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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

DONNA CURLING, ET AL., :
 :
 :
 PLAINTIFFS, :
 :
 vs. : DOCKET NUMBER
 : 1:17-CV-2989-AT
 BRIAN P. KEMP, ET AL., :
 :
 :
 DEFENDANTS. :

TRANSCRIPT OF EVIDENTIARY HEARING PROCEEDINGS
BEFORE THE HONORABLE AMY TOTENBERG
UNITED STATES DISTRICT JUDGE
SEPTEMBER 12, 2018
10:16 A.M.

MECHANICAL STENOGRAPHY OF PROCEEDINGS AND COMPUTER-AIDED

TRANSCRIPT PRODUCED BY:

OFFICIAL COURT REPORTER: SHANNON R. WELCH, RMR, CRR
2394 UNITED STATES COURTHOUSE
75 TED TURNER DRIVE, SOUTHWEST
ATLANTA, GEORGIA 30303
(404) 215-1383

A P P E A R A N C E S O F C O U N S E L

**FOR THE PLAINTIFFS DONNA CURLING, DONNA PRICE, JEFFREY
SCHOENBERG:**

DAVID D. CROSS
CATHERINE L. CHAPPLE
JANE P. BENTROTT
ROBERT W. MANOSO
MORRISON & FOERSTER, LLP

HALSEY G. KNAPP, JR.
KREVOLIN & HORST, LLC

FOR THE PLAINTIFF COALITION FOR GOOD GOVERNANCE:

ROBERT ALEXANDER MCGUIRE, III
ROBERT MCGUIRE LAW FIRM

BRUCE P. BROWN
BRUCE P. BROWN LAW

**FOR THE PLAINTIFFS COALITION FOR GOOD GOVERNANCE, LAURA DIGGES,
WILLIAM DIGGES, III, AND RICARDO DAVIS:**

CARY ICHTER
ICHTER DAVIS, LLC

FOR THE STATE OF GEORGIA DEFENDANTS:

JOHN FRANK SALTER, JR.
ROY E. BARNES
THE BARNES LAW GROUP, LLC

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FOR THE FULTON COUNTY DEFENDANTS:

KAYE WOODARD BURWELL
CHERYL RINGER
DAVID R. LOWMAN
OFFICE OF THE FULTON COUNTY ATTORNEY

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P R O C E E D I N G S

(Atlanta, Fulton County, Georgia; September 12, 2018.)

THE COURT: Morning. Please have a seat. Morning all. There are some people in the hallway. I'm assuming that they are being advised to go into the overflow room.

COURTROOM DEPUTY CLERK: They are, Your Honor.

THE COURT: We are here in the matter of *Donna Curling, et al., plaintiffs, vs. Brian Kemp, et al.,* Civil Action Number 1:17-CV-2989.

We have a lot of counsel. I think it would -- I have a little diagram of who everyone is. But why don't whoever is serving as lead counsel for the moment on each side stand up and introduce everyone with you.

MR. MCGUIRE: I'm Robert McGuire for the Coalition plaintiffs. I'm here with Bruce Brown --

THE COURT: You're not near a microphone. So please speak up.

MR. MCGUIRE: Your Honor, I'm Robert McGuire with Coalition plaintiffs. I'm here with Bruce Brown, co-counsel; Cary Ichter, co-counsel; and Coalition's corporate representative, Marilyn Marks.

MR. CROSS: Your Honor, David Cross with Morrison & Foerster on behalf of the Curling plaintiffs. With me is my colleague Jane Bentrrott, Catherine Chapple, and Robert Manuso and Halsey Knapp.

1 THE COURT: Thank you.

2 MR. SALTER: Good morning, Judge. John Salter with
3 Barnes Law Group for the state defendants, which is the State
4 Election Board members in their official capacity and Secretary
5 of State Brian Kemp in his official capacity.

6 With me at the table, Your Honor, is Mr. Barnes with
7 my firm and also one of the parties to the case, Rebecca
8 Sullivan. And Ryan Germany is deputy counsel -- counsel at the
9 Secretary of State's office. Also with me is Leigh Barnes, who
10 is my paralegal at the table.

11 We also have David Worley who is another State
12 Election Board member, Your Honor.

13 David, do you want to raise your hand?

14 I will let Fulton County and everyone else talk.

15 MS. BURWELL: Good morning, Your Honor. Kaye Burwell
16 on behalf of Fulton County, along with Cheryl Ringer and David
17 Lowman.

18 THE COURT: Very good. Thank you.

19 Now, we are sort of already a little cramped for time
20 and besides that space because we are -- I gather Fulton County
21 had some trouble getting through the security.

22 MS. BURWELL: Yes, Your Honor. We apologize.

23 THE COURT: Let's try to keep to the rest of the
24 timelines.

25 All right. First of all, I want to say I appreciate

1 the great amount of public interest in this and attendance.
2 The days of the courtrooms being packed and people looking down
3 from the balconies seem to be well gone and over except in our
4 movie imagination.

5 And so whatever happens here, I think that we should
6 all appreciate the profound public concern about voting issues
7 and wanting to be -- basically to participate in our democracy
8 and make it a vibrant democracy and make the judicial system
9 meaningful and exercising in meaningful review and being
10 witness to that.

11 So in keeping with those remarks, I want to simply
12 say I would genuinely appreciate if all counsel here as
13 stringent and colorful as your argument may be would be as
14 courteous as possible and not demean the other side. I don't
15 think it really helps the circumstance. There are sharp things
16 to be said on both sides. And I understand that. This --
17 these are issues of great importance to everybody. But I just
18 wanted to start with that remark.

19 I regret that there are individuals who are having to
20 hear and participate in this from the public who are in the
21 overflow courtroom. I would have used the overflow courtroom,
22 in fact, basically out of respect for everybody. But the
23 parties had a good deal of technology that they wanted to use
24 in presentation. And it was going to be a great deal more
25 awkward and difficult, and that courtroom is not equipped for

1 some of the technology at issue. That courtroom also was built
2 at a different time. So it reflects some of that as well as
3 the lack of endless funds to modernize.

4 We are making available, of course, the audio in the
5 overflow courtroom as well as there will be -- there are
6 screens in there that will show any exhibits. But
7 unfortunately or fortunately you won't get to see some of the
8 witnesses. There is no video presentation.

9 Obviously some people may decide to leave at points
10 because it may simply not be as interesting as they thought,
11 which is often so in court. And some of the people in the
12 front rows may decide they wish they could leave at points.
13 But in any event, that definitely happens.

14 I don't know whether anyone read any of the coverage
15 of people who attended the criminal trial in Virginia that went
16 on for a long time. And I had a feeling sometimes some people
17 were going to take amphetamines or something because they said
18 they were just holding themselves to stay awake. So this is a
19 daylong hearing. It is not weeks and weeks. But it has that
20 capacity as well for -- that people may be bored and move on.

21 I want to just say that I have already provided to
22 counsel a schedule for the day's proceedings. And just so that
23 everyone understands again, we're starting with arguments on
24 Eleventh Amendment immunity, standing, and related issues.

25 I think that in the interest of time because I have

1 read those briefs and they are very much legally oriented and I
2 do understand the arguments, I would ask counsel because --
3 particularly because we had to start late because of Fulton
4 County to try to truncate that to no more than 10 minutes each,
5 rather than 15 minutes.

6 And then we are going to have opening arguments on
7 the motion for preliminary injunction that is before me. And
8 then we are going to have direct and cross-examination of two
9 of the plaintiff Coalition's witnesses, I think Mr. DeMillo --
10 is that --

11 MR. MCGUIRE: DeMillo.

12 THE COURT: -- and Mr. Barnes. And then I anticipate
13 unless we have done something very wrong that we're going to
14 have a lunch break. And after that, we are going to have other
15 experts from the Curling plaintiffs and some of the state
16 defendants' witnesses, which include I understand individuals
17 from the state or county involved in the administration, as
18 well as former Secretary of State Cathy Cox and a
19 representative of Fulton County defendants. I can't remember
20 exactly everyone's titles.

21 Is that more or less right?

22 MR. CROSS: Your Honor, one thing, if I may. David
23 Cross for the Curling plaintiffs. We are not going to call
24 Mr. Barron at this point. And we have spoken with the
25 Coalition plaintiffs. I understand that they are not going to

1 call Mr. Barnes.

2 One other change, if we may. We will start with
3 Professor Halderman and then transition to Professor DeMillo.

4 And one thing --

5 THE COURT: I'm sorry. You are going to start
6 with --

7 MR. CROSS: Professor Halderman -- Alex Halderman and
8 then Rich DeMillo.

9 THE COURT: So you are going to swap the order --

10 MR. CROSS: Yes, Your Honor.

11 THE COURT: -- of the expert witnesses?

12 MR. CROSS: And then Chris Harvey will be the next
13 witness and the last.

14 Could I ask one question?

15 THE COURT: Yes.

16 MR. CROSS: As long as we don't elongate the schedule
17 overall, is it okay if we have flexibility to use time we have
18 picked up from losing witnesses -- letting witnesses go into
19 perhaps more time on closing arguments, which we think may be
20 valuable to the Court as long as we are not extending the day?

21 THE COURT: As long as you are not extending the day
22 and understanding we had to start late.

23 MR. CROSS: Understood.

24 THE COURT: But yes.

25 MR. CROSS: Thank you, Your Honor.

1 MS. BURWELL: Your Honor, Fulton County intends to
2 call Mr. Barron since the plaintiffs are not going to call him.

3 MR. SALTER: Your Honor, on behalf of the state,
4 since we had this planned based on our conference, I don't have
5 any problems with them switching the order of their experts.
6 We did bring Mr. Barnes -- Michael Barnes. We're not going to
7 let Roy testify, of course. But we did want to bring him
8 briefly on some -- on a particular issue, I think, that will be
9 of interest to the Court. It is a foundational issue. But it
10 won't elongate the time I don't think. And if they want to
11 cross him about that, they can. But we did expect him to
12 testify, and we built that into the schedule.

13 THE COURT: As long as it doesn't elongate your time.

14 I want to remind everybody that because the people in
15 the overflow courtroom are only hearing audio -- they can't see
16 you and see the way you are articulating -- it is probably more
17 important than ever that you be closer to a microphone and
18 speak in measured -- enough measured tones that people can
19 understand you. And it is always important for me too.

20 MR. BARNES: Your Honor, I would like to invoke the
21 rule of sequestration before any of the arguments or testimony.

22 THE COURT: As to expert witnesses?

23 MR. BARNES: Yes, ma'am. If they don't have their
24 facts down by now --

25 THE COURT: Well, I don't -- I'm going to not allow

1 it because I think that it is going to end up being a waste of
2 time. Because you're going to ask people about -- each of you
3 are going to ask about other individuals. This is not just
4 kind of did I see -- what did I see. I don't think it really
5 aids the efficient management of hearing the expert testimony.

6 MR. BARNES: I just want to put it on the record,
7 Your Honor.

8 THE COURT: All right. Of course, if the parties
9 agree, that is something else. But do you-all want to excuse
10 the experts then? If you-all think that, in fact, we're going
11 to be more likely to get to the bottom of things that way, that
12 is fine. But that is my instinct in terms of just efficient
13 management of the hearing.

14 MR. SALTER: Your Honor, just a point of
15 clarification, so the rule is invoked as to fact witnesses but
16 not the experts?

17 THE COURT: That would be my view. But I jumped in.
18 And if the parties actually agree, I don't want to -- about --
19 I will consider that. I'm not telling you what I'm going to
20 do, but I certainly will consider if the parties think that the
21 experts should be sequestered.

22 MR. McGUIRE: Your Honor, this is Robert McGuire. We
23 don't believe the experts should be sequestered. We think it
24 will be faster if they are able to listen to what other experts
25 are saying so they can opine on that and comment on that.

1 THE COURT: All right. So back -- yes?

2 MR. CROSS: Your Honor, we agree. For clarification,
3 I think the only fact witnesses in the room today are employed
4 or affiliated with the defendant. So does that mean the fact
5 witnesses are leaving?

6 MR. BARNES: They are our parties. She is a party
7 today.

8 MR. CROSS: Okay. So no one is actually leaving the
9 courtroom? Is that -- I'm trying to figure out who is leaving
10 the courtroom. Because they invoked Rule 615, but now they
11 want their witnesses in the courtroom.

12 MR. BARNES: If you are going to let one of them in,
13 let them all in.

14 MR. SALTER: We'll just withdraw --

15 MR. BARNES: We'll withdraw the motion. Just let
16 everybody in.

17 THE COURT: All right. Apparently I have.

18 MR. BARNES: That is fine.

19 THE COURT: All right. Anything else on a
20 preliminary basis that we need to discuss?

21 MR. SALTER: Not for the state, Your Honor. We're
22 ready.

23 MR. McGUIRE: Not for us, Your Honor.

24 MR. CROSS: Ready, Your Honor.

25 THE COURT: All right.

1 So what I would like to address unless the Court has
2 other questions is the preclusion issue. And when we were here
3 in May -- 1st of May, Your Honor indicated that you were
4 concerned potentially with res judicata and collateral estoppel
5 arising from what we are calling Curling One, which was a state
6 court lawsuit filed in May of 2017. And then that was
7 dismissed in July of 2017. And there were some of the same
8 plaintiffs that are here in this case, and it also involved
9 DREs.

10 The state law of preclusion governs res judicata and
11 collateral estoppel in federal court. And the Eleventh Circuit
12 has issued a good decision that actually deals directly with
13 Georgia state preclusion law. And that is *Community State Bank*
14 *vs. Strong*, 651 F.3d 1241. That is a 2011, Eleventh Circuit
15 decision.

16 And they talk in that case about res judicata and
17 about collateral estoppel. Since it may not be clear to
18 everybody, res judicata bars you from litigating any claim
19 which you brought or could have brought that was previously
20 decided on the merits in a final determination.

21 And collateral estoppel or issue preclusion is not as
22 broad. It prevents you only from relitigating issues that were
23 decided on the merits in an earlier case that were necessary to
24 the determination.

25 So Curling One filed in May 2017 was a case that only

1 brought state law claims, and it brought them in state court.
2 There was a motion for preliminary injunction, which was denied
3 on June 9 in an order. And in that order, the state court said
4 that sovereign immunity barred those state law claims.

5 We attempted to argue -- I represented the Coalition
6 in that case. We attempted to argue at the hearing that there
7 were federal claims that we could bring, Section 1983 claims,
8 and the judge made a very solid ruling that that was not an
9 issue in the case in dismissing the state law claims on
10 sovereign immunity grounds. Then she denied the motion for
11 preliminary injunction.

12 She issued that order, and no judgment was actually
13 issued. So that case remained alive until -- this case was
14 filed on July 3rd while that case was still alive. This case
15 brought federal claims under Section 1983.

16 And then on July 7th after this case was brought,
17 that case was voluntarily dismissed by the plaintiffs. So
18 there was never an entry of a final judgment in that case,
19 which is a prerequisite for both res judicata and collateral
20 estoppel to apply.

21 Just as a matter of Georgia law, they don't apply for
22 that reason. And there are other reasons as well. But that is
23 the main one.

24 THE COURT: All right.

25 MR. MCGUIRE: As far as standing goes, just to turn

1 back to injury, there are a number of injuries that are alleged
2 by the plaintiffs in the third amended complaint brought by our
3 clients and the second amended complaint brought by the Curling
4 plaintiffs. And all of those injuries are sufficient to invoke
5 standing, to invoke the jurisdiction of this Court, because
6 those injuries are all caused directly or indirectly by the
7 state's enforcement of the State Election Board rule requiring
8 the use of DREs for in-person polling place voting. And those
9 injuries are redressable if the Court grants us the relief
10 we're requesting. Therefore, all three of the elements of
11 standing, injury, causation, and redressability exist. And so
12 therefore we think the standing prong is covered.

13 Unless the Court has any questions on standing or
14 preclusion, I can sit down and turn over the rest of my time to
15 co-counsel to talk about the immunity.

16 THE COURT: All right. If you want to -- if either
17 of you want to save a minute if you have one, then I'm not --
18 then to respond to the state, you may do so also.

19 MR. MCGUIRE: By my watch, I have got 25 seconds of
20 my half. So I'll save that.

21 MS. BENTROTT: Good morning, Your Honor. Jane
22 Bentrott on behalf of Curling plaintiffs.

23 THE COURT: All right.

24 MS. BENTROTT: If it is all right, my colleague,
25 Robert Manuso, will pass out some of our slides.

1 THE COURT: And would you speak up also.

2 MS. BENTROTT: If you could, put up our slides on the
3 screen.

4 THE COURT: Thank you.

5 MS. BENTROTT: As Mr. McGuire said, I'm going to
6 address the Eleventh Amendment immunity issues.

7 THE COURT: Still a little louder.

8 ARGUMENT

9 MS. BENTROTT: Yes, ma'am. I think all parties agree
10 here the question is whether the ex parte Young exception to
11 Eleventh Amendment sovereign immunity applies. And the
12 exception is pretty clear. The immunity is limited to -- the
13 exception is limited to suits against state officers for
14 prospective injunctive relief, which is exactly what plaintiffs
15 seek here.

16 And the case law is very clear this is a very broad
17 exception. Where plaintiffs don't seek damages, where they
18 seek prospective injunctive and declaratory relief, the
19 Eleventh Amendment is not a bar in these cases.

20 Defendants attempt to wedge the plaintiffs into a
21 very narrow carve-out to the ex parte Young exception. Courts
22 don't apply the ex parte Young exception when the suit is
23 ultimately designed to redress only a past harm and not a harm
24 that may have begun in the past but is continuing and ongoing.

25 It cannot credibly be disputed that plaintiffs here

1 allege an ongoing and continuous violation of federal law as
2 required to meet the ex parte Young exception. Defendants
3 themselves have told the Court repeatedly and will tell the
4 Court again today that they intend to use the challenged DREs
5 in the upcoming election absent an injunction. That is the
6 definition of a continuing and ongoing harm and for which we
7 seek prospective injunctive and declaratory relief.

8 Just to clarify a few of the arguments that
9 defendants make, they suggest that the immunity does not apply
10 if the claim is based on conduct that began in the past. But
11 they cite *Papasan vs. Allaine*, which itself says that immunity
12 does not bar claims based on past, present, and future
13 deprivations.

14 Defendants also suggest that declaratory relief
15 affirmatively shows that plaintiffs are seeking to redress only
16 a past harm. Again, the cases they cite show that declaratory
17 relief is contemplated by the ex parte Young exception as seen
18 in *Summit Medical Associates vs. Pryor*, an Eleventh Circuit
19 case.

20 As my colleague covered this, I will just briefly
21 move on. And unless the Court has any questions on immunity,
22 I'll just briefly address the Curling plaintiffs' standing.

23 We agree with the Coalition plaintiffs that
24 plaintiffs here have standing, and we would just like to
25 highlight that requiring a registered voter to make the choice

1 between casting an absentee or provisional ballot or producing
2 photo identification in person has been determined by the
3 Eleventh Circuit to be an injury sufficient to qualify -- to
4 confer standing.

5 Defendants themselves say that the remedy here is
6 that plaintiffs possess an unlimited legal right to cast their
7 vote by paper absentee ballot if they do not trust the
8 unsecured DREs. That shows that this meets the exact
9 requirement of *Common Cause vs. Billups*.

10 I would just like to highlight our plaintiff Donna
11 Curling's experience when she tried to do exactly what
12 defendants here suggest. When she was concerned about the use
13 of DREs and her vote being counted, she attempted to vote via
14 paper absentee ballot only to learn in this litigation that her
15 vote did not count and she was disenfranchised. That alone
16 shows very clearly why Curling plaintiffs have standing in this
17 case.

18 If you don't have any questions, I'll reserve my
19 minute for any follow-up if needed.

20 THE COURT: Thank you.

21 MS. BENTROTT: Thank you, Your Honor.

22 MR. SALTER: Amy, would you switch the video from
23 plaintiff, please, ma'am.

24 ARGUMENT

25 MR. SALTER: May it please the Court, Your Honor.

1 John Salter for the state defendants. I'll try to keep
2 checking my time as best I can.

3 Let me start with why we are here today generally. I
4 know I have only got ten minutes and maybe one minute of amen
5 reserved for my folks in Fulton County. Most of this is my
6 issue alone. But I think they may join in one portion of the
7 argument.

8 We are here because Georgia state law delegates a
9 duty to the Secretary of State to -- they shall perform all the
10 duties imposed by this chapter in the election law title, and
11 that includes the obligation to develop, program, build, and
12 review ballots for use by counties and municipalities on direct
13 recording electronic voting systems used in the state.

14 In 2008 {sic} the Secretary of State at the
15 plaintiffs' request -- their first iteration of their complaint
16 you'll remember sought a mandamus action to compel a
17 reexamination of the DRE machines. That has been done. It has
18 been reexamined. There has been an additional certification.
19 That was in the spring of 2018 this year.

20 But the law allows -- the Secretary of State
21 delegates discretion to that office to in his or her opinion
22 attest that the kind of system so examined can be safely and
23 accurately used by electors. That discretionary decision
24 delegated to that office has been performed this year.

25 The DRE allegations in this case are unlike -- no one

1 disputes here that voting is fundamental. No one disputes that
2 it is important. This case is particular in terms of the
3 standing issue that is presented.

4 You have -- DRE allegations are different from vote
5 dilution cases, one man/one vote, *Wesberry vs. Sanders*, voter
6 ID cases. We don't have a waiting issue. We don't have a
7 dilution issue that is particular to any of these persons that
8 are before the Court today.

9 And what the claim is is that the DRE machines should
10 be presumed to be compromised. That is in the complaints. And
11 they want to override the discretionary decision delegated by
12 state law to a state official and basically have the Court
13 override his decision in this case and prohibit the use of DRE
14 machines.

15 The subject matter jurisdiction with this is that you
16 can't. The Supreme Court in 2013 said -- there was a very
17 reasonable common sense opinion from the Second Circuit that
18 said in a surveillance case where there was a data issue and
19 said -- the Second Circuit said we're going to use a reasonable
20 likelihood standard in order to weigh Article III standing
21 under the Constitution. The Supreme Court in 2013 in a case
22 called *Clapper* said, no, you are going to have to show more
23 than that.

24 And that inability to make a reasonable presumption
25 is what keeps the plaintiffs from showing the existence clearly

1 of subject matter jurisdiction in this case. It is also --
2 they are barred by the Eleventh Amendment because this is an
3 official capacity suit to control the state's discretion. They
4 are not saved by the three elements they would have to show
5 under ex parte Young.

6 Further, the State Election Board -- to the extent
7 that they are asking now to say, hey, tell the State Election
8 Board -- they are going to have to rulemake to try to make this
9 work for November 6. That gets us directly into a hornet's
10 nest of issues regarding legislative immunity where you are
11 basically telling them, you legislate, and if you don't
12 legislate the way I want to, state officials, basically the
13 next question is a contempt violation to make people legislate
14 the way this federal court wants them to or wants the court to.

15 So you can't presume standing under Article III.
16 Plaintiffs have no injury. These are arguments that are all
17 briefed. And I'm not going to go through every single one of
18 them, Your Honor.

19 There is no causal connection between any alleged
20 injury and any of the state's conduct. They are unlikely to
21 have a favorable decision that will actually redress their
22 fears.

23 The plaintiffs may not manufacture standing by
24 sitting on the train tracks and waiting for the train to hit
25 them. And, finally, we argued in the briefs -- I won't revisit

1 this -- that the plaintiff Coalition entity lacks associational
2 standing under that body of law.

3 Let me just hit the high points with you. The most
4 important -- the most prominent argument, I think, that is
5 clear under the precedent, especially after 2013, is that
6 plaintiffs have no injury, in fact. And there is no -- related
7 to that is there is no continuous, ongoing violation under the
8 ex parte Young analysis. Because -- and it is related to why
9 there is no harm. For a violation to exist, it makes sense
10 that you would have a harm that would be shown. Because the
11 state -- the theory that we're before the Court on today, Your
12 Honor, is that because the state and because the particular
13 state officer disagrees with the plaintiffs' software fears --
14 that he disagrees that those are reasonable fears, just as the
15 Secretary of State before him, Karen Handel, did, just as you
16 will hear today the Secretary of State before Karen, Cathy Cox,
17 disagrees.

18 Because the state doesn't agree that the plaintiffs'
19 fears are reasonable and well-founded, their argument is, well,
20 if we disagree, we can go to court and constitutionalize that
21 disagreement, that discretionary decision. And they then walk
22 directly into the argument that the certification by the state
23 officer that they are safe and secure to use is
24 unconstitutional. That is the theory we're talking about.

25 And the problem with that, as I said, is that the

1 Supreme Court has clarified in 2013 that their argument that
2 when they walk into a poll on November the 6th, 2018 -- the
3 argument that they are just fearful that their vote will not
4 count for some reason or will not be proven to count in a
5 recount or an audit thereafter if the election were contested,
6 that that is an injury. *Clapper* says that is not.

7 Secondly, we have a case that came out after 2013
8 after the Supreme Court wrote that opinion in *Clapper* that
9 actually deals with the DRE machines. A federal judge in
10 Pennsylvania, *Stein vs. Cortes* -- this is cited in our brief.
11 The quote from that case -- it actually didn't simply say, hey,
12 we have standing. We'll go forward. It denied the preliminary
13 injunction. But it also said this, plaintiffs' allegation that
14 voting machines may be hackable and the seemingly rhetorical
15 question they pose respecting the accuracy of the vote count
16 simply do not constitute injury-in-fact. That is a 2016 case.
17 We would ask the Court to agree.

18 I'm also going to talk about the fact that they can't
19 assume the risk here. They have a free and unrestricted right.
20 You didn't have this several years ago. But they have a free
21 and unrestricted right to vote absentee. And if they want a
22 paper ballot, they can -- it appears that Ms. Curling made a
23 mistake in how she sent her paper ballot in. Of course, that
24 is regrettable. But that is something that the voters are
25 expected to do for themselves.

1 You can't manufacture standing nearly by inflicting
2 harm on yourself based on a fear of a hypothetical future harm.
3 You can't parlay a future hypothetical harm into a real harm by
4 simply saying, well, I'm not going to take the unrestricted
5 right to file a paper ballot. That doesn't work under *Clapper*.
6 And the Supreme Court of Georgia in a DRE machine case in
7 *Favorito vs. Handel* said exactly the same thing in a unanimous
8 opinion of the Supreme Court of Georgia.

9 Here is why their claims are barred by the Eleventh
10 Amendment and not saved by *ex parte Young*. If you look at
11 *Lathrop vs. Deal* -- it came down last year in 2017 -- sovereign
12 immunity would bar these claims for injunctive relief because
13 of a law they allege -- that plaintiffs allege to be
14 unconstitutional.

15 And if you look at the *Seminole Tribe* case that went
16 from this circuit court in the Eleventh Circuit to the Supreme
17 Court of the United States, the Eleventh Amendment also serves
18 to avoid the indignity of subjecting a state to the coercive
19 process of judicial tribunals at the instance of private
20 parties.

21 Here is why they are not saved by the exception, the
22 three elements they have to meet, under *ex parte Young*. The
23 *Young* exception is not available --

24 THE COURT: How are you doing on your time?

25 MR. SALTER: 8:05.

1 THE COURT: All right. I just wanted --

2 MR. SALTER: I'm going to cite the same case that
3 Ms. Chapple -- I'm sorry. Excuse me -- that Ms. Bentrrott just
4 cited -- Jane cited. And that is *Idaho vs. The Tribe of Idaho*.
5 That exception is unavailable when the relief it sought would
6 upset the balance of federal and state interest that it
7 embodies.

8 If you have -- if you want -- can I switch real
9 quick, Amy, to the ELMO?

10 Look -- on the preclusion issue, look at the order.
11 If it is not in the record, we can put it in there. But the
12 *Curling vs. Kemp* case -- I want to correct something that my
13 brother of the bar said on behalf of the Coalition
14 plaintiffs -- that Mr. McGuire said. That case was not
15 dismissed at their instance.

16 It was dismissed in June -- the emergency motion was
17 denied, and the complaint is dismissed. It was dismissed
18 because the Court cannot adopt plaintiffs' conclusion that
19 Georgia's DRE voting equipment and its related voting system
20 are unsafe, inaccurate, and impracticable within the meaning of
21 the statute. Plaintiffs have failed to demonstrate any
22 concrete harm.

23 It went on to hold -- and so that harm -- now,
24 listen, this was at a different election granted. They were
25 trying on the eve of election in spring of 2017. But they were

1 arguing the same exact theory. And the Court said, you don't
2 have -- you haven't shown a harm. Then it said you have got --
3 we have sovereign immunity here that is at issue there.

4 If we can switch back real quick, Ms. Amy, and I'll
5 wind up.

6 So that is why they are not saved. The last thing
7 I'll point out is they are starting this Court, Your Honor,
8 down a road. Both of their injunctions depend on just saying,
9 well, just rulemake to make this elephant have wings and fly.
10 We'll take away the machines. Leave us with no system that is
11 workable for November the 6th. But the SEB, they can rulemake
12 to make this all work with the implicit thing that they are
13 going to come back and say, well, if they don't rulemake the
14 right way, you can hold them in contempt.

15 That is why you have legislative immunity according
16 to the Eleventh Circuit. We have cited a case on that.

17 With that, I'll hush, Judge, unless you have any
18 questions.

19 THE COURT: Not at this moment. Thank you.

20 MR. SALTER: Thank you, Judge.

21 MS. BURWELL: Your Honor, Fulton County joins in the
22 state's standing argument.

23 THE COURT: Thank you.

24 MR. MCGUIRE: Your Honor, Robert McGuire just very
25 briefly to rebut some of these points. So first of all --

1 MR. SALTER: I'll object. I don't want -- I don't
2 know if they want to do that as part of the preliminary
3 injunction. But we need to stay on track. It is our motion to
4 dismiss. So I just make that note. If they want to take us on
5 to the preliminary injunction presentation, I have no
6 objection.

7 THE COURT: I allowed him -- he had 25 seconds and
8 one minute. We're going to spend more time discussing it.
9 So --

10 ARGUMENT

11 MR. MCGUIRE: So in a case for prospective relief --
12 injunctive prospective relief, the test is whether there is
13 substantial risk. That is the test to determine whether there
14 is a substantial risk of future injury. And the distinction
15 between the *Clapper* case where it was not certain that the
16 voters -- that the people complaining would be surveilled is
17 different from this case where it is certain that the
18 plaintiffs are going to vote and be exposed to some substantial
19 risk. So that is the difference. *Clapper* does not apply to
20 this case. It does not control this case.

21 Mr. Salter pointed out that the order in *Curling One*
22 said that the complaint was dismissed. That is correct. But
23 there was no judgment. And a judgment is required for a final
24 judgment on the merits. There has -- a final judgment -- you
25 can't appeal an order. You can't appeal it unless there is a

1 judgment. There was no judgment.

2 And so the plaintiffs dismissed it. And to the
3 extent he wants to put the order in the record, we can also put
4 the notice of dismissal in the record that terminated the case.
5 That was a voluntarily dismissal.

6 And, finally, his point under the *Lathrop* case that
7 sovereign immunity bars claims against the state, that is
8 beside the point because the essence of the doctrine of ex
9 parte Young is that an official of the state who is acting
10 unconstitutionally, who is sued in his official capacity or her
11 official capacity, isn't the state. They are being sued --
12 they are acting outside of their authority because they are
13 doing something unconstitutional. And therefore the Eleventh
14 Amendment immunity that the state benefits from doesn't apply
15 to that official for a prospective injunctive relief suit.

16 And that is my time.

17 THE COURT: Thank you.

18 MS. BENTROTT: Nothing further, Your Honor.

19 THE COURT: All right. Thank you. First of all, for
20 purposes of moving forward here efficiently, I'm going to say I
21 am -- will not address the res judicata or collateral estoppel
22 arguments because I think that those can be properly handled in
23 the order. And I expect to issue an order on Friday or on
24 Monday. And I think that the real threshold issue is do I have
25 jurisdiction to hear this at all --

1 And I have considered the arguments made by the state
2 defendants and Fulton County who argue that there is not a
3 basis for standing and there is not a basis for jurisdiction
4 and that the Eleventh Amendment bars plaintiffs' federal
5 claims, particularly against the state defendants.

6 As to standing, I find that the plaintiffs have
7 sufficiently alleged the elements of standing. Specifically
8 they have alleged facts that plausibly show that they have --
9 that they will suffer injury-in-fact and have and that there is
10 at least reasonable allegations of a causal link between the
11 defendants' challenged conduct and the plaintiffs' injury here
12 and that the requested injunctive relief, if ultimately
13 granted, would redress the plaintiff' injury.

14 That is not to say that all of those things will end
15 up panning out. But for purposes of making the determination
16 that I have jurisdiction, I think it is sufficient.

17 As to the Eleventh Amendment immunity issue, the
18 Court finds that this is a classic ex parte Young case.
19 Plaintiffs are only seeking prospective injunctive relief
20 against state officials and county officials. Thus the ex
21 parte exception applies so that the plaintiffs' federal claims
22 are not barred by the Eleventh Amendment.

23 I understand the argument being made about *Clapper*.
24 I think the allegations here are far more detailed, far more
25 factually based, and also the motions for preliminary

1 injunction shore that up. I understand well that there are a
2 host of cases that have dealt with DREs in the past. And that
3 is the voting machine here. Though not all of them dealt with
4 software issues and some of the complex issues that have now
5 been presented to the Court.

6 The reality is times change, and it is not because we
7 have a different view of what -- sometimes we have a different
8 view of what the law is. Sometimes the facts have changed, and
9 we are in a rapidly changing time as to the issues and
10 assessment of what it means to essentially have a system that
11 is vulnerable to being hacked and, in fact, likely to --
12 potentially likely to have been hacked.

13 The type of evidence that is presently before the
14 Court or at least the allegations are far more substantive and
15 material and different even than what was in front of the court
16 in 2017. Not to mention that it was a different -- we're not
17 talking about retroactive relief guided towards the Sixth
18 District, which was involved in the case in superior court in
19 2017.

20 So I do think that the concerns in *Clapper* are real.
21 But I think that the allegations of the complaint and the
22 evidence that has been submitted in connection with the
23 allegations of the complaint are at least sufficient for me to
24 assert jurisdiction for purposes of holding this hearing and
25 considering the preliminary injunction.

1 And I will elaborate on that more fully again in an
2 order to be issued. But given the volume of paper that has
3 been submitted, I have just simply tried to -- we'll move
4 forward and hear the preliminary injunction based on that
5 determination.

6 All right. It is the motion of the plaintiff. So
7 I'll hear opening arguments on the motion for preliminary
8 injunction. And please remember at this point that I -- even
9 though I would expect those who are members of the public
10 haven't heard your arguments in full, I have read your briefs
11 in full. So this is -- while I know many who attended -- who
12 have requested to come thought this might be a public meeting
13 as opposed to a court hearing, it is not a public meeting.

14 So, you know, the most important thing is I get -- I
15 get helped in hearing this as to the arguments. The evidence
16 is something else. We'll address that later. Thank you.

17 OPENING STATEMENT

18 MR. CROSS: Your Honor, David Cross on behalf of the
19 Curling plaintiffs. Good morning. I'm going to start and then
20 I'm going to hand it off to my colleague, Mr. Manoso, within
21 the time that we have. And the Coalition plaintiffs and our
22 group have split this up within the time allotted.

23 Your Honor, the legal issues in this case that Your
24 Honor is going to have to decide on the preliminary injunction
25 essentially boil down, we submit, to two fundamental questions.

1 This case turns on two questions. The first is, do the
2 circumstances involving the current DRE-based system constitute
3 a deprivation of a constitutional right?

4 We submit in light of the showing from our side in
5 terms of expert testimony and extensive other findings
6 regarding these machines and vulnerabilities -- and we'll talk
7 through that today -- and the absolute dearth of evidence from
8 the defendants to defend this system the only answer the Court
9 can reach to that question is yes, which means the only
10 question before the Court today is the second, which is what is
11 the appropriate remedy. Not is there a remedy, whether there
12 will be a remedy, but what is it.

13 The remedy that we have proposed is paper ballots at
14 the polls throughout early voting and on the election day with
15 at least some measure -- additional measure for folks who are
16 disabled who can't do that and then some sort of appropriate
17 audit. We will talk through all that today. And to be clear,
18 the paper ballots should be the ballot of record --

19 The reality is that Georgia has been frozen in time
20 for the last 16 years and as a result has been left behind by
21 virtually every other state in the country with respect to how
22 elections are run today.

23 The Supreme Court has repeatedly emphasized that the
24 right to vote is sacrosanct. And I want to be clear about
25 something here, Your Honor. It is not just the right to cast a

1 ballot but also the right to have them counted. And the only
2 thing that Georgia -- that the Secretary of State and the
3 defendants can point to today that is possibly guaranteed to
4 Georgia voters is the right to cast a ballot. Once that ballot
5 has gone into the ether, no one knows whether it is accurately
6 recorded because it simply cannot be verified and the system is
7 inherently vulnerable as we will show today.

8 Confidence, the Supreme Court has also emphasized,
9 Your Honor, is essential to the functioning of our
10 participatory democracy, Your Honor. So even eroding
11 confidence constitutes harm. And given what we know from the
12 U.S. intelligence community today about the ongoing efforts to
13 hack these sorts of systems, voters cannot have confidence in
14 this system in the State of Georgia.

15 It is difficult to understand how the Secretary of
16 State and Fulton County can come before the Court, along with
17 the State Election Board, and claim that we are paranoid, that
18 our concerns are hypothetical because it flies in the face of
19 everything that we hear almost on a daily basis about Russia's
20 and others' efforts to interfere in the election.

21 The director of national intelligence characterizes
22 it as ongoing and pervasive efforts to undermine our democracy.

23 **(A videotape was played for the Judge.)**

24 MR. CROSS: The director of DHS, what is the target
25 of our enemies? It is our elections, fair elections. It is

1 very specific what they are targeting, Your Honor. The head of
2 the FBI says that this is a threat we need to take extremely
3 seriously to tackle and respond with fierce determination and
4 focus.

5 The Secretary of State who is entrusted with this
6 vote -- with this system here has literally done nothing. And
7 we will talk through the specifics of that today, Your Honor.

8 And let's just be clear about some specific facts.
9 Because when they say our concerns are hypothetical, again it
10 flies in the face of the facts. We learned over the summer
11 from Bob Mueller's investigation that sophisticated Russian
12 hackers were visiting websites for the purpose of trying to
13 infiltrate elections here, specifically in the State of
14 Georgia. At least one state -- it wasn't Georgia -- but at
15 least in one state they actually accessed the registration
16 database.

17 The timing of this is important. This is October 28
18 of 2016. Here is why that timing matters. Because Logan Lamb,
19 respected cybersecurity researcher, found in August of 2016,
20 one month before Russian hackers were trying to get into the
21 election system here, that that election system was vulnerable
22 to hackers.

23 What you will find also is that six months later
24 after he had warned the state that same system was still open
25 to hackers. So in the same exact time that we know Russian

1 hackers were trying to infiltrate the system here, it was
2 exposed to those hackers, Your Honor.

3 And tellingly, even though the defendants had an
4 opportunity to come forward with evidence in response to our
5 preliminary injunction motion and to assure the Court and the
6 State of Georgia voters that they have done the forensic
7 analysis to determine whether this system was compromised, it
8 is crickets. There is not a single cybersecurity expert on
9 their side of the room.

10 And you know what is interesting about that, Your
11 Honor, is there is one cybersecurity expert that the state
12 apparently respects because Secretary Kemp put a professor at
13 Georgia Tech, Wenke Lee, on the SAFE Commission. He is the
14 only cybersecurity expert on that commission.

15 And you're going to learn today, Your Honor, that he
16 recently gave a presentation that is entirely consistent with
17 all of our warnings and recommends the very same proposed
18 relief that we recommend. So it comes as little surprise that
19 they couldn't find any cybersecurity expert to refute the
20 showing that we have made.

21 Ultimately what this means, Your Honor, is that the
22 right to vote in the State of Georgia is illusory. As one of
23 my clients once said, it is akin to whispering your vote to
24 someone behind a curtain and just hoping they write it down and
25 count it as you intended. That is all that voters can take

1 away at the end of the day.

2 What the state says publicly is that the system
3 remains accurate and secure. They seek to assure voters of
4 that. And I don't think it can be overstated how disturbing
5 those representations are when given the opportunity in the
6 course of this case they have not come forward with a single
7 bit of evidence to support that representation.

8 Their entire defense in response to our preliminary
9 injunction motion is this. They simply attack our relief.
10 They say paper ballots in August are just going to be too hard,
11 take too much time and too much money. But they are utterly
12 silent on the vulnerabilities that rise to the level of
13 constitutional deprivation, and they should not continue to
14 defend a system publicly that they cannot defend in court.

15 That then leaves us, Your Honor, where I began. The
16 only question remaining before this Court is whether relief is
17 required -- I'm sorry -- not whether relief is required but
18 what relief is required.

19 With that, I'll hand it off to Mr. Manuso.

20 OPENING STATEMENT

21 MR. MANUSO: Never give the boss the clicker.

22 Thank you, Your Honor. This is Rob Manuso also for
23 the Curling plaintiffs. I would like to walk the Court through
24 briefly the issues of the public interest and whether the
25 change set forth in our proposed relief is feasible.

1 Our proposed relief is feasible in the time allotted.
2 And, in fact, it is necessary to promote the public interest.
3 One of the things that is ignored in the defendants' papers is
4 that paper ballots are already in the fabric of the current
5 Georgia voting system. Our proposed relief simply makes them a
6 much sturdier foundation than the current DREs.

7 The Georgia legislature recognized that there might
8 be times when the DREs fail. In these instances, paper is
9 established as the backup. We cited to several provisions in
10 our briefs that show when any voting equipment, including the
11 DREs, is impossible or impracticable the solution is the use of
12 paper ballots.

13 The statute specifically referenced DRE units
14 malfunctioning or another emergency situation that calls for
15 their use. Clearly, Your Honor, given the uncontested evidence
16 regarding the vulnerabilities, given the inability of the state
17 to solve them, the use of DREs is currently impracticable at
18 least at a minimum. And so the statutes already provide a
19 framework for the relief that we seek.

20 Those ballots are taken. They are counted. They are
21 secured. And the votes are counted on a paper ballot. These
22 are just two examples of the way in which paper is already in
23 use providing the framework for our proposed relief. This also
24 includes mail-in absentee ballots, which are currently done
25 using the optical scanners that are part of our proposed

1 relief.

2 And in addition, the optical scanning statutory
3 provisions that were on the books before the use of the DREs
4 are still on the books. They were never repealed, and they
5 give all the details necessary to use optical scanners down to
6 how you tabulate the vote and stick the optical scanned ballot
7 for scanning. So we believe the procedures are in place, Your
8 Honor.

9 We also believe that Georgia has the resources. One
10 of the things that is missing from their brief is any analysis
11 of the cost savings or the cost exchange by not having to use a
12 DRE system.

13 As the defendants noted in their papers, there are
14 over 28,000 DREs: 28,000 computers that need to be set up,
15 loaded, tested, maintained, and like all computers eventually
16 fixed when problems inevitably arise. The defendants have
17 given us no benchmark from which we could truly evaluate
18 whether the proposal -- our requested relief is actually going
19 to be more expensive.

20 In addition, there is no mention of the fact that the
21 federal government has specifically allotted resources for the
22 use of securing elections. As you will hear later today, Your
23 Honor, in just July of this year, Georgia finally requested
24 over \$10 million specifically for the purpose of securing
25 elections. You will also hear testimony that the resources are

1 there for the state in order to do this in a timely fashion.

2 On that note, we also believe that the state has
3 time. As you will hear today, several of the biggest counties
4 that would have the most to do have not even begun training of
5 their election workers. Again, those election workers already
6 have the procedures in place to use paper ballots because of
7 the statutory provisions I just referred to.

8 At the end of the day, Your Honor, it might be that
9 there are some added costs to this process. And it might be
10 that there are some time constraints we are bumping up against.
11 But we submit, Your Honor, that you have to look at both sides
12 of the scale.

13 Any burden on the part of the state and any potential
14 burden that they may incur in making this change are far
15 outweighed by the harm to the plaintiffs and other Georgia
16 voters if we simply resign ourselves to the status quo for
17 another election.

18 Mr. Cross already talked to you about the dilution of
19 the individual right to vote. It doesn't matter whether their
20 specific vote was counted or altered. If their candidate -- if
21 their chosen candidate is no longer a successful candidate
22 because of interference, their right was infringed in just the
23 same way. And, of course, Mr. Cross also talked about the loss
24 of voter confidence.

25 On the other side of the equation, Your Honor, you

1 As a federal court, you, of course, are not bound by state law.
2 And if the plaintiffs assert a constitutional right that is
3 being infringed by the enforcement of state law, of course,
4 state law must give way.

5 But we think it is significant nevertheless that
6 state law here provides the remedy if the DRE machines are
7 found to be impossible or impracticable. Now, what does
8 impracticable mean? Impracticable means that they do not do
9 what they are supposed to do. And if DRE machines are proven
10 to be unreliable and untrustworthy, as we believe they have
11 proven to be, then they are manifestly impracticable. And
12 therefore the relief that we are seeking fits hand in glove
13 into the entire administration of the election machinery that
14 the Georgia legislature has provided.

15 Now, as I said, as a federal court, that is not a
16 dominating consideration. But in terms of the public interest
17 and also in the balancing of the equities, the fact that the
18 relief we are seeking is exactly what the Georgia statute
19 contemplates is significant.

20 Given the overwhelming amount of evidence that these
21 systems are unreliable, the state -- and as Mr. Cross
22 mentioned, the crickets you hear from the other side in
23 response to that -- you will hear after we get through some of
24 the noise the basic response is, okay, okay, it is broken, but
25 we'll fix it later. That is what the state is saying.

1 And, Your Honor, when anyone says it is broken but
2 we'll fix it later, what they are doing is they are measuring
3 the chance of something really bad happening and they are
4 measuring the resulting harm. If I get a recall for my car
5 because the tires might explode, I can make one or two
6 decisions. I can put my kids in the back, drive for a month,
7 and hope nothing happens. The cargo, what you are carrying,
8 and the risk tells us what we're supposed to do. And here
9 everyone who knows the risk and what is at stake says change it
10 now. Don't change it for next year's election. But change it
11 now.

12 Most recently -- and we have put this in the record
13 over the weekend because it just came in several days ago -- as
14 Your Honor is aware, the National Academy of Sciences was
15 established by President Lincoln in 1861 as the authority that
16 the United States Government goes to when they have a technical
17 or a scientific question.

18 Two years ago, the National Academy of Sciences was
19 assigned the important task of looking at election security.
20 They came out with their report just last week. And in their
21 report -- and importantly, it is what is called a consensus
22 report, which means their entire staff of experts agrees.

23 In their consensus report -- and this is attached to
24 the supplemental declaration of Rich DeMillo, which was filed
25 on Friday or Saturday. In the consensus report, the National

1 Academy of Sciences in this 100-page report says that states
2 should use paper ballots. They should take every available --
3 every effort to replace the electronic machines with paper
4 ballots. And then they say before the 2018 election.

5 The National Academy of Sciences has a calendar. It
6 knows that the 2018 election is however many weeks away. Still
7 given that deadline, they have told us to take every effort to
8 get rid of those DRE machines and replace them with paper
9 ballots.

10 Your Honor, there will be a lot said about the
11 particular type of relief that we're requesting in this case.
12 In our motion, as is proper under Rule 65, we have done the
13 best we can in charting out in the proposed order exactly the
14 kind of relief that we think would be effective and sensible.

15 We have also tried to balance the various interests
16 that go into fashioning equitable relief. On the one hand, if
17 the order is too vague, it doesn't give the defendants fair
18 notice of what is in contempt. On the other hand, particularly
19 when there is a state agency involved, if it is too specific,
20 it might encroach upon their discretion and their judgment and
21 exactly how they want to effectuate the relief.

22 Your Honor, in case after case, the federal courts
23 and the Supreme Court have said once there is a constitutional
24 violation found, a United States District Court has vast
25 discretion in fashioning flexible, practical, effective relief.

1 It is practical.

2 In a case just several years ago, the Supreme Court
3 said flexibility is the heart of injunctive relief in federal
4 court. And so today we would respectfully request that at the
5 conclusion of the evidence we will have closing arguments. And
6 we would be welcome to questions and exchanges with the state
7 in ways that the Court could fashion effective relief
8 immediately that would balance all the interests involved.

9 Thank you, Your Honor. I'll reserve the rest of my
10 time for rebuttal.

11 MR. SALTER: Ms. Amy, could you switch over.

12 OPENING STATEMENT

13 MR. SALTER: May it please the Court. Judge, let me
14 start with this is the target they started you with back in the
15 spring. Their statement -- the plaintiffs stated to the Court
16 that immediate conversion to paper ballots can be accomplished
17 easily, their word, for November's elections, quote, without
18 any new equipment, software, significant poll worker training,
19 or additional funding.

20 We expect the evidence to show today that that is
21 completely untrue and incorrect. There are approximately -- I
22 think the evidence will show. This is not to the penny. But
23 this is my approximate figure. There are -- we think there are
24 2365 polling places on a given election date. We expect that
25 would decrease if your order were entered, certainly as to

1 early voting.

2 I think the evidence will show -- and I'll let
3 Fulton's witness describe this. I think the evidence would
4 show that early voting would be catastrophically impacted by an
5 order like this.

6 There are approximately 12,000 to 20,000 poll workers
7 for each election day. That poll worker training is scheduled
8 to begin in most counties, I think if not this week, next. How
9 do you train poll workers if you don't know what the rules
10 would be? We have approximately ten percent of voters under a
11 normal election historically who vote by a paper ballot --
12 absentee ballot, paper. We would go to 90 percent on that in
13 less than two months' time.

14 We have approximately 6.8 million registered voters,
15 active and inactive. Approximately -- let's call it less
16 than -- let's call it about 46 percent of that will turn out,
17 but you are talking about 3 million votes.

18 THE COURT: I have seen these numbers before. Remind
19 me if you have an exhibit with this.

20 MR. SALTER: I don't.

21 THE COURT: All right. If you would, provide it.
22 Thank you.

23 MR. SALTER: These are largely county executed
24 events, Judge. There is one county present before Your Honor,
25 as you know. There are 158 others. Voters are registered in

1 their county of residence. They vote and have their votes
2 counted in their county. These are all updated from the county
3 to the state. And the county elections officials determine
4 ultimately the validity of the ballots and the votes cast.

5 There are several different ways to vote in Georgia.
6 The most ones -- you know, absentee by mail with paper ballot
7 before election day, advance in-person election day on a DRE.
8 And then there are special circumstances I won't get into.

9 We cannot predict in good faith, Judge, how an order
10 like they are -- the plaintiffs are contemplating would affect
11 these between now and November the 6th and certainly for early
12 voting that begins before that.

13 Let's talk a little bit about the system just to
14 orient you. It is not just they are DRE machines. We use
15 ExpressPoll scanners to populate and figure out who is going to
16 get what kind of a ballot. We have a voter access card that is
17 that yellow card that you see. You have -- this is what the
18 units -- I think there is one in the courtroom.

19 This is what the DRE machine component of the system
20 looks like. DRE machines are not just -- it is not -- that is
21 not the system. The system is everything. It is also physical
22 security. It is how these things are secure. It is how they
23 are placed under lock and key, yes, at warehouses with
24 surveillance cameras; how we train poll workers to watch people
25 and how they -- so they don't insert something into the

1 machine. It is all of those things.

2 Here is an optical scanner that you will hear about.
3 You will hear today why Georgia was designed back in 2001 to be
4 not heavily dependent on optical scanners. You will hear why
5 Georgia does not have high capacity optical scanning machines.
6 You will hear the explanation for that.

7 You will hear why this is not a feasible solution to
8 run an election off of a primarily or 100 percent paper ballot
9 environment through the 800-something machines we have for what
10 we would anticipate to be approximately 3 million paper
11 ballots.

12 You will hear the testimony and you have seen -- the
13 testimony is unrebutted on the declarations. We only have 800
14 machines. That is inadequate. It is grossly inadequate to
15 think we could run a paper election off of 800 optical scanning
16 machines. And that is unrebutted.

17 Their plans are to use optical scanners and, failing
18 that, hand tabulation of this total expected volume.

19 THE COURT: Just in fairness, what they say is you
20 can either buy or rent additional scanners. So I'm not going
21 to quibble about it. But it is not that they have said -- not
22 rebutted it. They just simply said there is a method of --

23 MR. SALTER: If you look at one -- and pardon me.
24 Because we have got two different injunctions. One of their
25 proposals has been amended twice. I will point out that there

1 are several layers of this problem.

2 One is there aren't enough optical scanners. Two is
3 we can't procure them in time. Where does that leave you?
4 That leaves you with hand tabulation. That is a very, very
5 real -- because we don't have any other regime to go to.

6 One thing that I don't think my friends from up north
7 realize. In 2001 or in 2000, we did not have a uniform system.
8 There is no legacy uniform system to fall back upon. The first
9 time we had uniformity in the State of Georgia regarding a
10 voting -- a true voting system was 2002 when this joker lost
11 his election. That was the first time.

12 Before that, you had four --

13 THE COURT: Are you sure you are not changing sides?

14 MR. BARNES: Yeah. I believe I lost that one all by
15 myself, Judge.

16 MR. SALTER: We had four different systems in 2000,
17 Judge. You will hear evidence of that. You will hear evidence
18 that that is why it makes it so impossible to say, well, we'll
19 just put this on the State Election Board and they will
20 rulemake it away and make it all right.

21 Their idea -- they said this in their briefs. They
22 said, listen, Maryland did this in one year. You know -- you
23 have seen now in the briefing that is incorrect. The State of
24 Maryland has 24 counties. We have 159. It is a smaller state.
25 They said Maryland is the centerpiece for how you can do this.

1 They don't need all this time. We can do this for November.

2 It actually took Maryland -- the state, they started
3 in 2008. They didn't finish until 2016. It took them tens of
4 millions of dollars. And the implementation was actually
5 postponed in 2010 because they couldn't find the money. They
6 had to go back to their general assembly and say, we need more
7 money to budget this migration away from the DRE machines to a
8 paper ballot environment. That is the reality of what we're
9 contemplating here.

10 THE COURT: Although that was in the middle of the
11 financial crisis, and there wasn't extra money.

12 MR. SALTER: Your Honor, this took eight years.

13 THE COURT: I know. Right. I understand. Just
14 about the --

15 MR. SALTER: Let's talk a little bit about laches.
16 That is one of the arguments we made in terms of the
17 preliminary injunction issue for the relief sought.

18 With modifications and improvements, DRE machines
19 have been used in Georgia since 2002. The Curling plaintiffs
20 and the Coalition tried an injunction in front of the Honorable
21 Kim Adams -- Kimberly Adams in 2017. You have heard about
22 that.

23 This Court set -- then set an emergency schedule.
24 They came to federal court. Your Honor said, well, I'm going
25 to move heaven and earth to get you an emergency hearing before

1 the election of last year. You gave them a hearing -- a
2 deadline to file a preliminary injunction for September 1 of
3 last year. And they let it go.

4 And the Court told the plaintiffs in here in this
5 courtroom back in May, quote, I will reiterate again that it
6 would be in my mind virtually impossible to have a trial before
7 the November election in time to do anything with that. And
8 they still sat on their hands until last month.

9 Preliminary injunctions will be against the -- a
10 preliminary injunction here would be against the public
11 interest where it would have a needlessly chaotic and
12 disruptive effect upon the electoral process. This is a quote
13 from the Supreme Court of the United States from last June.

14 And this is that gerrymandering case -- partisan
15 gerrymandering case. It is about how we dilute votes through
16 partisan line drawing. You will see -- and while it is
17 important, there is no greater champion of voting rights than
18 Emmett Bondurant. We actually worked on a voter ID case -- my
19 firm did -- with Emmett's firm.

20 And then when this -- when one of these cases went
21 back down -- it is a Common Cause one in North Carolina two
22 weeks ago -- and the Court said, change it now. We're tired of
23 it. We have had it. We have decided they are
24 unconstitutional. Change it for the November election. Even
25 Common Cause, which actually the Georgia version gave a

1 declaration in this case -- even Common Cause got their
2 lawyers, Emmett Bondurant and Jason Carter, who I respect, and
3 said, stop. This is wrong. We have a disagreement with it.
4 It is unconstitutional, but it is too close to the election to
5 do this. And that is the responsible course here.

6 Elements of an extraordinary and drastic remedy like
7 an injunction in this case, they have to show four things:
8 Substantial likelihood of success, irreparable harm without an
9 injunction, and that the threatened injury outweighs the
10 damage -- basically a balancing of the equities -- and that
11 they advance the public interest.

12 Their injunction is not capable of enforcement, with
13 all due respect to the Court. A preliminary injunction to,
14 quote, come up with a plan is not specific enough and is not
15 capable of enforcement as an operative command according to the
16 Eleventh Circuit.

17 The omission of parties. We don't have the other 158
18 county election boards before the Court. And we can't -- we
19 can partner with the counties. We provide the ballots. We
20 provide -- we're supposed to provide a uniform election system
21 to the counties for their use. But we can't control them any
22 more than the Court we think can control absent parties who
23 aren't in this courtroom.

24 There is no substantial likelihood of success. And I
25 know the Court -- I hear what the Court is ruling. And I

1 respect the Court. We disagree, and I think we'll have to go
2 up on this.

3 But look at the past. *Favorito vs. Handel*, DRE case,
4 State of Georgia, 2009, affirmed the constitutionality of this
5 DRE system. Unanimous opinion of the Supreme Court of Georgia,
6 seven justices.

7 Eleventh Circuit here in Atlanta, DREs without paper
8 verification are constitutional. That is a 2006 case.

9 *Andrade*, a case from the Texas courts, dismissing
10 claims for injunctive relief that were complaining, like these
11 plaintiffs are, of the Secretary of State of Texas's
12 certification saying he shouldn't certify them.

13 *Schade vs. Maryland Board of Elections*, 2007, the
14 year before they decided to migrate. That held the DRE system
15 was constitutional.

16 *Weber vs. Shelley*, Ninth Circuit, quote, we cannot
17 say that use of paperless touchscreen voting systems restricts
18 the right to vote.

19 *Stein vs. Cortes*, Eastern District of Pennsylvania,
20 two years ago. They don't even have standing to argue this.
21 But then preliminary injunction denied.

22 And, of course, the order from Judge Adams in the
23 state court below. They can't cite a single case anywhere in
24 the country that sides with them.

25 The bottom line is the plaintiffs just disagree with

1 the unanimous opinion of the court of the state where we are
2 sitting. That court in that unanimous opinion in *Favorito*
3 said, quote, the fact that voters cannot actually see the
4 electronic record within the machine does not mean that the
5 vote is not accurately recorded or not recorded at all.

6 THE COURT: Now, listen, I'm very respectful of all
7 of the authority. But I think that to then point me to
8 *Favorito*, a decision in 2008, which certainly is a very
9 important decision to consider -- but it doesn't help me deal
10 with the record that is being presented to me now. And for the
11 state to say there is no difference in the world that we're
12 facing right now in data breaches and in handling -- in
13 handling the sort of threats that actually that we are hearing
14 about and which are being presented in competent evidence is
15 basically making me work in an Alice in Wonderland world.

16 I respect the judgments. I absolutely think that all
17 of the precedent you cite are obviously extremely on my mind
18 and absolutely will be considered in terms of whether to grant
19 injunctive relief. But it would be more helpful for me if the
20 state would grapple with what actually is also some of the
21 changes in the circumstances and not just point me to cases
22 that are older and that were not grappling with those
23 circumstances. Because they are not saying here it is just
24 simply because you have a -- you've got an electronic system.
25 It is certainly a part of it that it can't be audited. But we

1 are in different circumstances.

2 MR. SALTER: Your Honor, what has not changed because
3 of a threat environment with Russia is that they can be
4 audited. That is the point I'm trying to make.

5 THE COURT: Well, I --

6 MR. SALTER: I'm not trying to argue that current
7 events have changed. Current events by definition have
8 changed. What I'm trying to point out is the representation of
9 my friends on the other side that these things cannot be
10 audited is untrue. And the Supreme Court of Georgia, seven
11 justices, unanimously agree that is incorrect. It
12 fundamentally misunderstands the processes that we use in
13 Georgia as part of its election system. That is the point.
14 You can audit these things.

15 Plaintiffs' contentions regarding the accuracy of
16 recounts are merely hypothetical. That is what the court in
17 Georgia has said. There is no irreparable harm here in part
18 because the Georgia voters -- if they have this fear that their
19 vote will be somehow not counted correctly, not shown on a
20 recount, then they have the option unrestricted to do -- to
21 cast a paper ballot in the form of an absentee ballot prior to
22 actual election day.

23 And what the Supreme Court of Georgia said is
24 absentee voters have not been treated differently from polling
25 place voters except in the matter permissible under the

1 election statutes and as a result of the plaintiffs' own
2 choice.

3 They have adequate legal remedies. If Your Honor --
4 let's take as an example something bad happens. There are
5 election contests. There are recounts, both statutory and that
6 can be filed in court. And what has happened here -- what the
7 plaintiffs initially sought is a reexamination of the system by
8 the Secretary of State and his team. That has happened here.

9 I respectfully disagree with my friends who get up
10 here and say and characterize this as the Secretary of State's
11 office is doing nothing, the State Election Board is doing
12 nothing. That is incorrect. We gave them exactly what their
13 first complaint wanted.

14 Under the statute, a statutory reexamination of the
15 system began in 2017. We conducted a team review. And the
16 Court knows what that found. We'll have that certification in
17 evidence in the case.

18 That is what happened. They just continue to
19 disagree with that decision.

20 An immediate conversion to paper ballots -- to a
21 paper ballot election for November without time to prepare will
22 damage and disable Georgia's election security. They don't
23 have -- we argued about what is uncontroverted and all that
24 stuff.

25 But Merritt Beaver is chief information officer in

1 the Secretary of State's office. And what he has testified is
2 that moving to paper ballots in such an abbreviated time frame
3 could potentially damage Georgia's election security. We have
4 many years of experience protecting the current system. But we
5 do not have personnel that have dealt with the security
6 surrounding a paper ballot environment.

7 While it is certainly possible to build a system to
8 adequately protect the paper ballot environment, properly doing
9 so requires the right personnel, processes, and time for
10 testing and validation. Without each of those in place prior
11 to moving to a new system, security would be unmanageable.

12 You're going to hear -- you have in the record
13 declarations of the chief information officer, the election
14 director in the Secretary of State's office, the election
15 director of Cobb County, Gwinnett County, Muscogee County,
16 Richmond County, and Fulton County.

17 They don't have on their side a single current or
18 former elections official on their side saying, yeah, this is
19 doable, it is a good idea. Not a single one.

20 Paper ballots are, in fact, history tells us less
21 safe and secure. The chain of custody on what they are
22 suggesting would be a nightmare. It is one thing to say we
23 manage ten percent of absentee ballots that come in in the
24 state. It is another thing to say 100 percent in this time
25 frame.

1 Traditional paper ballots as became evident during
2 the 2000 presidential election are prone to overvotes,
3 undervotes, and -- you will hear testimony of this today --
4 hanging chads, and other mechanical and human errors that may
5 thwart voter intent. These are not the Holy Grail of voting
6 integrity. That is just incorrect.

7 The plaintiffs' motions must be denied, Judge. We
8 would ask you to do it and do it today and not in an order that
9 waits. Mandating paper ballots now has the potential to cause
10 voter confusion, particularly when implemented at such a late
11 date in the election process. That is our position.

12 Plaintiffs' plans for an immediate conversion are not
13 real plans at all. They are punting the rulemaking to the SEB
14 as window dressing really just to scapegoat the state for what
15 is liable to be a mess. And then they will blame -- they will
16 step back and say, we let the SEB rulemake it to make it all
17 right and it is their fault.

18 They cannot guarantee a secure election with a paper
19 ballot environment. Nobody -- there is no 100 percent system.
20 And you have read all the cases that have said all this. But
21 going to a system like this with this little time, with no time
22 to do real valid voter education, no time to actually rulemake,
23 no time to budget for, no time to procure a sufficient number
24 of optical scanning machines that would actually work, that
25 will virtually guarantee an unsafe and insecure election.

1 Thank you, Judge.

2 THE COURT: Thank you. Would you mind sending to
3 Ms. McConochie an electronic copy of your PowerPoint.

4 MR. SALTER: Yes, ma'am. I'll try to do so. I don't
5 know if I can do it though -- are you directing me to do it
6 right now or later today?

7 THE COURT: Later today is fine.

8 MR. SALTER: Thank you, Judge.

9 Any questions?

10 THE COURT: Maybe if you could do it at lunchtime if
11 you have it on the computer.

12 MR. SALTER: I will try. Anything further?

13 THE COURT: No, not right now.

14 OPENING STATEMENT

15 MS. BURWELL: Very briefly, Your Honor. Kaye Burwell
16 on behalf of Fulton County.

17 As this Court is aware, the case law is clear that
18 the grant of injunctive relief is an extraordinary remedy that
19 requires that it only be issued in limited circumstances and
20 only where the movant has satisfied this Court through a clear
21 showing that they have carried their burden. And in the
22 instant case, the stack of documents and declarations and
23 information provided by these plaintiffs does not carry their
24 burden.

25 That is because there is no real evidence of

1 irreparable harm. There is an argument that there is a risk
2 that exists. But there is no evidence that that risk has
3 actually been realized. And the Court understands that
4 establishing a risk of irreparable harm is not enough.
5 Plaintiffs have the burden of proving that immediate injury.
6 And here they can't do that.

7 As Mr. Salter said, the evidence is undisputed that
8 every plaintiff with the right to vote in Georgia has the
9 ability to vote via absentee ballot. They can vote a paper
10 ballot. They have the right to choose that and can.

11 THE COURT: If you ended up having 10,000 more people
12 voting in Fulton County, Fulton County would be prepared right
13 now?

14 MS. BURWELL: Your Honor, Fulton County -- if 10,000
15 people because generally --

16 THE COURT: More than the norm. Not 10,000 as a
17 whole. But 10,000 more than the norm.

18 MS. BURWELL: Well, I think 10,000 more they could --
19 Fulton County has 752,000 registered voters. And so for this
20 Court to say that in less than two months there needs to be
21 processes put in place to allow for paper balloting for all
22 752,000 is unreasonable and untenable.

23 You will hear from Mr. Barron. And when the Court
24 thinks about statewide the number of voters that would need
25 paper ballots if the Court were to grant the relief sought by

1 these plaintiffs, it is exponentially more than 752,000.

2 And the Court needs to keep in mind that the Eleventh
3 Circuit has made clear that a plaintiff that is seeking
4 injunctive relief has to do more than just assert a
5 constitutional violation or a risk. The threat can't be remote
6 or speculative. It has to be real and immediate.

7 And what we have here is a lack of evidence that it
8 is real and immediate. All we have is the potential risk.
9 There is no evidence in anything that the plaintiffs have
10 provided this Court that shows any hacking took place, that any
11 machine has been tampered with. There is only the allegation
12 that it is possible.

13 Mr. Salter talked to the Court about the fact that
14 plaintiffs have unreasonably delayed in bringing this
15 preliminary injunction. And it is important for the Court to
16 know that an unreasonable delay in and of itself negates the
17 presumption of irreparable harm.

18 Courts have recognized that claims against election
19 procedures have to be expressed expeditiously. And a delay in
20 preliminary injunction suggests that the status quo does not
21 irreparably damage the moving party.

22 Plaintiffs have waited over a year to file this
23 motion from -- they filed this case in July of 2017 and didn't
24 file for preliminary injunction until 2018. And because of the
25 previous lawsuit in 2017, these plaintiffs recognize all of the

1 administrative hurdles that go into a fair election process.
2 And they understand that what they are seeking would benefit
3 them. But it would not benefit Fulton County. It would not
4 benefit the voting public. It would not benefit the citizens.
5 It would not benefit the taxpayers.

6 And so the rights and burdens on the non-movants
7 greatly exceeds the speculative claim of harm that these
8 plaintiffs have put forth. You will hear testimony about the
9 administrative upheaval that would happen within the election
10 process this close to an extremely important election for
11 Georgia voters.

12 This Court is going to hear about the disruption in
13 early voting that would occur if this Court were to grant the
14 relief sought by these plaintiffs. This Court is going to hear
15 about the fact that there is not enough time and processes in
16 place for paper balloting. There is not enough time to get
17 ballots. There is not enough time to train people. There is
18 not enough time to come up with processes with respect to how
19 these ballots -- if there are this many millions of paper
20 ballots, how those would be transported and reviewed and
21 counted.

22 The Court is going to hear that Fulton County does
23 not have enough optical scanners to take care of all of these
24 potential paper ballots should the Court decide to grant the
25 injunction. And when the Court weighs the burdens on the

1 public versus the burdens on the few plaintiffs who say they
2 want to vote paper ballots, clearly they have not met that
3 burden because they do have the right to vote on a paper
4 ballot, just as other citizens have the right to use the DRE
5 machine if that is what they choose to use.

6 That is my time.

7 THE COURT: Thank you.

8 OPENING STATEMENT

9 MR. CROSS: Your Honor, brief rebuttal before we call
10 our first witness. I do have to say that I think the most
11 important thing I need to rebut is Mr. Salter's
12 characterization of lawyers from up north. I grew up in the
13 holy city of Charleston, South Carolina, and went to school
14 with Mr. Salter's wife. So I know he is not talking about me.
15 Let's just be clear.

16 THE COURT: It used to be people in D.C. anyway were
17 supposed to be part of the south. But that was maybe --

18 MR. CROSS: Well, I have to give him D.C. We live in
19 Virginia though.

20 Your Honor, on the delay point, I'm just going to say
21 this case has seen unusual circumstances. Our clients lost
22 their --

23 THE COURT: You can come up. I was trying to get a
24 member of my staff. But she is -- she just got confused. Go
25 ahead.

1 MR. CROSS: Our clients lost their chosen counsel.
2 Once they retained counsel, which took time particularly for a
3 case where they need pro bono counsel, we have moved as
4 expeditious as we could and have even gotten creative -- Your
5 Honor may remember the stipulation. But the Eleventh Circuit
6 coincidentally came down with incredible timing after we worked
7 it out with the defendants. But I just don't think laches
8 applies here at all.

9 The poll worker training, Mr. Salter admits it hasn't
10 even begun. But the point that gets lost when they talk about
11 this is they have to train the poll workers on paper ballots.
12 You heard from Mr. Salter and especially from Fulton County
13 that every single voter in the State of Georgia has an
14 unlimited right to vote by absentee.

15 And Your Honor hit the nail on the head when you
16 posed the possibility of what about an additional 10,000
17 voters. Well, what if every voter in the state decides to vote
18 absentee because they don't trust the DREs? They have said
19 that that is an absolute unlimited right that every voter has.
20 So they have got to be prepared to be able to do that. And
21 they have got to anticipate that voters are going to come in
22 with a lot more requests for paper, even if this fails.

23 But as we have pointed out, the absentee system is
24 actually not a viable alternative. Donna Curling is Exhibit 1.
25 She went through it, had no idea her vote didn't count until we

1 got into this litigation. And it is a cumbersome process. It
2 will be far easier and far less expensive for voters and the
3 state to provide those at the polls, Your Honor.

4 The redistricting decision, just briefly on that.
5 Mr. Salter mentioned this. The North Carolina case where
6 Common Cause, the plaintiff, stepped back from the relief. We
7 are nowhere in the world of redistricting. We're talking about
8 an increased volume of providing paper in addition to what they
9 already provide, not redrawing the lines. So it is just
10 completely inapposite, Your Honor.

11 Particularly unsettling to us also is the Secretary
12 of State is actually blocking the effort of some counties to
13 try to do this on their own. They sent out letters to the
14 superintendents saying you cannot do this on your own. Even
15 though the statute -- and we'll see this today. The statute
16 actually provides a discretion for the superintendents of the
17 counties to determine whether the machines are impracticable to
18 use.

19 And why the Secretary of State would stop that is
20 difficult to understand. And when they say we don't have any
21 county officials on our side, one, we haven't gotten discovery
22 and, two, those letters have a chilling effect on anyone in the
23 counties who might actually want to support us.

24 The election DRE cases they cite, Your Honor, only
25 briefly on that. As Your Honor pointed out, these are largely

1 older decisions. Importantly when you look at the decisions
2 like the *Stein* case in Pennsylvania, including Curling One
3 which they talked about, these are cases that were
4 retrospective. They were saying that we need relief for an
5 election that has already happened.

6 It makes perfect sense that in that situation the
7 Court would expect some showing of hacking having happened in
8 the past if you are going to undo a questioned election. The
9 whole premise of our case is let's not end up in that role.
10 That is a constitutional crisis that no one wants. So let's
11 take reasonable measures now and head that off.

12 On the auditing, Mr. Salter says it today. And one
13 of their declarants -- it may have been Chris Harvey -- says
14 that these machines can be audited. Notice what is missing.
15 Facts. Even Mr. Salter today did not offer you any explanation
16 of how to audit these machines.

17 Let me tell you why. Because it is not an audit.
18 What they are doing is they are just going to compare the
19 electronic recording of voting in one part of the machine to
20 the electronic recording of voting in another part of the
21 machine.

22 There is no independent record. That would be like
23 coming in and saying, we want to know if a bookkeeper is fixing
24 the books. Well, he kept two sets of books that he made at the
25 same time with the same method. So we'll just see if they

1 match up. If they are, then these books must be okay.

2 It is absurd on its face, Your Honor. It is not an
3 audit. These systems cannot be verified in any fashion.

4 The last point, Your Honor, is on the issue of harm.
5 Fulton County hit this pretty hard but had what struck me as a
6 pretty remarkable claim. She said the risk of irreparable harm
7 is not enough.

8 Your Honor, that is literally the standard for a
9 preliminary injunction, and we readily meet it as we will show
10 today. Thank you.

11 THE COURT: Would you later on at the break provide
12 me the citation with the case you are referring to on -- as to
13 the Eleventh Circuit's laches -- most recent laches decision?
14 I think that is what you were referring to.

15 MR. CROSS: Not on laches. It was the one that you
16 said you couldn't accept our stipulation where we were trying
17 to amend the complaint. That is what -- because we had --
18 everybody got on board with it and then the Eleventh Circuit --

19 THE COURT: About the parties?

20 MR. CROSS: Yes. Yes.

21 THE COURT: All right. And the claims.

22 OPENING STATEMENT

23 MR. BROWN: Your Honor, in the brief time that we
24 have, I'm going to hand to you, if I may approach, a timeline
25 of election security warnings. And that is just a guide to all

1 of the mountains of evidence showing that the state has been
2 given notice for 24 months to 10 years, depending on how you
3 look at it, that these systems need to be changed.

4 And one of the things that I would think the evidence
5 will focus upon is that the difficulty that the state explains
6 we believe is entirely exaggerated. But it is all from the
7 standpoint of the state staff. It is hard for staff to do this
8 because they have got to buy scanners. They have got to pick
9 up the phone and order scanners. They have got to order paper
10 ballots.

11 The state is not talking about harm to the voters.
12 The voters will go to the same places. They will go -- instead
13 of mashing a computer screen, they will get a paper ballot.
14 They will fill it out just like you fill out an SAT test,
15 except you know the answers in advance. It is that easy. That
16 is the only change in the voting experience. And the cases and
17 this case is about the perspective of the voters and the rights
18 of the voters, not inconvenience to the state.

19 Moreover, Your Honor, we have -- ironically we have
20 much more confidence in the state staff than they have
21 themselves. They can do it. They need to have a can-do
22 attitude to get this done.

23 MR. SALTER: I want that written down.

24 MR. BROWN: Thank you, Your Honor.

25 THE COURT: All right. In the interest of time,

1 we're going to just keep on moving. I'm going to let -- there
2 appear to be a few seats up here. So if -- Ms. McConochie, if
3 you would just let the security know that we have about maybe
4 four seats for somebody.

5 If someone is just going to the restroom and they are
6 planning to come back, please indicate that to the person you
7 are sitting next to.

8 All right. Thank you. There is a seat over there.

9 MS. CHAPPLE: Good morning, Your Honor.

10 THE COURT: Let me just let everyone get seated.

11 How many seats are there back there now? I don't
12 want to sound like a flight attendant stuffing people in. But
13 I'm just trying to be accommodating.

14 MR. SALTER: This is Mr. Halderman, Catherine?

15 MS. CHAPPLE: It is.

16 Good morning, Your Honor.

17 THE COURT: Good morning.

18 MS. CHAPPLE: May we have permission to bring this
19 voting machine up?

20 THE COURT: Yes.

21 MR. SALTER: No objection, Judge.

22 MS. CHAPPLE: Thank you.

23 THE WITNESS: It might be better to plug it in.

24 **(There was a brief pause in the proceedings.)**

25 MS. CHAPPLE: Your Honor, I would like to call

1 Professor Halderman to the stand.

2 THE COURT: Before he begins and since there is -- in
3 case there are any people left in the overflow courtroom, I
4 will say when we break for lunch some people may indicate they
5 are not coming back to their seats and there -- if they all
6 stay, there may be some seats because I notice some people come
7 and some people apparently stay. So all right.

8 COURTROOM DEPUTY CLERK: Good morning, sir. Please
9 raise your right hand.

10 (Witness sworn)

11 COURTROOM DEPUTY CLERK: Thank you. I'm going to ask
12 you to pull up close to the microphone. You can adjust the
13 microphone as needed. It is very important that we all be able
14 to hear you.

15 I'm going to ask you to state your first and last
16 name again for the record, and please spell your first and last
17 name for the record.

18 THE WITNESS: My name is Alex Halderman. That is
19 A-L-E-X H-A-L-D-E-R-M-A-N.

20 COURTROOM DEPUTY CLERK: Thank you.

21 Whereupon,

22 J. ALEX HALDERMAN, PH.D.,

23 after having been first duly sworn, testified as follows:

24 DIRECT EXAMINATION

25 BY MS. CHAPPLE:

1 **Q.** Thank you. Professor Halderman, the Court has your
2 declaration and CV. But could you please briefly summarize
3 your experience for the Court.

4 **A.** Yes. I'm a professor of computer science and engineering
5 at the University of Michigan and director of the Michigan
6 Center for Computer Security and Society. I have written more
7 than 70 technical papers and peer-reviewed studies about
8 computer science and computer security topics, including
9 numerous studies of electronic voting systems used in the U.S.
10 and other countries.

11 **Q.** Have you had any involvement with policymaking related to
12 election cybersecurity?

13 **A.** I have. One example is last summer I testified before the
14 U.S. Senate Select Committee on Intelligence as part of their
15 investigation into Russian interference in the 2016 election on
16 the subject of cybersecurity threats to U.S. election
17 infrastructure.

18 **Q.** Since you began in the field in 2007, have views of
19 election threats changed at all?

20 **A.** Yes, they certainly have. When I began actually in 2006,
21 I started working on this while I was studying for my Ph.D. at
22 Princeton. And back then when we were thinking about threats
23 to election systems, the main concern was, well, dishonest
24 insiders or dishonest candidates, attackers who would be
25 criminals of the usual nature.

1 But everything changed in 2016 -- in 2016 when during the
2 presidential election the threats of interference by foreign
3 power, by nation state attackers, presented a substantially
4 different and new threat and a much more serious form of
5 attacker than we had considered previously.

6 **Q.** Turning to the question today, what kind of electronic
7 voting machines are used in Georgia elections?

8 **A.** Georgia uses AccuVote TS and TSx paperless electronic
9 voting machines as its primary polling place equipment. It
10 also uses AccuVote-OS optical scanners to count the absentee
11 ballots.

12 **Q.** Based on your research with the DRE machines, are they
13 vulnerable to hacking or interference?

14 MR. BARNES: Well, Your Honor, I object. That is a
15 general question not addressed to this state and the
16 circumstances in this case that is pending before you.

17 Does the sun come up in the east? Yes, it does. But
18 it may not necessarily have the same basis in Georgia as it
19 does in Michigan. So unless he can --

20 THE COURT: I thought the sun in Michigan and in
21 Georgia were the same myself.

22 MR. BARNES: It comes up -- it comes up different in
23 Michigan.

24 THE COURT: I have heard that argument intimated in
25 your papers. And I thought, oh, my gosh, really we have

1 nuclear physicists that are different in Georgia who are
2 dealing with our nuclear power plants here than in any other
3 place.

4 I'm going to let her proceed.

5 **Q. (BY MS. CHAPPLE)** Okay. Thank you.

6 **A.** So --

7 **Q.** The question was: In your opinion, are the DRE machines
8 vulnerable to hacking or interference?

9 **A.** Yes, I would say in my opinion they are. And that is in
10 part because these AccuVote TS and TSx machines are the most
11 widely studied paperless electronic voting machines of any kind
12 in the world.

13 And I'm prepared -- I have done work developing
14 vulnerabilities and demonstration attacks on them myself. I
15 have reviewed work of my peers that has demonstrated further
16 vulnerabilities. I have even participated in security reviews
17 sponsored by a Secretary -- Secretary of State in another
18 state.

19 **Q.** What machine do you have here with you today?

20 **A.** This is an AccuVote TSx, one of those two machines used in
21 Georgia.

22 **MS. CHAPPLE:** Your Honor, may the witness have
23 permission to step down and perform the demonstration for the
24 Court?

25 **THE COURT:** Yes. You know, you can move it back a

1 little bit so you have some room.

2 MR. BARNES: Yeah. Move it back so I can see it.

3 THE COURT: So just move it back there. And that way
4 counsel can see it.

5 And, Counsel, if you get close to there, then you are
6 going to be able to see. It is just -- I'm flexible.

7 I think you're going to need to move it a little bit
8 this way so I can see it. Okay. I've got it.

9 Are you all right?

10 MR. BARNES: I'm fine.

11 **A.** Can everyone see? These are unfortunately not
12 current-type screen technology. So it is hard to see them at
13 an angle.

14 So what I'm going to demonstrate today is some of the
15 vulnerabilities that are present in these AccuVote touchscreen
16 voting machines. And I brought with me a voting machine that
17 currently has no malicious software running on it. It is set
18 up as a voting machine would be prior to an election. There is
19 no election loaded on to it at all.

20 And what I'm going to show is how it is possible for an
21 attacker to spread malicious and vote-altering code to these
22 machines without having physical access to the machines used in
23 Georgia.

24 So I'll begin by taking a step that poll workers would
25 take prior to any election, which is --

1 THE COURT: Give that down to him.

2 **A.** -- which is to load the ballot programming on to the
3 machine. Before every election, every electronic voting
4 machine needs to be programmed with the design of the ballot,
5 the races, the candidates, the rules of counting.

6 And in the machines used in Georgia, that programming is
7 created on a central system and then copied on to memory cards,
8 like this one I have here, and then loaded by election workers
9 into each of the machines.

10 I have prepared a demonstration in which I have created
11 malicious programming and infected this memory card with that,
12 along with a mock election. And even though that is not
13 visible to the poll workers -- there is nothing you can
14 externally see -- that programming is going to affect the
15 behavior of the machine.

16 So I'm going to use this key to unlock the door on the
17 side of the machine. And then I can insert the memory card.

18 MR. BARNES: Wait just a minute. This is by a poll
19 worker or a voter?

20 THE WITNESS: This is a poll worker.

21 MR. BARNES: I see. Okay. Go ahead.

22 **A.** When the poll worker inserts the memory card prior to the
23 election, the machine loads the election. And now it provides
24 election workers an opportunity to perform various kinds of
25 tests.

1 We hear a lot about logic inaccuracy testing, for example.
2 I'm going to perform just a very abbreviated form of logic
3 inaccuracy testing. I'm going to cast one test vote. So I
4 pressed the test vote button. No voter cards. Okay. It is
5 telling me the paper is low.

6 Okay. So test vote. And here is the special mock
7 election I prepared. It is an election for president of the
8 United States. And the candidates are George Washington or
9 Benedict Arnold. And I'm going to cast a test vote for George
10 Washington. I'm going to press the button to cast the test
11 ballot. Okay. The machine has thanked me for voting. Now,
12 that is all the time I would like to take now for logic
13 inaccuracy testing. Although we could certainly do more.

14 I'm going to have the machine print the results of the
15 logic inaccuracy test. And this printer is used by election
16 officials to print summary tapes. These are not a paper trail
17 in the sense that we use in the election research and practice
18 area. This is just a total of the number of votes recorded for
19 each candidate.

20 **Q. (BY MS. CHAPPLE)** Did the voter receive a tape like that?

21 THE COURT: Can you speak up? The court reporter has
22 to be able to get you.

23 **Q. (BY MS. CHAPPLE)** Excuse me. I asked whether a voter
24 would receive a tape like that.

25 **A.** No. The voter doesn't get to see this. This is just

1 printed by poll workers at the beginning or the end of the
2 election to summarize the totals.

3 And as you can see, Your Honor, the logic inaccuracy test
4 shows the machine is counting properly. We have the one vote
5 registered for George Washington and zero for Benedict Arnold.

6 Now I'm going to set the machine to run the actual
7 demonstration election. This is as poll workers would do, say,
8 on the morning of election day. I'm going to do this by
9 pressing the set for election button. This will clear all of
10 the votes that were entered during the tests. And it will
11 print what is called a zero tape. The zero tape -- the zero
12 tape is a record that shows that there were no ballots present
13 in the machine at the beginning of the election.

14 And indeed, Your Honor, there were zero ballots in the
15 machine according to the printout. Let me just fix the paper
16 tape. Okay. Now we can cast some votes. And this machine
17 just like all other TSx's requires a voter card in order to
18 authorize a vote. I have brought the voter cards here with me.

19 So I'm going to insert a voter card authorizing one vote.
20 And we can proceed to cast the vote. I'll cast one vote for
21 George Washington. Now I'll insert another voter card, and we
22 can cast the second vote also for George Washington. And now
23 we'll do one more vote.

24 Would anyone like to decide who our third vote will be?

25 THE COURT: George Washington, of course.

1 **A.** George Washington. All right. One more for George
2 Washington. All right. We have three votes for George
3 Washington in our test.

4 Now I am going to insert a different card. This is an
5 administrative card that poll workers can use to access
6 administrator functions. And I'm going to put it in in order
7 to end voting and say the election is complete. This requires
8 the poll worker to enter a PIN, which I will do. Now we can
9 access the function to end voting.

10 Okay. This says close the election. Now the machine will
11 print out a record of the totals for each candidate. This is
12 how the machine has counted up the votes, what it has
13 registered. And we expect -- I certainly hope we'll get a
14 result that says three votes for George Washington.

15 Excuse me. So the results that the machine has shown,
16 Your Honor -- the results the machine has produced are one vote
17 for George Washington and two votes for Benedict Arnold.

18 What has happened here is that the malware that I inserted
19 with the memory card without having pre-installed any malicious
20 software on the machine -- the malware that spread to the
21 machine through the memory card invisibly altered the records
22 of the vote to produce a fraudulent outcome.

23 MS. CHAPPLE: Your Honor, I would like to offer into
24 evidence the three tapes.

25 THE COURT: You've got to speak up. All right?

1 MS. CHAPPLE: Sorry. I would like to offer --

2 THE COURT: Get near the microphone. All right.

3 Thank you.

4 MS. CHAPPLE: Your Honor, I would like to offer into
5 evidence the three tapes as Plaintiffs' Exhibits 1 through 3.

6 THE COURT: Are there objections?

7 MR. BARNES: Yes, until I can cross him about it.

8 THE COURT: All right. Well, they are conditionally
9 admitted subject to being crossed. All right.

10 MS. CHAPPLE: Thank you, Your Honor.

11 THE COURT: Are we through with the machine for now?

12 THE WITNESS: Yes, we are.

13 THE COURT: So let's just put it a little closer to
14 me so it is not just blocking the way in case anyone needs to
15 approach you at some other point.

16 All right. Thank you.

17 Is that going to be any problem?

18 **(There was a brief pause in the proceedings.)**

19 **Q. (BY MS. CHAPPLE)** Thank you for that demonstration,
20 Professor Halderman.

21 During the demonstration, you inserted the memory card
22 with malware into the --

23 THE COURT: If you would bring the microphone closer,
24 you won't have that same problem. All right. Just get it
25 closer to you.

1 MS. CHAPPLE: The cord is tight.

2 THE COURT: The cord is tight. All right. Very
3 good.

4 **Q. (BY MS. CHAPPLE)** During the demonstration, you actually
5 physically inserted the memory card with malware into the
6 machine. Would an attacker need physical access to the machine
7 to infect the system?

8 **A.** No. So it would be sufficient to merely be able to change
9 the data that is loaded on to that memory card as part of
10 normal election processes. One way to do that would be to
11 infect the central administration systems on which the election
12 programming is produced, which would allow a way to spread
13 malicious software to many voting machines over a wide area all
14 at once.

15 **Q.** And for election results to be altered as you just
16 demonstrated, would the machines or system need to be connected
17 to the internet at all?

18 **A.** No. So this machine is not connected to the internet, for
19 instance. We're still able to -- we're still able to alter the
20 results.

21 **Q.** Can you alter or could an attacker alter results without
22 physical access and without an internet connection to the
23 machines or the system?

24 **A.** Yes.

25 **Q.** What -- and what is the basis for your opinion that voting

1 machines like the one that you just demonstrated on could be
2 hacked here in Georgia?

3 **A.** Well, I have done my own original peer-reviewed scientific
4 research about the machines. I have reviewed the work of
5 others. I have reviewed the -- I have reviewed Georgia's
6 explanations of the way the system operates and of its security
7 procedures that are in use. That is part of the basis for that
8 opinion.

9 **Q.** Other than the types of vulnerabilities you demonstrated
10 just now, are there additional serious vulnerabilities in
11 Georgia's system?

12 **A.** Yes. So I demonstrated just one way that an attack could
13 manifest and spread to the machines. There are many ways to
14 spread malicious software to the machines. There are ways to
15 spread malicious software potentially back to the election
16 management systems where that programming is created. And
17 there are other kinds of vulnerabilities, including ways that
18 voters could cast more votes than they are entitled to, that
19 officials could find out how -- the officials could find out
20 potentially how voters voted. There are many different kinds
21 of vulnerabilities.

22 **Q.** I would like to put a slide up on the projector.

23 MS. CHAPPLE: Your Honor, may I approach the witness?

24 THE COURT: Yes.

25 **Q. (BY MS. CHAPPLE)** Do you recognize this slide?

1 **A.** Yes, I do recognize this.

2 **Q.** And what is it?

3 **A.** This is -- I believe this is part of the index from a
4 security review of the AccuVote voting system that I performed
5 in 2007.

6 THE COURT: What is on the screen right now?

7 MS. CHAPPLE: Yes.

8 MR. BARNES: Was that in Georgia, Your Honor?

9 THE WITNESS: This was in California, which used the
10 same machine.

11 MR. BARNES: Well, to your knowledge, it used the
12 same machine? You don't know what changes have been made?

13 THE COURT: Well, do you?

14 THE WITNESS: It uses the same model of machine.

15 MR. BARNES: Well, Your Honor, I object to what they
16 do in California. I mean, you know, we are here about Georgia,
17 whether there is irreparable harm to this system after the
18 changes have been made to conform with the state's.

19 THE COURT: You will have an opportunity to
20 cross-examine the witness fully and bring out any differences
21 as to why I should not consider this. But I think we are
22 proceeding.

23 THE WITNESS: May I correct one thing about that?
24 California's machines had a paper trail add-on. So they did
25 produce a record of each paper ballot.

1 THE COURT: Were they the same -- other than that,
2 were they the same technology or not?

3 THE WITNESS: They were the same technology.

4 THE COURT: Were they also produced by Diebold?

5 THE WITNESS: Yes, they were also the AccuVote TSx
6 produced by Diebold.

7 **Q. (BY MS. CHAPPLE)** And is that the same machine you
8 demonstrated the hack on today?

9 **A.** Yes.

10 THE COURT: I need you to step back. Thank you.

11 THE WITNESS: I can see on the screen here.

12 THE COURT: It is also next to you over there.

13 THE WITNESS: Thank you. Thank you, Your Honor.

14 MS. CHAPPLE: I would like to enter this slide as
15 Exhibit 4.

16 MR. BARNES: I object. It has no relevancy to this
17 proceeding.

18 THE COURT: This is --

19 MR. BARNES: -- California.

20 THE COURT: All right. Well, I don't think the fact
21 that it is from California is the basis of an objection.
22 Whether it is something different and that the machine is
23 different, all of those things are to be considered and
24 potentially excluded but -- or given very little weight.

25 But what I'm trying to understand is what this

1 document is that you're asking to introduce.

2 MS. CHAPPLE: So this document is a source code
3 review of the Diebold voting system in 2007. The software and
4 the machines that Georgia uses are not any newer than 2007.
5 And as you can see, for example, the very first line, 5.2.1,
6 that AV TSx, that stands for the AccuVote TSx machine.

7 THE COURT: I'm just saying: Is this a summary that
8 was prepared by you, Professor Halderman, or is this something
9 that was from Diebold? I'm confused about what this is.

10 THE WITNESS: I did prepare the highlighted portions
11 of this index, yes.

12 THE COURT: All right. So this -- tell me -- this is
13 a summary of what that you prepared?

14 THE WITNESS: This is a summary of the findings of
15 the security review in 2007 that was conducted at the behest of
16 the California Secretary of State. And this list comes from
17 that study with portions highlighted by me.

18 MR. BARNES: Well, Your Honor, that is hearsay. I
19 mean, he is truly -- he didn't -- you didn't have anything to
20 do with this, did you?

21 MS. CHAPPLE: Yes. He is an author.

22 THE WITNESS: Yes, I'm an author of this study.

23 MS. CHAPPLE: He is the third author listed,
24 Halderman.

25 MR. BARNES: So you took it from other folks?

1 THE WITNESS: No.

2 MS. CHAPPLE: No.

3 MR. CROSS: Your Honor, could we have some procedure?

4 MR. BARNES: All right. I object, Your Honor.

5 THE COURT: All right. You object. I'm going to
6 give you a robust opportunity to cross-examine.

7 MS. CHAPPLE: May I enter these?

8 THE COURT: We don't have a jury here, even though we
9 have a lot of people here. So it is not like there is any
10 contamination of the jury.

11 Go ahead.

12 MS. CHAPPLE: I may enter it as Exhibit 4?

13 THE COURT: I'm going to allow it for now
14 conditionally. But I would certainly allow cross-examination,
15 and I'm doing that instead of doing some voir dire of this
16 because we'll never finish this proceeding. Otherwise I would
17 allow voir dire of it.

18 But this is -- you were a co-author of this study?

19 THE WITNESS: Yes. It is an excerpt.

20 THE COURT: If I understand correctly, this is a
21 summary of your findings and your peers' findings, who are --
22 and who are they?

23 THE WITNESS: This is a study that was authored by me
24 and other experts selected by the California Secretary of
25 State's office. And this is an excerpt from the study --

1 THE COURT: All right.

2 THE WITNESS: -- just to be clear.

3 THE COURT: All right.

4 **Q. (BY MS. CHAPPLE)** These are vulnerabilities that you found
5 as part of your study of the AccuVote TSx machines?

6 **A.** Yes.

7 **Q.** Is this list exhaustive?

8 **A.** No. This doesn't cover all of the known vulnerabilities.
9 No.

10 **Q.** Georgia performs testing prior to and on election day.
11 Would the issues, for example, the malware inserted in the
12 machine that we saw, be detected during that testing?

13 **A.** Based on the kinds of testing that I understand Georgia
14 conducts, no.

15 MR. BARNES: Well, Your Honor, what he -- I'm sorry.
16 I hate to do this. But I need to do it to build my record.

17 What he understands Georgia to do is not sufficient
18 --

19 MS. CHAPPLE: He has not made an objection.

20 THE COURT: Do you have an objection? I understand
21 you have obviously a line of effective cross-examination. But
22 is there an objection?

23 MR. BARNES: The objection is that what he
24 understands is not a sufficient foundation to give an answer.
25 I can understand a lot of things. But it is not --

1 THE COURT: It would probably more succinct to simply
2 say there is insufficient foundation for his opinion. Would
3 you please then go ahead and elaborate -- have the witness
4 elaborate what is the foundation for what he is stating.

5 **Q. (BY MS. CHAPPLE)** For example, parallel testing -- can you
6 explain to the Court what parallel testing is?

7 **A.** Yes. So I understand Georgia conducts some amount of
8 parallel testing. Parallel testing --

9 THE COURT: You understand this -- I mean, is this --
10 you actually know this or not?

11 THE WITNESS: I'm sorry. Based on the documents that
12 I have read about Georgia's procedures, Georgia conducts
13 parallel testing.

14 MS. CHAPPLE: Your Honor --

15 MR. BARNES: If he says I took the declaration of
16 somebody from the state and that I based it upon that, I have
17 no objection. It is just --

18 THE COURT: That is fine. Is it based on a
19 declaration, or is it based on -- of a state official or state
20 document?

21 THE WITNESS: Yes, based on state documents that I've
22 reviewed --

23 THE COURT: All right.

24 THE WITNESS: -- which -- I'm sorry. I don't
25 remember exactly which of the state documents.

1 THE COURT: Were they documents produced in this
2 proceeding or in other proceedings?

3 THE WITNESS: Documents provided that I --

4 MS. CHAPPLE: In this proceeding.

5 THE WITNESS: In this proceeding? Yes, I believe
6 documents that have been produced in this proceeding.

7 THE COURT: Well, for ease, we're going to proceed,
8 and we're going to have a lunch break. And I would like you to
9 shore this up what he is basing this on. But we're proceeding
10 now.

11 THE WITNESS: Yes. Excuse me.

12 MS. CHAPPLE: Thank you, Your Honor.

13 **Q. (BY MS. CHAPPLE)** Would parallel testing detect issues
14 such as malware in the DRE system?

15 **A.** Parallel testing is not sufficient to detect the malware.
16 It is not sufficient to detect malware on the voting machines.

17 **Q.** Why not?

18 **A.** Well, so parallel testing -- what parallel testing is is
19 it means that you take some of the voting machines and set them
20 aside during the election and have people cast votes on them
21 that you know what the votes are, as we did in this
22 demonstration, and then look at whether the results are what
23 you expected.

24 Well, there are a few problems with that. One is that
25 just like the malware I showed was able to detect logic

1 inaccuracy testing. And during logic inaccuracy testing, it is
2 possible to create an algorithm that detects the machine is
3 under parallel testing and not cheat during parallel testing.

4 When poll workers are following a script to enter votes
5 into the machine that they know, they are not going to behave
6 identically to real voters. Real voters do things like
7 sometimes take time to read the instructions that are unlikely
8 to be happening when people are casting vote after vote
9 following a script.

10 Even if parallel testing could perfectly simulate voters
11 and be indistinguishable, the best it would establish is that
12 the machines that were tested counted accurately. It couldn't
13 establish that every single one of the other machines was
14 counting accurately.

15 **Q.** Would testing a machine in election mode be sufficient to
16 know that there was no malware on the machine?

17 **A.** No. And for the same reasons. That parallel testing
18 would usually be conducted in election mode.

19 THE COURT: To your knowledge, is it normal to test
20 every machine or is it -- or is this a random amount of
21 testing? I realize it is based on your knowledge.

22 But let me just say: Generally speaking, since you
23 are an expert on elections as a whole, what is the norm?

24 THE WITNESS: Generally speaking, every machine would
25 be subject to logic inaccuracy testing as a pre-election

1 procedure. But for parallel testing, because it is
2 time-consuming and expensive and necessarily takes a machine
3 out of service if you are testing in parallel on election day,
4 only a few machines are tested in that form.

5 THE COURT: Per precinct or as a whole?

6 THE WITNESS: I've seen it done per county. I am not
7 sure if that -- for sure if that is what Georgia does or not.
8 A small number of machines.

9 THE COURT: So are you saying -- maybe you-all used
10 this. I can't remember. I think you did in -- in your
11 brief -- that this is equivalent to the VW emission issue that
12 they were able to mask -- mask what was actually happening?

13 THE WITNESS: Yes. That is another example in which
14 malicious software is engineered to defeat testing by detecting
15 it is under testing and suppressing the cheating during tests.
16 And it is exactly the same kind of problem with parallel
17 testing, logic inaccuracy testing, other functional testing on
18 voting machines.

19 Because you necessarily can't be testing with the
20 real voters and the real ballots, you are simulating what is
21 going on. It is in a controlled environment, and that
22 controlled environment is not going to be the same as the real
23 votes that are counted. It is going to be distinguishable
24 potentially by a computer algorithm.

25 **Q. (BY MS. CHAPPLE)** Thank you, Professor Halderman. Now I

1 would like to move to discuss the optical scanners used here in
2 Georgia. What type of optical scanning machines does Georgia
3 use?

4 **A.** Georgia uses AccuVote-OS optical scanners.

5 **Q.** Are you familiar with the AccuVote-OS scanner?

6 **A.** Yes. I do have one in my lab back in Michigan.

7 **Q.** How long does it take to run a ballot through an optical
8 scanner -- an AccuVote optical scanner?

9 **A.** I believe that the cycle time on the AccuVote-OS is about
10 three seconds.

11 **Q.** Given that time, how long would it take to tabulate the
12 election results in a Georgia election assuming 6.8 million
13 voters, a 50 percent voter turnout as the defendants have said
14 in their -- in their declaration using 891 optical scanners? I
15 can give you a piece of paper.

16 **A.** Oh, my gosh. Now you are really giving me the examination
17 dream. So I have done some of this math at the
18 back-of-the-envelope calculation. And 6.8 million voters,
19 50 percent turnout. So 3.4 million, divided by about 900
20 scanners is roughly, let's say, within ten percent about 3600
21 ballots per scanner. 3600 ballots per scanner, if it takes
22 three seconds per ballot at the fastest the scanners can
23 possibly go, that is what? 120 -- 180 -- it is about three
24 hours. Right. I believe that works out to about three hours
25 of work using all 900 scanners Georgia has across the state in

1 parallel.

2 **Q.** To tabulate all of the ballots in Georgia --

3 **A.** To tabulate --

4 **Q.** -- would take about three hours using 900 optical
5 scanners?

6 **A.** If they were utilized as quickly as they can possibly go.
7 Let's suppose in real life it takes -- maybe it takes five
8 times that. But that is still 15 hours.

9 **Q.** And if the ballots were multiple pages, you would
10 multiply, you know, by that amount of time. So if it is a
11 two-page ballot, it would maybe be double that?

12 **A.** At most, yes.

13 **Q.** 30 hours or --

14 **A.** No more than double.

15 **Q.** Right. In your opinion, what is the most secure election
16 system configuration?

17 **A.** My opinion is that the most secure election configuration
18 is one that has a paper trail that the voter can see. A paper
19 ballot or a machine that produces a voter verifiable paper
20 record.

21 And this is the most secure because you have both an
22 electronic record and a paper record. You are not relying on
23 either one of those to be the sole authority, and you can
24 cross-check them to make sure that both records are unchanged.

25 **Q.** And, finally, in your opinion as a computer scientist and

1 expert on cybersecurity, is there anything that Georgia could
2 do to know for sure that the November 18 election would not be
3 hacked?

4 **A.** No. And I would say something even stronger than that. I
5 don't think that there is anything that Georgia can do to
6 reasonably secure the -- the machines that are -- the
7 touchscreen -- paperless touchscreen machines that are in use
8 today.

9 MS. CHAPPLE: Thank you, Your Honor. No further
10 questions.

11 MR. BARNES: May I proceed?

12 THE COURT: Yes.

13 CROSS-EXAMINATION

14 BY MR. BARNES:

15 **Q.** Now, let me see this. You say these machines are no good
16 because a crook could get into the machine and create a
17 crime -- commit a crime; is that correct?

18 **A.** I worry less about crooks than about nation state
19 intelligence agencies. But yes, a crook potentially could as
20 well.

21 **Q.** And do you know where the ballot is built in Georgia?

22 **A.** The ballot -- my understanding is it is built today by the
23 Secretary of State's office.

24 **Q.** And do you know what security is around building that
25 ballot?

1 **A.** I know that Georgia takes steps to attempt to secure those
2 systems.

3 **Q.** So is that answer yes or no? Do you know what security --
4 do you know what security measures are around the building of
5 the ballot?

6 **A.** I know some of the security measures, yes.

7 **Q.** And where did you find that?

8 **A.** I believe one of the declarations from your side described
9 some of those measures.

10 **Q.** And do you realize these matters are very sensitive you
11 would agree and a state secret as to all of the way ballots are
12 built?

13 **A.** I'm sorry. I don't understand.

14 **Q.** Sometimes I confuse myself.

15 You have never been to the secure location in Georgia and
16 seen what has happened to build the ballot and to keep a crook
17 from putting in some malicious malware?

18 **A.** Not in Georgia. Although I have in other locations where
19 that is done for other states.

20 **Q.** Well, how many times has this malicious malware by a crook
21 in Georgia ever been found?

22 **A.** I don't know.

23 **Q.** Do you know of any that has ever been found?

24 **A.** Of any --

25 **Q.** Of any in Georgia. You said you don't know. I asked you

1 how many times. You said I don't know.

2 And the next question is: Do you know even one time that
3 malicious malware has been put in by a crook and came over the
4 security provisions put out by the Secretary of State?

5 **A.** I don't know. But it would be inherently hard to detect.
6 That is the problem with this kind of attack.

7 **Q.** So the question is -- it is not the question do you know
8 or not know.

9 Do you know as you sit here, yes or no, where a malicious
10 crook has ever put it into the state system where they build
11 the ballots?

12 **A.** I do know that Logan Lamb was able to access the Kennesaw
13 State systems.

14 **Q.** Yes, sir. Do you know what has happened with Kennesaw
15 State? Do you know what --

16 MR. CROSS: Your Honor, he needs to be able to finish
17 his answer.

18 MR. BARNES: I'm sorry.

19 **Q.** **(BY MR. BARNES)** Are you through?

20 **A.** I do know that Logan Lamb was able to access the Kennesaw
21 State system. And it would -- based on the way in which he was
22 able to access it, those systems would have been accessible to
23 other attackers as well.

24 **Q.** Do you know whether he ever got into the election system
25 or whether it was into a separate website?

1 **A.** That website was used to communicate the kinds of ballot
2 programming that are at issue here.

3 **Q.** And -- but the question back to it is: Is that the only
4 one that you know where a malicious malware has been put in to
5 a system in the secured location of the Secretary of State?

6 **A.** Well, I understand that there were further vulnerabilities
7 later shown at Kennesaw State as well.

8 **Q.** So all of yours is about Kennesaw State? Everything you
9 know about this malicious malware is at Kennesaw State?

10 **A.** Even if it was only Kennesaw State, unfortunately if the
11 machines were infected during the time that Kennesaw State was
12 exposed, they would likely remain infected today.

13 **Q.** Yes. You don't know what has been done since that time at
14 Kennesaw State? You don't know what they have done -- the
15 Secretary of State has done to move from Kennesaw State to
16 inspect all of the machines? You don't know any of that;
17 correct?

18 MR. CROSS: Your Honor, we'll stipulate that the
19 state has not provided any information on any such measures.

20 MR. BARNES: Well, Your Honor, is that an objection,
21 as you told me?

22 We'll have testimony regarding it. I'm trying to --
23 I believe I have got him on cross.

24 THE COURT: Yeah. You can go ahead and cross. But I
25 must say, you know, that there hasn't been discovery. And the

1 affidavit from the state was a little bit oblique, to say the
2 least, about what measures were implemented.

3 MR. BARNES: We'll have a witness here.

4 THE COURT: Okay. That is marvelous.

5 **Q. (BY MR. BARNES)** Let me ask you this. You say the optical
6 scanners are the way to go?

7 **A.** I do believe that the optical scanners can be made more
8 secure, yes.

9 **Q.** I'm sorry. Is that a yes or a no?

10 **A.** Yes.

11 **Q.** Okay. And do you know of the study that was conducted by
12 Secretary of State Cathy Cox where lower educated, lower income
13 were undercounted under the optical scanners?

14 **A.** I'm not aware of the study, no.

15 **Q.** Well, do you know if that undercounting of minority and
16 disadvantaged people is the reason that we went away from
17 optical scanners?

18 **A.** Optical scanners do provide a different interface, but
19 they are the most widely used voting technology in the country.

20 **Q.** Well, that is not what I'm asking you. Do you know that
21 because of the Georgia experience and the Georgia -- not the
22 Michigan where the sun comes up in the west -- but in Georgia
23 where we did a study and found out that minority and
24 disadvantaged voters would mark with an X rather than coloring
25 in the bubble and other things like that that they were being

1 undercounted?

2 **A.** I am not familiar with the study that you are referring
3 to.

4 **Q.** And have you ever seen any other study where optical
5 scanners because of the lack of expertise of the voters on how
6 to color -- you do color in the little bubble, don't you?

7 **A.** Yes.

8 **Q.** Okay. And if you don't color in the little bubble
9 altogether, you put an X or a check, you have seen studies that
10 show that those votes were undercounted; correct?

11 **A.** I have seen studies that say that. But there are studies
12 that show how to design the ballot for an optical scan system
13 in a way that reduces voter error.

14 **Q.** Yes. But this election is in two months. Well, less than
15 that really now. Do you think it could be developed in two
16 months?

17 **A.** I do, yes.

18 **Q.** Oh, okay. And how much do you think that will cost?

19 **A.** Well, we could do back-of-the-envelope calculations if you
20 would like. But I don't have figures prepared.

21 **Q.** All right, sir. Now, the gold standard --

22 THE COURT: Let me ask you: Has it been done in
23 other states or not? You say that it is the most -- it is
24 frequently used. So what --

25 THE WITNESS: Excuse me, Your Honor. Has what been

1 done in other states?

2 MR. BARNES: Optical scanners --

3 THE COURT: Optical scanners --

4 MR. BARNES: -- change with 60 days.

5 THE COURT: That is not my question. My question
6 followed up on: Is this just an idea of yours that a program
7 could be developed, or it has been developed and is used -- is
8 in use by other states?

9 THE WITNESS: Optical scanners are used very widely
10 across the country.

11 THE COURT: But to address the problem that Barnes
12 stated.

13 THE WITNESS: There are -- many states have addressed
14 concerns by -- about voter error through ballot design changes.

15 THE COURT: That is what I was asking.

16 THE WITNESS: Yes.

17 **Q. (BY MR. BARNES)** So you would have to redesign the ballot?

18 **A.** I don't know how your current ballot is designed I must
19 say.

20 **Q.** Because you don't know anything about Georgia? You have
21 never been hired by Georgia, have you? Have you ever been
22 hired by the State of Georgia?

23 **A.** No, I have never been hired by the State of Georgia.

24 **Q.** How many times have you been here?

25 THE COURT: All right. Proceed.

1 **Q.** (BY MR. BARNES) Well, let me ask you one last question:
2 Do you know where the Big Chicken is?

3 Now, let me ask you this: The gold standard in your mind
4 is a paper ballot; correct?

5 **A.** Yes.

6 **Q.** All right. And did you ever vote on a paper ballot?

7 **A.** I have, yes.

8 **Q.** Old paper ballot where you mark an X?

9 **A.** Where you fill in the bubble, yes.

10 **Q.** No, I'm not talking about a bubble. We are over the
11 optical scanners. I'm talking about an old paper ballot.

12 **A.** I'm sorry. I am referring to optical scan paper ballots,
13 the type used in Georgia.

14 **Q.** I'm talking about old paper ballots. Just, you know, you
15 mark; isn't that right? Have you ever voted on one of those?

16 **A.** I don't believe so.

17 **Q.** Yeah. Well, I have.

18 Now, you have to -- when you -- when you are counting the
19 paper ballot, every person that is on the list you have to
20 count -- for example, governor, you go through and you
21 count two stacks on Stacey Abrams and Brian Kemp for governor.
22 And then you go through all the governors. Then you go back
23 and count the same ballot again to lieutenant governor, then
24 secretary of state.

25 Isn't that the way you do it?

1 **A.** Yes. I have participated in a hand count of paper
2 ballots.

3 **Q.** And the studies show that the hand counting of the paper
4 ballots are the greatest fraud that has occurred?

5 **A.** Again, this is why optical scan paper ballots are
6 desirable because you end up with an electronic record and a
7 paper record and can check them to make sure they agree.

8 **Q.** Listen, I'm just trying to get you in the stall where you
9 are telling me you are. So you agree with me that the paper
10 ballots -- the old paper ballots are not a valid way to do
11 this?

12 **A.** I don't know if I want to say they are invalid. They are
13 still stronger as a defense against cyber attacks because,
14 well, it is on a piece of paper. It cannot be changed through
15 computer fraud.

16 **Q.** Yeah. But it can be changed by the fellow that is keeping
17 the tally, can't it?

18 **A.** Well, if there are dishonest election officials in
19 Georgia, it could be.

20 **Q.** Yes. Just like you have -- just like you have to have a
21 court right here --

22 THE COURT: All right, everyone. I understand your
23 humor, but this is really not a public meeting. So no
24 clapping.

25 MR. BARNES: I'm sorry.

1 **Q.** (BY MR. BARNES) Just like you would have to have a crook
2 to do what you have said?

3 **A.** You wouldn't need to have an insider to do what I said,
4 someone who was part of the process of counting.

5 **Q.** Not if they -- not if -- listen, that is the reason you
6 restrict the access when they are building the ballot; isn't
7 that true?

8 **A.** It is a good idea to restrict access while they are
9 building the ballot.

10 **Q.** So -- listen, so you would have to have a crook in the
11 room -- the secure room to build -- to make what you just did
12 here work?

13 THE COURT: Hello?

14 **A.** No, that is not true.

15 And fortunately these machines are quite sturdy. So you
16 are welcome to bang on it.

17 THE COURT: Why is it not true?

18 THE WITNESS: But it is not true that you would need
19 to have a person in the room. What you would need to do is be
20 able to spread malicious software to that machine.

21 **Q.** (BY MR. BARNES) Yes, sir. But you would have to -- if it
22 is -- I want you to --

23 THE COURT: All right. Step back. Thank you.

24 MR. BARNES: Can you not hear me?

25 THE COURT: I always can hear you, and you are here a

1 lot. So --

2 **Q.** (BY MR. BARNES) So you don't know -- so you say, well,
3 you can spread malicious software and you wouldn't have to be
4 in the room?

5 **A.** That is right.

6 **Q.** And you would have to do that how?

7 **A.** Well, so let me give you the example. We're talking about
8 the threat of nation state intelligence sectors. Very
9 sophisticated adversaries. And they routinely have techniques
10 available to them to spread malicious software to machines that
11 aren't directly connected to the internet.

12 The most famous example of that is the Stuxnet malware.
13 That is what was used to sabotage Iran's nuclear enrichment
14 program.

15 **Q.** That we did?

16 **A.** According to the New York times, yes.

17 **Q.** Okay.

18 **A.** But what -- the way that worked, those nuclear -- those
19 uranium centrifuges were not connected to the internet.
20 Instead, the malware spread on USB sticks that were
21 occasionally connected to the computer systems used to program
22 the uranium centrifuges.

23 **Q.** So you are telling me that even though this is not
24 connected to the internet, no malicious malware in the
25 beginning, that some outside source could infect it with

1 malicious malware -- some other crook?

2 **A.** Yes. Yes, that is the finding.

3 **Q.** And so you would have to have a crook voter to put the
4 information in, wouldn't you?

5 **A.** No. No one has to touch the machine. That is right. The
6 malware can spread in on the memory cards from the election
7 management system. It could potentially spread to the election
8 management system in a number of ways.

9 **Q.** Okay. But the election management system, if it is
10 secured, is not going to spread to the local systems, is it?

11 **A.** If the election management system is compromised, then all
12 of the local systems can be infected.

13 **Q.** Do you have a problem understanding my questions? I just
14 want to make sure.

15 **A.** I may. I'm sorry.

16 **Q.** If the election system -- the management system is
17 secured, then you cannot get to a local system to infect the
18 voting? Yes or no?

19 **A.** No. So there are other ways to spread malware to these
20 machines unfortunately.

21 **Q.** Yes, sir. So you have got to have a crook inside the
22 sealed room, the air-gapped system --

23 THE COURT: That is not what he said. So let's
24 just --

25 **Q.** **(BY MR. BARNES)** Well, that is the first one you said.

1 You said you would have to have one to insert it where they
2 built the ballot?

3 **A.** No. I said you don't need a crook inside the sealed room
4 because there are moments like the Stuxnet attack in which
5 malware can spread to that system, even though the state
6 does -- and I'm sure this is -- even though the state does
7 assert that those machines are isolated.

8 **Q.** And -- but you don't know that because you haven't looked
9 at Georgia's system?

10 **A.** I have read your side's declarations.

11 **Q.** From your personal knowledge, do you know?

12 **A.** From my personal knowledge?

13 **Q.** Yes.

14 **A.** Do I know -- excuse me. I don't understand the question.

15 **Q.** From your personal knowledge, do you know any breach in
16 the security that has occurred?

17 **A.** That has occurred?

18 **Q.** Yes.

19 **A.** For instance, the Kennesaw State breaches.

20 **Q.** You have already told us about that, and we're going to
21 get into that.

22 Anything else?

23 **A.** From my personal knowledge, the Kennesaw State breaches
24 are the ones I'm familiar with.

25 **Q.** So when did you visit Kennesaw State to examine this?

1 **A.** I haven't visited Kennesaw State, but I have reviewed the
2 FOIA emails that were produced that described their security
3 procedures and mitigations.

4 **Q.** So everything you know is what somebody else has said?

5 **A.** Well, what the people who were administering the network
6 at Kennesaw State said in their emails that were FOIAed yes.

7 **Q.** But not based on your personal investigation or not?

8 **A.** No.

9 **Q.** Okay.

10 THE COURT: So how much time more?

11 MR. BARNES: Just about five minutes. I'm about
12 done.

13 THE COURT: All right.

14 **Q. (BY MR. BARNES)** Do you have any knowledge regarding what
15 cybersecurity protocols are used by Georgia?

16 **A.** Yes, I do have some knowledge.

17 **Q.** Is that knowledge based on your personal knowledge or what
18 you read from somebody else?

19 **A.** It is based on what I have read.

20 **Q.** And do you have any specific knowledge of Georgia's
21 password change requirements?

22 **A.** No. Although those would be irrelevant to the issues at
23 hand.

24 **Q.** Do you have any specific knowledge of Georgia's policy
25 regarding brute force and inactivity during disabling?

1 **A.** During disabling?

2 **Q.** Yes.

3 **A.** What do you mean during disabling?

4 **Q.** Listen, do you not -- do you not understand what brute
5 force is and disabling? I'm just asking you. If you are -- if
6 you don't know what it is, I'll pass on.

7 **A.** I'll just say it is ambiguous in this context.

8 **Q.** So you have no specific knowledge of Georgia's policy
9 regarding brute force and --

10 THE COURT: All right. You have to explain what you
11 mean. Come on. Brute force is either I'm knocking somebody
12 over or are you talking about knocking the machine over? I
13 mean, I have to understand too.

14 MR. BARNES: I know, but I'm trying to get to the
15 extent -- I'm going to educate you with a witness.

16 THE COURT: That is great. But it doesn't help -- it
17 doesn't help me when you are examining the witness. So that is
18 what -- the ultimate point here, frankly, is to educate me.

19 THE WITNESS: If I can conjecture what the policy you
20 are referring to is, just for sake of clarifying the question,
21 it sounds like you are talking about password guessing and
22 password disabling policy.

23 And I don't have knowledge of Georgia's specific
24 policy for that. Although the policies about RAM passwords are
25 irrelevant to the kinds of attacks that I've demonstrated.

1 Q. (BY MR. BARNES) I'm sorry. Are you through?

2 A. Yes.

3 Q. Do you have any specific knowledge of any defenses Georgia
4 uses against SQL?

5 A. You mean against SQL injection?

6 Q. Yes.

7 A. So --

8 MR. BARNES: Your Honor, would you instruct the
9 witness. That is a yes or no. If it is yes, he can explain.
10 If it is no, he can explain.

11 A. I need to take a second to think about whether I know
12 about any of Georgia's policies. I believe no, I do not know.
13 Although I would say once again that is irrelevant to the
14 particular attack that is at issue.

15 Q. (BY MR. BARNES) Do you have any specific knowledge of the
16 penetration testing that Georgia undertakes?

17 A. I have knowledge about the kinds of penetration tests that
18 were undertaken at Kennesaw State.

19 Q. And that is all?

20 A. Yes.

21 Q. Okay. And you don't know what has been done since
22 Kennesaw State?

23 A. I do not.

24 Q. All right. Regarding how data relevant to election in
25 Georgia is secured, do you have any specific knowledge as to

1 how that has changed since Kennesaw State, that is, in 2016 to
2 the present?

3 **A.** Between Kennesaw State and the present, I do have some
4 knowledge of that.

5 **Q.** And so you have knowledge of the changes that have been
6 made by the State of Georgia?

7 **A.** Yes.

8 **Q.** All right. And where did you obtain that knowledge?

9 **A.** From the declarations of the other side, from published
10 reports.

11 **Q.** Declarations from the other side. Which side?

12 **A.** From your side. The defense's declarations. Excuse me.

13 **Q.** Do you have any personal experience designing an election
14 system specific to a primarily paper ballot environment?

15 **A.** I do, yes.

16 **Q.** What is that?

17 **A.** I have designed -- in my research, among other things, I
18 have designed ways to more efficiently audit paper ballots.

19 **Q.** Yes, sir. Have you ever published a peer-reviewed study
20 on the accuracy of optical scanners?

21 **A.** I myself haven't. I'm familiar with other peer-reviewed
22 literature on that topic.

23 **Q.** The question is: Have you published a peer-reviewed
24 article on the accuracy of optical scanners?

25 **A.** No, I haven't.

1 Q. Should voting -- you agree with me that voting mechanisms
2 should be racially neutral so far as that is possible? You
3 agree with that?

4 A. I agree with you.

5 Q. And also it should be neutral as to education level?

6 A. Insofar as is possible.

7 Q. Are optical scanners immune from overvotes?

8 A. From -- precinct count optical scanners can be made immune
9 from overvotes.

10 Q. No, sir. Well, let me ask you this: As optical scanners
11 are -- do you know what system of optical scanners Georgia used
12 before this?

13 A. Before the present?

14 Q. We had hanging chads in between.

15 A. Oh, those weren't -- those were mechanical --
16 electromechanical, rather than optical, I believe. I may be
17 wrong about that.

18 Q. We had optical scanners before that. Do you know anything
19 about the system that was used when we had optical scanners?

20 A. What year are you asking about perhaps?

21 Q. How old are you? Probably before you started. But it was
22 in the 1980s.

23 A. In the 1980s.

24 THE COURT: Let's move on then.

25 Q. **(BY MR. BARNES)** Do you know anything --

1 MR. BROWN: Your Honor, I object on relevancy
2 grounds. Georgia uses the same optical scanners today. This
3 line of questioning is challenging the optical scanners that
4 Georgia uses now to count 340,000 votes of Georgians. At issue
5 is not the accuracy of the scanners. They are using them right
6 now. So all we are hearing here, it is not going to have
7 anything to do with your decision.

8 MR. BARNES: I will rephrase the question.

9 Q. (BY MR. BARNES) Have you examined the optical scanners
10 Georgia uses now to count absentee ballots?

11 A. I have done some tests on the AccuVote-OS, yes.

12 Q. Well, that is not -- the ones that are used in Georgia
13 now -- have you tested a Georgia machine?

14 A. I have tested the model of voting machine used in Georgia,
15 yes.

16 Q. All right. And where did you test that?

17 A. Well, I have one in my laboratory at Michigan.

18 Q. And who in Georgia gave you that?

19 A. I don't think it was given to me by someone in Georgia.

20 Q. Well, listen --

21 THE COURT: Is it the same model as they are using?

22 THE WITNESS: It is the same model of machine.

23 Q. (BY MR. BARNES) You are sure of that?

24 A. Yes.

25 Q. And the question that I have for you is: Is that machine

1 capable of overvotes without some modification?

2 **A.** The machine can reject ballots that have been inserted in
3 them that have been overvoted.

4 **Q.** All I asked you is: Is the machine without alteration
5 capable of overvotes?

6 **A.** You mean of a voter casting a ballot that has been
7 overvoted? It may be the case that a voter can force the
8 machine to accept a ballot that has been overvoted. But I
9 don't actually -- I'm not sure if that is true.

10 **Q.** Well, you're the expert. I'm just a country lawyer.

11 **A.** Yes.

12 **Q.** And the question I have for you: Is it susceptible and
13 immune from undervotes without modification?

14 **A.** Every voting system is susceptible potentially to
15 undervotes.

16 **Q.** And overvotes?

17 **A.** The voter can always just choose not to cast the ballot at
18 all.

19 **Q.** No. I'm talking about where you get a ballot. You check
20 instead of filling in the bubble, and you put it in the
21 machine.

22 **A.** Oh, I see what you mean.

23 **Q.** Well -- and, you know, could that happen without
24 modification?

25 **A.** The machines are supposed to reject ballots that have too

1 many marks. But they can still fail to count a valid mark.

2 **Q.** They can fail to count a mark unless it is colored in?

3 MR. BROWN: Your Honor, I object on the same grounds.
4 They are using these scanners. The defendants are trying to
5 eat into our time massively.

6 THE COURT: All right. Well, you have one minute to
7 close up.

8 **Q. (BY MR. BARNES)** The question is: If you don't fill in
9 the bubble sufficiently, is it -- is that vote possible to not
10 be counted?

11 **A.** Yes, it is possible.

12 **Q.** All right, sir. Do you have any specific knowledge as to
13 the security protocol used by the Secretary of State regarding
14 the EMS server?

15 **A.** I have some knowledge regarding it.

16 **Q.** And that all came from the declarations that you read of
17 the employees of the Secretary of State?

18 **A.** And other published reports.

19 **Q.** If certified results do not rely on the election
20 management system, would the election outcome change?

21 **A.** If certified results -- you mean in the alternative? If
22 they relied on the paper tapes that the machines printed out?

23 **Q.** In Georgia. I'm giving you everything from Georgia. If
24 certified results by the Board of Elections do not rely on an
25 election management system, would the election outcome change?

1 **A.** I'm not sure I understand what alternative you are
2 proposing.

3 THE COURT: All right. You can have someone testify
4 about this. I think we've had enough at this juncture.

5 MR. BARNES: All right.

6 THE COURT: You know, you already went over your --
7 the amount of time. So if you have one minute you want to
8 clarify, that is it. But we have got also Fulton County. And
9 you-all also basically violated all of your time forecasts,
10 frankly, on this.

11 So we have got to get real when we are through with
12 this. Basically we've got to -- I understand that Fulton
13 County didn't get to examine. But is there something that is
14 pressing on your mind that is -- other than what Governor
15 Barnes very fulsomely went over?

16 MR. BARNES: Your Honor, the only thing I would like
17 to put on the record is the witness was being nonresponsive.
18 And that is the reason I ate up the time. And I ask the Court
19 not to restrict because of that.

20 THE COURT: I know that that is your view. I can't
21 say it is mine. But that is fine.

22 MS. BURWELL: Can I just clarify a few things with
23 the witness, Your Honor?

24 THE COURT: Yes.

25 CROSS-EXAMINATION

1 BY MS. BURWELL:

2 **Q.** Mr. Halderman, this machine that you have here that you
3 have demonstrated for the Court, that is not a machine that was
4 previously in use in Georgia; is that correct?

5 **A.** I don't believe that this particular example was -- just
6 to be clear, the model is used currently in Georgia. This
7 particular one I don't believe was used in Georgia.

8 **Q.** And there is different software on the same model;
9 correct?

10 **A.** That is correct.

11 **Q.** And, in fact, in your declaration in Paragraphs 25 and 26,
12 you talk about the fact that the software in the Georgia
13 machines is different from the software in the machines that
14 you did your demonstrations on; correct?

15 **A.** That is correct. Georgia uses a version of the software
16 that is version -- ballot station version 4.5. The
17 demonstration I gave here is on ballot station 4.6, a more
18 recent line of the code. I have previously done work showing
19 vulnerabilities in version 4.3 and 4.4.

20 **Q.** But not 4.5, which is what is used in Georgia; correct?

21 **A.** Only 4.3, 4.4, and 4.6. You are correct.

22 **Q.** So you have not done any sort of demonstration on a
23 Georgia machine as they are configured in Georgia; correct?

24 **A.** I haven't. Although I would be happy to work with the
25 state to do so.

1 Q. Okay. So let me ask you --

2 THE COURT: Let me ask you: You're an expert on
3 these machines. You do this type of studying all the time.
4 Obviously you have done it for the State of California and for
5 other places.

6 So what are the material differences, if any, in the
7 actual software to your knowledge in all of these iterations?
8 Obviously the earlier versions -- there are developments that
9 are supposed to make things more secure. Though one would
10 think 4.6 was more secure than 4.5.

11 MR. BARNES: Your Honor, I would object because he
12 couldn't know if he has never done a study on 4.5.

13 THE WITNESS: I can say for the --

14 THE COURT: Are you familiar with the software -- the
15 Diebold software and its developments as a whole? Let's put
16 aside Georgia. Are they marketed around the country to the
17 states?

18 THE WITNESS: Yes, they are. I am familiar, Your
19 Honor, with the features that have been added to the software
20 over the years. And the more recent versions of the software
21 have generally added additional security features. The current
22 version is 4.7. It is the most recent that was certified by
23 the -- by the EAC.

24 THE COURT: EAC is?

25 THE WITNESS: I'm sorry. The federal Election

1 Assistance Commission.

2 THE COURT: So does the 4.6 incorporate to your
3 knowledge the software advancements as to security that were in
4 4.5?

5 THE WITNESS: Yes, it does to my knowledge. Yes.

6 **Q. (BY MS. BURWELL)** Can you give the Court what your
7 knowledge is?

8 **A.** Well, so I have seen the source code to 4.6 under
9 nondisclosure agreements as part of the State of California.
10 And I reverse-engineered the previous version, 4.3, in
11 extensive testing. And I can see what has changed before --
12 between 4.3, 4.4, and 4.6. So there are reasonable
13 extrapolations that as a software engineer you can make about
14 what features are added and removed between versions.

15 **Q.** But you don't have any firsthand knowledge -- correct? --
16 of what those changes would be in 4.5?

17 **A.** In software engineering, features are usually added and
18 removed and persist over time. I saw what was in the room this
19 morning, and I saw what was in the room at lunchtime, and
20 people may have come in and out in the interim. But it is
21 unlikely that the overall architecture changed.

22 **Q.** That is your opinion that it is unlikely to change, but
23 you don't know that for sure; correct?

24 **A.** I can only speak to how software development typically
25 works. As a computer scientist, I have seen the engineering of

1 many other programs. But I do know about the vulnerabilities
2 that were common between the previous version and the version
3 after the Georgia version.

4 **Q.** So we're clear that you haven't seen 4.5?

5 **MR. BROWN:** Objection, Your Honor. Asked and
6 answered.

7 **THE COURT:** All right. Go ahead and proceed. I
8 think his testimony is clear.

9 **Q. (BY MS. BURWELL)** The demonstration that you have done
10 here and the demonstrations that you have done back at your
11 place of employment, none of those have been carried out in an
12 actual race in Georgia; correct?

13 **A.** Well, I'm not a criminal.

14 **Q.** Correct.

15 **A.** Yes.

16 **Q.** So they are demonstrations --

17 **THE COURT:** I think there is enough of the Georgia
18 questions, frankly. I think the Governor has covered this. So
19 I think he obviously indicated he has not done his work -- been
20 involved with the machines in Georgia -- personally in Georgia.

21 **Q. (BY MS. BURWELL)** So let me ask you about: Do you have
22 any expertise in setting up paper ballot environments?

23 **A.** Setting up paper ballot environments?

24 **Q.** Yes.

25 **A.** Well, I have done work on post-election audits of paper

1 ballot systems, yes.

2 **Q.** I'm not asking about post-election auditing. I'm asking
3 about the front end, setting up the processes and procedures.

4 **MR. CROSS:** Your Honor, we object. Governor Barnes
5 asked this exact question. We have covered this. Asked and
6 answered.

7 **MS. BURWELL:** I didn't hear an answer to that. I was
8 marking off everything.

9 **THE COURT:** Well, I'm sorry. He did ask about it.
10 So I'm going to ask you to move on, and I'm going to ask you if
11 there is something else.

12 **MS. BURWELL:** Okay.

13 **THE COURT:** I just think though the plaintiff took 34
14 minutes and you-all have taken 34 minutes plus. So I'm sorry
15 that a lot of your time was stolen -- but or not. But you
16 y'all shared it. I assumed -- I'm sorry -- that y'all had some
17 agreement. So I'm allowing you some room, but not a lot
18 because, A, the cafeteria closes at 1:30 and, B, we need to be
19 through with this witness and move on.

20 **Q. (BY MS. BURWELL)** Let me ask you about optical scanners.
21 I don't think you answered this question.

22 It is possible, isn't it, for optical scanners to be
23 compromised.

24 **A.** Yes, that is true.

25 **Q.** It can be compromised both with respect to the software, I

1 guess you would call it --

2 MR. CROSS: Your Honor, I'm sorry to object. But not
3 only was this covered but, as Mr. Brown pointed out, they use
4 optical scanners. If they are going to indict their own
5 system, then let's all move to paper ballots.

6 THE COURT: No more argument about it. But I think
7 that was precisely the sort of question that was asked. But
8 you did answer yes, that they can be compromised. And I'm
9 going to let you wrap up. And then we're going to close at
10 this point.

11 THE WITNESS: So yes, they can be compromised.
12 However, the advantage in an optical scan system is you have an
13 uncompromisable in a cyber attack physical record that can then
14 be spot-checked to make sure that the electronic record is
15 correct. That auditable record is what is completely lacking
16 in the paperless system.

17 THE COURT: Thank you very much. Plaintiffs' counsel
18 may do one minute and no more.

19 MS. CHAPPLE: No further questions, Your Honor.

20 MR. BROWN: No questions.

21 THE COURT: All right. I don't know how many people
22 may be out in the other room, and they may have all passed. We
23 look like we have a few seats left for when we get back.

24 I'm not going to take a full hour because we don't
25 have a full hour at this point. You-all need to just really

1 talk about what is -- what is important to you.

2 Originally we had -- it said direct and
3 cross-examination of Alex Halderman was 30 minutes. I assume
4 because you had deleted some witnesses that you added time to
5 that. But I didn't force you to basically tell me how that was
6 going to work out. But I do need to know now. Because,
7 otherwise, we're not going to finish today. And I am going to
8 finish today.

9 I mean, I wanted to give an opportunity for these
10 issues to be aired and for me to actually personally hear. And
11 I thought as a matter of public concern that the public had a
12 right to also hear the matters that are being briefed in this
13 court. And I thought that was important no matter what
14 happens. But we have to be able to move forward too.

15 MR. CROSS: Your Honor, just one quick thing before
16 we go. We actually didn't intend for his examination to go
17 longer. It would help if we could get a commitment that we're
18 going to have the normal rules of decorum because a lot of time
19 was lost on his direct with many, many interjections. And if
20 we could just stick to the rules, I think this will actually
21 stick to the schedule.

22 MR. BARNES: Well, I believe I have the right to make
23 an objection and to --

24 MR. CROSS: But not question the witness and jump
25 into voir dire at every other opportunity. He is either doing

1 it right then or on cross.

2 MR. BARNES: He was never offered as an expert.

3 MR. CROSS: That is not required in federal court.

4 MR. BARNES: I'll let --

5 MR. CROSS: The foundation was laid for his
6 expertise.

7 MR. BARNES: I understand.

8 THE COURT: Are you offering him as an expert?

9 MR. CROSS: Absolutely, Your Honor. And the
10 foundation we believe has been laid, and I don't think there
11 was any dispute about that.

12 THE COURT: All right.

13 MR. BARNES: I object because there has not been a
14 proper foundation of the knowledge and information regarding
15 the facts and circumstances of the State of Georgia --

16 THE COURT: All right.

17 MR. BARNES: -- and what is in dispute here.

18 THE COURT: Well, I'm going to accept him as an
19 expert as a computer science engineer who specializes in the
20 area of election technology. His background clearly manifests
21 that.

22 You know, whether there are weaknesses as to his
23 knowledge of Georgia is another matter. And you have had an
24 opportunity to explore it. Like it or not, we live in a
25 nation, just not in one state. And technology is not only

1 national. It is international.

2 So I understand the questions. I understand their
3 relevance -- some of their relevance. I'm not discounting
4 that. Because we are dealing with specific events in Georgia.
5 But they don't just occur in isolation.

6 Just as when there is a data breach in the financial
7 systems or in the medical systems, they are not just confined
8 to Georgia or to one state typically. They are nationwide, as
9 everyone well knows.

10 All right. It is ten after 1:00. I would like
11 you-all to talk about your schedule and be prepared to address
12 it with me afterwards. We'll resume at -- just because it is a
13 matter of reality, we won't be ready until ten of 2:00.

14 MR. SALTER: What was that, Your Honor?

15 THE COURT: Ten of 2:00.

16 MS. BURWELL: Your Honor, Fulton County joins in all
17 of the objections made by the state. I was trying not to --

18 THE COURT: That is fine. I appreciate that. It is
19 so noted. And I'm going to assume that unless you jump up and
20 say that is not our objection at some point. But I'm going to
21 just sort of have that as a standing position.

22 All right. If I say we're going to start then, if
23 you are coming back, come back a few minutes before then.

24 MR. MCGUIRE: Is that 1:50, Your Honor?

25 THE COURT: 1:50.

1 COURTROOM SECURITY OFFICER: All rise. Court stands
2 in recess until 1:50.

3 **(A lunch break was taken at 1:10 P.M.)**

4 THE COURT: Please have a seat. Counsel, have you
5 conferred and tried to impose some order on the schedule? I
6 can tell you my order -- order I can conceive of is basically
7 cutting off on closing argument. And basically you had very
8 full opening arguments that were in part closing arguments, as
9 far as I can see. And I have read your briefs.

10 So I might have some questions for you. But I don't
11 know that -- given what you-all have as an agenda, I don't know
12 how we get to closing arguments.

13 MR. SALTER: We hadn't encountered that. But I think
14 at this point -- I think we should plow through, Your Honor. I
15 would suggest we plow through and get through as much as we
16 possibly can.

17 THE COURT: You think we should just plow through?

18 MR. SALTER: And do the best we possibly can.

19 THE COURT: What I need to understand is -- because I
20 had given you-all a schedule based on what you gave me. But
21 because you eliminated some of the witnesses, I really didn't
22 know how much time you were forecasting. So that is one of the
23 reasons it was hard to control the time on the last one because
24 I didn't know once you had gotten rid of a witness.

25 So I need you to tell me when you start a witness how

1 long you have actually projected for the direct and the same
2 amount will be for the cross. But the cross is as divided
3 between -- just as when you put the person on, I'm expecting if
4 it is 20 minutes for the plaintiffs then it is going to be
5 divided as ever you see fit. It is the same thing over here so
6 we don't end up with -- if Fulton County counsel really has a
7 lot of questions, then the state defendant needs to allow for
8 the time. You can't just take up all of the time.

9 I didn't like having to do that to Ms. Burwell. That
10 is not fair. She is smart and has information and examination
11 to contribute. I can see that the plaintiffs have already
12 collaborated, but I wasn't so sure over on this side of the
13 room that you-all had.

14 I just want to say additionally I understand that
15 this is a Georgia case. And I have said that before. But I
16 don't think it is helpful at this juncture to grandstand about
17 this.

18 I think you can zero in on what somebody -- what they
19 have done with these particular machines. But obviously the
20 experts here are experts as defendants well know who have
21 been -- who are independent experts whose resumes have been
22 made available. And they are basically -- some of them have
23 worked for different states. But none of them indicate that
24 they have worked for Georgia. So this is obvious. I can take
25 note of that.

1 We don't have a jury. They don't need to be -- it
2 doesn't need to be brought home a thousand times. But there is
3 obviously a science of field to this. And these individuals
4 have identified what their credentials are. You can certainly
5 note that they haven't -- I can note and already have noted if
6 they have worked for Georgia or not.

7 And to my knowledge, most of them have not. I think
8 the Georgia Tech -- we have a Georgia Tech professor coming in?

9 MR. McGUIRE: He is next, Your Honor.

10 THE COURT: Maybe he has some knowledge I don't know
11 about. But let's focus.

12 What is the period of time for this witness?

13 MR. McGUIRE: So it is 30 minutes on the schedule. I
14 will take 14 minutes, and I will give Mr. Cross a minute. That
15 is all we have decided -- that is how we decided we can break
16 it up.

17 THE COURT: When defense counsel gets up to examine
18 this witness, tell me how you are breaking it up. If somebody
19 wants to concede something, that is fine. But --

20 MR. SALTER: We represented five and five, five
21 minutes for me and five minutes for Fulton County, in the
22 report. That was before, of course, the Court decided to grant
23 the plaintiffs' request to enlarge time.

24 THE COURT: Well, anyway, you will hear it. You can
25 consult and let me know.

1 MR. SALTER: Yes, Your Honor.

2 THE COURT: Call your next witness.

3 MR. MCGUIRE: Your Honor, we would call Richard A.
4 DeMillo.

5 COURTROOM DEPUTY CLERK: Good afternoon, sir. Please
6 raise your right hand.

7 **(Witness sworn)**

8 COURTROOM DEPUTY CLERK: Thank you. Please be
9 seated. Please pull up close to the microphone. You can
10 adjust the microphone if you need. It is very important that
11 we all be able to hear you.

12 I'm going to ask you to state your first and last
13 name again for the record, and then please spell those names
14 for the record.

15 THE WITNESS: Richard DeMillo. R-I-C-H-A-R-D. My
16 last name is spelled D-E, capital, M-I-L-L-O.

17 Whereupon,

18 RICHARD DEMILLO, PH.D.,

19 after having been first duly sworn, testified as follows:

20 DIRECT EXAMINATION

21 BY MR. MCGUIRE:

22 **Q.** Mr. DeMillo, I'm Robert McGuire, counsel for Coalition for
23 Good Governance. You submitted two affidavits in this case;
24 yes?

25 **A.** Yes.

1 Q. They were Documents 277 and 285. You said that your
2 primary focus and your experience there was information,
3 communication, cybersecurity, and computer system testing?

4 A. That is my background, yes.

5 Q. I'm going to ask you some questions in that area of
6 expertise. Mr. DeMillo, do you have an opinion as to
7 whether --

8 THE COURT: And you are a professor at Georgia Tech?

9 THE WITNESS: I'm a professor at Georgia Tech.

10 Q. **(BY MR. McGUIRE)** You have also worked for other places as
11 well; yes?

12 A. I have, yes.

13 Would you like to know some of them?

14 Q. Have you worked at Hewlett-Packard?

15 A. I have worked at Hewlett-Packard. I was the chief
16 technology officer at Hewlett-Packard.

17 Q. Have you worked for the Department of Defense?

18 A. I have worked for the Department of Defense. I ran a
19 project called the software test and evaluation project for the
20 Department of Defense.

21 Q. And in those positions, were you dealing with
22 cybersecurity and computer system testing?

23 A. Frequently, yes.

24 Q. Mr. DeMillo, I'm going to ask you if you have an
25 opinion -- have you formed an opinion on the question of

1 whether Georgia's DRE system can be trusted to accurately
2 deliver election results?

3 **A.** Yes, I have.

4 **Q.** What is your opinion?

5 **A.** My opinion is it is not a trustworthy system.

6 **Q.** Okay. Why do you have that opinion?

7 **A.** Well, cybersecurity depends on three pillars of trust:
8 Protection, detection, and containment. And I think in all
9 three of those areas, there are unanswered questions that
10 experts who have looked at these systems, experts who know
11 about cybersecurity have about Georgia's system, the
12 vulnerabilities we heard about this morning. There needs to be
13 a rather full explanation of what protections are in place in
14 order to address those vulnerabilities. We heard the
15 nonexistence of paper ballots. That makes it difficult,
16 impossible to detect the vulnerability breaches when they
17 occur.

18 And we have yet to hear anything about containment. So in
19 the event of a catastrophic breach, how do you go forward? How
20 do you conduct the election?

21 **Q.** So I want to take that conceptual framework, and I want to
22 put what happened in this case -- the allegations in this case
23 in the context of that framework.

24 So talk about protection. To your knowledge, based on
25 your understanding of the allegations in this case, has that

1 pillar been satisfied?

2 **A.** So you hear about vulnerabilities in computer systems.
3 And these voting machines, like this one, are just computers.
4 And the way that you protect against intrusions is to
5 understand those vulnerabilities and build in safeguards.

6 But you have to go through the vulnerabilities one-by-one,
7 and you have to explain how about that vulnerability is going
8 to be addressed.

9 I can give you just a couple of examples of that if you
10 would like.

11 **Q.** Real briefly.

12 **A.** So you want physical security. You want to know that the
13 equipment has been secured, that someone can't come in and
14 tamper with it. But in the case of Georgia, we have no such
15 assurance. We really don't know very much about the physical
16 security of the systems.

17 You have to be able to have logical security. These
18 systems, particularly the DREs, are built on top of 25-year-old
19 computer technology that really didn't have security
20 subsystems. There is nothing like an AV system, an antivirus
21 system, that sits on this computer.

22 And so all of the things that you would do in the normal
23 course of events with modern computers to say, well, here is
24 how I address this vulnerability is lacking.

25 **Q.** So rather than go through the other pillars, I'm just

1 going to jump into something specific. So this machine -- you
2 see this machine in front of you?

3 **A.** Yes.

4 **Q.** Now, you saw Professor Halderman hack this machine?

5 **A.** Yes.

6 **Q.** So we know this machine is compromised; yes?

7 **A.** Yes.

8 **Q.** If the State of Georgia came to you and said, Mr. DeMillo,
9 we want to find out if this machine is compromised, could you
10 figure that out?

11 **A.** You could conceivably figure it out, yes.

12 **Q.** What would you have to do for this machine to figure that
13 out?

14 **A.** So what I would probably do is open the machine up, attach
15 some probes to terminals in the back of the machine, and read
16 the memory of the machine just like you would read a disc on a
17 PC. I would compare that image to the latest software that we
18 had from Diebold to see if it was a match or not.

19 **Q.** If you did that, how long do you think it would take to do
20 this machine?

21 **A.** I'm guessing, but I would guess about a half hour per
22 machine.

23 **Q.** Now, if Georgia has 27,000 of these machines, how long
24 would it take to do that?

25 **A.** It would take -- it would take 14,000 hours to do that.

1 Q. And then if you did that, the system would be good; yes?

2 A. No. Because the infection was spread by a contaminated
3 memory card. So as soon as you insert that memory card back
4 into the machine, the machine is contaminated again.

5 Q. So you have to check memory cards also?

6 A. You have to check all the memory cards.

7 Q. Same process?

8 A. Basically, the memory card readers are commodity devices.
9 You insert the memory card and check to see what is there.

10 Q. We have heard about other components of the system like
11 the GEMS server, the optical scan units, e-poll books.

12 Would those have to be checked also?

13 A. Yes. But very different processes for those.

14 Q. Shorter? Quicker?

15 A. Well, in the case of GEMS servers, it is really a
16 difficult problem because we're talking about software that
17 hides in the deep recesses of the operating system. Sometimes
18 in the software that loads as the machine is starting -- it is
19 there to not be detected. So it is in many cases impossible to
20 find it.

21 Q. Let's say you can check every single component that
22 Georgia uses in its election system. You did that, and you had
23 enough time, and you took care of that.

24 Would the system then be trustworthy to accurately deliver
25 election results?

1 **A.** No.

2 **Q.** And why not?

3 **A.** Because the second pillar isn't in place. You have to be
4 able to detect. And without a written record of voter intent
5 to conduct an audit against, you have no way of determining
6 whether or not the votes have been changed.

7 **Q.** So when you say written record, what do you mean?

8 **A.** A paper ballot. Hand-marked paper ballot.

9 **Q.** So do machines like this ever have any kind of written
10 record?

11 **A.** No.

12 **Q.** Does Georgia's DRE system have the capability to produce
13 an independent and paper audit trail of every ballot cast?

14 **A.** No.

15 **Q.** How do you know that?

16 **A.** Because I know the architecture of the machines. When I
17 was at Hewlett-Packard, I used to manufacture machines very
18 similar to this. If the machine is compromised, all the memory
19 in the machine is compromised. It doesn't matter how often you
20 print it it is going to come out to be whatever the malware
21 wants it to be.

22 **Q.** Are you familiar with Georgia's machines in particular?

23 **A.** Am I familiar with Georgia -- so I don't think that there
24 is a Georgia machine. I think these machines are manufactured
25 by companies like Hewlett-Packard, like Diebold for mass

1 market. They are commodity electronics.

2 They have components that come from all over the world.
3 Sometimes those get packaged into machines that are delivered
4 to Georgia, sometimes to California. And so, you know, the
5 idea of a Georgia machine from the point of cybersecurity
6 doesn't really make a lot of sense.

7 **Q.** So you heard the cross-examination of Professor Halderman;
8 yes?

9 **A.** Yes.

10 **Q.** Do you put any significance in the fact that he's looked
11 at versions 4.3, 4.4, and 4.6 but not 4.5?

12 **A.** No, not really. If you -- even if you assumed that the
13 ballot station software were perfect, they were clean, they
14 weren't contaminated, you have to understand that the hardware
15 and software that runs on these machines is commodity
16 electronics.

17 It is a Windows CE operating system that is notoriously
18 insecure. It doesn't have a security subsystem, for example.
19 And that is what you would compromise.

20 If I were going to approach this machine, I probably
21 wouldn't start with the ballot station software. I would start
22 with known compromises for Windows CE.

23 **Q.** Are you familiar with the National Academy of Sciences
24 report?

25 **A.** I am.

1 Q. Did that address a system that has been compromised by
2 being available to the internet for six months, or did it
3 address -- what did it address?

4 A. Well, it addressed the vulnerabilities of the system.

5 MR. SALTER: Your Honor, one objection for the record
6 if I may. It assumes facts not in evidence. But go ahead.

7 THE COURT: All right. So noted.

8 Q. (BY MR. McGUIRE) Let me ask you the question again. Your
9 second affidavit attached the National Academy of Sciences
10 report?

11 A. Yes.

12 Q. Yes?

13 A. Yes.

14 Q. So did that report look at DREs in their pristine state or
15 DREs in a compromised state?

16 A. So the National Academy report looked at the inherent
17 vulnerabilities of DREs, in particular paperless DREs, and said
18 that they are so dangerous that they shouldn't be used in any
19 further elections.

20 Q. So if you start with DREs that have been evaluated that
21 way and you make them accessible to anyone in the world over
22 the internet for six months, does that make them in your
23 opinion more or less safe?

24 A. Well, it certainly doesn't help. It makes them more
25 vulnerable, I think.

1 Q. Now, the defendants have represented in their opening
2 statements that they do testing.

3 A. Uh-huh (affirmative).

4 Q. Have you observed any of that?

5 A. I have observed logic inaccuracy testing.

6 Q. Does that set your mind at ease as far as the security of
7 these systems?

8 A. No. It really doesn't tell you anything at all about the
9 accuracy of the system as they are used in elections. And in
10 particular, it doesn't tell you anything about the accuracy of
11 the systems when they are under attack.

12 Q. Mr. Salter's opening also represented that DREs can be
13 audited. Are you aware of that?

14 A. No.

15 Q. How would you audit a DRE?

16 A. Well, the very idea of an audit requires two independent
17 sources of information or two independent transactions to
18 compare against each other. And the idea of auditing a single
19 machine is sort of circular reasoning.

20 If the machine is compromised, you have to assume that
21 everything in the machine is compromised. Therefore anything
22 the machine tells you about its internal state is unreliable.

23 Q. What about the safeguard of being able to run a recount?

24 A. Same thing. Same thing. You are just adding the numbers
25 up again and expecting to get the same result.

1 Q. We have heard some testimony or some questioning about the
2 accuracy of paper ballots in recording voter intent versus
3 optical scanners -- read by optical scanners --

4 A. Yes.

5 Q. -- versus DREs?

6 A. Right.

7 Q. The implication, as I understood it, was that DREs are
8 more accurate. Do you have a view on that?

9 A. Well, so let me say at the beginning of my answer that
10 recording human choices is an inherently error prone process.
11 So any way of doing that is going to be subject to error.

12 I'm not aware of any studies that say that DREs are any
13 inherently -- any more inherently reliable at recording human
14 choices than paper ballots.

15 Q. How can DRE be inaccurate in recording your choice?

16 A. Well, a lot of things happen. So one thing that happens
17 is that when a machine is compromised what gets compromised are
18 the relationship between the touches that a voter makes on the
19 screen and the names of candidates that are supposed to be
20 voted for when the screen is touched. And that would destroy
21 the accuracy of the vote.

22 Even if the machine wasn't compromised by malicious
23 software, these are old machines. And they require constant
24 calibration. Now, in fact, the machines -- the contemporaries
25 of these machines, the little small handheld devices that we

1 used to sell, when you started the machines up would first ask
2 you to calibrate the screen. And that was because they can't
3 really tell when you touch the screen have you touched exactly
4 the mark that you intend to touch.

5 **Q.** So relying on what you know of cybersecurity and computer
6 system testing, what would your solution be to make the
7 security of this system better?

8 **A.** Well, as I said, I think these are designed to be unsafe.
9 It is not clear that you can design in security to the system
10 that we have in front of us here. I think introducing a
11 voter-verified paper trail would help a lot. I think replacing
12 these machines with hand-marked paper ballots would
13 dramatically improve the system.

14 **Q.** Now, the defendants have accused the plaintiffs of being
15 Luddites. Do you know what a Luddite is?

16 **A.** I do know what a Luddite is.

17 **Q.** What is a Luddite?

18 **A.** A Luddite is a person who doesn't like technology and is
19 prone to go out and smash them whenever he finds them.

20 **Q.** Do you consider yourself a Luddite?

21 **A.** This is a strange career for a Luddite.

22 **Q.** And would paper -- going to paper ballots be a Luddite
23 solution to this problem?

24 **A.** No. I think every -- every cybersecurity expert, every
25 computer scientist that I know of who has weighed in on this

1 matter thinks that paper is the safest way to conduct
2 elections.

3 The weaknesses in paper are well-known. But you don't
4 have the unknown weaknesses of cybersecurity to worry about.

5 **Q.** And are you aware of how many Americans vote using paper
6 ballots?

7 **A.** I'm not.

8 MR. MCGUIRE: All right. I'm going to stop there and
9 turn it over to Mr. Cross. Thank you.

10 THE COURT: I just want to ask you to clarify what
11 you said about the cards. I just couldn't catch what -- I
12 missed something in terms of how to detect whether a card has
13 been infected.

14 THE WITNESS: So you would read the card. There are
15 card readers. The old-fashioned computers used to have these
16 slots that you would fit these big fat cards into. You would
17 read it just like you would read a disc.

18 Then there are programs that pull the information off
19 those cards. And you can use it to compare it to other files.
20 And if those files match, then you would know that the card
21 wasn't in its original -- or was in its original state.

22 THE COURT: All right. Do you know whether that is
23 being done or not?

24 THE WITNESS: I don't know.

25 THE COURT: All right.

1 MR. CROSS: Very briefly, permission to approach the
2 witness with an exhibit.

3 THE COURT: All right.

4 DIRECT EXAMINATION

5 BY MR. CROSS:

6 **Q.** Mr. DeMillo, I hand you what has been marked as
7 Plaintiffs' Exhibit 5.

8 Let me ask you a couple of foundational questions if I
9 may. Are you familiar with something called the SAFE
10 Commission in Georgia?

11 **A.** I am, yes.

12 **Q.** And what do you understand that to be?

13 **A.** I understand it to be the commission that the Secretary of
14 State formed to make recommendations for acquiring the next
15 generation of voting systems.

16 **Q.** Is there a member of that SAFE Commission selected by
17 Secretary Kemp who is an information technology and
18 cybersecurity expert?

19 **A.** Yes.

20 **Q.** What is his name?

21 **A.** His name is Professor Wenke Lee.

22 **Q.** Do you know him personally?

23 **A.** I do. He is a colleague.

24 **Q.** At Georgia Tech?

25 **A.** Yes.

1 Q. And did you attend a meeting of the SAFE Commission just
2 last week?

3 A. I did.

4 Q. And did Mr. -- did Professor Lee put up a presentation at
5 the meeting?

6 A. He did, yes.

7 Q. And was that meeting in sort of a private lunch session of
8 the committee as opposed to the public forum?

9 A. It was a smaller room. But the public was invited in to
10 view the session.

11 Q. And did you observe Professor Lee's presentation?

12 A. I did.

13 Q. And did that -- what did that presentation concern just
14 very generally and briefly?

15 A. It was --

16 MR. SALTER: We're getting into hearsay. I just want
17 to make an objection. I would move to strike.

18 THE COURT: He is talking about the subject matter of
19 the presentation. You may proceed. Objection overruled.

20 But if there is going to be hearsay --

21 MR. CROSS: Let me do this. I'm going to move in
22 Exhibit 5 once he takes a look at it and authenticates it.

23 But the argument on hearsay, I will say, Your Honor,
24 is the SAFE Commission is organized by Secretary Kemp. He runs
25 it. He picked the people. So this would fall under a party

1 opponent admission we would submit, Your Honor, because this
2 is, in fact -- it is funny they laugh. It is almost offensive.
3 But this is the only thing they pointed to in all their
4 briefing that the Secretary of State has done to secure the
5 election. This is it. They say it is his initiative. And
6 this is the man he handpicked to be his cybersecurity expert.

7 MR. BARNES: Bring him in here.

8 THE COURT: All right.

9 MR. CROSS: Please do. Sorry, Your Honor.

10 THE COURT: All right. Enough. Find out what the
11 subject matter is. And if there is a presentation, then he can
12 present -- provide a copy of the presentation.

13 MR. CROSS: Thank you, Your Honor.

14 **A.** It was a tutorial to the commission members on the basics
15 of cybersecurity.

16 **Q. (BY MR. CROSS)** Take a look at Exhibit 5 you have in front
17 of you, and let me know if that looks to be a fair and accurate
18 copy of the presentation that Professor Lee made at the SAFE
19 Commission meeting just last week.

20 **A.** Yes, it looks like the same presentation.

21 MR. CROSS: Your Honor, we move Exhibit 5 into
22 evidence.

23 MR. SALTER: Objection, Your Honor.

24 THE COURT: What?

25 MR. SALTER: Objection.

1 THE COURT: You have an objection?

2 MR. SALTER: I have a hearsay objection.

3 THE COURT: All right. Well --

4 MR. CROSS: Your Honor, the additional argument I'll
5 make just briefly, one, it is not hearsay for the reason I
6 said. The additional argument I will make is we don't frankly
7 have to put it in for the truth because it directly contradicts
8 their position. And so even just to get it in front of the
9 Court to show that the statements were made by their own
10 cybersecurity expert --

11 THE COURT: Well, let me see a copy of it.

12 MR. SALTER: I didn't mean to interrupt.

13 THE COURT: You made your objection. We're going
14 to -- I can always in the end determine it is hearsay. But
15 we're going to proceed for now.

16 MR. CROSS: Thank you, Your Honor. I'll also just
17 note for the record, if I may, the rules of evidence don't
18 strictly apply in a preliminary injunction hearing. And Your
19 Honor is entitled to hear hearsay as well.

20 That was all I had, Your Honor. Thank you.

21 THE COURT: Could I see the exhibit?

22 MR. CROSS: Yes, please. I handed him the marked
23 copy, Your Honor.

24 THE COURT: That is all right.

25 So just when we say AV industry in 1998 or in 2000,

1 AV refers to?

2 THE WITNESS: Antivirus.

3 THE COURT: Antivirus. All right.

4 Are you through?

5 MR. CROSS: I just didn't know if you had any
6 questions.

7 THE COURT: No.

8 MR. CROSS: Thank you, Your Honor.

9 MR. SALTER: Can I ask for a ruling from the Court?
10 I'm not sure where my bounds are as to this exhibit that was
11 just tendered by Brother Cross.

12 Is the Court going to admit it or simply just allow
13 some testimony in as kind of a treatise?

14 THE COURT: Well, this is the presentation that was
15 given?

16 THE WITNESS: Yes.

17 THE COURT: I mean, I don't have to accept it for the
18 truth of the matter. But I'm going to allow it for what was --
19 it was presented, and certainly it seems to me one of the
20 points that the state has is that you are moving forward. So I
21 think, you know, it is relevant in that regard. I don't have
22 to accept it all for the truth of the matter asserted in here
23 though. But for the high points, that is something else.

24 MR. SALTER: May I examine from it then, Your Honor,
25 subject to our objection that it is --

1 THE COURT: You haven't been given a copy?

2 MR. SALTER: I have a copy, Your Honor. Counsel
3 provided me with a copy.

4 CROSS-EXAMINATION

5 BY MR. SALTER:

6 Q. Mr. DeMillo -- is it DeMillo or DeMillo?

7 A. DeMillo.

8 Q. I'm John Salter. Good to meet you, sir. I'll try to move
9 along as quickly as I can.

10 You have performed a study of the overall security system
11 at the state before? You participated in one through Georgia
12 Tech?

13 A. I supervised one.

14 Q. You supervised. Was this back in 2007 for Karen Handel,
15 Secretary of State at the time?

16 A. Yes.

17 Q. Okay. I will try to --

18 MR. SALTER: May I approach the witness, Your Honor?

19 THE COURT: What?

20 MR. SALTER: May I approach the witness?

21 THE COURT: Yes.

22 MR. SALTER: I apologize. I don't have enough copies
23 for the Mongol horde of lawyers here on the other side of me.
24 Your Honor, if y'all want one.

25 I don't know if we'll tender this or not. But I

1 wanted to have it present if the witness wanted to read it.

2 **Q.** (BY MR. SALTER) Can you identify the title page of that
3 document, Professor?

4 **A.** Security Study of the Processes and Procedures Surrounding
5 Electronic Voting in Georgia.

6 **Q.** And I'm going to stick and move. If I confuse you, let me
7 know. But I'm going to try to move along because I promised
8 five minutes, and that was the representation.

9 So when was this study done?

10 **A.** It was delivered -- well, you see on the front page it was
11 delivered May 2008. So it was done in the seven months leading
12 up to that.

13 **Q.** And was this -- was the final report actually made to the
14 Secretary of State at the time?

15 **A.** Yes.

16 **Q.** And did this assume -- did this study basically assume the
17 similar kind of software vulnerabilities that you have
18 testified today --

19 **A.** Well, this was --

20 **Q.** -- as a potential problem?

21 **A.** This was 2007. So 2007 we knew much, much less about the
22 vulnerabilities than we do today.

23 **Q.** Well, it did assume that -- you didn't perform a software
24 audit of e-voting machines because you accepted the findings of
25 previous software security studies; correct?

1 **A.** I'm not an author of the report.

2 MR. CROSS: Your Honor, by Mr. Salter's own
3 objection, this would appear to be hearsay. Nor does this
4 witness appear on this document. Could we --

5 MR. SALTER: It is actually a Government report.

6 MR. CROSS: I'm sorry. Could we just maybe have some
7 context of what it is and what we are doing.

8 MR. SALTER: I'm not tendering it yet. I am using it
9 as a learning treatise. He actually participated in the study.
10 It was actually funded. It is a Georgia Tech -- if you want to
11 call it a public document, Government report, it could come in
12 under Rule 4, the exception to the hearsay rule.

13 I'm just using it to examine this witness as a
14 proffered expert on cybersecurity, including the systems in
15 action in Georgia.

16 THE COURT: All right. Well, you can ask him
17 questions about it, and I'm not sure where you are going
18 though.

19 To the extent you know -- because I know you
20 participated in the review. I'm not sure you participated in
21 the writing of the study.

22 THE WITNESS: So these authors worked for me. So --
23 and I am familiar with the methodology they used. I'm not an
24 author of this report.

25 THE COURT: All right.

1 Q. (BY MR. SALTER) But you directed some of the study?

2 A. I supervised the study.

3 Q. Supervised some of the study. Are you familiar with some
4 of the findings that were made and furnished to the Secretary
5 of State?

6 A. Some of them, yes. It has been a while since I have
7 looked at it.

8 COURT REPORTER: Y'all were talking at the same time.
9 I cannot get you.

10 Q. (BY MR. SALTER) She's going to get on to us. Okay. Are
11 you with me?

12 Were you familiar with the findings that were presented to
13 the Secretary of State back in 2007 or '8?

14 A. Yes.

15 Q. And was some of the findings -- I want to ask you if this
16 sounds familiar. Was some of the findings a concern that a
17 single trusted person could install malicious software on a DRE
18 machine? Was that a finding?

19 A. I don't recall.

20 Q. Okay. So if you turn to Page 4 of the executive
21 summary -- I'll try not to take you through the whole entire
22 report because we don't have time.

23 MR. SALTER: And if I could, Amy, if you would light
24 up the ELMO here.

25 Q. (BY MR. SALTER) Do you see where it says election

1 officials would likely be able to detect certain technical
2 attacks by voters discovered in previous studies provided that
3 they are trained to recognize suspicious voter behavior?

4 Did I read that right?

5 **A.** Yes.

6 **Q.** All right. And in terms of what that is referencing, it
7 is talking about the fact that we know even in 2007 and 2008
8 when this was actually published -- we knew that you could
9 install if you had free access to it -- if you assume that,
10 that you could install a memory card with a malicious virus on
11 a DRE machine? We knew that back then, didn't we?

12 **A.** We did, yes.

13 MR. CROSS: Your Honor, again, is this coming in for
14 the truth? What are we doing here? This is clearly hearsay.

15 MR. SALTER: Your Honor, their only theory on why all
16 the other case law doesn't matter is because they told the
17 Court, well, there is a new threat. This isn't a new threat.
18 It is new that it is Russian and coordinated.

19 THE COURT: No. That is not true. The cases you
20 bring in this court often are based on new technology and new
21 efforts. They are not necessarily based on Russia in terms of
22 data breach and hacking.

23 So, you know, you can do this. I think you can
24 examine it. But I don't know that it obliterates everything
25 else. And I really think that we would spend a lot better time

1 if we could also deal with what has happened since that time.

2 But you are welcome to do it. You can spend all your
3 time on 2008 if you want, ten years ago.

4 **A.** Can I respond to your question?

5 **Q. (BY MR. SALTER)** Yeah. Was it known in 2008 that you
6 could install -- if you had access to a memory card to install
7 malicious virus malware on a DRE machine?

8 **A.** The question is: Who do you mean by you? So in 2007, we
9 didn't know about the kind of threat called the advanced
10 persistent threat. This is a kind of threat that is mounted by
11 organized crime, by nation states using advanced techniques.

12 The cartoon that the Judge noted in Wenke Lee's
13 presentation makes a humorous point about that. But it
14 nevertheless is the point that what has happened since 2008 is
15 that these people have much more capabilities than they had
16 in -- you know, in this time frame.

17 And so the things that we could do back then can now be
18 done over a long period of time using very complicated tools,
19 using advanced capabilities.

20 **THE COURT:** Things that we can do back then, what do
21 you mean?

22 **THE WITNESS:** So what it would take to install
23 malware on a single voting machine in 2007 has now been
24 automated to the point where an advanced persistent threat can
25 make a process of it. They can just like manufacture malware

1 to send out to these machines without even -- without even
2 contacting someone that is internal to the system.

3 **Q. (BY MR. SALTER)** My question -- if I can direct you back
4 to my question, I don't want to be here all day. In terms of
5 the demonstration that was made this morning with Mr. Halderman
6 -- Professor Halderman -- do you recall that? -- where he
7 inserted a memory card. He had a programmed virus on it, and
8 you insert that in -- that was something that has been known
9 for more than a decade as a potential vulnerability with DRE
10 machines; is that fair?

11 **A.** Yes.

12 **Q.** Okay. And one of the things in terms of going in with a
13 memory card and you unlock the key -- remember how he had to
14 unlock the key? You had to have a key; right?

15 **A.** (Witness nods head affirmatively.)

16 **Q.** Can you answer?

17 **A.** Yes. But that misstates what the demonstration was.

18 **Q.** No. He had a key; correct?

19 **A.** But he was playing the role of a poll worker. He wasn't
20 playing the role of an attacker.

21 **Q.** I'm not arguing with you. But he had a key?

22 **A.** Yes.

23 **Q.** He had the memory card?

24 **A.** Yes.

25 **Q.** And so in terms of a poll worker doing that, using the

1 key, putting the memory card in there, is that the kind of
2 thing that in terms of y'all's studying back in 2008 that you
3 referenced that kind of thing if observed by another poll
4 worker would be a suspicious activity and likely to be
5 discovered; fair?

6 **A.** No.

7 **Q.** Okay.

8 **A.** No.

9 **Q.** Let's talk about this. This is Page 4 where it says, even
10 if you were a poll worker, a single trusted person choosing to
11 act against the state may find an opportunity to alter the
12 software on a machine. That is basically what we heard about
13 this morning; fair?

14 **A.** Right.

15 **Q.** Okay. By limiting an individual's access to the voting
16 equipment, reliance on each individual's trust can be reduced;
17 correct? Did I read that correctly?

18 **A.** Yes.

19 **Q.** Do you know whether or not this recommendation was acted
20 on and that there was a reg implemented to increase and train
21 poll workers regarding watching not only voters inserting
22 something but also other poll workers potentially tampering
23 with the machine?

24 **A.** Do I know that?

25 **Q.** Yes.

1 **A.** No, I do not know that.

2 **Q.** Fair enough. In terms of -- I want to flip to this.
3 Well, let me ask one other thing.

4 Are you aware -- let me say this. Is it reasonable to
5 expect any software program to be error-free?

6 **A.** No.

7 **Q.** Absolutely not? Knowing that, isn't it reasonable for
8 people to design a system that has enhanced consistently
9 implemented physical security measures regarding the software
10 components and the chain of custody involved that is implicated
11 by that; fair?

12 **A.** Physical security of software components?

13 **Q.** Locking up the actual software devices that make the
14 memory cards; fair? You would lock that machine up?

15 **A.** Those are connected to the internet.

16 **Q.** Are you -- hold on. Is it your testimony that your
17 opinions are based on the idea that the computers that form --
18 that populate the ballots that make the memory cards -- is it
19 your testimony that that is connected to the internet?

20 **A.** The GEMS servers are from time to time connected to the
21 internet, yes.

22 **Q.** That is the basis of your opinions here today?

23 **A.** I'm reading the training manuals that Diebold distributes
24 with its machines.

25 **Q.** So that -- so yes, the basis of your opinions today is

1 that the critical GEMS servers that populate the ballots for
2 the state and create the memory cards -- that that is sometimes
3 connected to the internet? That is your opinion?

4 **A.** Yes.

5 **Q.** One of the things you have testified that you are talking
6 about here in this presentation or whatever it was last week --
7 do you have a complete and reasonable understanding of the data
8 encryption that is used by the Secretary of State in the
9 Secretary of State's IT department?

10 **A.** No.

11 **Q.** Do you have a -- same question as to the blocking
12 parameters that are used in the Secretary of State's IT
13 department in relation to election security.

14 **A.** I don't know what blocking parameters means.

15 **Q.** In terms of how -- do you have personal direct knowledge
16 regarding how updated the security patches are on the critical
17 infrastructure technology equipment used by the Secretary of
18 State's IT department?

19 **A.** No.

20 **Q.** Do you have personal, direct knowledge regarding the
21 penetration testing and the methodology that is used?

22 THE COURT: All right. Listen, if you want to enter
23 into a stipulation as to all of those questions, since I know
24 none of it has been provided to me and it was very -- and might
25 have all been relevant, could have been under seal -- but there

1 is no indication that any -- because of the affidavits given
2 here that these individuals have been provided that access.

3 MR. SALTER: They haven't. Absolutely not. That is
4 my next question.

5 THE COURT: So then why don't you stipulate? We
6 don't have a jury here. Let's save time. Stipulate and just
7 move on.

8 MR. SALTER: Do y'all stipulate that the plaintiffs
9 have no knowledge regarding penetration technology
10 (unintelligible) --

11 COURT REPORTER: I'm sorry, Mr. Salter. I just need
12 you to slow down, please.

13 MR. SALTER: Yes, ma'am. I'm sorry.

14 COURT REPORTER: I got about four words.

15 MR. BROWN: We will stipulate that there is no
16 evidence in the record describing what he is talking about and
17 that we're unaware of whether Professor DeMillo in his capacity
18 at Georgia Tech or otherwise has knowledge of that.

19 And Mr. Salter is way over his time and eating into
20 Fulton County's time and eating into our time later today.

21 MR. SALTER: Fair enough.

22 **Q. (BY MR. SALTER)** But do you have any personal knowledge to
23 that in terms of basing your opinions regarding how we use
24 penetration testing?

25 **A.** I'm not aware that you use penetration testing.

1 MR. SALTER: I will roll through this and wind up and
2 then let --

3 THE COURT: Well, I'm going to -- unless Fulton
4 County wants to -- I'm going to let Fulton County's counsel
5 appear at this point unless --

6 MS. BURWELL: I will concede my time.

7 **Q. (BY MR. SALTER)** Mr. DeMillo, can you testify from your
8 personal knowledge regarding a single instance in which a flash
9 drive or some other medium-type device was inserted -- has been
10 inserted into the server used at the Secretary of State's IT
11 department that led to a vote being changed on the DRE machine?

12 **A.** I'm not -- ask the question again. I'm not sure what you
13 are asking.

14 **Q.** Are you aware of a single instance in which a corrupted
15 flash drive or other medium was inserted into the server at the
16 Secretary of State's office, the one that is kept behind -- I
17 will represent to you is kept behind a locked door -- that
18 somehow resulted in a malicious virus that changed a vote in
19 Georgia?

20 **A.** I don't know how I would be aware of that.

21 **Q.** Do you have -- can you testify to an instance in which
22 that has happened anywhere in the country under election -- in
23 a real election anywhere in the country?

24 **A.** Ask me again what you are saying.

25 **Q.** I was removing it out of the Georgia Secretary of State's

1 server that populates the ballots that creates the memory
2 cards.

3 Are you aware of a single instance anywhere in the country
4 where a virus was propagated down through the server that
5 creates the ballot format, through the memory card, on to a DRE
6 machine?

7 **A.** I don't think so, no.

8 MR. SALTER: I'm over my time, Judge, and I know it,
9 and I'll hush, but I think that establishes where we are.

10 THE COURT: All right. And I trust then that you are
11 going to present some actual affirmative evidence from the
12 Secretary of State's office.

13 MR. SALTER: Could I ask one more question?

14 THE COURT: No. No, you cannot.

15 Is this witness excused?

16 MR. McGUIRE: Yes, Your Honor.

17 MR. CROSS: Your Honor, just one question if I may.

18 THE COURT: Yes.

19 REDIRECT EXAMINATION

20 BY MR. CROSS:

21 **Q.** Professor DeMillo, do you have Professor Lee's
22 presentation in front of you?

23 **A.** Yes, I do.

24 **Q.** So Mr. Salter turned you to the last page, operation and
25 maintenance and some best practices there. Do you see that?

1 **A.** The last page?

2 **Q.** Yes.

3 **A.** Yes.

4 **Q.** That is the one he put up?

5 **A.** Yes.

6 **Q.** Just very briefly, do you see the one on the page a few
7 pages before, same heading, with the subheading specification
8 and design and it says paper ballots done right?

9 **A.** Uh-huh (affirmative).

10 **Q.** Do I read this correctly that even with the best practices
11 that Mr. Salter put up the only specification and design for an
12 election system that Professor Lee offered in this presentation
13 that has the characteristics of verifiably cast as intended,
14 verifiably collected as cast, and verifiably counted as
15 collected, and cannot be completely controlled -- or be
16 completely controlled or manipulated by any cyber component --
17 the only specification design are paper ballots done right with
18 auditing?

19 **A.** Yes.

20 MR. CROSS: Thank you.

21 THE COURT: Do you want your -- what were you
22 planning to do, Mr. Salter?

23 MR. SALTER: Could we tender that, Judge. We'll
24 offer that as D-1.

25 MR. MCGUIRE: We have nothing else for the professor.

1 THE COURT: Do you have any objection to the exhibit
2 being offered by Mr. Salter?

3 MR. SALTER: Let me identify it. I think it is the
4 2008 report by Georgia Tech in which Mr. -- is it Professor
5 DeMillo?

6 THE WITNESS: Professor, Dr. DeMillo.

7 MR. SALTER: -- that Dr. DeMillo had some role in
8 supervising the report.

9 Any objection?

10 MR. CROSS: Your Honor, our position would be that
11 they should be received the same way. So we have no objection
12 if he withdraws his objection to ours. If he is going to stand
13 on his objection, then we're forced to make a hearsay
14 objection. I say just let it all come in and let Your Honor
15 figure out the facts.

16 THE COURT: They are both basically presented to the
17 Government as part of the Government process. They are both
18 admitted.

19 MR. CROSS: Thank you, Your Honor.

20 THE COURT: Thank you.

21 Who is your next witness?

22 MR. CROSS: Your Honor, the plaintiffs call to the
23 stand Chris Harvey.

24 THE COURT: How long do you anticipate?

25 MR. CROSS: I'm going to try to stick to 15 minutes,

1 and I can cut out some stuff on the witness. But that is the
2 aim.

3 THE COURT: Are you -- is that the totality of
4 plaintiffs' examination, or are you doing some examination, Mr.
5 McGuire?

6 MR. McGUIRE: I need a few minutes. Your Honor, we
7 would like -- I would like to have five minutes if I could.

8 **(Witness sworn)**

9 COURTROOM DEPUTY CLERK: Thank you. Please be
10 seated. Please pull up close to the microphone so we can hear
11 you.

12 I'm going to ask you to state your first and last
13 name again for the record, and please spell your first and last
14 names for the record.

15 THE WITNESS: Yes, ma'am. My name is Chris Harvey.
16 That is spelled C-H-R-I-S H-A-R-V-E-Y.

17 COURTROOM DEPUTY CLERK: Thank you, sir.

18 MR. CROSS: Your Honor, for convenience, could I pass
19 up a binder to the witness and to you?

20 THE COURT: Yes.

21 Whereupon,

22 CHRIS HARVEY,

23 after having been first duly sworn, testified as follows:

24 CROSS-EXAMINATION

25 BY MR. CROSS:

1 Q. You don't need to look at it quite yet. We'll get to it,
2 Mr. Harvey.

3 So, Mr. Harvey, you've been the State of Georgia's
4 elections director since July of 2015; is that right?

5 A. That is correct.

6 Q. Before that, from August 2007 to July 2015, you were the
7 chief investigator and deputy; right?

8 A. Correct.

9 Q. That was for Georgia?

10 A. For the Secretary of State's office, yes.

11 Q. Sorry. Deputy inspector general for the Secretary of
12 State's office?

13 A. That is correct.

14 Q. So you have worked for the current Secretary of State for
15 the last eight years; is that right?

16 A. That is correct.

17 Q. So you work for Brian Kemp?

18 A. Yes, sir.

19 Q. Take a look at -- well, let me ask you first: You're
20 familiar with the SAFE Commission we have talked about today;
21 right?

22 A. Yes, sir, I am.

23 Q. And the members of that commission were selected by
24 Secretary Kemp; right?

25 A. Yes, sir.

1 Q. And the only individual on that commission who was
2 identified as an information technology and cybersecurity
3 expert is Professor Wenke Lee from the University of Georgia
4 Tech; right? Or Georgia Tech Institute?

5 A. Yes, sir.

6 Q. He was selected by Secretary Kemp for that role; right?

7 A. That is my understanding.

8 Q. The SAFE Commission has had only two meetings since it was
9 announced in the spring of this year; right?

10 A. Yes, sir.

11 Q. The first was in June of this year?

12 A. Yes, sir.

13 Q. The second was just last week?

14 A. I believe two weeks ago. It may have been last week.

15 Q. Fair enough. I think it was September 4. Does that sound
16 right?

17 A. It could have been. I have been on the road.

18 Q. Within the last two weeks?

19 A. Yes, sir.

20 Q. And you attended both meetings; right?

21 A. I did.

22 Q. And at the most recent meeting, you attended a panel
23 moderated by Professor Wenke regarding cybersecurity and
24 elections?

25 A. I did.

1 Q. And you also attended a presentation that he put on
2 regarding cybersecurity considerations for voting systems;
3 right?

4 A. Yes, sir.

5 Q. So you saw the presentation, some of which went up on the
6 screen today, from Professor Lee that is now in evidence;
7 right?

8 A. I did.

9 Q. Turn to Tab 3 in the binder if you would, sir. So you
10 sent a letter to county commissioners and officials across 159
11 counties of Georgia on August 1st of 2018; right?

12 A. Yes, sir.

13 Q. So approximately six weeks ago; right?

14 A. Yes, sir.

15 Q. And this is -- the copy you have in front of you, does
16 that look to be a fair and accurate copy of the letter that you
17 sent out?

18 A. Without reading every word, I believe so.

19 Q. That is your signature on the last page, is it not?

20 A. It is, yes, sir.

21 MR. CROSS: Your Honor, we move Exhibit 6 into
22 evidence.

23 MR. SALTER: No objection.

24 THE COURT: It is admitted.

25 MR. McGUIRE: No objection.

1 THE COURT: Admitted.

2 MR. CROSS: Thank you, Your Honor. We'll give marked
3 copies at the end if that is okay to keep things moving.

4 THE COURT: That is fine.

5 **Q. (BY MR. CROSS)** And you sent this letter in your official
6 capacity as the State of Georgia's elections director; right?

7 **A.** Yes, sir.

8 **Q.** And you acknowledge in this letter that for over a decade
9 it has been your job to be intimately familiar with both
10 Georgia election law, systems processes and procedures; right?

11 **A.** That is correct.

12 **Q.** And you state in this letter that throughout your tenure
13 at the Secretary of State's office election security has been a
14 top priority for you personally and for the entire Secretary of
15 State's office and county election officials; right?

16 **A.** That is correct.

17 **Q.** That would be since your tenure began in 2007; right?

18 **A.** Yes, sir.

19 **Q.** You are aware that in August -- on August 24, 2016,
20 cybersecurity researcher Logan Lamb was able to access and
21 download information from the GEMS server, which is used to
22 manage the elections in the State of Georgia; right?

23 **A.** That is not my understanding, no, sir.

24 **Q.** Are you not aware that Logan Lamb was able to access the
25 GEMS server?

1 **A.** My understanding is that Logan Lamb was not able to access
2 the GEMS server. My understanding is that he was able to
3 access a web server at Kennesaw State University that was used
4 exclusively for the staff at Kennesaw State to communicate with
5 the counties. But at no time was that ever connected to a GEMS
6 server or to any of the systems that built ballots in Georgia.

7 **Q.** But that web server included GEMS databases?

8 **A.** I don't believe it did. But I could be wrong.

9 **Q.** Did you investigate that?

10 **A.** I did not.

11 **Q.** But you believe that when Mr. Lamb stated in his
12 declaration under oath that he was able to download GEMS
13 databases that he was mistaken?

14 MR. SALTER: Objection to the question. I think the
15 witness has answered I don't know. I think he is asking him to
16 comment on the credibility of a witness who is not here.

17 THE COURT: I don't think he is asking -- have you
18 read that before, or were you aware of that before?

19 THE WITNESS: No, ma'am.

20 THE COURT: So you had never looked at Mr. Lamb's
21 statement or any of the information he provided in your
22 capacity as director of elections?

23 THE WITNESS: Not -- his declaration for this case,
24 no, ma'am.

25 THE COURT: Yes. That is part of the question. But

1 the question also is: When this came out -- and it was a
2 fairly public thing -- you didn't make yourself familiar with
3 the scope of the information that Mr. Lamb had identified was
4 accessible?

5 THE WITNESS: I made myself aware of the generalities
6 of the situation. The FBI actually investigated and did not
7 share that information with our office.

8 And in talking with the -- with the staff at KSU, I
9 was told that the web server only contained communication
10 information to the -- went from KSU to the counties.

11 So my understanding is that it did not contain GEMS
12 databases. That is my understanding as I sit here today.

13 **Q. (BY MR. CROSS)** Are you aware that it -- well, I tell you
14 what, just for the sake of speed, let me ask this: When
15 Mr. Lamb accessed the database that you said is used to
16 communicate with the counties, that happened during your
17 tenure; right?

18 **A.** In June of 2016, again --

19 **Q.** In August of 2016.

20 **A.** In August of 2016, yes, sir, I was the election director
21 at that time.

22 **Q.** When he accessed that same system and the same data six
23 months later, that was also during your tenure, was it not,
24 sir?

25 **A.** It was.

1 Q. You state in the letter that there are some who believe
2 that because the current DRE machines are fully electronic
3 there is no way to verify that voter selections match the vote
4 counts output. You say this belief is not true; right?

5 A. Yes, sir.

6 Q. But as you heard from Professor Lee during his
7 presentation, he certainly disagrees with you in saying that
8 that is not true; right?

9 A. Well, I don't know that he was speaking -- I don't recall
10 him speaking specifically about our system.

11 Q. You think that when Professor Lee got up to give a
12 presentation to the SAFE Commission, which the Secretary of
13 State's office has touted as its singular effort to secure this
14 election, and he was talking about securing an election -- you
15 didn't think he was talking about the system in this state?

16 A. No. The SAFE Commission -- the commission of the SAFE
17 Commission is to look at future voting systems. He was
18 speaking -- my understanding of the presentation he gave -- are
19 you talking about the lunch presentation?

20 Q. Yes.

21 A. He was speaking generally about cybersecurity. He was not
22 speaking specifically about our current voting system is my
23 understanding of that presentation.

24 Q. I'm trying to move on for the sake of time here,
25 Mr. Harvey. The State of Georgia has requested from the

1 federal government just over \$10 million as part of the federal
2 funding, the HAVA funding, that is available to secure
3 elections in the country; is that right?

4 **A.** That is correct.

5 **Q.** Did you determine the amount that was requested?

6 **A.** No, sir. The amount was allocated to the state by the EAC
7 and by Congress.

8 **Q.** The state has received that funding; right?

9 **A.** We have completed all the paperwork. Whether the money
10 has actually hit the account or not, I don't know. As of a
11 week or two ago, I think we were still waiting for it to land
12 in the account.

13 **Q.** And you didn't request that funding from the state until
14 July 10 of this year; correct?

15 **A.** That sounds about right.

16 **Q.** In fact, originally Secretary Kemp turned it down and said
17 he was not going to take it? That was the original position;
18 right?

19 **A.** I'm not aware of any declination of funds. No, sir, I'm
20 not aware of that.

21 **Q.** Take a look at Tab 4 if you would, which is the
22 declaration you submitted in this case. And if you would
23 start -- we're almost done. Turn to paragraph -- I'm sorry --
24 Paragraph 20 on Page 11.

25 At the bottom, the very last line, you have got a sentence

1 that reads -- going to the top of the next page -- the optical
2 scanners that are currently part of Georgia's system are
3 manufacturer recommended to tabulate up to 2000 ballots each
4 election; right?

5 **A.** Yes, sir.

6 **Q.** Sir, is it your testimony under oath that the optical
7 scanners available in this state have a maximum capacity of
8 tabulating a sum total of only 2000 ballots for an entire
9 election?

10 **A.** That information came from Michael Barnes in our office as
11 far as the general --

12 **Q.** Sorry to interrupt. I just want to make sure. Is that
13 your testimony? Do I understand correctly that that is what
14 you are stating here?

15 **A.** That is my understanding of what the manufacturer
16 recommendations are.

17 **Q.** But you heard that from Mr. Barnes?

18 **A.** That is correct.

19 **Q.** You have no firsthand personal knowledge on whether that
20 is accurate; correct?

21 **A.** Yeah. I heard it from Mr. Barnes. I believe it to be
22 correct.

23 **Q.** Based on what you heard from Mr. Barnes?

24 **A.** Yes, sir.

25 **Q.** So you haven't read --

1 THE COURT: From Attorney Barnes or somebody else?

2 THE WITNESS: No, sir. Michael Barnes is the Center
3 for Elections Systems director in the Secretary of State's
4 office. He deals with the machines.

5 THE COURT: All right.

6 MR. BARNES: No kin.

7 MR. CROSS: Your Honor, we move to strike that
8 portion of the declaration as obvious hearsay. He has no
9 foundation or personal knowledge. And it is actually quite an
10 important fact in this case.

11 MR. SALTER: Your Honor, no objection. We'll have
12 Mr. Barnes present.

13 THE COURT: All right.

14 **Q. (BY MR. CROSS)** You also state in the very next sentence,
15 currently Georgia has 891 optical scan machines; is that
16 accurate?

17 **A.** Again, based on Mr. Barnes' report, it is.

18 **Q.** Turn to Paragraph 11, if you would, sir.

19 THE COURT: Are you moving to strike that too or not?

20 MR. CROSS: No. We're okay with that.

21 THE COURT: All right.

22 MR. KNAPP: We finally got a number out of them.

23 MR. CROSS: That one we think is true.

24 **Q. (BY MR. CROSS)** Paragraph 11 you provide -- let me just
25 direct your attention here.

1 THE COURT: You are looking at an affidavit of his?
2 What is the document number?

3 MR. CROSS: It is -- his affidavit -- it is --

4 MR. SALTER: 265.

5 MR. CROSS: -- 265-2 in the docket. 265-2.

6 **Q. (BY MR. CROSS)** Do you see at the top of Page 6, where
7 Paragraph 11 goes on -- you provide an estimated cost where it
8 states, I estimate the cost of preparing and mailing out a
9 paper ballot, including the cost of ballot printing, preparing
10 and printing the inner and outer envelopes and both outgoing
11 and return postage to be approximately \$2 per absentee ballot
12 package; right?

13 **A.** Yes, sir.

14 **Q.** And that is an estimate you made -- well, strike that.
15 How much of that was outgoing and return postage? I assume it
16 is about half?

17 **A.** The postage outgoing would probably be about between 50
18 and 60 cents.

19 **Q.** Each way?

20 **A.** Yes.

21 **Q.** So somewhere from half to a little more than half?

22 **A.** Probably.

23 **Q.** And how much of that was preparing and printing the inner
24 and outer envelopes?

25 MR. SALTER: Your Honor, may I object as to

1 relevancy. And, Cross, you tell me if I'm wrong. But I
2 thought y'all had withdrawn this whole absentee ballot --

3 MR. CROSS: We have, which is why this is very
4 relevant which will become clear.

5 MR. SALTER: Subject to that, we'll reserve an
6 objection as to relevance.

7 THE COURT: All right.

8 **Q. (BY MR. CROSS)** How much of the two dollars or the roughly
9 80 cents to a dollar left over was preparing and printing the
10 inner and outer envelopes?

11 **A.** It is a much smaller amount. We print those in our
12 office. I would say maybe ten percent.

13 **Q.** Of the total. So another 20 cents?

14 **A.** Approximately.

15 **Q.** So we're somewhere around 1.20 to 1.40?

16 **A.** I believe so.

17 **Q.** And so how much of that was ballot printing?

18 **A.** The remainder would be ballot printing.

19 **Q.** So around 40 --

20 **A.** You think --

21 **Q.** Around 60 to 80 cents?

22 **A.** Correct. That is my understanding.

23 **Q.** Okay. All right.

24 THE COURT: Is that what you are trying to make me
25 aware of? That it is 60 to 80 cents for ballot printing?

1 MR. CROSS: Yes. The only estimate we have of the
2 cost to do paper ballots in this court is 60 to 80 cents per
3 ballot. And we'll walk through the math, if we actually get
4 some closing on it. But you will see it comes down to a very
5 small number when you figure about 3 million voters.

6 **Q. (BY MR. CROSS)** Georgia has run a pilot program in Conyers
7 using paper ballot voting machines; right?

8 **A.** Ballot marking devices, yes.

9 **Q.** And there has been no problem reported during that pilot?

10 **A.** Not that I'm aware of, no, sir.

11 **Q.** And, in fact, you recognized as of October of last year
12 that this kind of technology seems to be what a lot of states
13 are going towards; is that right?

14 **A.** It is.

15 **Q.** In fact, you recognize as of last year that this is
16 becoming the new normal to have some sort of paper as part of
17 the voting machine; right?

18 **A.** Yes, sir.

19 **Q.** And, again, just so we're clear, you made that recognition
20 in October of 2017; right?

21 **A.** Yes, sir.

22 MR. CROSS: No further questions.

23 CROSS-EXAMINATION

24 BY MR. MCGUIRE:

25 **Q.** Ready, Mr. Harvey?

1 **A.** I'm ready.

2 **Q.** My name is Robert McGuire. I represent the Coalition
3 plaintiffs, the other set of plaintiffs.

4 Mr. Harvey, you're the election director for the entire
5 State of Georgia?

6 **A.** That is correct.

7 **Q.** And in the Secretary of State's office, everyone there is
8 a public servant?

9 **A.** Yes.

10 **Q.** And you serve the public?

11 **A.** That is correct.

12 **Q.** What you do is what is in the public's interest; yes?

13 **A.** Yes.

14 **Q.** As you see it?

15 **A.** Yes, sir. In accordance with the laws and office policies
16 and regulatory guidelines, rules, and all that stuff.

17 **Q.** And when your office takes an action, your office by
18 definition views that action as being in the public interest?

19 **A.** I believe so.

20 **Q.** So I would like to direct your attention back to Exhibit 7
21 or 6, which Mr. Cross put in front of you as Tab 3 in the
22 binder. It is your letter.

23 Now, you wrote this letter on August 1st; yes?

24 **A.** Yes.

25 **Q.** That is six weeks ago today?

1 **A.** I believe so.

2 **Q.** Okay. You wrote it to counties to stop them from
3 exploring this switch -- making the switch on their own to
4 paper ballots?

5 **A.** Yes. I had gotten some questions about whether or not
6 they had the authority to do that.

7 **Q.** And at the bottom of Page 2, there is a paragraph that
8 says -- I'll just read it -- there is a provision of Georgia
9 law that allows the state to move to paper ballots in the event
10 that the machines are inoperable or unsafe.

11 Did I read that right?

12 **A.** Yes, sir.

13 **Q.** And then it says, if we ever reach a point where our
14 office feels that these machines cannot be trusted to
15 accurately deliver election results, we will invoke this
16 statutory provision. Did I read that right?

17 **A.** Yes, sir.

18 **Q.** So your office sees it as being in the public interest to
19 move to paper ballots if the DRE machines are untrustworthy;
20 yes?

21 **A.** If the DRE machines are not untrustworthy? I may have
22 misheard you. Could you repeat that, please.

23 **Q.** So your letter says, if we ever reach a point where our
24 office -- that is Secretary of State Kemp's office; yes?

25 **A.** Yes, sir.

1 Q. If we ever reach a point where our office feels that these
2 machines -- that is the DREs; right?

3 A. That is correct.

4 Q. -- these machines cannot be trusted to accurately deliver
5 election results, we will invoke this statutory provision to
6 move to paper ballots? That is what you said there; right?

7 A. Yes, sir.

8 Q. And you wouldn't say that if you didn't think it was in
9 the public interest to do that if the machines are
10 untrustworthy; right?

11 A. If that is what we felt, yes, sir.

12 Q. Now, Secretary Kemp has a history of being concerned about
13 hacking, does he not?

14 A. A history of being concerned about hacking? I think
15 election security has always been a concern of Secretary
16 Kemp's.

17 Q. But specifically hacking? He has been concerned about
18 hacking in Georgia's election system; yes?

19 A. I think people -- I would have to know exactly what
20 context. I think people use the term hacking in a very general
21 way that has anything to do with manipulating or interfering as
22 opposed to the specific hacking in terms of computers and
23 networks and things like that.

24 Q. Does David Dove work in Secretary Kemp's office?

25 A. No.

1 Q. Did he ever at any point?

2 A. He did.

3 Q. When was that?

4 A. He worked -- he worked in the office up until, I want to
5 say, maybe six -- six months ago or maybe a year ago. Maybe it
6 has been a year.

7 Q. And how long did he work there before he left?

8 A. Several years. I don't know exactly.

9 Q. Several years. He was the chief of staff and legal
10 counsel to the Secretary of State; correct?

11 A. He was chief of staff. I think he was deputy general
12 counsel.

13 Q. So like you, when he says something in writing, he speaks
14 for the secretary?

15 A. I assume. I wouldn't want to speak for him.

16 MR. McGUIRE: Okay. Your Honor, if I may approach
17 the witness, I have an exhibit I marked as Exhibit 7.

18 THE COURT: Yes, you can approach the witness.

19 MR. SALTER: What is this exhibit, Rob?

20 MR. McGUIRE: That is being marked as 7.

21 MR. SALTER: It is being marked as 7?

22 MR. McGUIRE: 7.

23 Q. **(BY MR. McGUIRE)** Mr. Harvey, do you recognize exhibit --
24 well, what has been marked for identification as Exhibit 7?

25 A. I don't.

1 Q. Do you see the Georgia Secretary of State seal on it at
2 the top left corner of every page?

3 A. I do.

4 Q. Do you see on Page 2 it has contact information, David
5 Dove, chief of staff and legal counsel for Georgia Secretary of
6 State's office?

7 A. I do.

8 Q. Okay. The title of this presentation is critical
9 infrastructure and DHS hacking attempts; yes?

10 A. It is.

11 Q. And it looks like there is a table of contents over on the
12 left that begins with introduction and talks about critical
13 infrastructure, SOS network security, and then DHS hacking
14 attempts. Do you see that?

15 A. I do.

16 Q. This is a presentation that Secretary Kemp's office gave
17 to someone. It says legislative update. Is it reasonable to
18 think that was to the legislature?

19 A. I think that is reasonable. But I'm not aware of it.

20 Q. Does it surprise you that Secretary Kemp would appear to
21 be concerned about hacking of Georgia's election system by our
22 own Government?

23 A. Does it concern me?

24 Q. Does it surprise you?

25 A. I think Secretary Kemp was concerned about any type of

1 interference in the election system.

2 **Q.** He takes hacking very seriously?

3 **A.** I believe so.

4 MR. McGUIRE: Okay. Your Honor, I would move to
5 admit Exhibit 7 as a statement of opposing party.

6 MR. SALTER: Objection, Your Honor. I don't think
7 this witness has adequately identified this document. I don't
8 think there is a witness who can today.

9 MR. McGUIRE: Your Honor, I believe it is
10 self-authenticating. It has the seal of the State of Georgia
11 on every page, and it has information within it that is
12 self-evident as to the authorship.

13 THE COURT: Had you seen it before?

14 MR. SALTER: No, ma'am.

15 THE COURT: Why don't you take a look at it and
16 attempt to verify. If this is basically -- if it was put out
17 by the Secretary of State's office on this topic, it seems
18 relevant. And unless I know that, you know, you-all claim that
19 this is not, in fact, from the Secretary of State's office, I'm
20 inclined under the context here to allow it. I'm not -- it
21 could have been the proper witness. One would think he would
22 have known about it because of the topic. But if he doesn't,
23 he doesn't.

24 MR. SALTER: Your Honor, that is my point. This
25 witness does not. And if they have someone who can come in and

1 authenticate it, that is fine. But this witness --

2 THE COURT: Well, I'm just asking you under the
3 circumstances of a preliminary injunction hearing -- you know,
4 we could be here for days and get it properly authenticated.
5 If you could ask your -- obviously this witness can make a
6 phone call and determine if it is what it purports to be.

7 Okay?

8 MR. McGUIRE: I have less than a minute left, so I
9 will be very brief.

10 **Q. (BY MR. McGUIRE)** So you spoke in your initial examination
11 by Mr. Cross about the KSU server being used to communicate
12 with the counties. Do you remember that?

13 **A.** The KSU web server, yes.

14 **Q.** So I think I wrote this down. You say the KSU server was
15 used to communicate to the counties?

16 **A.** That is correct.

17 **Q.** What do you mean by communicate to the counties?

18 **A.** Send information to the counties.

19 **Q.** Okay. So counties were receiving election information
20 presumably that was sent from that server?

21 **A.** Yes. Some election information.

22 **Q.** That server is the server that was wide open to the world
23 for at least six months from August 2016 to March of 2017?

24 **A.** My understanding is that was a communication server that
25 was improperly configured and exposed, yes.

1 **Q.** And is it not the source of the pollbook data that the
2 counties download to use in their own election operations?

3 **A.** It is not currently.

4 **Q.** At the time though it was?

5 **A.** I'm -- I don't -- I don't believe that is correct. But
6 I'm not 100 percent sure, Your Honor.

7 **Q.** Is it not true that the counties -- that the Secretary of
8 State's office would send out Tweets to the counties saying
9 your e-pollbook information is ready to download?

10 **A.** There were -- there was some information that would come
11 that way. For example, the bulk update, which is -- at the end
12 of advanced voting, you take the data for everybody who has
13 advanced voted and you send the counties the registration
14 numbers of those individuals so that they can go in and mark
15 them as having already voted so that if they try to show up on
16 election day they will be shown as voted. That was the kind of
17 information that was sent across that server.

18 I don't believe that more sensitive information like the
19 ExpressPoll logs or the ExpressPoll data would have been sent
20 across that. But I'm not the best person to give you an exact
21 answer on that.

22 **Q.** So you are not in a position to contradict Logan Lamb's
23 affidavit, for example, in which he suggests that that kind of
24 data was on the KSU server?

25 **A.** There was some data that was on the server. I don't

1 know -- I don't know.

2 **Q.** And, finally, last question, you would agree with me that
3 the e-pollbook is part of the certified DRE system that Georgia
4 uses to conduct its election?

5 **A.** It is part of the voting system.

6 MR. McGUIRE: No further questions. Thank you.

7 MR. SALTER: May I, Your Honor?

8 THE COURT: Yes. Proceed.

9 MR. SALTER: May it please the Court.

10 DIRECT EXAMINATION

11 BY MR. SALTER:

12 **Q.** Mr. Harvey, once the plaintiffs filed their lawsuit, did
13 the Secretary of State reexamine the DRE system?

14 **A.** We did.

15 **Q.** And what was the recommendation that was made to the
16 Secretary of State by the team that conducted that
17 reexamination in 2017?

18 **A.** That the DREs in the voting system in the three counties
19 we examined performed flawlessly, recorded and reported every
20 vote as cast.

21 **(There was a brief pause in the proceedings.)**

22 MR. SALTER: Your Honor, I would like to tender a
23 copy of the official certification. And if I could approach
24 the witness with that.

25 THE COURT: Yes.

1 MR. SALTER: Approach, Your Honor?

2 THE COURT: Yes.

3 **Q. (BY MR. SALTER)** Can you identify that record for me?

4 **A.** Yes. This is the report of the recertification of the
5 election system that we did at the end of 2017.

6 MR. SALTER: Your Honor, I'm going to tender that as,
7 I think, Defendants' 2.

8 THE COURT: Any objection?

9 MR. McGUIRE: No objection.

10 MR. CROSS: No objection.

11 THE COURT: Admitted.

12 **Q. (BY MR. SALTER)** And did the Secretary accept the
13 recommendations that were made by the team that conducted that
14 examination?

15 **A.** Yes, they did.

16 **Q.** Talk to me about paper ballots because we're short on
17 time. Is it possible to manipulate paper ballots?

18 **A.** It is.

19 **Q.** Can you describe some of the ways that you can remember as
20 you sit here today that paper ballots could be manipulated?

21 **A.** Paper ballots could be -- they could be lost. They could
22 be excluded. They could have improperly marked ballots
23 inserted in them. They could be forgotten. They could be left
24 in trunks of cars. They could be spoiled intentionally by poll
25 workers or people that were counting or other folks. They

1 could be stolen or gotten unauthorized access, passed around.
2 Any number of ways.

3 **Q.** Currently what is the percentage -- I know you may not
4 have it down to the number. But can you -- are you aware of
5 the historical percentage that we would estimate for the number
6 of voters who would vote via a printed paper ballot election --
7 what you would expect that to be in the upcoming election?

8 **A.** Between five to ten percent depending on turnout.

9 **Q.** And assuming the Court were to mandate a primarily paper
10 ballot election with only narrow exceptions for people who have
11 disabilities or visually-impaired folks who need to use a DRE
12 machine for that, how will we execute a primarily paper ballot
13 election for the November 6, 2018, election and include early
14 voting if you would?

15 **A.** How would we do that?

16 **Q.** Yes.

17 **A.** It would be -- it would be extremely difficult. It would
18 require getting ballots printed, ordered, proofed, distributed.
19 One of the difficulties with paper ballots is that, you know,
20 when we went to a uniform voting system in the early part of --
21 well, 2002, we went from a system -- we went from a system
22 where there were basically three primary ways where people
23 voted, either optical scan paper ballot -- I'm sorry -- optical
24 scan, the punch card, or the lever machine. And there was no
25 statewide system.

1 So while there are laws regarding optical scan ballots,
2 there are no uniform rules or laws regarding optical scan
3 ballots in Georgia, like we do have for DREs, like we do have
4 for absentee ballots, to the extent that it would govern
5 exactly how the ballots were handled and sealed and
6 transported, not nearly to the same degree that they are DREs.

7 So you would have to -- you would have to, first of all,
8 get the ballots. You have to pay for the ballots. You would
9 have to train the poll workers on using them. You have to
10 devise a system to account for all of the ballots, to transport
11 the ballots.

12 It would be, I believe, impossible to conduct precinct
13 tabulation because we simply don't have enough optical scan
14 devices to tabulate at the precinct level. So you would have
15 to take the ballots to a central location. They would have to
16 be accounted for. They would have to be scanned in.

17 The process would take considerably -- considerably
18 longer. Results would be longer in coming. We would have to
19 account for storage space with paper ballots.

20 There are lots of different things that come into play:
21 Equipment, privacy screens, tables, chairs, precinct setups,
22 polling places. All of those things are something that have
23 not been thought about in elections in Georgia since before
24 2002.

25 **Q.** Is early voting required by state law in terms of your

1 understanding?

2 **A.** It is.

3 **Q.** And when does early voting begin for this upcoming
4 November 6 election?

5 **A.** On October 15.

6 **Q.** Assuming a paper ballot requirement, how would paper
7 ballots -- let me back up.

8 How many different ballot combinations -- different ballot
9 combinations are there estimated for the next November 6
10 election?

11 **A.** Oh, hundreds, if not thousands, throughout the state.

12 **Q.** Could it be as many as 3000? Does that sound --

13 **A.** It wouldn't surprise me.

14 **Q.** And so in terms of how would you conduct early voting --
15 if you are required to have early voting, how would you run a
16 secured chain of custody when you have to have each ballot
17 design available for the given district and for the given
18 voter?

19 **A.** One of the advantages of advanced voting now with the DREs
20 from a convenience point of view is that you have got a
21 centralized ballot provider, which is the DRE.

22 Especially in large counties that have multiple ballot
23 size, you would have to have individual stacks of provisional
24 ballots that were identified by ballot style, by precinct. And
25 you would have to -- as voters come in, you would have to have

1 the poll worker identify what ballot style it was, retrieve the
2 ballot, get it to them. The voter would vote it.

3 The voting process would be the voter simply marking a
4 paper ballot with a pen or pencil. But the logistical support
5 to go into that in a place like, you know, Fulton County that
6 would have hundreds of ballot styles for advanced voting, you
7 would need significantly more staff, significantly more space,
8 and, like I said, some of the auxiliary equipment.

9 **Q.** There has been a mention of the Help America Vote Act
10 money, this \$10 million. Do you have an opinion as to whether
11 or not that money could be used to offset any costs regarding
12 an immediate conversion to paper ballots for November the 6th?

13 **A.** We --

14 MR. CROSS: Objection, Your Honor. Foundation.

15 THE COURT: I'm sorry?

16 MR. CROSS: Foundation.

17 MR. SALTER: I'm asking whether he has an opinion.
18 And we can get into it. I will get there.

19 MR. CROSS: He needs to answer that yes before he
20 offers his opinion.

21 MR. SALTER: Yes. That is fine.

22 **A.** Could you reask the question, please.

23 **Q. (BY MR. SALTER)** Do you have an opinion as to whether --
24 an understanding of whether or not the state could use this
25 \$10 million of money from the HAVA, Help America Vote Act,

1 grant money on a paper ballot election if we were forced to
2 immediately convert?

3 **A.** I do have an opinion.

4 **Q.** All right. How did you come by that opinion?

5 **A.** I asked -- we asked the EAC, the Election Assistance
6 Commission.

7 **Q.** Okay. And what were you told?

8 **A.** We were told --

9 MR. CROSS: Objection. Hearsay.

10 MR. SALTER: It goes to explain conduct, Your Honor.

11 THE COURT: All right. Go ahead.

12 Who were you told something by?

13 THE WITNESS: I'm sorry?

14 THE COURT: You said we were told. Who were you told
15 by?

16 THE WITNESS: We were told by Mark -- I believe his
17 name is Mark Abbott at the Election Assistance Commission. He
18 is the one that is responsible for the disbursement of the
19 grants via email yesterday. And we're told that that would
20 be -- in an audit that would likely not be a covered expense.

21 **Q.** **(BY MR. SALTER)** How would you -- can you describe for the
22 Court your feelings on the importance of public voter education
23 regarding any significant change to the voting system?

24 **A.** Well, one of the -- in 2002 when the new system was rolled
25 out, there was a significant effort and expense of time spent

1 in educating voters about the new voting system.

2 I think it is important that if a change were to be made
3 that voters would be given as much advance notice as possible,
4 as much information as possible, as much opportunity to receive
5 whatever kind of training would be necessary so that the voters
6 would maintain a high level of confidence in the voting system.

7 **Q.** Assume an immediate conversion somehow for the November
8 the 6th election. How would that -- how would you expect --
9 based off your experience as election director for the last
10 several years at the Secretary of State, how would that affect
11 early voting?

12 **A.** I believe it would reduce the number -- one of the first
13 things is it would reduce the number of early voting sites.
14 For the reasons I mentioned, the logistics of it would make
15 staffing a significant problem. So I believe it would reduce
16 the number of advance voting sites.

17 I believe it would significantly increase the time that it
18 would take a voter to vote.

19 **Q.** Why is that?

20 **A.** Well, I think there is something -- I think there is kind
21 of a fundamental difference in interacting with paper and
22 reading something in a way that you are not familiar with.
23 When you have been voting on a screen for 15 years, I think
24 there is just a general interaction that operates differently.

25 You know, there may be issues with legibility, with

1 vision -- people being able to see the ballot. So I believe it
2 would slow down voting. I believe it would take a longer time.
3 I think it would lead to longer voting lines and possibly
4 discourage voters from participating in advanced voting.

5 **Q.** What is your opinion about whether Georgia can rely on the
6 current optical scanning machines to tabulate votes?

7 **A.** I think it would be an extraordinarily big lift to use the
8 current optical scans to conduct a statewide election.

9 **Q.** Why is that?

10 **A.** They are not designed to operate ballots at that level.
11 They make -- the companies make high volume scanners that can
12 scan hundreds or thousands of ballots at a time. These are
13 generally designed to be done at the precinct level. And there
14 is -- you know, they are not new technology.

15 I have had counties tell me that they have had just
16 difficulties with the physical operation. They have rollers,
17 and they have -- they need to be cleaned. And, again, it is
18 just a difficulty.

19 From a time perspective, it would increase the time to get
20 results dramatically.

21 **Q.** Why not procure more optical scanning machines by
22 November 6?

23 **A.** Well, it would be -- that would be a solution. You would
24 have to find some. They are not -- these aren't manufactured
25 much any more. I believe our vendor has a very, very small

1 number.

2 So we would have to find them. We have to go through a
3 procurement process. We would have to get funds. I say we,
4 the counties or us, however it was decided or directed. We
5 would have to have funds to purchase these. We would have to
6 get them into the state, get them acceptance tested, make sure
7 that they were ready to go, and get them to the counties.

8 **Q.** Assume an immediate conversion for the purposes of this
9 upcoming November 6th election. What is your opinion as to
10 whether that would increase or decrease the risk of human error
11 in terms of overall election security?

12 **A.** I believe it would increase the possibility that voters
13 would --

14 MR. CROSS: Objection, Your Honor. Is this witness
15 being offered as an expert? If so, what is it in? Because we
16 are hearing a lot of opinions. Or is this just a lay witness?

17 MR. SALTER: I think he has basically got -- based on
18 his experience, he investigates human error and when it
19 happens. And it does happen.

20 THE COURT: Well, I don't know that he is an expert.
21 He can -- he can testify based on his experience in the
22 department and dealing with recollections as a lay witness.
23 But he is not an expert.

24 MR. CROSS: Thank you, Your Honor.

25 **Q. (BY MR. SALTER)** When was the last election before DREs?

1 **A.** The last election before DREs -- well, they went to DREs
2 in 2002. So statewide it would have been, I guess, the 2000
3 election.

4 **Q.** And if the uniform DRE -- if the system that we have that
5 is uniform were taken away, would there be a uniform system to
6 fall back on? That rulemaking could be made for one uniform
7 system?

8 **A.** There is not another uniform system for Georgia right now.
9 It is -- the uniform system is based on DREs.

10 **Q.** If there was an immediate conversion to paper ballots, how
11 would --

12 THE COURT: You can keep on going, but I don't know
13 whether your co-counsel planned to ask any questions. You are
14 at about 16.

15 MR. SALTER: Thank you, Judge.

16 MS. BURWELL: I'll concede my time, Your Honor.

17 MR. SALTER: That is all I have, Judge. Thank you.

18 THE COURT: All right.

19 RE-CROSS-EXAMINATION

20 BY MR. CROSS:

21 **Q.** Mr. Harvey, we have heard a number of times from the
22 defendants in this case that voters have a, quote, unlimited
23 right to vote by paper absentee ballot. Do you agree with
24 that?

25 **A.** Yes.

1 Q. And the defendants have offered that as an alternative for
2 voters who don't trust the DREs and want to make sure their
3 vote is counted? To vote by absentee? Do you understand that?

4 A. I do.

5 Q. But do I understand you are saying that if every voter who
6 votes in the upcoming election were to vote in that manner the
7 state would not and could not comply? You just couldn't handle
8 the volume of paper?

9 A. Not exactly. It would still be a challenge because we're
10 dealing with the same number of optical scans.

11 One of the big differences would be the actual voting.
12 When you vote by absentee, all the ballots come by mail into
13 the election office. It comes in to a central place with
14 full-time staff and systems that are designed to process those
15 ballots as efficiently as possible, more efficiently than
16 generally happens at a polling place. So that would be a
17 significant difference.

18 If this were to happen or if there were to be some type of
19 allocation that may allow for an earlier tabulation or
20 something, that may affect it also.

21 But the optical scan problem still exists. You have these
22 machines that would have a very hard time. But if the process
23 were to be spread out over time and that was acceptable, then
24 it would be -- it would be different than voting at the polling
25 places on paper.

1 **Q.** So if all of the voters who cast votes waited until the
2 final days to get their absentee ballots in, say roughly maybe
3 3 million votes, even though they have an unlimited right under
4 the law to do that, do I understand correctly you are saying
5 the state just simply could not and would not count those
6 votes? It would not comply with the law?

7 **A.** No, sir, I'm not saying that at all. I'm saying they
8 would continue -- they would process those absentee ballots
9 just like they do now. There would be a lot more of them. And
10 it would take longer.

11 But the difference would be that you wouldn't be dealing
12 with the polling place logistical difficulties that you would
13 if they were voting on paper at a polling place and you had to
14 account for all that stuff.

15 You know, the good thing about absentee voting is
16 everything is right there and it goes out and it comes back
17 right here -- you know, right back to the same place. And
18 there is a very solid structure set up for absentee voting by
19 mail. It has been in place and has been effective for several
20 years.

21 **Q.** Just so I understand, if those votes did come in in the
22 final days, even all on election day, if every voter in the
23 state decided to exercise that unlimited right on election day,
24 3 million paper came in, the state certainly would and could
25 comply with the law to get those scanned in time to certify the

1 election; right?

2 **A.** Yeah. We would absolutely do everything and the counties
3 would too to make sure that those got processed.

4 **Q.** Two final points. We have heard a lot about the
5 difficulty of storage with the paper ballots; right? That was
6 one of the things you mentioned?

7 **A.** Yes, sir.

8 **Q.** There are 27,000 DREs that you have to store across the
9 state; right?

10 **A.** Correct.

11 **Q.** Do I understand right that 500 paper ballots, assuming
12 each one is a single page, would be roughly about the size of a
13 ream of paper, 500 pages in a ream; does that sound right?

14 **A.** Well, the ballots are -- they are a little bit longer
15 than -- 8 by 14, maybe legal size. In some cases, maybe
16 18-inch ballots. So they would be larger than a piece of
17 paper.

18 **Q.** Same thickness, maybe a little bit longer?

19 **A.** Probably a little heavier grade. But I mean, not wildly
20 different. I mean, we're not --

21 **Q.** Sure. Have you actually done the math to figure out how
22 much storage it would take if you had to store roughly
23 3.3 million paper ballots?

24 **A.** Well, we would have to store twice that number because we
25 would have to have ballots for all of the voters. So it would

1 be double that.

2 I have actually done -- I can't say I have done the math,
3 but I have done sort of the visualization. If you think about
4 a box of paper as being 5000 pieces of paper, which I think is
5 the standard -- you know, we all know about the size of a box
6 of paper. That is 5000 ballots. And you go to, you know, a
7 county like Fulton County with 600,000 voters or Cobb County
8 with four -- Gwinnett County with 500,000 voters, that is a lot
9 of boxes, in addition to the DREs that they already have.

10 THE COURT: But just thinking about the -- how much
11 for the ballots? And then let's move on. How many rooms for
12 ballots? How many --

13 MR. CROSS: I think I can help, Your Honor.

14 **Q. (BY MR. CROSS)** If we stick with the idea that it is,
15 let's say, double the thickness of a ream of paper, a little
16 bit longer, and you are working with 3.3 million ballots, would
17 it surprise you to learn that that would only come to about
18 1500 cubic feet? About the size of two U-Haul trucks?

19 MR. SALTER: Your Honor, I'll just object.

20 **Q. (BY MR. CROSS)** Would that surprise you?

21 MR. SALTER: It is argumentative. And in terms of
22 relevance, there is no probative value of this. I don't want
23 to coach. But there is -- this is -- the ballots are printed
24 by the county. The cost would be incurred by the counties, not
25 the state. They would have to do the storage.

1 THE COURT: I understand. He is just asking, since
2 the witness said he had looked at it, does that sound right to
3 you.

4 THE WITNESS: It sounds approximately right. The
5 other issue is not just storing the bulk ballots but storing
6 them in polling places overnight and things like that.

7 THE COURT: I understand.

8 **Q. (BY MR. CROSS)** Last question, Mr. Harvey. Are you aware
9 of studies finding that paper ballots are actually faster than
10 electronic voting machines? Have you read those studies?

11 **A.** I'm not aware of any. I'm not aware of that.

12 MR. CROSS: No further questions.

13 MR. MCGUIRE: Just very short.

14 THE COURT: Be very short. Because really -- is
15 there something you have to add because that is significant
16 really?

17 MR. MCGUIRE: I think it is.

18 THE COURT: All right. Ask your two questions.

19 RE-CROSS-EXAMINATION

20 BY MR. MCGUIRE:

21 **Q.** Mr. Harvey, you said Georgia doesn't have any scanners to
22 make this switch without burdening voters? That is your
23 testimony?

24 **A.** In polling places, yes.

25 **Q.** Georgia has about 800 scanners roughly?

1 **A.** Approximately, yes.

2 **Q.** Are you just guessing that it doesn't have enough, or did
3 you do some analysis?

4 **A.** No. I've spent a lot of time talking with county election
5 officials that actually do it. I have seen -- I have been to
6 tabulation on election night and have seen the process of
7 scanning ballots and seen how long it takes. And it would
8 be -- again, to say you couldn't do it is, you know -- is
9 different than saying it would take an exceptionally long time.
10 It may exceed the time for certification.

11 **Q.** So it is fair to say that you don't have a number that you
12 think Georgia needs in order to make this possible? You
13 haven't done an analysis that has that number?

14 **A.** A number of what?

15 **Q.** Number of scanners that would be required.

16 **A.** That is correct. I have not done that analysis.

17 **Q.** You can't give the Court that information?

18 **A.** No, sir.

19 MR. MCGUIRE: Nothing further.

20 MR. SALTER: We'll call Michael Barnes next. Thank
21 you, Mr. Harvey.

22 THE COURT: I do have a question for the witness
23 myself. If a lot more people were going to vote though, the
24 counties -- you would come up with the money? If there was an
25 indication that there was an interest in a greater volume of

1 absentee ballots, the state would be responsible for getting
2 them printed; correct?

3 THE WITNESS: Under the law, the counties are
4 responsible.

5 THE COURT: But right now they are paying for it or
6 the state is paying for it?

7 THE WITNESS: The counties pay for the paper ballots.

8 THE COURT: They would have to do so?

9 THE WITNESS: Right.

10 THE COURT: Regardless of whether they had it in
11 their budget or not, they would have to be responsible?

12 THE WITNESS: Yes, ma'am.

13 THE COURT: I know you didn't -- that you were not
14 aware of what plaintiffs offered, this Exhibit 7. But it does
15 deal with critical infrastructure and supposed hacking by the
16 Department of Homeland Security into the -- into the website of
17 the Secretary of State and you weren't consulted about this at
18 all?

19 THE WITNESS: Not about this report. I'm aware of
20 some of the circumstances around the DHS aspect of it. And we
21 have certainly been involved in cybersecurity and those kinds
22 of issues. As I believe you will see from other witnesses
23 about how that's sort of segmented some within the Secretary of
24 State's office.

25 THE COURT: And is there somebody in the Secretary of

1 State's office who assumed responsibility other than it is
2 going over to the FBI for dealing with any of the issues that
3 arose as a result of the exposure of information that Mr. Lamb
4 provided?

5 THE WITNESS: Secretary Kemp, ma'am.

6 THE COURT: He did?

7 THE WITNESS: He did.

8 THE COURT: He did the evaluation?

9 THE WITNESS: I thought you asked who assumed
10 responsibility.

11 THE COURT: I'm sorry. Then my question was -- he
12 assumed responsibility. But is there some -- was there anyone
13 in the department or anyone who was hired to basically look at
14 the breadth of the issues or maybe there weren't that were
15 raised by Mr. Lamb's -- that experience and the fact that the
16 fact data field was open for six months at least allegedly
17 according to Mr. Lamb and then his colleagues that all sorts of
18 personal information was identified -- identifiable and
19 manipulatable in that time period?

20 THE WITNESS: That would be Merritt Beaver, who is
21 our CIO in the Secretary of State's office.

22 THE COURT: And Mr. Beaver, did he consult with you
23 about that at all?

24 THE WITNESS: We consult regularly back and forth on
25 that stuff, yes, ma'am.

1 THE COURT: So -- all right. And this indicates --
2 this document -- and it may or may not be true -- but that at
3 least to the legislature that the secretary took the position
4 in a very active way that the election system is not a critical
5 infrastructure. Is that still the position of the department?

6 THE WITNESS: I don't believe so, ma'am. At the time
7 when elections were declared critical infrastructure, nobody
8 knew what that meant, including the Department of Homeland
9 Security.

10 And since that time, there has been a lot of
11 development, a lot of consultation, and a lot of -- a lot more
12 specificity added so that people understand what critical
13 infrastructure is.

14 THE COURT: Thank you. Can this witness step down?

15 MR. SALTER: Yes, Your Honor.

16 We'll call Michael Barnes, Your Honor.

17 COURTROOM DEPUTY CLERK: Good afternoon, sir.

18 THE WITNESS: Good afternoon.

19 **(Witness sworn)**

20 COURTROOM DEPUTY CLERK: Thank you. Please be
21 seated. Please pull up close to the microphone. You can
22 adjust it if you need to.

23 I'm going to ask you to just state your first and
24 last name again for the record, and please spell those names
25 for the record.

1 THE WITNESS: Michael Barnes.

2 M-I-C-H-A-E-L B-A-R-N-E-S.

3 Whereupon,

4 MICHAEL BARNES,

5 after having been first duly sworn, testified as follows:

6 DIRECT EXAMINATION

7 BY MR. SALTER:

8 Q. Just to verify, are you any kin to this gentleman right
9 here at counsel table?

10 A. I am not, sir.

11 Q. Not related to Roy?

12 A. I am not.

13 Q. But you are from Mableton?

14 A. I reside in Mableton, yes, sir.

15 Q. When were you first employed by the Secretary of State's
16 office?

17 A. I was first employed with the Secretary of State's office
18 in August of 1998.

19 Q. Who hired you?

20 A. Lewis Massey.

21 Q. Kind of trace for the Court -- just kind of give the Court
22 a thumbnail sketch of your employment since.

23 A. I started off with Secretary Massey as a special
24 assistant. When Secretary Cox was elected in 1998, I stayed on
25 with the office as a special assistant. I was promoted over to

1 the elections division in 2000 -- late 2001 as the assistant
2 director of elections.

3 I resided at the Secretary of State's office as assistant
4 director of elections from that time until June of 2005. And
5 then I returned to the Secretary of State's office in January
6 of this year.

7 **Q.** Where did you go in 2005?

8 **A.** In 2005, I transitioned to be the assistant director for
9 the Center for Elections Systems at Kennesaw State University.

10 **Q.** What was the idea behind creating this Center for
11 Elections Systems up at Kennesaw State?

12 **A.** The center was brought to Secretary Cox in 2002 as a
13 training facility. Then Professor Brit Williams, who was on
14 staff with the computer science department at Kennesaw State,
15 came forward to Secretary Cox and suggested that there needed
16 to be something available to poll workers, to county officials
17 across the state that was continually there to educate and help
18 assist counties as we transitioned to a uniform system. Sort
19 of a continuing education process.

20 **Q.** What were your job responsibilities in 2006 or -- excuse
21 me -- 2016?

22 **A.** 2016? I was the director for the Center for Elections
23 Systems at Kennesaw State.

24 **Q.** What did that entail?

25 **A.** I was in charge of the overall day-to-day operations of

1 managing the employees there within the center, overseeing the
2 ballot building production operations within the center, the
3 production of the ExpressPoll data sets, the two primary
4 functions that the Secretary of State's office had entrusted to
5 the Center for Elections.

6 **Q.** How do you build a ballot?

7 **A.** It is a process that takes a substantial amount of time
8 given an election. An election like what we have coming up
9 forward, the general election, we start building the databases
10 at approximately 90 days prior to the given election.

11 **Q.** Where do you build the -- on what computer device do you
12 build the ballots?

13 **A.** We have an air-gapped system within the Secretary of
14 State's office that holds our ballot-building information, our
15 ballot-building software. And that is the system that is used
16 to produce that data output.

17 **Q.** Is that ever connected to the internet?

18 **A.** It is not.

19 **Q.** Ever?

20 **A.** Ever.

21 **Q.** Has it ever in the time that you have been employed either
22 with the center -- with CES or any of your tenures before or
23 after in the Secretary of State's office -- to your knowledge,
24 has it ever been connected to the internet?

25 **A.** Our ballot-building servers have never been connected to

1 the internet.

2 **Q.** Are those ballot-building servers protected from anybody
3 walking in and simply inserting a USB drive or a media into the
4 device?

5 **A.** The SOS server where the ballot-building information is
6 housed today -- I don't even have access to that server. It is
7 within a locked environment that only the IT systems operators
8 for the Secretary of State's office have access.

9 THE COURT: I'm sorry. What is your current
10 position?

11 THE WITNESS: I am the director for Center for
12 Elections Systems at the Secretary of State's office.

13 THE COURT: So you basically moved -- when the center
14 got moved out of Kennesaw, you moved with them?

15 THE WITNESS: Yes, ma'am. I was the only one that
16 was retained.

17 **Q. (BY MR. SALTER)** Mr. Barnes, are you aware of this issue
18 regarding a website server at KSU in 2016?

19 **A.** I am.

20 **Q.** Can you describe what happened in your understanding?

21 **A.** To the best of my recollection of those events that took
22 place in August of 2016, we received a phone call -- we being
23 the executive director at the time Merle King. I did not
24 receive the phone call -- received a phone call from Mr. Logan
25 Lamb.

1 And he first introduced himself by saying that he was
2 directed to our center by Fulton County elections office, that
3 he had visited the election supervisor in Fulton County to
4 offer his services to Fulton County on tightening their
5 elections operations.

6 And the director for elections in Fulton County then
7 directed Mr. Lamb to the Center for Elections Systems at
8 Kennesaw State saying that if you wanted to learn more about
9 the voting system in Georgia that you would reach out to them.

10 He then let it known to us that he -- in his capacity he
11 did a scan of our web server and said that he found some
12 deficiencies with it and he would be interested in talking to
13 us about how he might help us address those deficiencies.

14 **Q.** Can you describe whether what, if anything, regarding the
15 web server -- can you describe how many servers would have been
16 located at CES in Kennesaw in 2016?

17 **A.** In 2016, we would have had three individual computers that
18 we would have referenced as servers. We would have had our web
19 server, which was our outward phasing server, the one that was
20 penetrated by Mr. Lamb.

21 We had our ballot-building server, which is in our
22 air-gapped system where it was separated out from the internet
23 and no connection ever to that. Yet it was networked to other
24 devices within the office and only within the office that
25 allowed our ballot-building teams to do their work and then

1 save that information back to that internal server.

2 And then the third server was the one that was used to
3 build the ExpressPoll data sets. Those are the -- those are
4 the electors' list that reside on the ExpressPolls that are
5 used on election day.

6 **Q.** Were the problems -- which servers did the problems that
7 Mr. Logan Lamb call to your attention affect?

8 **A.** The web server.

9 **Q.** Any of the other two?

10 **A.** No, sir.

11 THE COURT: I'm sorry. The third server uses --
12 creates the ExpressPoll data sets; right?

13 THE WITNESS: Correct.

14 THE COURT: And is that linked to something?

15 THE WITNESS: It is not. It is also in the
16 air-gapped system. It is not linked to anything external.

17 THE COURT: But this is -- so I'm just trying to
18 understand the impact of it. When we go and go to our precinct
19 and try to vote and they say, you are not listed here. I don't
20 know who you are, and you insist that you are there, this is
21 the information they have? They are working off of that?

22 THE WITNESS: Correct. The data set that is --

23 THE COURT: That is worst case scenario. I know
24 exactly who you are. Yes, go ahead. I have seen you a hundred
25 times.

1 THE WITNESS: The data set that is on ExpressPoll --
2 that is a data file that has been generated and built and
3 replicated. We replicate that data file about 6000 times. It
4 is placed on compact flash memory cards that are then
5 hand-delivered to the elections offices in each individual
6 county.

7 Then those data sets are placed into the
8 ExpressPolls. Basically it is an electronic electors' list.
9 It contains not only the information for the polling location
10 that the device is assigned to, but it also has the polling
11 information for all other polling locations in use on that
12 election.

13 **Q. (BY MR. SALTER)** All right. What, if anything, about this
14 web server issue in 2016 makes the election that would occur on
15 November the 6th less safe?

16 MR. CROSS: Objection, Your Honor. Speculation.
17 Foundation.

18 MR. SALTER: He has got a foundation. He makes --

19 THE COURT: I think --

20 MR. SALTER: He makes the memory cards.

21 THE COURT: You need to make your question a lot more
22 specific than that. I'm sorry.

23 MR. SALTER: He understands the whole system. He has
24 actually -- actually has the actual factual knowledge, and this
25 is the issue. We have had a lot of talk and a lot of talk to

1 the media by their lawyers.

2 THE COURT: You can ask a general question, but I'm
3 going to ask you -- we're just going to be potentially
4 wandering in the universe. But go ahead.

5 **Q. (BY MR. SALTER)** What, if anything, about this web server
6 that ran the website for CES and the issues that were called to
7 your attention by Mr. Lamb in 2016 would make November 6th,
8 2018's election less safe?

9 **A.** I cannot think of something off the top of my head that
10 would endanger the election in this coming November based upon
11 what was on that server.

12 **Q.** Whether because of what happened in 2016 or simply because
13 of other reasons and/or steps we wanted to take to change the
14 security procedures at the Secretary of State, can you describe
15 kind of what has changed in terms of election security between
16 then and now?

17 **A.** Since we transitioned to the Secretary of State's office,
18 first off, we have completely -- the Secretary of State's
19 office built a brand-new air-gapped system. The air-gapped
20 system had been looked at by Kennesaw State after all of these
21 things took place. And they agreed that the air-gapped system
22 was still tightly controlled, that there was no penetration
23 point in to that system.

24 But that system was not brought in and plugged in to the
25 Secretary of State's office. The Secretary of State's office

1 built a whole new ballot-building air-gapped system for us to
2 use from preparing the databases for the given elections in
3 2018 and moving forward.

4 The distribution of the completed databases, first off,
5 before a completed database can be issued to a jurisdiction
6 that jurisdiction has to proof the database. They have to
7 proof the ballot images.

8 Those images are now shared to the county -- they are all
9 PDF files. But those PDF files are shared to counties through
10 an SOS-controlled FTP site.

11 **Q.** Can you explain to the Court what that is?

12 **A.** It is a secure file transfer process where the counties
13 have direct access to a single folder. And then within that
14 folder, we would place the PDF files that are ballot proofs
15 that are reports from the generated database that allow them to
16 then proof the content of the database.

17 It also provides them a sign-off sheet that has to be
18 returned once they have proofed the database and found it to be
19 accurate for their needs for that given election. Then that
20 sign-off sheet is returned to the Secretary of State's office.

21 We do not release the completed database until we have
22 that sign-off sheet validating that what we have built is what
23 the county needs.

24 Once we have that sign-off sheet, we then prepare a
25 database for delivery to the county itself. And that data file

1 is password protected. But we also place that data file on to
2 a CD, and then we encrypt the CD. The CD --

3 **Q.** Why do you do that?

4 **A.** Just an extra layer of security to try to protect the
5 content of the data that is on that CD.

6 **Q.** So can anybody -- in terms of how -- the memory cards that
7 go into the DRE machine for a particular election, how do those
8 get from -- can you give a quick understanding of how those get
9 from this secure air-gapped server under lock and key at the
10 Secretary of State's office to a machine? Can you run the
11 traps on that process?

12 **A.** It starts by the completion of the database, the CD that I
13 was just mentioning. The CD has to be delivered to the county.
14 The county then takes that CD, and they load that CD directly
15 into their controlled GEMS computer, which is another computer
16 that is not networked to any external points.

17 From that server, the county then loads the database that
18 is on the CD. Now, in order to access the CD, the county has
19 to call the Secretary of State's office and request the
20 passcode to access the database. And we have -- for every
21 county, we have a folder with contact points. And it is
22 expected that we will hear from those contact points at the
23 county.

24 The other item that we have placed on to the CD is a
25 verification code where the county provides that verification

1 code back to us before we release the password that accesses
2 the database. If they cannot give us that verification code,
3 we don't give them the passcode. We would -- we just send them
4 another CD. We would not try to make it happen for them.

5 Once that -- once they have the proper passwords to access
6 the CD and load it on to their GEMS server, once it is loaded
7 to their GEMS server, then they are in control of creating the
8 individual memory cards that are used and inserted into the
9 voting machines.

10 **Q.** If you are going to have a counting malicious virus on a
11 graphical interface like a DRE machine, what is the importance
12 of having the ballot design file in order to make that
13 malicious virus perform the way you attempted to? Does that
14 make sense?

15 **A.** I think it does. I'll do my best to try to answer.

16 I believe you would want to know where the candidates are
17 positioned within the structure of the database. It is not --
18 and I'm not a computer scientist. And I don't claim to be.
19 And I have never written malicious code. I'm not a -- I don't
20 write code.

21 But from a layman's perspective, if I were writing
22 something like that, it doesn't matter that the ballot says
23 Brian Kemp or Stacey Abrams. It is the position of that name
24 within the structure of the database. What is the ID that
25 correlates to it?

1 MR. CROSS: Your Honor, again, we object. This
2 witness is not an expert. This is way beyond any foundation we
3 have heard from him.

4 MR. SALTER: I think he is actually testifying
5 correctly. I think you would actually need the actual ballot
6 design in order to know where to put --

7 THE COURT: Well, I think he has so disclaimed
8 knowledge of computer engineering and not done malicious code
9 that -- with knowledge of that, I mean, I have allowed a lot
10 including the opining as to it couldn't have any impact on the
11 election. And, you know, since he is -- I don't know what his
12 background is. But he definitely has disclaimed being a
13 computer scientist or an expert on malicious code. So I'm a
14 little bit hesitant --

15 MR. SALTER: I'll withdraw that question.

16 **Q. (BY MR. SALTER)** In terms of -- have you spent the last --
17 how many years have you spent doing -- looking at holistically
18 election security as a system for the State of Georgia?

19 **A.** I have been working with this voting system since it was
20 selected in 2002.

21 **Q.** Are you aware of any instance in which a malicious code
22 was successfully installed on a DRE machine under election
23 circumstances?

24 **A.** I am not.

25 **Q.** During election circumstances?

1 **A.** I am not.

2 MR. SALTER: Thank you, sir.

3 THE COURT: Are there any questions?

4 CROSS-EXAMINATION

5 BY MR. BROWN:

6 **Q.** Mr. Barnes, my name is Bruce Brown. Just a few questions.

7 **A.** Yes, sir.

8 **Q.** You mentioned the ballot-building process. The ballots
9 have already been built for the 2018 election; correct?

10 **A.** We are currently in the ballot-building phase for the 2018
11 election. As of this morning, we had -- of 159 county
12 databases complete, I think we were still waiting on sign-offs
13 from 15 of those.

14 **Q.** And after the ballot-build is completed, you will move to
15 actually ordering printed ballots; correct?

16 **A.** Counties actually have already -- those counties that have
17 signed off on their databases -- those counties have already
18 been delivered their databases. They have already been in
19 talks with their printers to acquire their needed printed
20 ballots.

21 **Q.** So if they needed more printed ballots, they already have
22 the template to do so and would simply need to order more
23 printed ballots from their printer; correct?

24 **A.** I don't know yet because I don't know what the Court may
25 ask us to do, if I would have to readjust the databases that

1 have already been built. So I don't know the true answer to
2 that question yet.

3 **Q.** Why would you need to readjust the database for the
4 ballot?

5 **A.** Because the current databases are not set up to tabulate
6 election day ballots through optical scan means.

7 **Q.** So the provisional ballots aren't done that way?

8 **A.** No. The provisional ballots, within the database
9 structure, there are four counting groups. There is the
10 polling day counting group, which is done through DRE. There
11 is the advanced in-person counting group that is done through
12 DRE. There is the absentee by mail, which is done through
13 optical scan. Then there is the provisional that is done
14 through optical scan. So two of those four have been
15 configured from optical scan use when you would be scanning
16 ballots centrally. The other two have not been configured.

17 **Q.** But in terms of absentee ballots or provisional ballots,
18 those could come from any precinct in any ballot style;
19 correct?

20 **A.** I'm not sure what the question is.

21 **Q.** Well, all I'm saying is that the state has anticipated
22 having to process using an optical scanner every single ballot
23 style; correct?

24 **A.** The optical scan system is set up so that it can handle
25 any optical scan ballot from any precinct. Yes, sir.

1 Q. So what would be necessary with the switch to all paper
2 ballots is simply ordering more paper ballots; correct?

3 MR. SALTER: Objection. Go ahead. I think it
4 misstates the testimony. Go ahead. I withdraw the objection.

5 THE COURT: Thank you.

6 A. The databases that -- the legislature states that we have
7 to count votes at the precinct level. We have to be able to
8 know -- the state law says we have to count results of ballots
9 at the precinct level.

10 So we have to be able to calculate those at the precinct.
11 So additional work would have to be done on these completed
12 databases to make them available to tabulate votes not only at
13 the absentee level. A ballot could be scanned and said yes,
14 this is a vote from this precinct from the absentee category.

15 But the way the databases are currently configured, I
16 could not scan a ballot that was collected on election day and
17 know that it was an election day ballot.

18 Q. (BY MR. BROWN) So if you were ordered by the Court to
19 switch to paper ballots, are you telling me that your team
20 could not construct the database sufficient to handle election
21 day ballots like you handle other ballots?

22 A. No, sir, I'm not saying that at all.

23 Q. That is good. Now, let me go to your --

24 A. What I would like to add to that is I would have to spend
25 some time adjusting the databases to make them able to do that.

1 Do I know how much time would be needed to do that? I do
2 not. Because we have never had to adjust a database in that
3 capacity before.

4 **Q.** And in responding to our motion for summary judgment, you
5 haven't developed any estimates of the cost of that, have you?

6 **A.** I have not.

7 MR. SALTER: Objection. Instead of summary judgment,
8 you mean preliminary injunction?

9 MR. BROWN: What did I say?

10 MR. SALTER: Summary judgment.

11 MR. BROWN: We could convert it.

12 MR. SALTER: I will say no.

13 MR. BROWN: I misspoke. In response to our motion
14 for preliminary injunction.

15 **Q. (BY MR. BROWN)** Has the Secretary's office done anything
16 to decontaminate the DRE machines since the KSU server was
17 accessed by Mr. Lamb?

18 **A.** Can you explain your question?

19 **Q.** No.

20 MR. SALTER: It assumes facts not in evidence would
21 be the objection, Judge.

22 THE COURT: Well, have you done anything to determine
23 whether there was a contamination or what was the issue
24 involving -- that Mr. -- what was the scope of the issue that
25 Mr. Lamb brought to your attention so you are able to know

1 whether it had the larger -- might have had a larger impact?

2 THE WITNESS: What I can speak to is that the
3 computer that Mr. Lamb accessed did not contain any of the
4 ballot station software, the ballot station firmware, the GEMS
5 operating system, the GEMS executable files, those items that
6 are actually needed to create a GEMS database that are able to
7 populate a touchscreen with its ballot station operational
8 executable program.

9 **Q. (BY MR. BROWN)** And have you reviewed -- I know you are a
10 layperson like me. But have you reviewed the scientific
11 submissions that have been made by Experts Bernhard or looked
12 at Mr. DeMillo's testimony as to their contrary view about the
13 way that an intrusion by Mr. Lamb or someone who did what he
14 did could contaminate the system? Have you looked at that?

15 MR. SALTER: Your Honor, I'll just object to that as
16 argumentative.

17 THE COURT: Overruled.

18 **Q. (BY MR. BROWN)** Have you looked at that?

19 **A.** I have reviewed them. Have I analyzed them and read
20 through them for all content? I have not.

21 **Q.** Has the -- besides the gentleman whose slide we saw
22 earlier who was on the STAR commission -- no.

23 THE COURT: SAFE.

24 **Q. (BY MR. BROWN)** The SAFE Commission. Besides that
25 gentleman, has the Secretary employed a cyber security expert

1 to review those allegations to determine whether or not you
2 need to do something more?

3 **A.** I know that the CIO for the Secretary of State's office
4 has been highly engaged in analyzing how our systems are set up
5 now within the Secretary of State's office. Any additional
6 analyzation of that, I cannot speak to.

7 **Q.** And what is his name?

8 **A.** Merritt Beaver.

9 **Q.** And is he here today?

10 **A.** I believe he is.

11 **Q.** And is he going to testify?

12 **A.** I don't know the answer to that.

13 THE COURT: Is he testifying -- Mr. Beaver -- today?

14 MR. SALTER: You have got a declaration from
15 Mr. Beaver. I showed it in my preliminary or opening
16 statement.

17 THE COURT: My problem is I know that the -- it
18 doesn't answer the question that has been asked to many
19 different witnesses. They just said they do things differently
20 now.

21 MR. SALTER: That is what we want to show.

22 THE COURT: That is all it says.

23 MR. SALTER: Yes.

24 THE COURT: But I don't really know in the end
25 then -- you are not able to say what the department did to

1 fully get to the bottom of whether there -- how all sorts of
2 personal information purportedly was available about voters
3 that would be the sort of information collected on a -- for
4 voting purposes -- why that would have been accessible to Mr
5 Lamb.

6 THE WITNESS: I cannot speak to that.

7 THE COURT: And why his colleague said it continued
8 to be available six months later.

9 THE WITNESS: I can't speak to that.

10 THE COURT: And the department doesn't have any
11 information and you -- as the division of head of elections,
12 you don't have any information on that?

13 THE WITNESS: Not on that, no, ma'am.

14 MR. SALTER: What was that last question, Judge? I
15 didn't hear that.

16 THE COURT: It is a secret. I will ask the court
17 reporter to repeat it because it is not.

18 Go ahead. Can you do that?

19 **(The record was read back by the court**
20 **reporter.)**

21 THE COURT: That was about the -- did you want her to
22 go back further?

23 MR. SALTER: No -- yeah.

24 THE COURT: About the -- how -- the question really
25 related to how was it that all of this sort of information that

1 was basic voter information and voter ID information that would
2 have been collected for the voter registration -- that he would
3 have -- it would have been available on this website and why it
4 would be still available on an open -- on an open access basis
5 six months later, not just to Mr. Lamb but to other researchers
6 who called and were concerned and reported it. That was it.

7 MR. SALTER: I'll hush in the interest of time.

8 **Q. (BY MR. BROWN)** Mr. Barnes, whether at KSU or at the
9 Secretary of State's office, did the Secretary of State
10 undertake any forensic examination of the computer systems that
11 were at KSU? Any of them?

12 **A.** I know that those servers were inspected by the FBI. But
13 the Secretary of State, no, sir.

14 **Q.** And so if they were -- if an intruder from Ahira or Moscow
15 had gone into the systems, the Secretary was not curious enough
16 to find out, was he?

17 MR. SALTER: Objection, Your Honor.

18 THE COURT: I'm going to overrule it -- I mean,
19 sustain the objection. Let's just move on.

20 You've got more?

21 MR. CROSS: I'm sorry?

22 THE COURT: You have got more?

23 MR. CROSS: I haven't questioned him yet. But I'm
24 going to be brief.

25 THE COURT: You better be.

CROSS-EXAMINATION

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BY MR. CROSS:

Q. Mr. Barnes, the KSU server that we talked about that Mr. Lamb accessed, that was wiped after this litigation was filed; right?

A. Following university protocol, yes, sir, it was.

Q. Following the university protocol but didn't Secretary Kemp's office characterize that as reckless, inexcusable, and inept? Those were his words; right?

A. I believe I have heard those before, yes, sir.

Q. So I want to talk about the air-gapped or the GEMS server that you say is air-gapped. Did I understand correctly you said that is networked to other devices; correct?

A. The air-gapped system is on its own private network.

Q. Is that a yes, sir, it is networked to other devices?

A. It is networked to other devices in a private system.

Q. And do those devices include PCs?

A. Yes, sir.

Q. Do they include laptops?

A. No.

Q. Do those PCs -- have the PCs -- well, strike that.

The GEMS server that you say is air-gapped, it has a wireless access point; correct?

A. It does not.

Q. Do you believe that the GEMS server does not have a

1 wireless access point?

2 **A.** The GEMS server within the Secretary of State's office
3 that I do my work on does not have a wireless connect point.

4 **Q.** And you are saying that that network that it is connected
5 to -- the network has no wireless access point?

6 **A.** Yes, sir.

7 **Q.** And is that the basis for your testimony today in saying
8 that it is a secured air-gapped system?

9 **A.** Yes, sir.

10 **Q.** Do state workers --

11 THE COURT: It is all connected by wire? That is
12 what your testimony is?

13 THE WITNESS: Yes, ma'am.

14 **Q.** **(BY MR. CROSS)** The GEMS network that was posted by KSU,
15 that would have a wireless access point; correct?

16 **A.** It did not have a wireless access point.

17 **Q.** So you are saying even at KSU there was no wireless access
18 point to the network to which the GEMS server was connected; is
19 that right?

20 **A.** The GEMS servers at KSU was never on any network except
21 its private network.

22 **Q.** Do state workers type in every race and candidates' name
23 into the GEMS server?

24 **A.** Yes, sir.

25 **Q.** So that is how the data gets loaded?

1 **A.** Yes, sir. It is all manual entry.

2 **Q.** What version of Windows is used? XP?

3 **A.** Within our office, yes, sir.

4 **Q.** On the GEMS server?

5 **A.** The -- yes, sir.

6 **Q.** And what is the most recent version of that?

7 **A.** The most recent version of XP?

8 **Q.** On the GEMS server.

9 **A.** I would have to ask my CIO.

10 **Q.** So you don't know?

11 **A.** I do not know.

12 **Q.** How recently was it patched?

13 **A.** Again I would have to ask the CIO.

14 **Q.** Do you know whether it was in the last year?

15 **A.** I would have -- it was constructed in this year. So --

16 **Q.** But you don't know?

17 **A.** I do not know what levels of security they have -- they

18 have surrounding that entire system with.

19 **Q.** This removable media like flash discs, memory discs,

20 memory cards -- are those ever connected to the network to

21 which the GEMS server is connected?

22 **A.** The only thing that is used to transfer data from the

23 private network over to distribution points is a single USB --

24 lockable USB drive.

25 **Q.** Okay. So this GEMS server network does have removable

1 media that is connected to it from time to time; correct?

2 **A.** The removal media, yes, is used to take PDF files that are
3 generated as proofs to transfer over for county for proofing
4 purposes.

5 **Q.** And what are all the devices that that USB device is
6 connected to?

7 **A.** It is connected to a single computer in my office.

8 **Q.** What is that computer connected to?

9 **A.** That is our public facing process, but that is how it is
10 connected up to the secured FTP site.

11 **Q.** What do you mean when you say public facing?

12 **A.** It is my computer where I check emails and work and do my
13 daily business.

14 **Q.** Okay. So if you are checking emails, that computer is
15 connected to the internet; right?

16 **A.** That is correct.

17 **Q.** So you have got a computer connected to the internet that
18 then has a USB device connected to it. You then take that USB
19 device, and you connect it to the network where the GEMS server
20 is connected; correct? Yes?

21 **A.** The USB drive that I move from --

22 **Q.** Can you answer my question yes, sir?

23 **A.** The USB drive that I move from the private network, I put
24 into a locked position, insert it into my public device, and
25 transfer data up to the secured FTP.

1 When that USB drive is removed from my computer and moved
2 over to the private network, it is reformatted before it is
3 used again.

4 **Q.** Was the answer to my question yes?

5 **A.** Do I move a USB drive from one unit to the next? The
6 answer is yes.

7 **Q.** From one unit connected to the internet to the GEMS server
8 network; yes?

9 **A.** Yes.

10 **Q.** Thank you. The memory cards that are used in the 27,000
11 or so DREs around the state, are those at some point connected
12 to the GEMS network?

13 **A.** When you say GEMS network, what do you mean?

14 **Q.** Are they ever connected to the network to which the GEMS
15 server is connected?

16 **A.** Ask the question again, please, sir.

17 **Q.** The GEMS server includes the ballot definitions that
18 ultimately end up on the memory cards, which end up in the DRE
19 machines; right?

20 **A.** Uh-huh (affirmative).

21 **Q.** Yes?

22 **A.** Yes.

23 **Q.** Okay. So how does the -- how do the ballot definitions
24 get from the GEMS server to the memory cards?

25 **A.** The ballot definitions are first delivered to the county

1 on an encrypted CD. The encrypted CD is then loaded directly
2 to the GEMS computer. The GEMS computer then reads the data
3 file that is on the CD, loads it into the GEMS computer.

4 Then the GEMS computer is connected to a single
5 touchscreen unit through a local area network, hard wired,
6 wired together. And then a memory card is inserted into the
7 touchscreen unit. And the images from the database are
8 transferred through the touchscreen to the memory card.

9 **Q.** So the memory cards are connected to the GEMS computer by
10 way of this other unit -- this other device?

11 **A.** By way of the touchscreen, yes.

12 **Q.** Now, it sounds like we have learned that in addition to
13 the USB device that goes from your computer to the GEMS network
14 there is additional removable media? There is a CD that you
15 just mentioned that also gets plugged into the GEMS computer;
16 correct?

17 **A.** Correct.

18 **Q.** Are you aware of studies finding that a single memory card
19 infected with malware -- that malware can make its way into a
20 GEMS system through the sort of connection that you just
21 described?

22 **A.** I have heard those studies, yes, sir.

23 **Q.** Last point, you testified that you can't think of any risk
24 or any reason why Logan Lamb's access to this web server would
25 make the upcoming election or any election less safe; is that

1 right?

2 **A.** Yes, sir.

3 **Q.** Are you aware that he was able to obtain voter
4 registration databases filled with personally identifiable
5 information of over 6 million voters, driver's licenses, birth
6 dates, home addresses, the last four digits of Social Security
7 numbers, and more? Did you know that?

8 MR. SALTER: Objection, Your Honor. Relevance as to
9 how that makes DRE less safe.

10 MR. CROSS: Are we really arguing about what that is
11 all about now?

12 THE COURT: Counsel is entitled to make his
13 objections, and I would ask the audience to be reserved.

14 MR. CROSS: I'm sorry, Your Honor.

15 THE COURT: I'm going to overrule the objection.

16 **Q.** **(BY MR. CROSS)** Were you aware of that, sir? Yes or no?
17 Were you aware of that?

18 **A.** Was I aware that we made mistakes at Kennesaw State? Yes,
19 sir.

20 **Q.** That is not my question. I just identified several
21 categories of personal identifying information. Were you aware
22 that Mr. Lamb was able to access that through this web server?

23 **A.** I was aware that Mr. Lamb was able to see those files.
24 But to pull them down, I am unaware.

25 **Q.** And do I understand that it is your view that a

1 sophisticated hacker like Russia could not affect the security
2 of the upcoming election at all with all of the information we
3 just identified? No way they could do it?

4 MR. SALTER: Objection.

5 **Q. (BY MR. CROSS)** Is that right?

6 MR. SALTER: Objection as to how it relates to
7 putting a malicious virus on a DRE. That is the issue.

8 MR. CROSS: That is not the question that he was
9 asked by Mr. Salter. We covered this. And he insisted on a
10 very general, broad question. You let him do it. I am
11 impeaching him.

12 THE COURT: All right. Well, you can ask him the
13 question, and then we need to stop.

14 MR. CROSS: Understood.

15 THE COURT: Do you want him to repeat it?

16 **Q. (BY MR. CROSS)** So do I understand correctly --

17 THE COURT: I'll just have the court reporter read
18 it. Can you do that?

19 Go ahead. Ask the question.

20 **Q. (BY MR. CROSS)** Do I understand correctly that you can't
21 think of any way -- I tell you what. I'm going to make it
22 quick. We'll make it easy.

23 Just so I understand, are you aware that Mr. Lamb was able
24 to access election management system GEMS databases? Did you
25 know that before today?

1 MR. SALTER: Objection. Assumes facts not in
2 evidence.

3 MR. CROSS: It is in Mr. Lamb's declaration, which is
4 part of the record.

5 **Q. (BY MR. CROSS)** Did you know that before today?

6 **A.** The only election database that I was aware of that was on
7 the server at the time that Mr. Lamb accessed the server was a
8 training database that was used to educate local county
9 election officials on how to use a voting system and also to
10 educate high school students on how to use it as well.

11 **Q.** Did you know that he was able to extract passwords for
12 supervisors that controlled the administration of the DRE
13 voting machines? Did you know that?

14 **A.** The passwords that I am familiar with him accessing on the
15 website were for the ExpressPolls, not for the DRE machines.

16 **Q.** So your understanding is that the only thing he got is the
17 ExpressPolls, not the administrator passwords that controlled
18 the administration of the DRE voting machines? Is that your
19 understanding?

20 **A.** It is my understanding that the only passwords that were
21 on that device were ExpressPoll passwords.

22 **Q.** So given how little you understand about what Mr. Lamb was
23 able to access, that may explain why you can't see how that
24 could pose a risk to a future election.

25 THE COURT: That is argumentative. That is

1 argumentative.

2 MR. SALTER: Can I ask one question I think the Court
3 would like to know the answer to?

4 THE COURT: Go ahead, especially since I cut you off
5 on the one other question you wanted to ask.

6 REDIRECT EXAMINATION

7 BY MR. SALTER:

8 **Q.** You were asked one question -- Mr. Cross asked a
9 question -- I think it is pertinent for the Court -- about that
10 private network that was at KSU. And you have some computers
11 that are directly networked to that closed network.

12 Do you know what I'm talking about?

13 **A.** Uh-huh (affirmative).

14 **Q.** Do those computers that are connected in -- do those PCs
15 have any sort of internet capability?

16 **A.** They do not.

17 MR. SALTER: Thank you.

18 No more for this witness, Judge. Thank you.

19 THE COURT: May this witness be excused?

20 MR. SALTER: Come on down, Mike.

21 MR. BARNES: Can we go to the bathroom for about five
22 minutes?

23 THE COURT: All right. I'll take a five-minute
24 break.

25 MR. SALTER: Your Honor, just so you know for

1 housekeeping, I think Fulton County will call Mr. Barron, the
2 election director for Fulton County, and then we'll call
3 Secretary of State Cathy Cox. We can get both of those.
4 Rebecca --

5 THE COURT: All right. There are a lot of people
6 here. So even though I would like to say five minutes, please
7 try to get back in five minutes. But I understand that there
8 are limits. There are bathrooms on the 22nd floor, the 21st
9 floor in the same location.

10 COURTROOM SECURITY OFFICER: All rise. This court is
11 in recess for five minutes.

12 **(A brief break was taken at 4:09 P.M.)**

13 THE COURT: Please have a seat. Go ahead.

14 MS. BURWELL: Thank you, Your Honor. Fulton County
15 would call Cecilia Houston-Torrence.

16 COURTROOM DEPUTY CLERK: Good afternoon, ma'am.
17 Please raise your right hand.

18 **(Witness sworn)**

19 COURTROOM DEPUTY CLERK: Thank you. Please be
20 seated. Please pull up close to the microphone. And you can
21 adjust that microphone as you need. It is very important we
22 are all able to hear you today.

23 I'm going to ask you to state your name again for the
24 record, and please spell your first and last name for the
25 record.

1 THE WITNESS: Cecilia Houston-Torrence.
2 C-E-C-I-L-I-A. Houston, H-O-U-S-T-O-N, Torrence,
3 T-O-R-R-E-N-C-E.

4 THE COURT: Just before we begin with your
5 examination, I wanted to ask counsel what is the projection of
6 the length of the testimony.

7 MS. BURWELL: Ten minutes tops.

8 THE COURT: All right. Mr. Barron is still coming?

9 MS. BURWELL: Yes.

10 THE COURT: I got a little confused because of the
11 change. I just wondered if there had been a change.

12 Very good. Proceed.

13 Whereupon,

14 CECILIA HOUSTON-TORRENCE,
15 after having been first duly sworn, testified as follows:

16 DIRECT EXAMINATION

17 BY MS. BURWELL:

18 Q. Ms. Torrence, are you a registered voter?

19 A. Yes.

20 Q. In what county are you registered?

21 A. Fulton County.

22 Q. Can you tell the Court about your background and
23 experience regarding voting in Fulton County?

24 A. I have been voting in Fulton County since 1986. I am past
25 president of the League of Women Voters, Atlanta, Fulton

1 County, a poll watcher -- and yeah.

2 **Q.** When DREs were being recommended for use in Georgia, were
3 you selected to assist with testing the machines?

4 **A.** Yes. I was part of the team that tested out the initial
5 machines back in, I think, 2001, 2000.

6 **Q.** Can you please tell the Court about that?

7 **A.** Yes. We were asked to go in, I guess, just more like a
8 focus group to test the machines for ease and see how easy it
9 was for us to use the machines and if we had any questions at
10 that time.

11 **Q.** How many machines did you --

12 **A.** There were about ten, I think, in the facility that we
13 were at.

14 **Q.** So what was your impression of DRE machines at that point?

15 **A.** I was -- it was much easier than I had anticipated. And
16 all of our questions that we asked were answered. So it was
17 fairly easy for us to use.

18 **Q.** Did you have any concerns about the accuracy of DRE
19 machines at that point in time?

20 **A.** Yeah. Our initial -- I think all of us had concerns about
21 the accuracy of the machines. And yeah, we did initially.

22 **Q.** Did you ask questions about that?

23 **A.** Yeah, we did. We were concerned about, you know, the fact
24 that we did not have a paper receipt, but those were -- those
25 were all addressed.

1 Q. So all of your concerns about it were addressed?

2 A. Uh-huh (affirmative).

3 Q. Now, has your impression of DRE machines changed at all?

4 A. No. I haven't had any change over the last 15 years. And
5 I poll-watched for probably 10 or 12 years.

6 Q. And when you are poll-watching, the machines that are in
7 use are the DRE machines?

8 A. Yes. The machines are, yes.

9 Q. Do you have any concerns at all about DRE machines being
10 susceptible to tampering?

11 A. No.

12 Q. Are you planning on voting this November?

13 A. Definitely.

14 Q. Are you planning on voting using the DRE machine?

15 A. Yes.

16 Q. Do you trust that a DRE machine is going to accurately
17 record your vote?

18 A. Yes.

19 Q. Do you have any concerns about paper ballots?

20 A. My concern about paper ballots was how many hands would
21 touch the ballots and the possibilities of them being
22 compromised by human error.

23 Q. As a former president of the League of Women Voters, what
24 was your reaction when you first learned about this lawsuit?

25 MR. KNAPP: Your Honor, I don't think she is speaking

1 on behalf of the League of Women Voters. She is speaking on --

2 THE WITNESS: That is correct. I'm not speaking on
3 behalf of the League.

4 MS. BURWELL: I wasn't suggesting that she was
5 speaking on behalf. But given her experience in that role,
6 that was why the question started with that.

7 MR. KNAPP: The same. I don't think that is, first
8 of all, relevant to a point in time when she was involved back
9 in 2001. I'm not sure what relevance that has to do with her
10 comfort in voting in 2018 as the prior line of questioning was
11 proceeding.

12 THE COURT: I think we're kind of going far astray in
13 terms of the issues right now before us. I mean, obviously
14 even by who -- the reaction of people here, there are lots of
15 people who have different views. It is one of public concern.

16 MS. BURWELL: Correct, Your Honor. And because there
17 are declarations with respect to issues, Fulton County has the
18 obligation to bring before the Court all --

19 THE COURT: All right. You can simply have her do
20 it. But I would have preferred if that is what you wanted to
21 do is just an affidavit. But go ahead and ask one question and
22 then proceed.

23 **Q. (BY MS. BURWELL)** So are you concerned at all about issues
24 with respect to the November election and any impact?

25 **A.** My only concern was that this is a historic election. And

1 changing at this late a date might cause people to have some
2 reserve about voting.

3 **Q.** Have you had any discussions with others about the
4 upcoming election or any concerns about it?

5 **MR. KNAPP:** Objection. Hearsay.

6 **THE COURT:** Could you move beyond that. I don't
7 think we can have her reporting on other people -- identify
8 other people's discussions with her about this.

9 **Q. (BY MS. BURWELL)** Given your experience as a poll worker
10 and your prior experience, do you have any information about
11 segments of the population who use early voting?

12 **A.** Most of the people that I have experienced use early
13 voting are people that use public transportation, people that
14 can't -- can't get off to vote during regular hours, and they
15 take advantage of that opportunity.

16 **Q.** So for you personally, would a change to a paper ballot at
17 this point in time this close to the election increase your
18 confidence in the election?

19 **A.** No.

20 **Q.** Okay. Why not?

21 **A.** I just think a change -- the timing. I think the timing
22 on it for me initially when I heard about it was suspect. Like
23 why now? I just think that at this point changing it might
24 cause more chaos and be a little more hectic than the current
25 system that we have in place.

1 Q. Do you have any concerns about a change to paper ballot
2 disenfranchising voters?

3 A. That is a concern. That is a major concern.

4 Q. And what is your opinion on that?

5 A. I just feel that we do everything we can to encourage
6 people to vote. And any change might -- might cause people to
7 be more skeptical about the process.

8 MS. BURWELL: Thank you. I have nothing further,
9 Your Honor.

10 MR. SALTER: Nothing for the state, Your Honor.

11 CROSS-EXAMINATION

12 BY MR. BROWN:

13 Q. My name is Bruce Brown, and I represent the Coalition
14 plaintiffs. Just a few questions.

15 Would you agree that the county should not reduce the
16 number of voting centers for early voting for the reasons you
17 said; correct?

18 A. Correct.

19 Q. So that if an order is entered with respect to paper
20 ballots, you would agree that it would be appropriate to
21 include in that an order that the counties keep the number of
22 voting centers open for early voting as it has been in the
23 past; correct?

24 A. Yes, sir.

25 Q. You mentioned that you have a long association with the

1 League of Women Voters; correct?

2 **A.** Yes.

3 **Q.** And I'm going to hand to you --

4 MR. BROWN: If I may approach the witness, Your
5 Honor.

6 **Q.** **(BY MR. BROWN)** -- hand to you what will be marked as
7 number -- Plaintiffs' 8. And from time to time, the League of
8 Women Voters comes out with publications called Impact on
9 Issues and things like that; correct?

10 **A.** That is correct.

11 **Q.** And does this appear to be a selection of the League of
12 Women Voters Impact on Issues 2016 to 2018?

13 **A.** It appears to be.

14 **Q.** Let me turn your attention to the second page of this
15 exhibit, which is the 15th page of this publication.

16 And is it true that the League of Women Voters at their
17 convention in 2006 clarified their position that voting systems
18 should employ a voter-verifiable paper ballot or other paper
19 record?

20 MS. BURWELL: Objection. Foundation.

21 THE COURT: I just think we have limited time. I'm
22 not sure this is really -- unless this is something that you
23 feel is essential to your proceeding, I think we probably
24 should give it up.

25 MR. BROWN: I'll take your lead on that. Thank you.

1 MR. KNAPP: No questions, Your Honor.

2 THE COURT: All right. You may step down. Thank you
3 very much for coming.

4 MS. BURWELL: Fulton County calls Richard Barron.

5 COURTROOM DEPUTY CLERK: Good afternoon, sir.

6 **(Witness sworn)**

7 COURTROOM DEPUTY CLERK: Thank you. Please be
8 seated. Please pull up close to the microphone so we can all
9 hear you.

10 I'm going to ask you to state your name again for the
11 record, and please spell your first and last name for the
12 record.

13 THE WITNESS: Richard Barron. R-I-C-H-A-R-D.
14 Barron, B-A-R-R-O-N.

15 COURTROOM DEPUTY CLERK: Thank you, sir.

16 Whereupon,

17 RICHARD BARRON,

18 after having been first duly sworn, testified as follows:

19 DIRECT EXAMINATION

20 BY MS. BURWELL:

21 **Q.** What do you do for a living, Mr. Barron?

22 **A.** I am the Director of Registration and Elections for Fulton
23 County.

24 **Q.** So that means that you oversee all of the election
25 activities for the county?

1 **A.** I oversee all the elections that happen in Fulton County,
2 yes.

3 **Q.** And in your position as elections director, are you aware
4 of any evidence that any Fulton County DRE machine has ever
5 been physically accessed by an unauthorized person?

6 **A.** No.

7 **Q.** And as the Fulton County election director, are you aware
8 of any evidence that any Fulton County DRE machine has been
9 remotely accessed by any unauthorized person?

10 **A.** No.

11 **Q.** And, again, as the election director, are you aware of any
12 evidence that the Fulton County GEMS server has been improperly
13 accessed?

14 **A.** No, I'm not.

15 **Q.** Are you aware of any evidence that any memory card used in
16 the Fulton County DRE machines has been improperly accessed?

17 **A.** No.

18 **Q.** Are you aware of any evidence that any memory card used in
19 Fulton County DRE machines has been infected with malware?

20 **A.** No.

21 **Q.** Are the Fulton County DRE machines connected to the
22 internet?

23 **A.** No, they are not.

24 **Q.** Are there written protocols for the handling of DRE
25 machines?

1 **A.** Yes.

2 **Q.** And can you tell the Court about that?

3 **A.** Well, we have a chain of custody. Whenever we prepare the
4 DREs before the election, they go through L&A. We seal them.
5 They go out for delivery. They are assigned to a polling
6 place. They are delivered to that polling place.

7 Once they are delivered, there is a cable that runs
8 through them through the handles. They are left in most
9 polling places in a locked room. Some places those aren't
10 available.

11 But -- and then when the poll workers get there on
12 election day, they will -- or the day before when they set up
13 the machines, they get those ready. The morning of election
14 day, they verify the seals with the DRE recap sheet based on
15 the serial numbers on the DRE units. And also they verify
16 those against the wire seals.

17 They open those up, check to make sure there are no votes
18 on the machine. And then voting happens throughout the day.
19 At the end of the day, they will record the number of votes
20 that are on there. They reseal those -- first, they have to
21 accumulate the results. The media cards are put into a sealed
22 bag, which would then go to one of our check-in centers. And
23 then all of those machines come back to the warehouse.

24 **Q.** Before any voting occurs, can you tell the Court where the
25 Fulton County DRE machines are kept?

1 **A.** We have them in a warehouse.

2 **Q.** And can you tell the Court about the security in the
3 warehouse?

4 **A.** We have a warehouse that is protected by an alarm system.
5 It is also -- there is a locked door. Then you go in -- there
6 is a second locked door with a keypad to get into it.

7 Once you get in there, all of the voting units are in
8 stacks like you would see at a Costco. And in that area also
9 is our GEMS server and all of the other election equipment and
10 supplies.

11 **Q.** Are the DRE machines sealed unless they are being tested
12 or used?

13 **A.** Well, if they are -- we seal them once they are ready to
14 go out. Once they have been tested, then we seal them.

15 **Q.** So when you seal them, tell the Court what that means.

16 **A.** We put -- there is a -- on the handle -- once the lid is
17 closed, we -- there are seals like a security seal with a seal
18 number on them, like a serial number. And those are secured --
19 fastened through -- through the -- there is a hole in the
20 handles. The only way that you can get into the machine is if
21 you cut that.

22 **Q.** So is this seal made out of metal?

23 **A.** Yes.

24 **Q.** How is the serial number imprinted on this particular
25 seal?

1 **A.** Well, it is a hard molded plastic. And so the number is
2 imprinted into the plastic. You would have to file it off to
3 get rid of it.

4 **Q.** So that is on the external? That is on the outside of the
5 machine -- the seal?

6 **A.** Yes.

7 **Q.** And tell the Court about the chain of custody forms with
8 respect to a particular machine.

9 **A.** Well, each machine is assigned to a polling place. So
10 those -- those machines and the serial numbers and the seals
11 are all on a DRE recap sheet. And those are assigned their --
12 we have delivery teams that take those out to the assigned
13 polling places. Once they get there, they have to verify that
14 what they are delivering is what is on that DRE recap sheet.

15 **Q.** And can you tell the Court who delivers to the polling
16 places for Fulton County?

17 **A.** We have -- mostly it is firemen and some police officers
18 that are off duty.

19 **Q.** And are they familiar with the security requirements?

20 **A.** Yes.

21 **Q.** Including the chain of custody form?

22 **A.** Correct.

23 **Q.** Now, once a machine has been delivered to a polling place,
24 can you tell the Court what the process is with respect to
25 security once a machine arrives and is about to be used?

1 **A.** Well, they are -- they are chained together like -- it is
2 like a bike -- almost like a bike cable. You would have to
3 take a bolt cutter to get through it. All the machines are
4 secured together.

5 They are all sealed as I said before. The poll workers
6 have to take the chain off of it. And then they set up the
7 machines. They would -- they also -- they have to verify the
8 seals, as I said before, cut those seals if they all are fine.

9 If there was a machine that has been tampered with, if a
10 seal has been cut, then that machine would be taken out of
11 service.

12 **Q.** Are you aware of any instance where a seal has been cut?

13 **A.** No.

14 **Q.** Okay. So you said they would check the serial number?

15 **A.** Correct.

16 **Q.** Tell the Court what they are checking the serial number
17 against.

18 **A.** Well, before they go out on the DRE recap sheet, we record
19 the seal number -- the security seal number on the DRE recap
20 sheet. So when the poll workers then get that, when they have
21 the DRE recap sheet, they have their own copy that they pick
22 up.

23 When they get to the polling place, they have to verify
24 that those match, that the serial number on the DRE and the
25 serial number on the security seal match.

1 Q. Can you tell the Court how physical security is different
2 during early voting?

3 A. Well, during early voting, we -- the machines are there.
4 We have early voting for 19 days. So they are opened on the
5 first day of early voting. And then they are resealed and
6 closed at the end of each day of voting.

7 They record the number of votes before they close it at
8 the end of the night. The next morning they have to verify
9 that the same number of votes are on there. And they also have
10 to verify the seal that was put on the night before. It is on
11 there before they open it in the morning.

12 Q. Is there additional physical security during early voting?

13 A. Most of our early voting sites are in the libraries. So
14 we have -- they are in locked -- they are in locked rooms.

15 Q. And what about on the machine itself? Is there any
16 additional security for the actual machine during early voting?

17 A. We have -- well, this machine right here also has -- this
18 unit doesn't have it on there. But Georgia has a specific
19 piece of equipment -- or it is a piece of metal that slides
20 over the lock on the side that would prevent tampering.

21 Q. And that is placed on every --

22 A. Every early voting unit.

23 Q. And that is every night --

24 A. Yes.

25 Q. -- it is placed on there?

1 **A.** Yes. It is put on -- it is affixed to the unit before it
2 ever leaves the warehouse.

3 **Q.** Okay. All right. So it just stays on?

4 **A.** Yes.

5 THE COURT: How long are we going to be on the
6 security -- the physical security of the machine? Because, you
7 know, I want you -- I obviously would like to complete this
8 hearing today, and I thought there were other issues that he --
9 I'm not sure that these issues are necessarily in contest. And
10 I don't remember Mr. Barron's affidavit at the moment. So --

11 MS. BURWELL: Yes. I'll move on, Your Honor.

12 THE COURT: Thank you.

13 **Q. (BY MS. BURWELL)** Let's tell the Court about the memory
14 card that is inside. Can you tell the Court what security
15 features are on the memory card?

16 **A.** Well, the memory cards go in the side. For example,
17 during early voting, the door that was spoken about during the
18 demonstration this morning isn't accessible. Once the memory
19 card is in there, we slide that metal piece down there. And
20 the only way to get that off until it gets back to the
21 warehouse is to break the machine.

22 **Q.** Are you aware of any instance where there has been a
23 broken machine?

24 **A.** No.

25 **Q.** Now, is there a seal on the memory card?

1 **A.** We have some identifiable information that we put on each
2 of our memory cards before they're put into the machine.

3 **Q.** Okay. And can you tell the Court how that memory card and
4 that identifying information works with the actual machine?

5 **A.** Well, once it goes in there, it is -- it is paired with
6 that machine. It has already gone through L&A. So it is ready
7 to go into election mode.

8 If for some reason, as they said this morning, you take it
9 out -- if somebody was to take it out, first they would have to
10 get through the metal -- the outside portion of the metal that
11 protects the door. And if you pulled it out and you stuck
12 another memory card in there if it is not -- if it is in
13 election mode, the first thing that is going to happen is it is
14 going to kick the printer on, especially if it is from a
15 different database.

16 Each database is -- an election database is specific to
17 that election. So if someone wanted to -- if someone had
18 access to a GEMS server, if it wasn't ours, they wouldn't be
19 able to put a memory card in there and have it -- it wouldn't
20 work because the machine wouldn't recognize it.

21 **Q.** Is that because the memory card is tied to a particular
22 machine in a particular precinct?

23 **A.** It is tied to a particular election. The only way it can
24 be compromised is if somebody has access to our -- to our
25 database.

1 MR. CROSS: Your Honor, I apologize.

2 **A.** Our server.

3 THE COURT: I'm sorry.

4 MR. CROSS: I have to object. This is well beyond
5 any foundation laid for -- he is giving it sounds like expert
6 opinion on computer science at this point.

7 THE COURT: All right. Are you a computer engineer?

8 THE WITNESS: No, I am not.

9 THE COURT: I think that we are going beyond his
10 expertise. He can certainly say he doesn't think it happens.
11 But I don't know that he can be basically identifying the only
12 way something can happen as -- in terms of the computer science
13 here.

14 MS. BURWELL: Well, Your Honor, this isn't computer
15 science. This is the process by which the machines are
16 prepared, and this is the elections director. And so he is
17 responsible for the machines and knowing how they work and
18 knowing how they are configured.

19 THE COURT: Are you familiar, in fact, with all of
20 the computer science of how the machines are working and how --
21 is that true?

22 THE WITNESS: I am not a computer scientist. But I
23 know enough to rebut what was -- what is in the demonstration
24 this morning. I watched the video of the professor.

25 And what Georgia has that he didn't say is that there

1 is -- we have a big piece of metal that protects it from being
2 manipulated during the day.

3 THE COURT: All right. You're talking though -- I
4 think that the point of the presentation was not that -- at
5 least as I took it, was not that somebody secretively
6 necessarily would just come in during the day but the fact that
7 it is, in fact -- it is subject to manipulation -- the data.

8 Maybe other people took something else from it, and I
9 understand that. And maybe that is why we're spending so much
10 time on the physical apparatus. But I absolutely accepted the
11 testimony that you got -- that you have some way of blocking
12 the -- physically of blocking somebody from putting a new card
13 in there as your routine process. And I accept that. But I
14 think going beyond that is -- I'm uncomfortable with.

15 MS. BURWELL: Okay.

16 **Q. (BY MS. BURWELL)** Can you tell the Court about any
17 security measures you have put in place for the GEMS server?

18 **A.** Well, it is an air-gapped server. We have -- basically it
19 is never -- it is not connected to the internet.

20 MR. CROSS: Objection, Your Honor. Air-gapped is a
21 computer term. This is also duplicative of what we have heard.
22 He can't possibly testify to whether the system is air-gapped.

23 MR. SALTER: On behalf of the state -- may I on
24 behalf of the state -- go ahead, Kaye.

25 MS. BURWELL: Your Honor, as the elections director,

1 Mr. Barron is testifying to the processes that take place --

2 THE COURT: All right. You have a GEMS computer in
3 your -- you have a GEMS --

4 THE WITNESS: Server.

5 THE COURT: Your GEMS server is not connected to the
6 internet you are saying?

7 THE WITNESS: Correct.

8 THE COURT: And all of the other counties have a GEMS
9 server?

10 THE WITNESS: Correct.

11 THE COURT: And you communicate with the GEMS server
12 from the --

13 THE WITNESS: A warehouse.

14 THE COURT: Well, no. When you get a -- when you
15 get -- this disc -- because you have been here all day -- and
16 any other -- that has been testified about from the director of
17 elections for the state, you get that mailed or you get that
18 sent?

19 THE WITNESS: We pick it up because of our proximity.
20 Yes.

21 THE COURT: And others may have it mailed to them?

22 THE WITNESS: No. It is either -- it is usually
23 delivered from what I understand out by officers to the other
24 counties.

25 THE COURT: There are 159 counties.

1 THE WITNESS: Yes.

2 THE COURT: And you are one of -- obviously the
3 largest one, and you get it. And I guess the others have one
4 server, or do you have more than one server?

5 THE WITNESS: We have one.

6 THE COURT: You have one. And then that server
7 has -- you are saying has absolutely no interface at all --

8 THE WITNESS: Correct.

9 THE COURT: -- with the web or anything else like
10 that?

11 THE WITNESS: (Witness nods head affirmatively.)

12 THE COURT: You are just running it based on the
13 information that is on the disc is your testimony?

14 THE WITNESS: Correct.

15 THE COURT: And there is -- and that server never
16 interfaces at any other time -- it is completely -- it is not
17 wireless you are saying?

18 THE WITNESS: Correct.

19 THE COURT: So it is only used for this particular
20 purpose you are saying?

21 THE WITNESS: Yes.

22 **Q. (BY MS. BURWELL)** There is a security system where the
23 GEMS server is? A security system?

24 **A.** Yes. We have two cameras that are pointed at it. And
25 then we also -- I mean, we have the alarm system and the

1 keypad.

2 **Q.** Let me ask you now about the financial impact of the
3 proposed use of paper ballots. Can you speak to that?

4 **A.** If we were ordered to go to paper ballots with our active
5 voter count -- it is about 752,000 registered voters. We would
6 probably -- because you have to have enough ballots on hand for
7 100 percent turnout.

8 In Georgia, there is no limit in the code as to if a voter
9 makes a mistake how many times they can go back and correct
10 their ballot. Therefore we would probably need to order a
11 million ballots. And you are talking about 40 cents a ballot.
12 So that would be \$400,000 for Fulton County.

13 **Q.** What other expenses would there be other than just the
14 cost of the ballot itself?

15 **A.** Well, just to get -- I think the biggest cost is going to
16 be the -- it depends on how we count those ballots. For
17 example, it took us -- our absentee ballots, we began on
18 election day morning in the presidential election at 7:00 A.M.
19 And we had 30,000. We only have 45 optical scan units in
20 Fulton County.

21 Just in the most recent election, we had -- during L&A
22 testing, 19 of them went down, which they have been out -- sent
23 out for repair. It took us until 5:00 Wednesday to count
24 30,000.

25 So I heard testimony earlier that it takes three seconds

1 to run these through. If you have a perfect ballot and those
2 things are running in a perfect condition, you might be able to
3 get some of them. Sometimes it takes a ballot to go through
4 four or five or six times before the scanner reads it.

5 **Q.** Have you estimated how many scanners you think you would
6 need if you had to potentially scan up to 700,000 ballots?

7 **A.** We would need -- well, if we're going to precinct scan and
8 do our absentee, we would need 250 scanners. We have -- we
9 have -- we'll probably have 45 ahead of this election.

10 I talked to ES&S, our vendor. They only have 55 left for
11 the entire state.

12 **Q.** And so you told us that you had 41, and 19 are out for
13 repair. So if you were to get the ones that ES&S has, you
14 would end up with about how many?

15 **A.** If all of them are working on election day, we would -- we
16 would have 100. But none of the other counties would be able
17 to increase their inventory.

18 **Q.** So you would have 100 even though you think you would need
19 250?

20 **A.** Correct. Because if we have to run those through at the
21 warehouse, I would estimate it would take a week at least to
22 count those ballots. That is probably running teams 24 hours a
23 day.

24 I don't know how many of those -- you are going to have
25 ballots that aren't going to run through. They are going to

1 have to be remade. You would have to have teams that are going
2 to have to determine the intent on some of those. You are
3 going to have ballots that are going to be marked incorrectly.

4 You are going to have all sorts of things come up. We
5 definitely would not meet the time to canvass if we --

6 THE COURT: When you say time to canvass, what do you
7 mean?

8 THE WITNESS: We are given until -- we have to -- by
9 the Monday after the election, we have to canvass the election,
10 which is to declare the results official.

11 I don't -- unless everything went absolutely perfect,
12 I couldn't guarantee that we would finish by Monday.

13 THE COURT: So what happens if you can't?

14 THE WITNESS: I guess that is up to Mr. Harvey.

15 THE COURT: I mean, Fulton County has had problems
16 with its elections before. Has it always been able to declare
17 the results by that canvassing deadline?

18 THE WITNESS: I think before I came here there were a
19 couple of times before when they had a difficulty, yes.

20 THE COURT: But they proceeded to ultimately have the
21 actual results declared; right?

22 THE WITNESS: Correct. But they -- yeah. They have
23 never done it with --

24 THE COURT: Under you?

25 THE WITNESS: No. You are going to have a lot of

1 really unhappy candidates and elected officials if they have to
2 wait that long.

3 I mean -- speaking for myself, I'm under significant
4 pressure to get those results out by no later than 11:00 just
5 by elected officials in my county.

6 THE COURT: 11:00 on --

7 THE WITNESS: On election night.

8 THE COURT: And on any election night? Because I'm
9 just trying to think about people waiting the night of the
10 sixth district runoff. There was -- the Fulton County machines
11 went down that night; right?

12 THE WITNESS: Not the runoff. In the first --

13 THE COURT: In the first one?

14 THE WITNESS: Yes.

15 Well, what happened in that election was we had three
16 different databases that we had to use. We had one for south
17 Fulton, the Roswell election runoff that was in April. We had
18 to produce -- we had to have a -- we had to have a CD 6
19 database, and we had to have one for Johns Creek. So we had
20 those three -- we had to run three different databases.

21 And Fulton County is different than all the other
22 counties in that we have check-in centers because the county
23 has so many precincts. They are spread out all over the -- it
24 is 75 miles from one end to the other.

25 Therefore we had to use three databases because of

1 all of these different timelines that came down upon us when
2 the elections could get -- when they could get programmed. So
3 once we had those on election night, every time we had to
4 switch between databases. If we wanted to bring in CD 6,
5 because we modem our results in --

6 THE COURT: CD 6 means?

7 THE WITNESS: Congressional district six. If we
8 wanted congressional district six results to come in, we had to
9 have all five check-in centers modem those results in. We had
10 everything color-coded depending on whether it was a CD 6 media
11 card or whether it was a City of Roswell, south Fulton card, or
12 whether it was a Johns Creek card. Those were all color-coded
13 and separated.

14 What happened on election night was when we had shut
15 the -- we had a City of Roswell card. It got put into one of
16 the machines, and it entered in to the congressional district 6
17 database.

18 So when we went to run the results, it wouldn't kick
19 it out. I mean, it wouldn't tabulate because it said there was
20 an error. The problem with our system now is that the error
21 messages are gobbledygook. They don't tell you what the real
22 error is.

23 But what it did show that night was that if you stick
24 a media card in there that is foreign to the database, because
25 the Roswell database was separate from the CD 6 one, the

1 results came in and that database wouldn't accept it. So even
2 though it took us -- when we went -- when we asked the state,
3 you know, what does this -- this error mean, they weren't sure.
4 The guy in my warehouse that is in charge of all the machines
5 figured it out. We got --

6 THE COURT: Was that before or after 11:00 at night?

7 THE WITNESS: Oh, that was probably going from 11:00
8 to 12:30. Yeah. So, anyway, what it did -- I mean, it was a
9 big pain. But what it did prove was that the system works and
10 that it doesn't read results from -- one database can't go into
11 another.

12 THE COURT: Thank you.

13 **Q. (BY MS. BURWELL)** Do you know how you would transport --
14 if you had to have this million ballots how you would transport
15 them before and after the election?

16 **A.** How we're going to transport them? I haven't -- the last
17 time I did -- I did some paper ballot elections when I was a
18 director in Texas. And you -- the poll workers pick the
19 ballots up. They are sealed in boxes. And the ballots go out
20 with the poll workers. And they take them home until election
21 day. They will pick them up on a Sunday. And then they take
22 them home until election day. That is how we did it there.

23 **Q.** In Texas?

24 **A.** Yes. The same thing would have to happen here.

25 **Q.** Well, there would have to be processes put in place?

1 **A.** Right. There would have to be a number of things put into
2 place. It would be a really tough thing to do given this time
3 frame.

4 **Q.** And they are --

5 MR. CROSS: Your Honor, I'm sorry to interject. We
6 have been going on for half an hour with this witness. We seem
7 to be treading ground that we have covered with other
8 witnesses.

9 THE COURT: Is there an affidavit from Mr. Barron?

10 MS. BURWELL: I tried not to cover the things that
11 were in his --

12 THE COURT: How much more do you have?

13 MS. BURWELL: I'm almost finished.

14 THE COURT: All right.

15 **Q. (BY MS. BURWELL)** When is early voting scheduled to begin?

16 **A.** October 15th.

17 **Q.** Is it likely or unlikely that you could get everything in
18 place if you were -- if it was determined that paper ballots
19 need to be used?

20 **A.** The problem with using paper and early voting is that you
21 have to have every ballot style available. And poll workers,
22 even though a lot of them are good, they are notorious about
23 giving out the wrong ballot during early voting because they
24 have to pick from what in Fulton County would probably be
25 400 -- 450 ballot styles.

1 And it is very easy to give out the incorrect ballot.
2 That was always the Number 1 complaint that we had in Texas.
3 And it just -- it was -- it was amazing no matter what you did
4 how many times you would get that complaint.

5 **Q.** Okay. So if given that, how would you handle early voting
6 in terms of numbers of locations and places? What do you think
7 you would need to do?

8 **A.** I don't think I -- I would probably cut the number of
9 early voting sites down to a minimum. Either just have it at
10 the government center or maybe have it at our annexes as well.
11 But no more than three places. I just don't -- there are too
12 many headaches.

13 **Q.** What about training for an election using paper ballots?

14 **A.** We have already begun our online training. Our poll
15 workers go through online training, as well as in-person
16 training. The online training has already started. As far as
17 the -- we're going to begin soon the in-person training.

18 We would have to rewrite all of our procedures. And the
19 manuals -- we try to get those printed before training. I just
20 don't see that it is -- at this point at this late date, I
21 don't see how it is reasonable to expect any of the counties to
22 do that.

23 **Q.** Would you need ballot boxes at each precinct if you went
24 to paper ballots?

25 **A.** Yes.

1 **Q.** Do you know how many ballot boxes you would need?

2 **A.** Well, we are going to need at least -- it depends on -- we
3 have 183 polling places, 377 precincts. So you are talking --
4 we would need at least 250 to 300 ballot boxes. Some of them
5 are going to -- it just depends on the turnout. I mean, we are
6 going to have to have extra ballot boxes out there because some
7 of them are going to overflow. And they would have to be
8 sealed during the day, and we would have to open up a new one.

9 Now, if we had precinct counters in some of them, we
10 could -- I don't even know if the optical scan units can mount
11 on to -- they can mount on to like a big huge box where the
12 ballots drop in to that. I don't know if those are available.

13 **Q.** For purchase for use?

14 **A.** Correct.

15 **Q.** What impact would having a few -- how many early voting
16 locations are you expecting to have currently using DRE
17 machines?

18 **A.** We have 20. And then we're going to have up to two
19 outreach locations per day going.

20 **Q.** So if you cut that down to three locations, what impact
21 will that have on election day?

22 **A.** We're going to have -- the lines are going to be -- we're
23 going to have longer lines. It usually takes longer to vote a
24 paper ballot from what I have witnessed over 19 years because
25 it just -- people are coloring those ovals in. It takes longer

1 than it does to press -- press the screen and scroll through a
2 screen.

3 **Q.** Are you required to keep track of all paper ballots?

4 **A.** Yes. You have to do -- we would have to design some
5 new -- I mean, it would basically be an accounting -- like an
6 accounting sheet. You know, it is not going to be that hard to
7 design it. But you have to make sure that you account for all
8 of the unvoted ballots, the voted ballots, any ballots that are
9 spoiled during the day if the voter makes a mistake,
10 provisional ballots.

11 MS. BURWELL: I have nothing further, Your Honor.

12 MR. SALTER: Nothing from the state, Your Honor.

13 THE COURT: All right. Can you-all possibly
14 consolidate your questions -- the sides -- or have you already
15 divided territory?

16 MR. CROSS: We have divided these up.

17 **(There was a brief pause in the proceedings.)**

18 CROSS-EXAMINATION

19 BY MR. CROSS:

20 **Q.** Mr. Barron, you talked about dealing with the election
21 results from the April 2017 sixth district special election;
22 right?

23 **A.** Yes.

24 **Q.** You said you had to modem the results in; is that right?

25 **A.** Yes.

1 Q. And by modem, you mean a computer modem? Just sending the
2 results in over the internet; right?

3 A. No. It is an old analog -- they are analog phone lines.

4 Q. So what does the modem connect to?

5 A. They go from our -- from -- all of the machines that we
6 have, we have card readers up at our check-in centers. Those
7 go into a phone line that we have at the check-in centers.
8 They are assigned phone numbers -- modem phone numbers into our
9 server.

10 Q. They are assigned phone numbers into the GEMS server?

11 A. The GEMS server.

12 Q. Mr. Barron, do you honestly not understand that hackers
13 can get into the GEMS server through the phone modem?

14 A. That is extraordinarily difficult to do.

15 Q. You are not a computer scientist, are you?

16 A. No. But I have asked people with the expertise about it.
17 And it would take an extraordinary effort to even do that.

18 Q. You've never heard of hackers -- okay. It is fine.

19 But your GEMS server is connected to phone lines? We're
20 clear about that.

21 A. These are analog phone lines.

22 Q. All right. So it is not air-gapped? Let's just be clear.
23 Correct?

24 A. Yes, it is.

25 Q. You think a GEMS server that is connected to phone lines

1 is air-gapped? That is your understanding of air-gapped; is
2 that right, sir?

3 **A.** Yes.

4 **Q.** Thank you. You mentioned something about you got error
5 messages from the election night reporting system that were
6 gobbledygook; is that right?

7 **A.** Uh-huh (affirmative).

8 **Q.** Yes?

9 **A.** Yes.

10 **Q.** Thank you. You talked about the challenge of poll workers
11 handing out the right paper ballot. But poll workers have to
12 figure out which electronic ballot voters use on a DRE;
13 correct?

14 **A.** Yeah. They do that on the ExpressPoll.

15 **Q.** Right. So -- but because there is no hard copy of the
16 ballot that is voted by any particular voter on a DRE, we
17 actually have no idea how often a voter gets the wrong ballot
18 on a DRE; right?

19 **A.** Usually -- I mean, we do get -- we do get complaints here
20 and there about that, yes.

21 **Q.** On the DRE?

22 **A.** Yes. It is just that over 19 years when you get -- use a
23 paper system the number of complaints go way up.

24 **Q.** Mr. Barron, you actually have concerns about the existing
25 electronic system because of the age of the software; correct?

1 **A.** I would like a new system.

2 **Q.** Well, let's be clear. In your view, you don't find it
3 defensible to keep defending year 2000 software on these
4 systems; correct?

5 **A.** Well, I mean --

6 **Q.** That is your view; right, sir?

7 **A.** It is old. Correct.

8 **Q.** I'm going to ask the question again. Is it in your view
9 that it is not defensible to keep defending year 2000 software
10 on these election systems; right? You have said that; right?

11 **A.** I have said something similar, yes.

12 **Q.** We can pull up the article.

13 **A.** Yeah, you can get it. I know what you are talking about.
14 I don't remember exactly what my quote was.

15 **Q.** But I've accurately characterized what you said?

16 **A.** Probably.

17 **Q.** I'm trying to save time here, sir.

18 MR. CROSS: Pull the email up.

19 **Q.** **(BY MR. CROSS)** Last thing -- oh, sorry. Two more things.
20 We'll move quick.

21 Mr. Barron, can you see what is on the screen? There
22 should be a monitor behind you if that is easier. This is an
23 email that you sent on May 15 of 2017; correct?

24 **A.** Uh-huh (affirmative).

25 **Q.** Yes? I'm sorry. You have got to say yes or no.

1 **A.** What was the question?

2 **Q.** This is an email you sent on May 17th of -- May 15 of
3 2017?

4 **A.** Yes.

5 **Q.** Okay. Do you see you wrote in that second paragraph there
6 was -- let me give the context. There was an error that
7 occurred with some memory cards around an election at this
8 time; right?

9 **A.** Uh-huh (affirmative).

10 **Q.** Yes?

11 **A.** There was --

12 **Q.** There was an error that occurred with some memory cards in
13 Fulton County around this time; correct?

14 THE COURT: Could you sit down. You can sit wherever
15 you want, but sit down. Thank you.

16 **Q.** **(BY MR. CROSS)** A disagreement arose between you and
17 Secretary Kemp as to who was responsible and how it got
18 handled; is that fair?

19 **A.** Well, I don't know that I had any -- any contact with
20 Secretary Kemp about it. But what I was saying was that
21 basically we -- we didn't have the choice of how many databases
22 we were going to run. And --

23 **Q.** Mr. Barron, I'm just asking: You had a different view
24 than the one you understood to be expressed by Secretary Kemp
25 concerning how this happened?

1 **A.** I don't remember what his view was. But --

2 **Q.** Okay. Here is what you wrote. Secretary Kemp is out of
3 line for thinking this violated any rule or law. He has never
4 run an election and has no clue how to run one. This very old
5 system, year 2000, coupled with the state forcing multiple
6 databases on us should be investigated. The new voting systems
7 out there would have prevented this human error.

8 That is what you wrote on May 15 of 2017 from your
9 official Fulton County work account; correct?

10 **A.** Right. Correct.

11 **Q.** Last question or last point, sir: At least as of June of
12 2017, the Secretary of State's office was using an FTP site to
13 share election-related files with the counties, including
14 Fulton; right?

15 **A.** I believe so, yes.

16 **Q.** And that is still true today; right?

17 **A.** Yes. An FTP site?

18 **Q.** Yes.

19 **A.** Yes, we get PDFs from it.

20 **Q.** Yes?

21 **A.** Yes. PDFs.

22 **Q.** On FTP?

23 **A.** Yes.

24 MR. CROSS: Thank you.

25 CROSS-EXAMINATION

1 BY MR. MCGUIRE:

2 **Q.** My name is Robert McGuire, Mr. Barron. Good afternoon.

3 So, Mr. Barron, you described a very elaborate process it
4 sounds like that goes into setting up DREs, servicing them,
5 breaking them down, securing them. It sounds like it takes a
6 lot of labor; is that right?

7 **A.** Yes.

8 **Q.** And it sounds like obviously those are people who are
9 working for you? You have to pay them?

10 **A.** Correct.

11 **Q.** And if you didn't have to use DREs, all of that labor and
12 those costs would be freed up for you to use on other things;
13 yes?

14 **A.** Yeah. It depends on what system we have. Yes.

15 **Q.** And, secondly, you talked a lot about the physical
16 security that you used, the processes you used to keep the DREs
17 secure.

18 You would admit that no physical security system is
19 perfect; yes?

20 **A.** Correct.

21 **Q.** But your folks would do just as good a job of securing
22 paper ballots as they would have of securing DREs; yes?

23 **A.** Yes.

24 MR. MCGUIRE: No further questions.

25 REDIRECT EXAMINATION

1 BY MS. BURWELL:

2 Q. Mr. Barron, do you have money in your budget to cover the
3 cost of paper ballots, ballot boxes?

4 MR. CROSS: Your Honor, this is beyond the scope. We
5 really need to move on. None of us asked any questions about
6 this. She doesn't get to do another direct.

7 MS. BURWELL: He brought up the issue of money. That
8 is why I'm asking him about that.

9 THE COURT: I think that -- I think that -- I'm going
10 to -- I think the parties will probably agree that everyone's
11 budgets are set. But I have already asked what happens as it
12 is if you got a -- if you ended up with independently 15,000
13 more people voting by absentee ballot, somebody would have to
14 get those ballots out regardless if it was in the budget. You
15 can't prevent people from voting.

16 MS. BURWELL: Right. But there is a difference
17 between 15,000 additional votes and 700 --

18 THE COURT: I think the parties -- the plaintiffs
19 ought to be able to stipulate, frankly, that the budgets were
20 set before.

21 MR. BROWN: That is correct, Your Honor.

22 THE COURT: And they did not make an allocation for
23 this; is that right?

24 MR. BROWN: We have no contrary evidence, Your Honor.

25 THE COURT: All right. Fine.

1 MR. BARNES: And the State of Georgia has not. We
2 are required at appropriation from the General Assembly.

3 MR. BROWN: If a hurricane hit and prevented the DREs
4 from being used, Georgia law would provide the paper ballots
5 and the State of Georgia would pay every dime for those.

6 MR. BARNES: That -- you --

7 THE COURT: All right.

8 MR. BARNES: Could or would.

9 THE COURT: I'm going to -- wait a second. This
10 witness is not going to resolve that. You inserted that. And
11 I understand why you did. But the fact is they agreed as to
12 Fulton County. And so that is what the question was.

13 So does that take care of the rest of your follow-up?

14 MS. BURWELL: Just one other.

15 **Q. (BY MS. BURWELL)** You had talked about the modem results.
16 Those results were temporary; correct?

17 **A.** Yes.

18 **Q.** Ultimately you still have to rely on the actual memory
19 cards?

20 **A.** Correct.

21 MS. BURWELL: Thank you. Nothing further.

22 THE COURT: May this witness step down?

23 MR. SALTER: No objection, Judge.

24 Your Honor, with your permission, we will try to get
25 in former Secretary of State Cathy Cox.

1 THE COURT: I want to say, just so it doesn't get
2 lost, I'm admitting all of the documents. Some of them
3 you-all -- about Exhibit 7, it still looks like it is an
4 official document. If you think it is not -- so I'm going to
5 say all exhibits because I can always give no weight to an
6 exhibit or later on determine it is of no value.

7 As to Plaintiffs' Exhibit 7, you have been in the
8 hearing all day. Please email Ms. McConochie or put -- I tell
9 you what. File a notice in the morning by 11:00 whether you
10 are admitting that it is, in fact, what it purports -- what it
11 seems to be, which is a publication of the Secretary of State's
12 office, Brian Kemp, as a legislative update critical
13 infrastructure and DHS hacking attempts. I can't tell the
14 exact date. But it appears to be -- have been given to the --
15 as a legislative update in 2007. And I would think you would
16 be able to determine that. If it is not real, then tell me
17 that.

18 MR. BARNES: I think the objection is this was a
19 presentation made to the committee, a legislative body.

20 THE COURT: I understand by the Secretary of State's
21 office.

22 MR. BARNES: No. No. No. The Secretary of State's
23 office didn't make it. Oh, they did. I'm sorry. They did.

24 THE COURT: It says Georgia Secretary of State.

25 MR. SALTER: I think you are thinking of the other

1 presentation.

2 THE COURT: It has the Secretary of State's office
3 seal. I would understand otherwise. So I would just -- you
4 know, it may be worth nothing. But I'm just trying to move
5 through there. All right.

6 MR. SALTER: Understood, Judge. We'll move along.
7 Thank you.

8 (Witness sworn)

9 COURTROOM DEPUTY CLERK: Thank you. Please be
10 seated. Please pull up close to the microphone, and you can
11 adjust it if you need to.

12 I'm going to ask you to state your first and last
13 name again for the record, and then spell those names for the
14 record.

15 THE WITNESS: My name is Cathy Cox. C-A-T-H-Y C-O-X.

16 Whereupon,

17 CATHY COX,

18 after having been first duly sworn, testified as follows:

19 DIRECT EXAMINATION

20 BY MR. SALTER:

21 Q. I think most people know you, Ms. Cox. But can you
22 explain -- can you describe -- kind of give the Court a
23 thumbnail sketch of your education and career.

24 That is broad I know. I'm just trying to move fast.

25 A. I grew up in Bainbridge, Georgia. I attended and

1 graduated from Abraham Baldwin Agricultural College, University
2 of Georgia, and Mercer Law School.

3 I was elected to the Georgia House of Representatives in
4 1992, elected Secretary of State in 1998, reelected in 2002. I
5 serve currently as the dean of Mercer University School of Law.

6 **Q.** And were you a Secretary of State elected to the State of
7 Georgia?

8 **A.** Yes. Twice.

9 **Q.** And what responsibility did you have in the capacity --
10 well, give me your terms of service as Secretary of State for
11 the State of Georgia.

12 **A.** First elected in 1998 and reelected in 2002. So 1998 to
13 2006.

14 **MR. SALTER:** And this is -- we're not going to use
15 this exhibit up on the wall. We're not going to put this into
16 evidence, Judge.

17 **Q. (BY MR. SALTER)** But can you -- I don't know if you can
18 read that, Ms. Cox. But if you want to step down, feel free
19 to. But one of the things I wanted just for you to explain to
20 the Court was kind of how you -- did you have a role in
21 designing the current election system that we are using with
22 DREs back in 2000, 2001?

23 **A.** Yes, I did.

24 **Q.** What was that role?

25 **A.** Well, it started after the 2000 presidential election when

1 the country was really focused on Florida. And the recounts
2 started in that presidential election, and it was clear that
3 Florida had a real mess on their hands.

4 And so we undertook a study to determine whether we had
5 had similar problems. And as we jumped into that, we found
6 that we had a lot of problems. So we instituted a more formal
7 study of exactly what happened in Georgia in the 2000 election
8 and made that report then to the Governor and the legislature
9 determining that Georgia had actually lost more votes
10 proportionally than Florida had in the 2000 election, which was
11 really stunning to us.

12 But the number that we lost would not have changed the
13 outcome of the vote in Georgia. So the media really was not
14 paying much attention to the error rate in Georgia as they were
15 in Florida where the results were much closer. But to us it
16 was really horrifying to know that we had lost almost 94,000
17 votes in that 2000 election.

18 So as Secretary of State --

19 THE COURT: When you say by lost, you had no record
20 of them?

21 THE WITNESS: We could tell that people voted, but
22 there was no vote registered in the presidential election,
23 which is highly unusual because that is why you have a higher
24 turnout in every presidential election because almost everybody
25 has an opinion on the presidential race. They may not vote for

1 any other race. But they are going to cast a vote and have an
2 opinion on the presidential race.

3 So to know that close to 100,000 people went to the
4 polls, cast a vote, but no vote registered was a major problem.
5 We had four different types of election equipment at the time.
6 So we began in earnest a real study of what had happened and
7 what we might be able to do about it.

8 **Q. (BY MR. SALTER)** When we talk about lost votes, can you
9 tell the Court -- can you define an undervote for the Court's
10 benefit?

11 **A.** Well, in a generic sense, an undervote means that someone
12 cast a ballot but their choice did not register. It could not
13 register at the time in 2000 because we had four different
14 types of ballots being used in Georgia. It could mean that on
15 a paper ballot -- we actually had two counties that were using
16 the old bed sheet size paper ballots in 2000 -- that they maybe
17 double-marked a race or it appeared that they marked two
18 candidates. So, technically, that might be called an overvote.
19 But in the generic sense of our report, it would mean that vote
20 didn't -- was voided. So there was no vote cast in that
21 particular race.

22 On an optical scan ballot at the time, there were two
23 different types of optical scan systems. There was one where
24 you filled in a bubble. There was another type that had an
25 arrow out beside a name. And the voter literally had to draw a

1 line to connect the ends of an arrow, which was a very unusual
2 system.

3 And if they mismarked it -- sometimes they would put an X
4 in the bubble instead of filling it in, and the scanner might
5 not read it. We saw ballots where people would circle the
6 candidate's name and not fill in the bubble. For whatever
7 reason, a host of different types of reasons, a choice would
8 not register.

9 So depending on the type of equipment, the bottom line is
10 their choice would not register.

11 **Q.** Several of the different systems that Georgia was using at
12 the time could be made to show undervotes that were essentially
13 lost votes; is that fair?

14 **A.** That is right. Of course, we had the hanging chads on
15 punch card machines in a lot of larger counties.

16 **Q.** I was going to -- describe for the Court the different
17 systems that the -- the report --

18 THE COURT: Is that really worthwhile at this point?
19 So we don't have -- I mean, no one is here challenging the fact
20 at this point that there was a decision made to change the
21 voting system in 2001. We are just sort of back up at this
22 point in time.

23 MR. SALTER: The point, Your Honor --

24 THE COURT: And I think you did provide a good
25 summary of the history of --

1 MR. SALTER: I just want to make sure that -- you
2 know, sometimes the Eleventh Circuit doesn't take my word for
3 it. You know, the opinion of counsel is not evidence. So I
4 want to make sure that it is in the record.

5 THE COURT: All right. Go ahead.

6 **Q. (BY MR. SALTER)** Can you describe the four different
7 systems that -- in the last election before DREs, the 2000
8 election, there were four different systems in place. Can you
9 describe those for the record?

10 **A.** There were two counties that were still using the literal
11 paper ballots that were large -- we called them bed sheet size
12 ballots. There were a number of counties that were still
13 using -- I think numerically more counties were using the
14 refrigerator-sized lever machines than any other type of
15 equipment.

16 Some of the larger counties were using the punch card
17 ballot. Then a number of counties had moved to the optical
18 scan -- one of the two types of optical scans.

19 So four different types.

20 **Q.** What kind of -- the idea being -- did Georgia have
21 experience -- before DRE machines were instituted and we had
22 this system designed around them in 2002, do we have a uniform
23 body of rulemaking that we can refer to immediately for use in
24 the November 6th, 2018, election?

25 **A.** Before 2000 -- before we passed the laws in 2001, it was

1 every county unto themselves. So it was -- that is why it was
2 a real hodgepodge. Every county could choose their own
3 equipment.

4 And procedures were -- there were some procedures spelled
5 out in the code, but it was really up to the counties to sort
6 of administer elections.

7 **Q.** I want to read to you just Page 10 of that. Let me ask.
8 You issued two reports. What were the names of the public
9 reports?

10 **A.** The first report was based on the study we did after the
11 2000 election, which was called a Wake-up Call or something.
12 I'm not sure I remember the full title. But the second report
13 after we put in to place a 21st Century Voting Commission was a
14 report of that commission.

15 **Q.** Who was on that commission?

16 MR. CROSS: Your Honor, I just want to put an
17 objection on the record, and hopefully we can move on. But
18 we're talking about circumstances 20 years ago.

19 MR. SALTER: That is right.

20 MR. CROSS: That is --

21 MR. SALTER: The point is in terms of the relevancy
22 issue, David?

23 MR. CROSS: It is not relevant.

24 MR. SALTER: Thank you. May I respond to the
25 relevancy objection, Your Honor?

1 THE COURT: Yes.

2 MR. SALTER: We don't have anything to go back to.
3 That is the whole point. We don't have a uniform system to go
4 back to if you take this away. We never rulemade for the
5 counties. If you take this system away, we don't have anything
6 to go back to.

7 Their whole idea is the representation --

8 MR. BROWN: Your Honor --

9 MR. SALTER: May I finish?

10 The representation in the plaintiffs' motions is we
11 already have the framework. The point is you take this away
12 and we don't. That is the whole point.

13 MR. BROWN: Your Honor, it is not our representation.
14 I was reading from Mr. Harvey's letter to all the counties that
15 said we do have it and if there is an emergency or if it is
16 unsafe everybody will use paper ballots. It wasn't -- it is
17 not our position. It is our quoting their directions to the
18 counties.

19 MR. SALTER: Presumably --

20 MR. CROSS: The only point -- if I can also respond
21 too. I agree with everything that Mr. Brown said, and I will
22 just say this. The position that the state boils down to today
23 is that if there were a power outage on election day, hurricane
24 or what have you, that they could not run an election. That
25 is, with all due respect, a ridiculous position to take.

1 As Mr. Brown points out and I believe this witness
2 will testify, the intended alternative was paper ballots. So
3 to say that there is no framework is just an absolute mistake
4 of the law. This is not relevant to talk about how paper
5 ballots were dealt with 20 years ago.

6 MR. SALTER: May I proceed, Your Honor?

7 THE COURT: You can. But I think you need to curtail
8 this some because I think -- I don't think that there is a
9 great deal of -- going to be a great deal of dispute about
10 this. And I think all of this could have been provided in a
11 response. And if you want to provide it by affidavit, I would
12 be willing to do that.

13 MR. SALTER: This is expounding on something that is
14 in a declaration generally. It is in Chris Harvey's
15 declaration. I wanted to point out just the history in terms
16 of whether or not we could go back to something.

17 THE COURT: Move through so we can --

18 MR. SALTER: I think I've made that point. We'll
19 move on to a different subject.

20 **Q. (BY MR. SALTER)** Madam Secretary, Ms. Cox, one of the
21 things was in the 21st Century -- I want to read this to you
22 and ask you about it. The Secretary of State's office
23 undertakes a more detailed analysis of undervote data, which I
24 think is the lost votes you were just speaking to, focusing on
25 differences that occur from precinct to precinct within the

1 same county using the same equipment. The study finds that
2 while undervoting is almost always more common in predominantly
3 African-American precincts, the gap between black and white
4 undervoting rates is actually highest not in punch card
5 counties but in counties using optical scanning equipment.

6 Can you talk about what y'all drew from that in terms of
7 the recommendations that were made to the General Assembly in
8 2001?

9 **A.** This was very surprising data to us to find -- Number 1,
10 to find because optical scanning equipment in 2001 and '2 was
11 the newest type of equipment being used. So there was a
12 presumption that it is newer, it must be better.

13 But when we found from the study in 2000 that some of the
14 highest error rates in individual counties actually came from
15 optical scan votes, then we dug deeper to say what is really
16 going on here. And then we would look precinct by precinct
17 within some counties.

18 For example, statewide the 94,000 votes that we couldn't
19 account for, that represented three and a half percent of our
20 total vote. But we found error rates in individual counties
21 using optical scan that were many -- 21 counties that were over
22 5, many that were over 9 and 10. Some as high as 15 percent of
23 their votes that wouldn't register on optical scan equipment.

24 And then when we broke it down precinct by precinct, we
25 found significant -- significantly higher rates between

1 majority minority precincts and majority white precincts on
2 optical scan equipment.

3 So there was a clear difference either in age or
4 educational levels. We didn't have the psychological
5 statistical means to dig much further into what the exact cause
6 was beyond that glaring difference. But that undervote gap was
7 largest among optical scan equipment over any of the other
8 types of --

9 THE COURT: Optical scan of ballots?

10 THE WITNESS: Of ballots. Of any of the other types
11 of equipment then in use in 2000. So some great racial or age
12 or educational experience difference in that type of equipment
13 over any of the others that were being used.

14 THE COURT: Did you control for any other factors?

15 THE WITNESS: We just looked at the data and the
16 outcomes.

17 **Q. (BY MR. SALTER)** Ms. Cox, plaintiffs argue that the system
18 we have now with the DREs is not auditable. How would you
19 respond to that?

20 **A.** Well, it depends on how you define an audit. If you had a
21 pure audit, I would assume you would violate the secret ballot
22 that is required by Georgia's Constitution. Because you would
23 need to track a ballot back to every individual and make sure
24 their vote was tracked and counted, which would be
25 unconstitutional.

1 But there are so many checks and balances in the system
2 from the paper certificate that a voter fills out in the
3 polling place that has to balance out at the end of the day
4 with the number of votes cast to the numbered list of voters
5 when voters check in and you know the number of people that
6 check in at any given precinct. All of those things have to
7 add up at the end of the day with the tapes that run off of
8 individual machines and that are posted in every polling place.
9 So there is an audit process --

10 THE COURT: That is just the total volume of the
11 votes?

12 THE WITNESS: Right.

13 THE COURT: That doesn't really go to though the
14 actual -- the sorts of issues, in fact, you in some ways might
15 have gotten with the 94,000, that maybe some votes were
16 erroneously captured or improperly moved to one category
17 versus --

18 THE WITNESS: No, it could not tell a vote that
19 moved. But --

20 THE COURT: You couldn't then.

21 THE WITNESS: But the numbers all have to add up at
22 the end of the night in terms of how many votes are cast within
23 an individual precinct. And that kind of balancing act is done
24 at every election.

25 **Q. (BY MR. SALTER)** There is a -- in the law, there is

1 this -- there is -- the certification by the Secretary of State
2 was crafted into this -- the kind of statutory design in terms
3 of DRE machines; correct? And there is a certification that
4 they are safe and secure; right?

5 **A.** Yes. That is correct.

6 **Q.** There is also this language that was argued today about
7 impractical in terms of voting machines. Do these two concepts
8 relate in terms of how the DRE machine election system works?
9 The impractical standard and the safe and secure certification?

10 **A.** The safe and secure certification I think is Code Section
11 418 maybe -- 21-2-418, something like that, where anybody can
12 ask the Secretary of State before an election to say they have
13 some doubts about the election. And the Secretary of State is
14 then -- if ten or more electors request, the Secretary of State
15 has to go back and recertify that the equipment is safe and
16 does accurately record votes, which I believe was done earlier
17 this year based on that kind of request.

18 There is a code section -- I think it is 21-2-334 which
19 has the language about if the use of a voting machine is
20 impractical -- this is what is in my view being misunderstood
21 because voting machine as used in the Georgia election code is
22 a term of art that is defined in 21-2-2 as a refrigerator-sized
23 lever machine. So voting machine is a lever machine.

24 **Q.** That is not just a term of art that is undefined? It is
25 defined in the code?

1 **A.** It is defined in 21-2-2. What you see before you is not
2 called a voting machine in the election code. That is called a
3 direct recording electronic device. So that code section that
4 uses the language that if a voting machine becomes
5 impracticable to use then you can go to paper ballots doesn't
6 even talk to this. That code section was adopted in 1964 when
7 lever machines were put in place. It was tweaked in 1998 in a
8 small way --

9 **Q.** Which is before all this happened?

10 **A.** Before any of this happened. It hasn't even been touched.
11 So that code section doesn't even apply to DRE machines. Now,
12 there is a code section in 4 --

13 THE COURT: You know, I think that Ms. Cox is a
14 spectacular lawyer. But I mean, I'm not sure that this is
15 proper testimony for her as -- I mean, she is testifying about
16 her experience as Secretary of State. And I respect her
17 judgment and her thoughtfulness and always have.

18 But I'm not sure it is proper for her to be basically
19 trying to educate me about -- though I appreciate it -- her
20 view of the law.

21 MR. SALTER: We are calling it to your attention.
22 The Court is obviously going to be the ultimate decider of the
23 law. I think Rule 703 allows us to explain this in terms of
24 the architecture of the system and the way it is designed. But
25 ultimately, of course, the Court is always the ultimate decider

1 of law. We don't dispute that, Judge.

2 I'll move on.

3 THE WITNESS: One thing if I could clarify my answer.
4 The one difference is there is one other code section that does
5 apply to DREs that says if a machine -- if a DRE malfunctions
6 then you could use a provisional ballot for that particular
7 machine.

8 It doesn't contemplate a statewide replacement of a
9 voting system. It is just if something happened to that
10 machine or in that polling place, like electricity went out in
11 a thunderstorm, they could use provisional ballots for that
12 next hour.

13 **Q. (BY MR. SALTER)** Let's turn to the idea of an immediate
14 conversion to a paper ballot election -- a primarily almost
15 exclusive paper ballot election for November the 6th.

16 The plaintiffs' argument is that paper ballots have more
17 integrity, that they're safer. Can you -- based off of -- you
18 are the last Secretary of State who was around when there was a
19 primarily paper ballot election or at least a lot bigger than
20 the ten percent we are currently using.

21 What were some of the chain of custody and security
22 challenges that you witnessed as Secretary of State back then
23 with paper ballots?

24 **A.** Well, the fraud opportunity with paper ballots is truly
25 limited only by one's imagination. And even in the years that

1 I was Secretary of State, we had issues with ballot boxes that
2 would disappear from locked vaults in a probate judge's office
3 overnight after election night before a recount could happen.

4 When you had ballots counted, papers would go missing.
5 You had suspicion about people who would have a piece of lead
6 literally in between their fingers and count -- you know, move
7 a piece of paper so they could add a mark to it and make it
8 look like it was a double vote and therefore not count. There
9 are just any number of security issues that can go wrong in
10 handling ballots.

11 But then there is just plain 'ol problems. We had a
12 county one time using optical scan that the humidity was high
13 and the paper absorbed so much humidity that the scanners kept
14 jamming. They called us. We had to suggest that they go home
15 and get hair dryers and lay out the ballots and literally dry
16 out the ballots so that they could scan any of the ballots.

17 We had one county just east of Atlanta where an entire
18 election nothing would scan because they had -- the county had
19 given out the wrong pen or pencil. And it would not register
20 in the scanner. So they had to get these teams to replicate
21 every single ballot to run it again in the machine because the
22 marker would not show up.

23 **Q.** Did they literally color the ballots in for the voters?

24 **A.** You have to do that under the watchful eye of the team who
25 makes sure that it is transferred correctly to another ballot.

1 But then you get into interpreting what the voter intended, and
2 all of those issues arise.

3 So there are common daily problems with handling paper and
4 unlimited opportunities for fraud.

5 **Q.** In terms of the way the DRE system was designed, how did
6 you take into account the risk that is presented by the fact
7 that software can be changed if someone has access to it? How
8 did y'all address that in the design of this system?

9 **A.** Well, I think we all would agree that any piece of
10 machinery that we bring in to an election place is not secure
11 in and of itself. You have to build a system of security
12 around it.

13 And that is where the State Election Board rules come into
14 place. And over the years from 2002 and until I left office at
15 the end of 2006, almost probably every time we had a State
16 Election Board meeting some issue would come out of a county
17 that looked like it might be problematic. And we would either
18 add a rule or tweak a rule about how these machines are used
19 and secured.

20 And that is why the physical security is so important to
21 the overall security. Because nobody thinks any piece of
22 equipment by itself is safe and secure. It is how you use it,
23 how you store it, and this whole process of logic and accuracy
24 testing. That is the whole protocol.

25 The analogy, Your Honor, that I would use is if you let me

1 take a slot machine home from Las Vegas I could find a way to
2 tweak it until it started giving me quarters. But the reality
3 is you use it under heavy duty security just like we do so that
4 those kinds of forms of mischief can't really happen. That is
5 why the physical security is absolutely essential to the
6 overall security of the system.

7 It is not that there is anything magical about that system
8 or that we thought that system would be it forever. It is the
9 whole process in which they are used and tested and secured.

10 **Q.** That is why you have things like air-gapped servers? That
11 is why you put those under lock and key? And was that all
12 envisioned from the beginning in 2002?

13 **A.** Absolutely.

14 **Q.** Is the idea of a malicious hacker -- whether they are
15 Russian or anything else like that, how -- how was that
16 considered by the 21st Century Voting Commission back in 2001
17 when they made the report?

18 **A.** Well, that was the heart of why we set up an independent
19 group like the group at Kennesaw State where they had some
20 staff initially that had the computer expertise because we
21 wanted to make sure that you don't just order equipment online
22 and have it delivered out to a county.

23 That acceptance testing that was mentioned here today is a
24 critical thing to make sure what comes off a shelf -- even if
25 we move to optical scanning, you just don't bring it from

1 Walmart and put it in a polling place. You have to make sure
2 that the software is absolutely working the way every other
3 piece of software in the state is working. So you go through
4 all of those levels.

5 THE COURT: But then why would we then -- why would
6 the state be using Windows software, for instance, that is out
7 of date that there are no patches for? This is such a concern.
8 I'm just -- and I know that you are not currently in this
9 position.

10 But I guess the question is: You are talking about
11 the very good work that you-all did -- thoughtful work that you
12 did and clearly there were real reasons for.

13 But would it be fair to say that you would anticipate
14 that there would be constant need for change in the environment
15 that we work in --

16 THE WITNESS: Absolutely.

17 THE COURT: -- and live in?

18 THE WITNESS: Absolutely. In the 21st Century Voting
19 Commission report, we recommended from the start that if we
20 move to DRE that it have some kind of a paper trail. But when
21 we got actual bids for the equipment in 2001, it wasn't
22 available.

23 But none of us contemplated that this would be the
24 end of the process but that it would -- that Kennesaw to some
25 extent could help us stay on top of things. But I don't know

1 that we realized this equipment probably could not be updated
2 as much as we would have anticipated.

3 We probably didn't anticipate obviously a recession
4 would come about and there wouldn't be money to provide new
5 equipment over time. But --

6 **Q. (BY MR. SALTER)** From beginning to end, how long did the
7 process take for you to feel like you made -- were making a
8 responsible decision that was communicated to the public,
9 communicated to the counties to make this kind of a drastic
10 change in the voting system in 2001 and '2?

11 **A.** We did it faster than anyone in the nation ever had done
12 it or ever thought it could be done. But it was all hands on
13 deck from the time that this report came out. And we went to
14 the Governor and the legislature in 2001 and passed this scheme
15 of the new law in 2001.

16 And so from 2001 to November of 2002, there is nothing
17 else my office focused on but changing out the election system
18 and doing massive amounts of voter education all over the
19 state.

20 The state gave us well over a million dollars, as I
21 recall, to do voter education and training. Wherever two or
22 more were gathered, I was there with a voting machine to train
23 people on these pieces of equipment. We hired massive staff to
24 do voter education and poll worker training and county election
25 training to get voters very comfortable with a new system of

1 voting.

2 We did a pilot project in 13 different cities so that we
3 could get further feedback on how it could work and what you
4 would have to do to acclimate voters to a new system. So it is
5 a system that -- anytime you make a change in voting, the last
6 thing you want to do is throw something in front of voters that
7 they are not comfortable with because it could either stifle
8 people from turning out to start with because they don't want
9 to show up and look like they don't know what is going on in a
10 polling place or get there and make a mistake that cancels
11 their vote.

12 **Q.** Would it be easy to make these -- strike that. Forget
13 easy. Would it be responsible in your position as a former
14 Secretary of State who has made the change -- a significant
15 change in the voting system statewide -- would it be
16 responsible in your personal opinion to make an immediate
17 conversion to a primarily paper ballot election for November
18 the 6th, 2018?

19 THE COURT: Is there an objection?

20 MR. CROSS: Yes, Your Honor.

21 THE COURT: What is the objection?

22 MR. CROSS: Relevance. Speculation. Foundation.

23 THE COURT: Well, I think that Ms. Cox has
24 significant experience, and she is opining based on her
25 experience and the question of equitable -- what is proper

1 equitable relief and -- I don't doubt that the public interest
2 is great in terms of having integrity in voting. But the
3 question is really is an injunction at this point warranted.
4 And I think the testimony is relevant.

5 MR. SALTER: Thank you, ma'am.

6 **Q.** (BY MR. SALTER) Do you remember the question, Ms. Cox?

7 **A.** I don't know any conceivable way you could change
8 Georgia's election system to any other system in the span of a
9 matter of weeks because that is what we're talking about is
10 weeks. Early voting starts in a matter of weeks.

11 And to train poll workers and county officials, to educate
12 voters on something new -- and especially an optical scan
13 system where we know how high the error rates were the last
14 time we used it -- I think would be chaotic beyond belief and a
15 setup for massive amounts of voter error, which is really not
16 where anybody in the election world would want to go.

17 MR. SALTER: Thank you, ma'am. Your witness.

18 MR. CROSS: Your Honor, permission to approach with
19 just a couple of documents we have been referencing.

20 CROSS-EXAMINATION

21 BY MR. CROSS:

22 **Q.** Good afternoon, Ms. Cox.

23 Secretary Cox, just to be clear, you haven't worked -- you
24 haven't been involved in the election system in this state
25 other than as a voter since 2007; right?

1 **A.** I have had a lot of contact with the staff and the
2 election office over the years. But I have not directly
3 supervised it, no.

4 **Q.** So you haven't managed it? You haven't conducted any
5 analysis of the current systems, anything like that; right?

6 **A.** That is correct.

7 **Q.** And you don't have any background in computer science,
8 information technology, cybersecurity?

9 **A.** I do not directly. But I spent a couple years of my life
10 studying this particular system.

11 **Q.** And that stopped as of 2007 as the Secretary of State?

12 **A.** That is correct.

13 **Q.** You agree that the current system does need to be
14 replaced? Your issue is timing; is that fair?

15 **A.** I don't know exactly what is in the marketplace now. But
16 even when we purchased it, we contemplated that at some point
17 there would be better technology. And we had hoped even then
18 there would be some mechanism with a paper trail that was not
19 available at that time.

20 **Q.** Right. So even back in 2001, 2002 when you adopted this
21 system, you had recommended -- you preferred a paper trail
22 because you understood the value of that; right?

23 **A.** We preferred an electronic system that also had a paper
24 backup. Not to stick with paper because of the inherent
25 problems with paper.

1 Q. Even though what you just described, an electronic voting
2 system that has a paper trail, has been available for many,
3 many years, we all understood Georgia has never switched --

4 A. I have heard that. But I don't know that to be true in my
5 discussions with some of the representatives of voting
6 companies.

7 Q. You are not aware that other states like California had
8 electronic voting machines that have paper records?

9 A. I'm not personally aware of that.

10 Q. You talked a little bit about the statute. When you
11 adopted this system in 2002, your office actually had the great
12 foresight to recognize that at some point these machines might
13 not be usable for any variety of reasons; right? Due to power
14 outage? They become impracticable, as the language in the
15 statute? And the good foresight that you had was in those
16 circumstances use paper ballots; right?

17 A. Well, that was a little of the discussion we just had.
18 The code section that uses the word impracticable does not
19 apply to DRE machines. There is another code section that says
20 if a DRE machine -- I think it is under the provisional voting
21 section -- that if a DRE machine malfunctions that you can use
22 provisional ballots for that -- for the duration of that
23 malfunction. But it doesn't contemplate throwing out an entire
24 system.

25 Q. Section 21-2-281 --

1 **A.** What was the last?

2 **Q.** 281. We can pull it up if it helps Your Honor -- I'm
3 sorry -- if it helps you, Ms. Cox. It states --

4 MR. CROSS: Would you like a copy. We have --

5 MR. BARNES: We have got it. We have got the book.

6 MR. SALTER: Paper copy.

7 MR. ICHTER: More reliable.

8 MR. SALTER: So you say, my friend.

9 **Q.** **(BY MR. CROSS)** Do you have that in front of you? 281?

10 **A.** Yes.

11 **Q.** So 281 states, in any primary or election in which the use
12 of voting equipment -- not machine -- voting equipment is
13 impossible or impracticable for the reasons set out in Code
14 Section 21-2-334 the primary or election may be conducted by
15 paper ballot in the manner provided by 334; right?

16 **A.** Right.

17 **Q.** Okay. That doesn't say voting machine, does it, ma'am?

18 **A.** No. That is correct.

19 **Q.** And in the section you were talking about, Section 418 --
20 you are welcome to turn to it if that helps. It is
21 Subsection (h) of 418, it talks about voting machines and DRE
22 units and indicates paper ballots can be used if some other
23 emergency situation exists which prevents the use of that
24 equipment to cast votes; right?

25 **A.** That is correct, 418(h).

1 Q. Yes, ma'am. Thank you.

2 Just to be clear, you are not suggesting in any way that
3 if DREs were to become unusable on election day for any variety
4 of reasons, inoperable, hurricane, whatever happens, power
5 outage -- you are not suggesting that the counties would have
6 no authority under the law to use paper ballots at those polls;
7 right?

8 A. I think that is the fail-safe mechanism that is there
9 if -- and I think we have frequently had power outages and
10 things like that for short periods of time on election day.
11 None of the polls would -- you know, under current law would
12 not have a supply of ample provisional ballots on hand to
13 accommodate that. But it has never been contemplated that it
14 would last for the duration of the day.

15 Q. Right. But the fail-safe available under the law is paper
16 ballots? We're agreed on that; right?

17 A. Yes, sir.

18 Q. When you were Secretary of State -- and Mr. Salter talked
19 to you quite a bit about your role then -- if you had gotten an
20 order from a court requiring you at this point in time to
21 proceed with paper ballots instead of the DREs, you're not
22 suggesting you wouldn't have complied with that order; right?

23 A. Certainly I would do everything within human power to
24 comply with an order. But it would be very problematic.

25 Q. Difficult, but you would certainly expect that you and the

1 good workers -- the poll workers would have been -- would have
2 complied with the court order requiring that; right?

3 **A.** To the extent you can. I mean, I think -- I don't know
4 that paper supplies would be available. Ballots are not
5 printed on just ordinary paper. They require a special kind of
6 paper. I mentioned the issue with paper that absorbed
7 humidity. There are a lot of other factors that go into
8 whether we could just snap our fingers and comply.

9 **Q.** And one of the things that you pointed out is that when
10 you moved to the DREs you actually did that faster than anyone
11 thought was possible and it was a massive undertaking? I think
12 you said you hired a massive number of people? A rather
13 Herculean effort went in to get that done in time for the
14 election in 2002; right? Yes?

15 **A.** That is correct, yes.

16 **Q.** In fact, the decision was made and the implementation of
17 that didn't actually start until May of 2002; right? Do you
18 recall that?

19 **A.** No. I believe it was earlier than that.

20 **Q.** You think it was earlier?

21 **A.** Yes. But I -- the time frame may not be correct.

22 **Q.** It has been a while. It has been a while.

23 **A.** I don't remember when we got the federal funding. That
24 would have been the real key of when we set things in motion as
25 to know that we could proceed.

1 Q. You believe that a cyber intrusion into Georgia's election
2 system is unlikely so long as voting machines itself are not
3 connected to the internet; is that right?

4 A. That is my general impression, yes.

5 Q. You believe that the only way the Georgia election system
6 could be hacked is if a hacker would have to go machine by
7 machine in a polling place while poll workers are sitting there
8 watching them? That is your understanding; is that right?

9 A. Not completely. I mean, I think there are other
10 mechanisms. But I think one of the good security features of
11 our system is that it is not connected to the internet. And
12 the individual machines are not connected to each other.

13 So I think there are some types of DREs out there that are
14 connected to the internet that are connected to each other.
15 And some kind of intrusion could be done a lot easier than it
16 could happen in Georgia.

17 Q. But your comfort level -- I just want to be clear. The
18 comfort you have with the existing system, that is because you
19 believe, as you just describe, because the individual machines
20 aren't connected to the internet they can't be hacked; right?

21 A. I would never say they can't be hacked. But, for example,
22 the demonstration this morning, I think, ignores the physical
23 security protocols that we have in place that would require
24 somebody -- somebody to violate some of those provisions that
25 we have in place to get access into the -- to an individual

1 machine or to the GEMS server to set that kind of mischief into
2 motion.

3 **Q.** One of the things that you point out challenges the paper
4 ballots -- you have given instances, for example, where paper
5 ballots disappeared from locked vaults; right?

6 **A.** That is right.

7 **Q.** Another one is where ballot boxes disappeared from secure
8 facilities; right?

9 **A.** That is right.

10 **Q.** So even with paper ballots, individuals have been able to
11 circumvent the locked facilities that you have talked about by
12 one of the measures that you say protect the DREs; right?

13 **A.** Well, that was before the Secretary of State set out
14 requirements for how equipment had to be stored. That was back
15 prior to 2002 when counties got to do their own sort of thing
16 and they tried to lock them up. But somebody found ways that
17 had an agenda to steal votes.

18 **Q.** Okay. So then the concerns you just talked about about
19 stealing paper ballots -- we don't have to actually worry about
20 those any more because you just described there are new
21 measures in place now that would prevent that; right?

22 **A.** There are certainly enhanced measures in place.

23 **Q.** And to the extent that someone would circumvent those
24 measures as to paper ballots, there's no reason to think they
25 couldn't circumvent the same measures with respect to DREs?

1 Both are locked up?

2 **A.** Well, we're talking apples and oranges here. I was
3 telling you what did actually happen. And Georgia has a
4 100-plus year history of voter fraud with paper ballots that we
5 can spend the rest of the day talking about.

6 But that was not a comparison to the security measures
7 that we now require by law and by rule and regulation for
8 voting equipment today.

9 **Q.** You mentioned before that one of the reasons that led to
10 the change in the system in 2000 was you went back and looked
11 and found around 90,000 votes that year that were undervoted,
12 meaning 90,000 votes that were no vote for president? Does
13 that sound about right?

14 **A.** Not quite the number. But yes, that is the process.

15 **Q.** Between 90- and 100,000?

16 **A.** Yes.

17 **Q.** But you didn't redo that election; right?

18 **A.** No. That was -- the election was already over. Florida's
19 recount was in process, and we wanted to know how bad was it on
20 our watch.

21 **Q.** So to be clear --

22 **A.** There was no process for redoing an election.

23 **Q.** Right. There is no process for redoing an election. That
24 is correct, isn't it, ma'am?

25 **A.** That is right.

1 **Q.** And the 90 -- let's just call it 95,000. I think it may
2 be 96,000 votes you found at the time -- that didn't give you
3 enough concern to think we have got to throw out the election
4 results?

5 **A.** You can't -- you can't throw out election results. It
6 caused us to say -- caused me to say as Secretary of State --
7 and that is why I was so focused on getting this done before
8 2002 -- I do not want to go through another election cycle
9 knowing how inaccurate our current systems of voting are.

10 So that is why I was absolutely determined that we were
11 going to find a better way to do this before the next major
12 election in Georgia.

13 MR. CROSS: No further questions. Thank you very
14 much.

15 CROSS-EXAMINATION

16 BY MR. MCGUIRE:

17 **Q.** Good afternoon, Secretary.

18 **A.** Good afternoon.

19 **Q.** You mentioned -- my name is Robert McGuire. I represent
20 the other set of plaintiffs, the Coalition plaintiffs.

21 You mentioned the report of the 21st Century Voting
22 Commission, and I would like to hand you a document.

23 MR. MCGUIRE: If I may approach the bench -- approach
24 the witness.

25 THE COURT: Yes. What is the exhibit number?

1 MR. McGUIRE: Are we on 10, David?

2 MR. CROSS: I'm sorry?

3 MR. McGUIRE: Are we on 10?

4 MR. CROSS: Yes.

5 THE COURT: What was 9? I thought we were on 9 now.
6 Was there an Exhibit 9 offered? Because we were at 1 through 8
7 for plaintiff.

8 MR. CROSS: We were going to mark Mr. Barron's email
9 as Number 9, the one that was on the screen.

10 MR. SALTER: We object to that just based on --

11 THE COURT: General principle?

12 MR. SALTER: Yes. Just on --

13 THE COURT: At 6:05?

14 MR. SALTER: Just kidding. Under Rule 403 and -- 403
15 based on balancing in terms of its probative value.

16 MR. BROWN: Because it is bad for your side.

17 MR. SALTER: The prejudice of it in terms of -- it
18 outweighs the probative value.

19 THE COURT: I don't have a jury. It is not
20 inflammatory. I'll admit it.

21 MR. SALTER: You are the jury.

22 THE COURT: So Exhibit 9 is admitted, as well as
23 Plaintiffs' 1 through 6 and 8 and 9. 7 I'm holding out until I
24 make sure that it is what it purports to be. That is what you
25 are going to file the notice on.

1 MR. SALTER: I think I am. Yeah. Ryan is going to
2 keep -- Mr. Germany will keep me straight.

3 THE COURT: Defendants' exhibits -- I have two
4 exhibits at this point, 1 and -- how many exhibits do I have on
5 your part? Just 1 and 2?

6 MR. SALTER: This will be --

7 THE COURT: Just to clear up the record again.

8 MR. SALTER: This is a joint exhibit for us, I think.

9 THE COURT: All right.

10 MR. McGUIRE: It sounds like it is a stipulated
11 exhibit.

12 THE COURT: Stipulated Exhibit 1. Joint Exhibit 1.

13 COURTROOM DEPUTY CLERK: I'm sorry, Judge.

14 MR. SALTER: Something we can agree on.

15 COURTROOM DEPUTY CLERK: Joint Exhibit 1, or is it
16 Plaintiffs' Exhibit 10?

17 MR. McGUIRE: This is will be the 21st Century Voting
18 Commission report.

19 THE COURT: It is Joint Exhibit 1. He marked it --
20 let's just have it Exhibit -- Plaintiffs' Exhibit 10, and you
21 agree to its admission. All right.

22 COURTROOM DEPUTY CLERK: I just need to know how it
23 is labeled.

24 **Q. (BY MR. McGUIRE)** Secretary Cox, this Exhibit 10, which is
25 in front of you, Plaintiffs' 10, that is your 21st Century

1 Voting Commission report; yes?

2 **A.** Yes, it appears to be.

3 **Q.** And if I can ask you to flip to Page 38 -- it is numbered
4 at the bottom. And if you count down to the fifth bullet
5 point, there is a recommendation here that says, the chosen
6 system should have the capability to produce an independent and
7 paper audit trail of every ballot cast; correct?

8 **A.** That is correct.

9 **Q.** You said that -- now, this was a consensus recommendation,
10 I take it?

11 **A.** Yes, of the commission.

12 **Q.** So everybody in the commission favored this?

13 **A.** I can't say that it was a unanimous vote. But it was
14 certainly an ultimate recommendation of the commission.

15 **Q.** And if you recall, did you agree with this recommendation?

16 **A.** I did.

17 **Q.** And I believe you testified earlier that that kind of
18 voting system wasn't available for DREs back then?

19 **A.** We had heard that it was, and I think we had had some
20 discussion with the vendors at the time that it might be. But
21 when we ultimately put out an RFP, we didn't have any -- I
22 don't recall that we had any systems that had a real backup
23 system.

24 **Q.** Okay.

25 **A.** We liked -- the overall recommendation was that DRE cured

1 so many ills. It gave the voters the ability to review their
2 ballot, which was the biggest problem you had with undervotes
3 and overvotes because the voter never got a chance to know they
4 made a mistake. You got to review the ballot on the electronic
5 equipment.

6 THE COURT: I hate to cut off the witness, but I
7 think you have talked about this quite a bit. And I think
8 we're just talking now about this recommendation. All right?

9 THE WITNESS: But the paper trail was not that we
10 thought paper should be the real ballot. We liked the DRE
11 equipment for all the things that it cured. But having the
12 backup system would have been a nice addition.

13 **Q. (BY MR. McGUIRE)** And you would agree that without an
14 independent paper audit trail you can only audit a DRE by
15 asking the DRE itself what it has got recorded; right?

16 **A.** No. It goes to -- as I said earlier, it depends on how
17 you define an audit. There is an audited system of checks and
18 balances at the end of every election night. A perfect audit
19 would violate the private ballot. So some variation of that.

20 **Q.** Sure. And if I understood your testimony, the reason you
21 wanted to move to DREs in the first place was because you had a
22 concern that Georgia's then current system was missing -- it
23 wasn't accurately recording the vote for some voters on the
24 paper with optical scan that was used then?

25 **A.** All four of the types of systems.

1 Q. Right. But this report says the optical scan was the best
2 one in use in Georgia at that time; right?

3 A. I wouldn't say the best one in use. But it had some of
4 the highest error rates that were equivalent to the punch card,
5 which everybody in the country at the time was talking about as
6 being so horrible.

7 Q. So if I can ask you just to turn to Page 22. I recognize
8 that you had reservations about the optical scan where it did
9 have error rates. But does it not say at the top of Page 22
10 optical scan should be noted shows the best overall accuracy
11 performance of any of the systems currently in use in Georgia?
12 Does it say that?

13 A. That is true, compared to punch cards, lever machines, and
14 bed sheet paper ballots. None of them looked very good in the
15 light of day.

16 Q. Now, it is true, isn't it, also that under your
17 administration of the Secretary of State's office you certified
18 a brand-new optical scanning system that replaced the one that
19 is talked about in this report?

20 A. Well, there were at least two different types of optical
21 scan used by the dozens of counties. And they could have been
22 made by different vendors. So I couldn't tell you how many
23 variations. But we certified one centralized type.

24 Q. And that is the more -- the most recent certification of
25 an optical scanner in Georgia?

1 **A.** I couldn't tell you if it is exactly the same now as we
2 put in place in 2002.

3 **Q.** But you wouldn't have certified it then if it wasn't
4 better than the one that was mentioned in this report; right?

5 **A.** I think it was essentially -- the worst type of optical
6 scan that we saw in 2002 was the type that had the arrow out
7 beside a name. And voters were not clear on what they were
8 even supposed to do.

9 So I know we talked about making sure we went to a bubble
10 system, which was one of the systems in place. So I don't know
11 that there was anything new about what we put into place other
12 than we certainly didn't want the connect-the-arrow type.

13 **Q.** Okay. So you got rid of that one and got a new one in?
14 And that is the one we use today you believe?

15 **A.** I believe so.

16 THE COURT: The one you got in 2002 --

17 THE WITNESS: I believe so, yes.

18 THE COURT: -- is what we still have?

19 THE WITNESS: I think so.

20 THE COURT: All right.

21 **Q.** **(BY MR. McGUIRE)** Now, so you as the Secretary of State
22 were dissatisfied with the quality of the state's voting
23 systems, and you initiated an effort to change it?

24 **A.** Well, every county had systems. The state really was not
25 in the voting system business until the 2001 legislation came

1 about as a result of this study. So yes, I was dissatisfied
2 with all of these types of equipment, the hodgepodge of
3 equipment that counties were using at the time.

4 **Q.** So is it fair to say you saw a problem with Georgia's
5 voting system? And in your judgment as an officer of the
6 state, you felt it was in the public interest to move to a
7 different system that would do a better job for Georgia voters?

8 **A.** Yes. That is a fair statement.

9 **Q.** Can you understand why folks who have doubts about these
10 DREs believe that is what needs to happen now?

11 **A.** I can understand if people don't fully understand the
12 security protocols about how these systems are used and tested
13 and stored that it would raise doubts. That is why when people
14 ask me about it and I go into all of this minutia about how
15 they are used they generally come away from a conversation
16 feeling a lot better than something they heard on the news or
17 read on social media because they didn't know all of that.

18 And it is -- again, it is because people say, how can you
19 have faith in this piece of equipment? I don't have faith in
20 that piece of equipment. I have faith in this whole system we
21 devised about how to use, store, test, and secure that system.

22 **Q.** And when you talk about the folks who don't understand the
23 system or maybe don't have the full picture of it, you surely
24 don't mean the National Academy of Sciences, for example, which
25 just issued a report saying these kind of systems shouldn't be

1 used just last week? You don't mean them, do you?

2 **A.** I haven't read their report. But, again, I could take
3 that home myself and probably figure out how to do something
4 bad with it. It is not any -- there is nothing magical about
5 that machine. It is how it is all used and stored. And I
6 don't know whether any of the scientific reports take those
7 things into consideration.

8 **Q.** So it sounds like you are saying the circumstances matter.

9 THE COURT: I think that it is --

10 MR. MCGUIRE: Thank you, Your Honor. That is all.

11 THE COURT: All right. Can this witness step down?

12 MR. SALTER: Yes, ma'am. Thank you.

13 THE COURT: Thank you. All right. There are no
14 other witnesses, are there?

15 MR. SALTER: There is one other witness that I have
16 like three questions for. I swear on the Bible. Identify
17 yourself, talk about how much time -- basically it is about
18 their ability to rulemake under the APA and how that works with
19 time. That is it. It takes --

20 THE COURT: We can't have him give me an affidavit
21 tomorrow morning?

22 MR. SALTER: Would y'all object to something like
23 that? Do y'all want to cross on the APA in terms of time and
24 emergency rulemaking? We have a public comment period, 30
25 days. We have to serve the General Assembly, the two houses.

1 We have to serve the Attorney General's office. And there is a
2 public comment period on rulemaking --

3 MR. BROWN: Your Honor, this appears to be not fact
4 testimony. And so it would be mainly do your rules say this,
5 do they say that.

6 MR. SALTER: That is fair.

7 MR. BROWN: So I don't think this is proper --

8 THE COURT: Can't you-all stipulate to what they say?
9 I mean, is it not -- is it not just legal?

10 MR. SALTER: It really is legal. I mean, that is --
11 Bruce's point is fair. And I think --

12 THE COURT: If you want to provide me a summary of
13 that tomorrow.

14 MR. SALTER: I could do that, if there is no
15 objection to a short five-page brief.

16 THE COURT: You can provide a summary.

17 MR. BROWN: If we can respond with an even shorter
18 rebuttal.

19 THE COURT: Do you think you can do that -- are you
20 going to do that by 2:00 or something like that?

21 MR. SALTER: I think we can do that. I think we
22 could do that, Judge.

23 THE COURT: Then they can respond.

24 MR. SALTER: It is a simple issue.

25 THE COURT: Why don't you provide it by 1:00. And

1 they can provide something by 5:00. Does that -- does that
2 work with you-all?

3 MR. BROWN: That is fine, Your Honor.

4 THE COURT: 1:00 and 5:00 tomorrow.

5 MR. SALTER: That is fine. 1:00 for us.

6 THE COURT: Great. I didn't allow for oral argument.
7 I did allow for the submission. And I wanted something else
8 in.

9 I know that -- I know everyone would like to have a
10 decision as quickly as possible. And obviously I would have
11 hoped in an ideal world to have had the hearing be shorter and
12 to be able to be ready to announce something. But I am aiming
13 to do it this week.

14 I know that there have been references about walking
15 down the street to the Eleventh Circuit. And, of course, that
16 is the right of either party. I would say -- and I don't want
17 to discourage anyone's exercise of their rights obviously here.

18 I would point counsel to the Supreme Court's decision
19 in *Purcell vs. Gonzalez*, 549 U.S. 1, which basically it said
20 because there were no findings of fact by the court -- by
21 either the District Court or then ultimately the Court of
22 Appeals there is nothing -- basically it remands because they
23 can't really properly review it.

24 So I'm not planning to give an exhaustive decision in
25 this time frame. But I have allowed you-all to present the

1 evidence, and I think it would just suggest to both parties
2 that it would be preferable to wait until I have a decision.
3 And I do have some criminal cases that I have to hear in the
4 next day and a half. And I'm going to do my very best to give
5 you a decision on Friday. But if not, then it would be Monday.

6 And I just think that, you know, we have done all of
7 this, and I would hate to just simply not at least have a
8 written decision that sets forth the general reasons for
9 whatever I'm doing, whether it is for jurisdiction or for --
10 the jurisdictional determination, a standing determination, or
11 the ruling on the preliminary injunction.

12 Of course, as I said, it is up to you. But that is
13 my view. And, you know, what ends up happening in *Purcell* is
14 even though the District Court and the Court of Appeals took a
15 different position in *Purcell* basically then says -- sends it
16 back and can't -- too late then, of course, for the election
17 and then says essentially but the Court of Appeals' decision
18 was vacated and the case was remanded for further proceedings.

19 So it is sort of like let's not -- my hope would be
20 that no one would jump the gun. I'm going to get you a
21 decision as absolutely fast as possible hopefully Friday but
22 not later than Monday so that there is plenty of, I think,
23 time.

24 You know, the general observation I have here is the
25 one I made from the start. Times change. We are facing -- I

1 don't mean to be focusing on Russia or anything else. But we
2 are in a very quickly evolving situation in terms of cyber
3 technology and cyber crime.

4 I have sat through some very sophisticated testimony
5 myself in other cyber crime cases from the FBI. And, you know,
6 obviously we have a lot of expert testimony here. And there
7 has been a -- we have a lot of concern nationally that has been
8 expressed by recognized bodies, not just the National Sciences
9 Academy but -- and not just the FBI and not just the NSA as to
10 the continued use of an unverifiable -- DREs without verifiable
11 tape results.

12 But -- so these are big issues. And they are big
13 issues because they also impact not just the integrity of the
14 vote but they can dilute one party's vote versus the other. It
15 affects the credibility of the system. And I, you know, have
16 basically proceeded to allow the evidentiary hearing here and
17 go at great length because I recognize that and because it is
18 an issue of public import that also ends up in the court
19 because you don't want anyone's -- no one wants their vote to
20 be insecure but moreover diluted or altered.

21 But at the same time, one -- I have to recognize --
22 and I am just saying this as a preview, which everyone here
23 knows from the testimony here -- that there are -- this is a
24 catch-22 because there is significant -- we know other ways in
25 which people's votes can be compromised: Long lines, people

1 losing -- not understanding how to use ballots. And it is not
2 just a parade of horribles either. I mean, it is a parade of
3 horribles that Ms. Cox described from another era.

4 We might not be in that era. But these are real
5 challenges, and there are lots of -- the Sixth Circuit right
6 now has basically allowed a case to proceed because of -- in
7 part because there was the whole -- problems in administration
8 of the precincts in the balloting process.

9 So, you know, I'm concerned that we're here at this
10 eleventh hour. I'm concerned that I understand what the
11 plaintiffs' position is is that the evidence didn't at this
12 point ripen this much, it didn't become as much of a crisis
13 from their perspective given the evidence that was available in
14 the most recent number of months.

15 I won't fully comment on that because I attempted to
16 deal with this earlier. And I'm concerned in part for the
17 state as well that, you know, why are we just dealing with this
18 now. I know that ideally in all -- in the best circumstances
19 is that the legislature would have dealt with this. And it
20 would never end in a court's lap to address these voting
21 issues.

22 But I don't think what happened at Kennesaw
23 completely -- and other sorts of data has been presented can be
24 just said that it is nothing, that this is not a question of
25 Luddites, and it is not a question of -- but at the same time

1 you don't want people standing outside the polls giving up,
2 being confused, being discouraged. And those are very real
3 things.

4 And the catch-22 is that, you know, there is a lot of
5 criticism of the fact that the state and counties have not
6 moved -- been able to move on this, that we're using antiquated
7 software that would be -- that is susceptible -- not just
8 susceptible but there is a great -- strong evidence about some
9 of its susceptibility.

10 It is not just, oh, it is a theoretical paranoid
11 notion at this point. And we don't think that in other
12 contexts in financial frauds, as I said, in data breach cases.
13 We don't think it is theoretical because it hits our bank
14 accounts, and we can see it. But we can't in the same way see
15 about whether our vote was -- what happened to it, did it
16 actually go for the same person.

17 So it is ideally -- and it is not just ideally.
18 These are real, real issues. But the fact still is that lots
19 of people who work at the precincts are virtual volunteers. It
20 is a big job to put on an election. And the last thing -- I
21 don't think we want to compromise the voting process that way.
22 What we do want is this to be dealt with.

23 And that is really why I -- you know, I didn't like
24 it to be called just paranoia because if you call it just
25 paranoia you don't deal with it. And I would anticipate that

1 we have to deal with it, whether here or in the -- or in the
2 legislature or in the -- by the Secretary of State.

3 But it is late. I have to tell you a few things.
4 Lots of you had your phones taken downstairs. And the court is
5 basically closed. Everyone will have to meet with the court
6 security officer outside the courtroom who has given their
7 phone over. He will escort you to pick up your telephones.

8 So do not walk out when I saw one person go out
9 without the phone -- without your phone. And you are going to
10 need to do that. So don't just simply go off willy-nilly or
11 else you will be picking up your phones and coming back here
12 tomorrow.

13 And in terms of getting out of the building --

14 COURTROOM DEPUTY CLERK: Your Honor, the court
15 security officers will direct them once they pick up their
16 telephones.

17 THE COURT: All right. Because normally the front
18 door is closed at this point. So I'm not going to even pretend
19 to give you any directions.

20 COURTROOM DEPUTY CLERK: Your Honor, if anyone does
21 not need to pick up a telephone and came in on the LP level,
22 they can leave without having to do anything further. If you
23 did not leave a telephone downstairs but you came in on the
24 Spring Street level and you need to leave on the Spring Street
25 level, you will need to be escorted by security in order to do

1 that.

2 MR. BARNES: Your Honor, do you intend to issue the
3 order on the immunity and Eleventh Amendment at the same time?

4 THE COURT: Yes. I'm planning to do the whole thing
5 together. That is why I just sort of asked you to hold off so
6 that at least if you want to appeal you have got --

7 MR. BARNES: I understand.

8 THE COURT: -- a piece of paper.

9 MR. BARNES: I understand. I was just trying to
10 get --

11 MR. SALTER: We were doing that. We figured that --
12 we have been waiting, Judge.

13 THE COURT: So I really -- in the end, I want to say
14 I appreciate everyone's presence again as I started in the
15 morning. I appreciate the interest. I appreciate how much all
16 sides put in to trying to educate me and clarify from your
17 perspectives what the evidence points to.

18 I think it has been very helpful. And I know how
19 much energy goes into an emergency hearing. Certainly it has
20 been for me.

21 MS. BURWELL: Your Honor, could I provide the Court
22 with like a one-page closing? Just one page?

23 THE COURT: You are welcome to do that. You are
24 welcome to do that. But I have, you know, notebooks and
25 notebooks and files and files. So you -- I have been reading

1 everything. You are welcome to do whatever.

2 But since I believe I have a -- I have some criminal
3 cases tomorrow.

4 COURTROOM DEPUTY CLERK: You do, Your Honor. You
5 have a criminal case and a civil case tomorrow.

6 THE COURT: I probably can't get to read it until
7 4:00 or 5:00. You are welcome to file something.

8 Thank you-all very much. Have a good evening.

9 COURTROOM SECURITY OFFICER: All rise. This
10 Honorable Court has been adjourned.

11 **(The proceedings were thereby concluded at 6:26**
12 **P.M.)**

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C E R T I F I C A T E

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3 UNITED STATES OF AMERICA
4 NORTHERN DISTRICT OF GEORGIA
5

6 I, SHANNON R. WELCH, RMR, CRR, Official Court Reporter of
7 the United States District Court, for the Northern District of
8 Georgia, Atlanta Division, do hereby certify that the foregoing
9 322 pages constitute a true transcript of proceedings had
10 before the said Court, held in the City of Atlanta, Georgia, in
11 the matter therein stated.

12 In testimony whereof, I hereunto set my hand on this, the
13 15th day of September, 2018.
14
15
16

17 *Shannon R. Welch*

18 _____
19 SHANNON R. WELCH, RMR, CRR
20 OFFICIAL COURT REPORTER
21 UNITED STATES DISTRICT COURT
22
23
24
25