these kinds of wholesale frauds become much more plausible. For example, Professor Ed Felten and some of his students at Princeton discovered that they were able to engineer a voting system virus that they could use to infect a Diebold voting machine such as the ones that are used in Georgia and Maryland. You only need to infect one or a small number of machines, and due to the way that memory cards are moved from machine to machine, the viral infection

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could spread to all the machines in a county. So a very

small amount of effort could result in a very large amount

of fraud.

Senator Nelson. Now, would one of these verifiable

audits, voter-verifiable audits, discover that? Maybe that

is to Mr. Williams, your thoughts on it. I thought you

might be shaking your head.

Mr. Williams. Well, first of all, I disagree with--

Senator Nelson. I think you need to hit your button

again.

Mr. Williams. I disagree with the conjecture that you

can very easily infiltrate a Diebold voting machine. We

have them. We have the source code and everything else.

We have not been able to do it. We have not been able to

fabricate a voter card. We have not been able to fabricate

one of those memory cards.

But be that as it may, all of your computers are

vulnerable to attacks, either deliberate or accidental, and

that is just as true of the optical scan computer as it is

of the computer in the DRE. And to alter votes with a DRE,

you have got multiple DREs--in Georgia, we have got 26,000

of them. If you wanted to try to alter a State election,

you would have to get to some percentage of those 26,000

machines; whereas, with optical scan, you have got only one

per precinct, typically. A very large precinct may have

two. But you have only got two machines that you have got

to get to as opposed to 15 or 20.

So, you know, there are trade-offs. We do not have

the quintessential voting system yet. I think when we do,

it will be an electronic voting system with an accurate,

reliable paper trial. And then you have got the benefits

of both systems. You have still got your ability to run

vote centers. You have still got the ability for the

handicapped to vote. The problem is we are probably 4 to 6

years away from that.

Senator Nelson. Well, let me ask your advice, then.

Should we be using them until those 4 or 5 years of

research and development have occurred?

Mr. Williams. Ideally, no, but the reality that we

are dealing with is that we have an installed base of

voting systems that cannot be changed quickly. Starting

right now to change the voting system for 2008 is going to

be difficult. If you do not have that thing already on

order right now, you are probably not going to make it,

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because by the time you go through your procurement, get

the machines in, get your poll workers trained, you know,

2008 is going to be here.

So the bad news is that, for the next election, we are

probably going to have to "dance with them what brung us,"

because the EAC--I am sorry, the TGDC and NIST right now

are working on what they are calling the 2007 Voting System

Guidelines, and those are the first guidelines that are

going to have really strict guidelines for independent

verification of voting systems.

They are not due to the EAC until July of this year,

and if what happened with 2005 is any indication, they will

not go into effect probably until December of 2008, a month

after the 2008 election. And then we have got to wait for

the vendors to build voting systems to those

specifications.

So my feeling is that in this interim we have got to

really concentrate on the things that we can control, and

that is, training people, avoiding poor ballot formats,

training poll workers. And this is not an impossible

dream. We know that the Diebold system is flawed. We know

all of them are flawed. And in spite of those flaws, in

the State of Georgia we have run over 3,000 successful

elections on Diebold voting machines.

So it can be done, but we devote tremendous effort to

training, to physical security, to policies and procedures.

At Kennesaw we have a center that does nothing but support

elections. On this ballot issue, we format the ballots for

114 of the 159 counties in Georgia, and the others, whether

they format themselves or contract them out, that ballot

has to come in to us for quality control before it can be

used in an election.

Chairman Feinstein. Thank you, Mr. Williams.

Senator, your time--actually, you got double the amount of

time, Senator Nelson.

Senator Nelson. Well, thank you.

Chairman Feinstein. You are very welcome.

[Laughter.]

Chairman Feinstein. I would like to dismiss this

panel with one request: if you would give the Committee a

short paragraph in writing, each one of you, if there were

to be legislation, what the certification process should be

in that legislation.

I thank you all very much and appreciate your

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attendance.

Chairman Feinstein. And now I will begin to introduce the next panel. It is four people, so we will need an additional chair for a witness, staff, please.

Ms. Conny McCormack is the chief elections officer of Los Angeles County. Los Angeles is the largest county in the United States, and she has had 25 years of experience as an elections official.

Warren Stewart is the Product Director of VoteTrustUSA. That is a national nonpartisan network of State and local election integrity organizations across the country.

Connie Schmidt is retired as the Election Commissioner for Johnson County, Kansas, after serving there for 31 years. She currently provides election consulting services to local, State, and Federal agencies.

Michael Waldman is the Executive Director of the Brennan Center for Justice at New York University School of Law. That is a nonpartisan public policy and law institute that focuses on issues of election integrity and access.

We say welcome to you, and we would like to begin with Ms. McCormack.

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STATEMENT OF CONNY McCORMACK, REGISTRAR-

RECORDER/COUNTY CLERK, LOS ANGELES COUNTY,

CALIFORNIA

Ms. McCormack.   Thank you, Chairman Feinstein.   We

have different weather in California, don't we?

Chairman Feinstein.   You could say that.

Ms. McCormack.   Ranking Member Bennett, Senator

Bennett, and Senator Nelson, it is a pleasure to be here

with you today.   I have long remarks, as everyone else

does, that you have a copy of, and I will shorten them.

And I also provided the Committee with a big binder, not

only from California's experiences but from other States as

well, because I think what I am hearing today--and being at

the end of the panels, we get to hear more--is you really

are truly seeking facts and evidence.   And I think that is

what makes me feel very pleased that you are doing that,

because, unfortunately, a lot of what has happened in the

elections in the last few years has been emotion-laden.

And as an election official for 25 years, I can tell you,

when you are on the ground during elections--and many of

you have local background experience, local government--

that is where the rubber hits the road, and that is where

we have to make it work. And I know that all of you are

seeking that, and I appreciate that. So thank you for the

opportunity to be here.

And I know your overriding goal is the same as all of

ours in this room, and that is accurate casting,

tabulation, reporting, and counting the votes the way the

voters intended. That is the key. It is really important

to keep that in mind.

And looking at all the voting systems that are out

there, no voting system is perfect, but looking at all the

ones that are out there, the best track record to get that

accuracy to reflect the voters' intentions are the

electronic voting equipment.

I have had experience with both the electronic, the

optical scan, and the punch cards in the 25 years I have

been running elections, so I have seen ballots. It is

always amazing how voters can find ways to try to interpret

what the instructions are on all types of systems. But

when we get to the situation that we have had, starting

with Florida in 2000, and someone else is making the

voters' determination of what they did, that is when we

have a real problem, I think. And I think Senator Bennett

was alluding to that in his opening remarks. With optical

scan ballots--and most of our ballots in Los Angeles County

are cast optically scanned. We have a combined system. We

have early voting on touch screens as well. And in the

optical scan ballot, you will have ballots that people do

what you said, Senator Bennett. They will circle them,

they will put the mark outside of the area, and it will not

be picked up by the scanner.

However, when elections are in a recount situation--

and that is when we all know it is the most important, when

it is very close, to say what is happening with each and

every individual ballot. I am hearing that, and I am

hearing that with Sarasota. Clearly, when elections are

closer, it is the most important. It is always important,

but it is the most important.

And so when you get to that situation and you have

people--because the optical scan ballots are never 100

percent, people do make these errors outside of the way.

So when you recount them, you are going to get slightly

different results. That slight difference could be a

quarter of a percent, a tenth of a percent. That can be

enough in a close election. We have all had elections that

fell within that margin.

And then you have someone in Florida in 2000 who was holding ballots up to the light, or you have election officials or others making decisions based on a ballot-by-ballot basis of what that voter's intent is.

I think it is really important to recognize the facts with electronic voting is that is not the case. The votes go into the system, and they come out of the system the way they were put in the system. And I think one of the things that needs to be mentioned right now that the State of California has taken on and other States are starting to do, very important to assure the reliability and accuracy of the system is the parallel monitoring on election day.

In California, Secretary of State Shelley in 2004 started this process. He is a Democratic Secretary of State. It was continued by Secretary McPherson, a Republican Secretary of State. And in all those parallel monitoring tests on election day--and that is when you take the real equipment on election day in a real environment and vote it for the whole 13 hours. Their reports--and they are totally publishable and out there--show 100 percent accuracy of the electronic voting systems, every

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single one of them, and California uses every model. It

does not matter whether it is ESS, Diebold, Sequoia. They

use every single model. Every single one of those was

tested, and they all came out 100 percent.

So if accuracy is the number one thing we are seeking,

you cannot beat DREs. They have the proven track record.

The other systems get very close, but they do not reach the

100 percent, So, again, that is very significant, the

parallel monitoring test. And, unfortunately--some other

States have done it, but, unfortunately, that did not occur

in Florida, so you don't know whether or not it was any

potential from a malicious virus to be introduced that only

becomes apparent on election day. Well, when you are doing

your parallel monitoring, you do know, because it is

election day, the clocks and the equipment are set the same

way as all the other equipment that is used. So those are

important facts that are based in some of the reports that

I gave you that I think you need to keep in mind. We are

trying to avoid ambiguity in these systems.

Chairman Feinstein. Please conclude. I am trying to

keep everybody on a time limit.

Ms. McCormack. Okay. I am going to make just a

couple more points, one being to reiterate that VVPATs--and

we do have the VVPAT in California--to use it as the

permanent record would be a very big mistake to legislate

that, because you are always going to have paper jams,

whether it is 1 percent, 2 percent, 5 percent. You do not

want that to be the official record when you know in the

system you can prove that the number of people who signed

in and the number of ballot images in the system match, you

know those are real people's votes. You do not want to be

taking some away because of a proven printer jam, and I

have included examples. In our election, we did an audit

after November 2006, and we had some paper jams. You could

not read what the person did, but you could see it in the

ballot image on the equipment. I think that would not

withstand any litigation. A judge is going to say, "Ms.

McCormack, do you know those votes are in there?" "Yes."

"Can you prove it?" "Yes. Here is the number of people

who signed in. This is what happened." And in a recount

is when you really want it to be the accuracy. If you go

to a VVPAT for that--I think it is fine for an audit. As

an audit tool, I think it is a good audit tool, because

then you can look at it as an audit. But to make it the

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official ballot would be a real problem.

Chairman Feinstein. Thank you very much.

Ms. McCormack. Thank you. I will leave the rest for questions. I do have some comments I would like to address through questions on ballot design, because in California we have had some ballot drop-off that is similar. So I would like to address that.

Thank you.

[The prepared statement of Ms. McCormack follows:]

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Chairman Feinstein. We would be happy to hear you.

Thank you.

Mr. Stewart?

STATEMENT OF WARREN STEWART, POLICY DIRECTOR,

VOTETRUSTUSA, WASHINGTON, D.C.

Mr. Stewart. Chairman Feinstein, Ranking Member

Bennett, thank you for giving me the opportunity to speak

to you regarding citizen concern about the security and

reliability of electronic voting systems. It is an honor

for me to participate in this hearing with Members of

Congress, election officials, and distinguished computer

and legal experts--

Chairman Feinstein. Please pull the mike and speak

directly into it

Mr. Stewart. Oh. Good heavens. Okay.

Chairman Feinstein. So the recorder can get your

words. Thank you.

Mr. Stewart. It is an honor for me to participate in

this hearing with Members of Congress, election officials,

and distinguished computer and legal experts to speak on

behalf of the primary stakeholders in America's elections--

the voters.

The process through which we cast and count votes has

received a greater level of citizen interest and scrutiny

in the past few years, more than ever before in our

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Nation's history. This public awareness has arisen from personal experiences in polling places, news accounts of election problems, and a series of governmental and academic studies that have exposed the serious security vulnerabilities of electronic voting.

VoteTrustUSA is a national nonpartisan network serving State and local election integrity organizations across the country. These groups are made up of volunteers, dedicated, hard-working Americans, Republicans, Democrats, and Independents, who care deeply about the great Republic they live in, patriots willing to commit themselves to the cause of transparent elections. While this broad-based movement embraces a wide range of proposals and positions, it is unified in the conclusion that the direct electronic recording of votes to computer memory is inimical to democracy.

Millions of Americans have determined that the consent of the governed is most accurately and reliably transferred to those who govern through the use of paper ballots marked by voters and subject to robust audits to verify the accuracy of election results.

Many States have made the decision that paper ballot

voting systems with ballots either counted by hand or with

ballot scanners are not only more accurate and reliable,

but also significantly less expensive and less burdensome

for poll workers. Innovative ballot-marking devices and

other assistive systems have allowed States to retain paper

ballot systems while still providing voters with

disabilities and language minority voters the opportunity

to cast their votes privately and independently.

Over the past year, New Mexico and Connecticut have

abandoned plans to purchase touch screen voting machines in

favor of statewide paper ballot systems. Last week, the

Governor Florida, as has been mentioned, announced his

intention to replace touch screen voting machine with

optical scan machines in all precincts statewide. Also

last week, the Virginia Senate passed a bill that would

phase out the future purchase of direct electronic voting

machines.

Legislative initiatives have been proposed in many

other States that would prohibit paperless electronic

voting systems and require mandatory audits of election

results. Much of the distrust of election machinery rests

on the lack of transparency of the software used to

administer electronic elections. When the counting of

votes consists of running proprietary software to process

vote data, the correctness of election results depends on

the correctness of software, and there is no way to

guarantee the correctness of software.

For years, the first line of defense against reports

of security vulnerabilities in voting systems has been

claims that laboratory testing ensured strict conformance

of the qualified systems to Federal standards. But

recently we have learned that the laboratory responsible

for testing at least 70 percent of the voting system

software used last November was not adequately tested to

those standards. The culture of secrecy that has been

allowed to exist among the voting industry, the testing

laboratories, and the institutions that oversee them had

bred a deep level of distrust among voters that must be

addressed with a new commitment to transparency before the

full confidence of voters can be restored.

While the direst of pre-election predictions may not

have been realized on November 7th, the range and severity

of the problems that did occur serve as a warning that

action must be taken to ensure meaningful reform before the

next Federal election cycle. I have submitted for the

record an account of e-voting in the 2006 midterm elections

that draws from the surveys submitted by participants in

the Poll Workers for Democracy Project, reports from voters

who called the Election Incident Reporting System and voter

action hotlines, and reports collected by votersunite.org

from national and local media.

The report indicates that the promise of easier

voting, more accurate tallies, and faster results with

computerized systems has not been fulfilled. An increasing

number of voters, poll workers, and election officials are

finding the election process to be more difficult, not

easier, and confidence in the final tallies has been

undermined. While hardly comprehensive, this report is

indicative of the widespread failure of electronic voting

systems across the country and how this failure has

affected the experience of voters.

I am encouraged by the prompt attention that these

concerns have received through the convening of this and

subsequent hearings, and I deeply appreciate the

opportunity to address these concerns to the members of the

Committee. I look forward to working with you to ensure

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the accuracy, accessibility, and auditability of our

elections.

[The prepared statement of Mr. Stewart follows:]

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Chairman Feinstein. Thank you very much.

Connie Schmidt?

STATEMENT OF CONNIE SCHMIDT, PRESIDENT, ELECTION

CONSULTING SERVICES

Ms. Schmidt. Thank you very much. I appreciate the

opportunity, as the others do, to be here with you today,

particularly in the role of a retired elections

administrator. I will refer you to my written testimony,

and I would like to spend my time today talking with you

about what actually happens behind the scenes in an

election office and on election day to kind of give you a

broad picture.

Johnson County, Kansas, has been a voting machine

county--we are quite unique--for almost 40 years. We

started with lever machines in 1968, and we moved--one of

the first counties in the Nation to move to electronic DRE

machines in 1988, and we replaced those with touch screen

machines in the year 2002. None of that equipment has ever

had a voter-verified paper audit trail, so I think that is

significant.

Our staff has solid security procedures in place.

Each election memory card and voting machine is put through

rigorous, manual logic and accuracy testing prior to every

election. A detailed audit trail and chain of custody is

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maintained throughout that entire process and is open to

the public. Poll workers attend comprehensive hands-on

training and are provided an additional opportunity in our

county to practice opening and closing the equipment during

what we call "Practice Makes Perfect," scheduled the week

prior to every election. On election day, we support and

deploy a very integrated support system for our poll

workers.

Is there a weak link in this process? Always.

Unfortunately, it is not a perfect system. For us, the

busiest and most stressful part of election day is the

first thing in the morning--and that usually means between

5:00 and 6:00 a.m.--and again right after the polls close.

We deploy, again, a multi-level support system to ensure

that all of our equipment is open and to assist with

closing the equipment in the evening. And that support

network is absolutely critical to our success on election

day. Without it, the stress and the anxiety level of our

poll workers peaks. As that anxiety and stress continues

throughout the day, then more and more problems occur with

our poll workers. So if they start the day out stressed,

it is very hard for them to recover and remain calm to

manage all the other things and all the other procedures and processes they have to handle.

Once the polls open for voting, we experience our number of calls reduce dramatically. If printers are required to print all day long, we know that the phone calls, the support system, and the poll worker anxiety level is going to increase. We have all experienced the cash register tape standing in line at Wal-Mart or the grocery store when the red lines appear on the tape. Imagine for a moment the anxiety level of all of our poll workers across the country when they see the red lines on the voting machines. They now know they have to interact again with this piece of equipment, and at the same time we have long lines of voters waiting to vote, and their support network is not in that building.

Every system has its pluses and minuses. Indeed, there is no perfect one. Mechanical parts are going to fail. They fail on the scanners and they fail on voting machines. Paper ballots get jammed. Voters do not always follow directions when they are marking their ballots. Our experience, however, has been that voters make far fewer errors using DREs than they do when voting absentee using

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optical scan paper ballots.

It is also a fact that there are no voter-verifiable paper trails in place to guarantee a voter that the memory card inside of a precinct count optical scan machine has recorded their votes correctly. This machine only notifies the voter of under- or overvotes. The only way that the memory card is validated is if and when those optical scan ballots are recounted by hand, and we all know that hand counts are not 100 percent accurate.

Again, the keys to a successful election include solid security procedures, rigorous logic and accuracy testing with an audit trail, comprehensive poll worker training, and an integrated election day support system. I urge you to give careful consideration to the following three key points:

There is a need for ongoing training and distribution of best practices for poll workers and election officials. Please remember that any additional change prior to the 2008 Presidential election is going to place an additional burden on an already very stressed system.

Technology solutions should be encouraged in order to move the business of elections forward, not backwards. We

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need corporate and academic partners to join with us as we

work to develop and innovate and test and deploy those new

solutions. It is critical that any new hardware and

software requirements be thoroughly, again, and rigorously

tested. It cannot fail on election day if it is determined

to be the official ballot. There are no do-overs on

election day.

I urge you to use caution. If a voting machine paper

trail is declared to be the official ballot, we will

effectively disenfranchise voters whose ballots were cast

when the machine jammed, ran out of toner, or failed to

print. Thank you.

[The prepared statement of Ms. Schmidt follows:]

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Chairman Feinstein. Thank you very much.

Mr. Waldman?

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             STATEMENT OF MICHAEL WALDMAN, EXECUTIVE DIRECTOR,

             BRENNAN CENTER FOR JUSTICE, NEW YORK UNIVERSITY

             SCHOOL OF LAW

     Mr. Waldman. Thank you, Madam Chair, for holding this

important hearing so early in this session of Congress, and

thank you, Senator Bennett. I would like to also

acknowledge Lawrence Norton, who is the Chair of the

Brennan Center's Task Force on Electronic Voting, who is

here with us, and I ask that the work of that task force be

entered into the record, along with our written testimony.

     Chairman Feinstein. So ordered.

     [The information follows:]

     / COMMITTEE INSERT

Mr. Waldman. Since 2000, it is important to stress the magnitude of what has happened. There really has been a move across the board into electronic voting in a variety of ways, and understandably, this has been complex and has had problems. Electronic voting, done right, offers the possibility for greater accuracy and greater accessibility. But it has also spawned enormous doubt, enormous concern, and enormous worries among ordinary citizens as well as experts about the accuracy of the systems. And we had theories and we had worries, and we felt that it was necessary to assemble some facts.

In 2005, we convened a task force of many of the Nation's top computer scientists, voter security experts, and other experts from inside the Government, from academia, and from the private sector, and asked them if these worries were well founded. Are there, in fact, great security risks with the new voting systems? And the task force reported with great strength that, in fact, first of all, all the electronic voting systems now used in the United States have tremendous security risks. And they say this as computer scientists and experts. That is the bad news.

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        The good news is that there are, in fact, remediation

steps that can be taken to blunt these risks. That is the

good news. The bad news, again, is that very few

jurisdictions have taken these steps, and, hence, we do

support Federal legislation to impose some national

standards on what is a very diffuse and localized system of

election administration. And we are very pleased that you

all are talking about this and moving in that direction.

        I will mention just a few things in addition to what

the other witnesses have said that we encourage you think

about as you do this.

        First, it is important not only that there be a voter-

verified paper trail, which, of course, is important and

you have heard this from so many of the witnesses, but that

there be random audits of that paper trail. What the task

force concluded was that the voter-verified paper trail

without those random audits was of questions value in

ascertaining whether there had been problems either with

the count or potential security flaws or hacking or

something like that.

        The second thing I would point out is that it is

important to have parallel testing, which, as you know, is

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the term of art for basically checking the machines on

election day to make sure that they are recording votes

accurately. That is also very important, and that can be

done more immediately than almost any of the other steps

that are described.

The third thing that we would stress, which is

considered in the legislation, is that the scientists and

experts found a tremendous risk from wireless components.

Wireless components are allowed in voting machines in all

but two States. Only Minnesota and New York currently ban

wireless components. And while it is true, as an earlier

witness said--

Chairman Feinstein. What is a wireless component?

Mr. Waldman. It is an antenna inside a computer like

people have in a laptop that enables me to go into a

Starbucks and get on the Internet with my laptop.

Chairman Feinstein. Right. Got it.

Mr. Waldman. And they are now the norm in computers,

but although the computers are not linked up formally to a

network, what the experts concluded is that it would be

possible to walk into a polling place with a PDA or a

PalmPilot and trigger an attack. And that can be stopped

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by simply banning and removing the wireless components.

There is one final issue that I would mention that really goes to the human element in all of this. This is a complex system. There are many thousands of people, many of whom are part-time, many of whom are volunteers serving the country and the citizenry working in elections. It is extremely important that accurate resources and effort be put into training, and also to training of voter through videos to show people how to use the systems. And that raises ultimately the question of money.

I am asked, when I speak about this--and I am sure you are, too. Many times people will say, well, I go to my ATM and it never has once given me the wrong amount of money. How come we cannot get these systems to work? The banks of the United States spend significantly more in one year maintaining the ATMs than the Federal Government has spent since 2000 entirely converting the voting system to electronic voting in the United States. Congressman Holt envisions $300 million. We think that is at least the amount that is needed to make this work. Done right, this can be a plus for democracy, but thus far it has not been done right.

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[The prepared statement of Mr. Waldman follows:]

Chairman Feinstein. Thank you very, very much.

I would like to begin by just stating California law, because I think it is interesting. On October 7, 2005, the Governor signed a law which stipulates that for direct recording electronic voting systems, the electronic record of each vote would be considered the official record of the vote, except as provided for in subsection (b). Now, (b) says this: "The voter-verified paper audit trail shall be considered the official paper audit record and shall be used for the required 1-percent manual tally described in Section 15360 and any full recount. The voter-verified paper audit trail shall govern if there is any difference between it and the electronic record during a 1-percent manual tally or full recount."

So I would assume that this is what Los Angeles is carrying out. So you do have a paper audit trail that is utilized in these audits. Is that not correct?

Ms. McCormack. Absolutely, Senator. That is correct. The concern is when we get to a recount and that would have to become the official ballot. If there are paper jams-- which there will be; we have experienced them and we know there will be--those folks would then lose their vote

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because you could not use what was in the electronic

system. You have to supplant that with the VVPAT, even

though you would know in the electronic system the votes

are in there and cast. So that is the--

Chairman Feinstein. All right. Let me ask the other

witnesses, then. Is this a correct assumption?

Mr. Stewart. Well, for example, if I may, in the bill

that was introduced by Mr. Holt this week, there is a

clause that clarifies that if there is a demonstrable

compromise in the voter-verified paper records, the

electronic tally could be relied upon. And I think even if

that was not explicit, if one party was main--if it was

clearly compromised, the paper ballots, it would be easy

enough for the party that was maintaining that the

electronic totals were accurate, the burden of proof would

be on them to demonstrate that it was compromised.

But I do not think we are going to be in a situation

where, you know, when that paper is obviously--but it needs

to be spelled out in legislation, and, for example, I know

in Connecticut's State law it is spelled out explicitly.

Chairman Feinstein. Well, we will take a look at

that. Anybody else? Yes, sir, go ahead.

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Mr. Waldman. Madam Chair, not precisely on the issue of whether the paper is the record or not, but this is one area where the Senate version of the legislation could actually strengthen and improve on the House version in that the--we encourage you to require that the paper, when there is paper, be cut paper; rather than the rolls that use thermal printing, pieces of paper like in a laser printer that we are all used to in offices, that actually winds up with far fewer problems.

In Cuyahoga County in Ohio, there was a problem where the thermal roll had been put in, but it was printed on the wrong side, so there was no record. There are ways of making paper better than other paper, and that can be done legislatively.

Chairman Feinstein. Thank you very much.

Senator Bennett, would you like to ask a question?

Senator Bennett. Madam Chairman, this has been a very informative hearing, and the panels that we have had have given us a great deal of information.

I see a slightly different point of view from Williams, McCormack, and Schmidt, who have run elections, than the others who have examined elections. And I am not

going to say that there is anything wrong with those who

examine elections, but it is interesting that people who

have had actual experience on the ground have different

views than people who are monitoring this.

The one thing I come back to, Ms. Schmidt, you talked

heavily about the importance of training. Dr. Williams did

the same thing. Ms. McCormack, you talk about all of the

workers. If somebody is going to commit election fraud, it

is going to be human beings who do it, and they can do it

regardless of the system. In looking back in history--and

I cited the history of Lyndon Johnson's experience--it

seems to me it is easier to commit fraud with paper ballots

than it is with electronic ballots. With electronic

ballots you have got to have a hacker who understands what

needs to be done with the software. And as Dr. Williams

pointed out, you have got to have a massive kind of effect

because these machines are not connected one with each

other. You have got to be really, really anxious to do

this.

With paper ballots, all you have to do is open the top

of the ballot box, dump a bunch of paper in, close the top

of the ballot box, and it is done. It is not very

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technologically difficult. And we know it is being done.

There are precincts that historically have a 100-percent turnout. There are precinct's that have more than a 100-percent turnout. And you have read John Fund's book that describes in California the couple who decided they wanted to be civic and do their responsibility and they agreed to be poll workers. And at the end of the day, the male, the man in the couple, is trembling, and his wife says to him, "What's the matter?" And he said, "The election is over. The polls are closed. I am standing here with 1,500 unmarked ballots in my hand and nobody watching me, and I could mark every single one of them and put them in the ballot box, and no one would be the wiser."

So the description you give us, Ms. McCormack, of what is done to make sure that kind of thing does not happen--and I was interested to have you say that the DRE is the most accurate--comes back to the kinds of security that you have to see to it that people do not do that.

Now, you talk about lever machines. I have been told in Philadelphia all they do is close the door at 8 o'clock go around to the back of the machine, find out how many votes have not been cast in order to come up to a 100-

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percent turnout, go back to the front of the machine and

pull the lever however many times it is to get to 100-

percent turnout, and they have done it.

So this has been very enlightening. We are moving, I

think, Madam Chairman, in the direction of trying to use

technology to be as accurate as possible. And I was struck

by Dr. Williams' warning that getting ready in time is

going to be difficult. But, ultimately, we all want the

same goal, which is accuracy and preventing vote fraud, and

preventing vote fraud comes down to the workers that are

there.

I participated in a similar hearing before the

Governmental Affairs Committee after the last election,

after the discussions of what was happening in Florida and

elsewhere. And Senator Bond came in with the election card

of Trixie Mixler, who happens to be a Springer Spaniel.

And she votes very regularly and very legitimately--that

is, very conscientiously in every election. And so the

whole question of voter ID, the whole question of training

workers, the whole question of seeing to it that you have

security is not just a technological one. And I have the

feeling that moving in the direction of technology is going

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to give us greater confidence rather than less because we do have a long history of vote fraud and rigging elections that pre-dates any discussion of electronic voting.

So I thank you all. You have educated this Senator a great deal.

Chairman Feinstein. I would just like to say something, and then I know that Ms. McCormack wanted to say something.

I have concern about electronic voting. I am not sure that the most technologically modern machines necessarily give one the best results. I mean, I just got a new cell phone in my car. Every time I punch numbers, another number comes up, and it is, frankly, driving me crazy. And it just so happens, we cannot go to another vendor because I have got this long contract.

[Laughter.]

Chairman Feinstein. Anyway, I do not like the cell phone.

Senator Bennett. You are the Chairman of the Rules Committee. You can change the contract.

[Laughter.]

Chairman Feinstein. I don't think so.

In any event, I am from the school that likes to see their mark. You know, I am from the school that wants to know that I voted. When we had the big lever machines, I would pull my lever down. I would complete it. I would go back and check it before I left.

I really regard--I don't know whether it is because I am a woman or because I have run. You want to be sure that it is right. And I really think the time has come for there to be some national election standards. That is really where we are driving to, that everybody has to play by some rules that are the same, that ensure to the greatest extent possible that people's mark, however that mark is made, is the official mark of that individual. And I think that is where the paper trail comes in. It becomes, in a sense, the mark that we have voted.

So we have tried to make some changes. I just want to say that the record is going to be open. We will be submitting some questions in writing. They will be part of the official record of this.

Ms. McCormack, you wanted to say something, and I think I cut you off and promised you you would have a later opportunity.

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Ms. McCormack. Thank you, Senator, and many of my
remarks are in my written testimony. But I did use some
specific examples of ballot design issues that have
occurred in California that I think are instructive,
because some of the earlier witnesses indicated it was
unprecedented to have a 13-percent drop-off in a high-
visibility congressional or Senate race, when actually it
is not.

In 1976, in Los Angeles County, there was a 13.8-
percent drop-off--that is, 14 percent--from President to
U.S. Senate in Los Angeles when the rest of California, the
vote for Senate was higher than for President. So it was a
huge anomaly, and--

Senator Bennett. That was not Senator Feinstein's
Senate race?

Ms. McCormack. No, it was not. It was in 1976. It
was between Tunney and Hayakawa, and there was this huge
drop-off that made no sense. It is so analogous to what is
going on now. And the studies came to reveal it was a
ballot design issue. There was clearly a huge amount of
white space on the paper ballot. People missed the race.
And you could look at the ballots. They were the marked

punch card ballots. They were completely non-marked in

that race, and it made no sense. And it did not happen in

the absentee vote.

So there are precedented examples. As recently as--

Chairman Feinstein. Let me just tell you one thing.

I just ran and I voted absentee. I got my ballot, and, of

course, in this one you connect the line, you know, with a

pencil. I couldn't find my name, and I sort of panicked.

And then I realized you had to turn it over, and on the

other side there was my name. But all of the other--in the

ballot I got, all of the other officials were on one page.

Well, that is ballot design, which I think is kind of

interesting. So I think you have a real point about ballot

design, and I think we have to be specifically careful

about this.

Ms. McCormack. I think it is just not unprecedented.

I think we have heard that it is. And as recently as 2003,

in the Governor's recall election in California, that was

our last punch card election for eight counties in

California, and including Los Angeles. We had the DREs for

the early voting, as we have had, and our drop-off between

people voting yes/no on the question first before getting

to the candidates was only a third of 1 percent, not even a

percent. People voted yes or no on the touch screens. It

became very obvious to them it was there. And yet it was

the very first thing in the biggest print on the punch card

on the ballot layout. And we made it big print, and we had

a 7.84-percent undervote on the yes/no.

So that had to have been ballot design. They called

me later and said, "I never saw the yes/no," even though it

was right at the top in big print. You look at it, and

your eye went--just like in this Florida race, your eye

went to the middle of the page where the candidates were.

You wanted to go find the candidate. And I think that it

is just--newspaper people know because they know where

everybody's eye goes on the page. Those kinds of studies

would be very valuable in the election business.

Chairman Feinstein. Thank you.

Does anyone else have a comment as long as we are

doing this? Mr. Waldman?

Mr. Waldman. Two very quick points to respond to

Senator Bennett's points.

First of all, we did work with a number of election

officials, and we would be happy to submit those names for

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the record.

And the Senator is absolutely right that people have been trying to stuff ballot boxes, in fact, since politicians were campaigning in togas. And there is no reason to think it would stop now with electronic systems or anything else.

The important thing here is not that there is a foolproof system, but that an auditable record enables you to check and find out whether or not that has happened.

In terms of Senator Lyndon Johnson's landslide election, we know from historians but also at the time that they "found a box of ballots" a week after the election that were all for him. Had that been a non-paper electronic system, that would not have stuck out the way it did. And it is the need to have a backup record that makes it not necessarily harder to do the fraud but easier to catch it.

Senator Bennett. I would disagree with you. Back to my example of the fellow who had 1,500 ballots in his hand, dropping them in a ballot box, there is no auditable trail, no way of ever finding that, ever.

Mr. Waldman. That would create quite an anomaly,

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though, in--

Senator Bennett. Yes, they found a ballot box in the
Johnson race, but the one expert in Utah politics whose
judgment I trust said there has only been one election in
Utah history where he believed the loser was counted out
rather than voted out. And, again, it was back in the days
of completely paper-marked ballots. And he was in election
central, and he said the phone calls kept coming in: "How
many votes do we need? How far behind are we really? How
many votes do we need?" And the west side of Salt Lake,
which was a stronghold for one of the two parties, had not
come in yet. And as the rest of the State would come in,
the west side had still not come in. And the questions
were, you know: "We haven't heard from the West Side yet."
And, "We are still counting." And, "It was a heavy
turnout." But, "How many votes do we need?" And he said,
"I kept getting those phone calls," and finally when the
West side came in, surprise, the Governor was re-elected,
even though everybody had expected that he would lose."
And he said, "I cannot prove it. I have nothing but my
intuition." But I think that was the one election in Utah
history where the loser was counted out rather than voted

out. And we have had plenty of circumstances where that

kind of thing has happened, and the DRE would make that

impossible. You would not be able to say, "How many do we

need?" Because basically the results all come in

simultaneously.

Mr. Stewart. If I could just say, you are talking

about a situation with a lot of insider access. That means

people inside the process who are changing the vote totals.

They certainly can do that with the tabulation systems as

well, even though it is computerized. There is no reason

they cannot--if someone has that kind of access to keep

adding votes, they can also flip the votes. There can be,

you know, bugs put in there to, a certain point, switch the

totals to 51-48 the other way around. The problem there is

it is completely undetectable. You wouldn't even know if

this ever happened or--

Senator Bennett. Ms. Schmidt and Ms. McCormack, do

you agree with that?

Ms. Schmidt. I would say that the security procedures

rest in the hands of the local election officials and the

trust in the election process. You know, one person has to

be in charge in each jurisdiction to manage that election,

and that trust has to reside in those people. In my

county, it resided in me. And my security procedures were

that two people at all times had to be in the tabulation

room, and there was only one way in and that was through

the key that I had. And they logged in and the time and

the date and the reason why they were in the room. And we

had video cameras in place at all times pointed towards the

computer screens.

So we did everything that I could conceivably think of

to keep that event from happening, even though I trusted

highly my staff.

Senator Bennett. Ms. McCormack?

Ms. McCormack. Thank you, Senator. In addition to

what Ms. Schmidt has said, we do similar, as across the

country. But I think the point that has been made needs to

be clarified with the parallel monitoring because that is

the point, and I think the Brennan Center makes that very

well. To have the equipment being used by independent

testers in a test environment all day long so that you

cannot have a bug that is going to be introduced for 5

minutes to reverse some votes. We keep tremendous logs of

all the--all the voting systems have a logging system. It

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can be tracked back. It is detectable.

So for these emotional allegations that it is not

detectable, it is detectable. It is just you have to do

the right tests, and some of the jurisdictions are not

doing those tests. And I think that that standard needs to

be incorporated so that people can know that the tests were

conducted appropriately on election day.

Chairman Feinstein. All right. I am going to thank

you all very much. As I said, the record will be kept

open. I think it was a good morning. Hopefully we learned

some things, and we are very grateful for your testimony

and look forward to hearing from you in the future.

So thank you, and this hearing is adjourned.

[Whereupon, at 11:58 a.m., the Committee was

adjourned.]