UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
EL PASO DIVISION

LEAGUE OF UNITED LATIN AMERICAN CITIZENS, ET AL	§	**3:21-CV-00259-DCG-JES-JVB**
V.	§	**8:59 A.M. TO 12:59 P.M.**
GREG ABBOTT, IN HIS OFFICIAL CAPACITY AS GOVERNOR OF THE STATE OF TEXAS, ET AL	§	**OCTOBER 4, 2025**

PRELIMINARY INJUNCTION HEARING
BEFORE THE HONORABLE DAVID C. GUADERRAMA,
HONORABLE JERRY E. SMITH
AND HONORABLE JEFFREY V. BROWN
DAY 4 (MORNING SESSION) OF 9 DAYS

APPEARANCES:

FOR THE PLAINTIFFS LULAC AND MALDEF:
Ms. Nina Perales
MALDEF
110 Broadway Avenue, Suite 300
San Antonio, Texas 78205
(210) 224-5382
nperales@maldef.org
and
Mr. Javier Silva
MALDEF
100 North LaSalle Street
Suite 1900
Chicago, Illinois 60602
(312) 427-0701
info@maldef.org

FOR THE GONZALES PLAINTIFFS:
Mr. David Fox
Mr. Richard A. Medina
Elias Law Group
250 Massachusetts Avenue NW
Suite 400
Washington, DC 20001
(202) 987-5010
dfox@elias.law
rmedina@elias.law

APPEARANCES: (continued)

FOR THE PLAINTIFF MEXICAN AMERICAN LEGISLATIVE CAUCUS:
Mr. Sean McCaffity
Mr. George (Tex) Quesada
Sommerman, McCaffity & Quesada, LLP
3811 Turtle Creek Boulevard, Suite 1400
Dallas, Texas 75219
(214) 720-0720
smccaffity@textrial.com
quesada@textrial.com

FOR THE PLAINTIFF TEXAS NAACP:
Ms. Lindsey Cohan
Dechert LLP
515 Congress Avenue, Suite 1400
Austin, Texas 78701-3516
(512) 394-3027
lindsey.cohan@dechert.com
and
Mr. Robert Weiner
Mr. Jeremy Lewis
Mr. David Rollins-Boyd
Ms. Jennifer Nwachukwu
The Lawyers Committee for Civil Rights Under Law
1500k NW
Washington, DC 20005
(617) 893-1322
rweiner@lawyerscommittee.org
drollins-boyd@lawyerscommittee.org
jlewis@lawyerscommittee.org
jnwachukwu@lawerscommittee.org
and
Mr. Carroll Rhodes
Law Offices of Carroll Rhodes
P.O. Box 588
Hazlehurst, MI 39083
(601) 894-4323

FOR THE BROOKS PLAINTIFFS:
Mr. Chad W. Dunn
Brazil & Dunn
1900 Pearl Street
Austin, Texas 78746
(512) 717-9822
chad@brazilanddunn.com

APPEARANCES: (continued)

FOR THE BROOKS PLAINTIFFS:

Mr. Mark P. Gaber
Mark P. Gaber, PLLC
P.O. Box 34481
Washington, DC 20043
(715) 482-4066
mark@markgaber.com
and
Ms. Molly Elizabeth Danahy
Molly E. Danahy, Esq
P.O. Box 51
Helena, Montana 76112
(406) 616-3058
danahy.molly@gmail.com
and
Ms. Sonni Waknin
Sonni Waknin, Esq
6417 N. Figueroa Street, #10
Los Angeles, California 90042
(732) 610-1283
sonniwaknin@gmail.com
and
Mr. Jesse Gaines
Jesse L. Gaines Attorney at Law
6015 Meadowbrook Drive
Fort Worth, Texas 76103
(817) 714-9988
gainesjess@ymail.com

FOR THE CONGRESSIONAL INTERVENORS:

Mr. Gary L. Bledsoe
The Bledsoe Law Firm
6633 East Highway 290, Suite 208
Austin, Texas 78723-1157
(512) 322-9992
garybledsoe@sbcglobal.net
gbledsoe@thebledsoelawfirm.com
and
Mr. Robert Notzon
Law Offices of Robert Notzon
1502 West Avenue
Austin, Texas 78701
(512) 474-7563
robert@notzonlaw.com

APPEARANCES: (continued)

FOR THE STATE DEFENDANTS:

Mr. Ryan G. Kercher
Mr. William Francis Cole
Mr. William D. Wassdorf
Mr. Steven Loomis
Ms. Ali Thorburn
Mr. Zachary Berg
Mr. David Bryant
Mr. Anthony Rodregous
Office of Texas Attorney General
P.O. Box 12548
MC 009
Austin, Texas 78711
(512) 936-2613
ryan.kercher@oag.texas.gov
william.cole@oag.texas.gov
will.wassdorf@oag.texas.gov
steven.loomis@oag.texas.gov
ali.thorburn@oag.texas.gov
zachary.berg@oag.texas.gov
david.bryant@oag.texas.gov
anthony.rodregous@oag.texas.gov
and
Mr. William Thomas Thompson
Lehotsky Keller Cohn LLP
Special Litigation Unit
408 W. 11st Street, 5th Floor
Austin, Texas 78701
(210) 286-0806
will@lkefirm.com

Also in Attendance:
Mr. Richard Rienstra

Court Reporter:
Laura Wells, RPR, RMR, CRR
601 Rosenberg, Suite 615
Galveston, Texas 77550

Proceedings recorded by mechanical stenography.
Transcript produced by computer-assisted transcription.

DAY 4 - AM SESSION
(PRELIMINARY INJUNCTION)

OCTOBER 4, 2025

	Page
Reporter's Certificate.....	179

ALPHABETICAL

WITNESSES	**Page**
MATTHEW BARRETO, Ph.D,	
Direct Examination by Mr. Dunn	21
Cross-Examination by Mr. Kercher	128
SHEMAIAH STOKES	
Direct Examination by Mr. Lewis	6
Cross-Examination by Mr. Bryant	18
Redirect Examination by Mr. Lewis	19

EXHIBIT INDEX

PLAINTIFFS' EXHIBITS

EXHIBIT NUMBER	**OFFERED**	**ADMITTED**
Brooks Exhibit Numbers 269, 284, and 284	54	54

PROCEEDINGS

(Call to order of the Court.)

JUDGE GUADERRAMA: Good morning, everyone. It's a beautiful day today. Also a special day. It's Ms. Laura's birthday, and so we want to wish her a happy birthday.

Thank you. Be seated, please.

JUDGE BROWN: Speak slowly for her today, please.

MR. LEWIS: I'm going to try my very best.

Good morning, Your Honors. Jeremy Lewis on behalf of Plaintiff Texas NAACP.

Plaintiffs call Shemaiah Stokes to the stand.

JUDGE GUADERRAMA: Good morning, Ms. Stokes. Raise your right hand to receive the oath.

Do you solemnly swear or affirm the testimony that you will give in this proceeding will be the truth, the whole truth, and nothing but the truth so help you God?

THE WITNESS: Yes.

JUDGE GUADERRAMA: Thank you, ma'am. Have a seat right there in that chair. And if you would be so kind as to roll into the microphone, kind of lean into it a little, it should get louder.

SHEMAIAH STOKES,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. LEWIS:

Q. Good morning, Ms. Stokes.

A. Good morning.

Q. Can you please state your name for the Court, spelling your first and last.

09:01:14

A. Shemaiah Stokes, S-h-e-m-a-i-a-h, S-t-o-k-e-s.

Q. What race do you identify as, Ms. Stokes?

A. Black.

Q. Can you tell the Court what city and county you reside in?

09:01:34

A. I live in San Antonio in Bexar County.

Q. How long have you lived in Bexar County?

A. Since October 2020.

Q. And have you lived in San Antonio that entire time?

09:01:46

A. Yes.

Q. And are you a registered voter at your current address?

A. Yes.

Q. Do you regularly vote in the state and federal elections?

09:01:54

A. Yes.

Q. And do you plan to vote in future state and federal elections?

A. Yes.

09:02:01

Q. Now, could you just briefly describe your educational

background?

A. Yes. I have a bachelor's in psychology. And currently I'm pursuing a master's in clinical mental health counseling.

09:02:12 **Q.** What do you currently do for a living?

A. I'm a parent educator at a children's shelter.

Q. Could you tell us a bit about what you do as a parent educator?

A. Yes. I help -- I teach parents typically that come to

09:02:25 us through CPS cases how to better relate to and create better relationships with their children.

Q. And what kind of people do you serve in that role?

A. All kinds. But typically underserved, mostly people of color. Usually we get some unhoused people. Things

09:02:52 like that.

Q. Do you serve communities throughout Bexar County in that role?

A. Yes.

Q. How long have you had that job?

09:02:58 **A.** I've had this job for a little over a year.

Q. What did you do before that?

A. I was an early intervention specialist at Brighton Center.

Q. Can you tell us a bit what you did in that role?

09:03:09 **A.** Yes. I helped parents, coached parents in ways to

help their developmentally delayed children ages zero through three reach milestones.

Q. Was that also throughout Bexar County?

A. Yes.

09:03:22 **Q.** Did you travel throughout Bexar County for that role?

A. I traveled throughout the Live Oak area, but the company serviced all of Bexar County.

Q. And how long did you do that?

A. Two years.

09:03:33 **Q.** And what job did you have before you did that?

A. I was a community case manager for adults with mental illnesses exacerbated by substance abuse.

Q. Can you tell us a little bit about that one, too?

A. Our population was in high risk, underserved. They

09:03:54 battled with illness and addiction. And so I spent a lot of time in mental health settings. And that was an array of clients. People of color as well as not.

Q. That was likewise throughout Bexar County?

A. Yes.

09:04:08 **Q.** And you also traveled throughout Bexar County for that role?

A. Yes.

Q. And are you currently part of any civic groups?

A. Yes. The NAACP.

09:04:18 **Q.** And are you familiar with the mission of the Texas

NAACP?

A. Generally, yes.

Q. Can you tell us what you generally understand that mission to be?

09:04:25 **A.** To just make sure that Black people have equal footing in spaces where we need to be represented.

Q. And why is that important to you?

A. Well, everyone should have equal footing in spaces, especially political spaces, but I'm also a Black person

09:04:44 and my children are Black people.

Q. So through this civic engagement and your prior jobs, do you feel like you have kind of gotten to know the Bexar County community generally?

A. Yes.

09:04:53 **Q.** I'd like to talk about the Bexar County community a little bit now. I'm going to pull up what we've marked as Texas NAACP Exhibit 222.

MR. LEWIS: I think we will be filing an updated exhibit list later today, so I'm not sure if that's on

09:05:07 there quite yet. We have copies for the Court.

MS. COHAN: May I approach?

BY MR. LEWIS:

Q. I'll be showing this. I'm not good with my handwriting.

09:05:44 Is this the image you have in front of you,

Ms. Stokes?

A. Yes.

Q. Can you tell the Court what that image is?

A. U.S. Congressional Districts SB-6 Conference Committee Report File Plan C2193.

Q. Just for the record, I'll represent to you this is a 2021 enacted congressional plan for the state of Texas.

What congressional district do you live in under this plan?

A. 35.

Q. I'm going to zoom in on CD 35 here. CD 35 is going to be the one highlighted in blue there.

Can you just tell the Court what counties made up CD 35 under the 2021 plan?

A. Yes. Bexar, Comal, Hays, and Travis.

Q. Now I'm just going to switch to a more detailed version of that same CD 35 highlighted in yellow here.

Now, are you generally familiar with the area highlighted in yellow here?

A. Yes.

Q. And can you explain to the Court how you are familiar with this area?

A. I live in the lower area, and I have traveled to and through the higher area.

Q. So just to start, I'm going to zoom in on that lower

area of that highlighted area there, the portion that you live.

MR. LEWIS: May I approach, Your Honor?

JUDGE GUADERRAMA: Yes, sir.

09:07:10 BY MR. LEWIS:

Q. If you could, just mark on that map where you currently live generally.

A. (Witness complying.)

Q. Thank you.

09:07:35 Now can you tell us a bit about the area you marked here where you live?

A. Yes. It is heavily urban. And it is in San Antonio. There's always construction. But I live near -- my church is ten minutes away. My mother-in-law, their family is 09:07:53 about six minutes away. I live near a few schools. My favorite restaurants are about 15 minutes away, which is really important to me. Yeah.

Q. And can you tell us a bit about the demographics of that area?

09:08:09 **A.** I mostly see Black people and people of color in my area.

Q. And do you also see other Black communities on the map here in the highlighted portion?

A. Yes.

09:08:20 **Q.** And can you tell us where those are?

A. Yes. In the Fort Sam Houston, Kirby, Windcrest, Converse, Live Oak area.

Q. How are you familiar with those areas?

A. I live and travel through and go to banks in those areas.

09:08:40

Q. Can you tell us what type of things you go to in those areas?

A. Again, my church. Mostly for me it is restaurants. That's where I spend a lot of my time. So yeah.

09:08:50

Q. And are there any other, you know, cultural community hubs in that highlighted portion?

A. Yes. In the downtown area we have an African American museum. And they do, like, tours on the Riverwalk, things like that, to talk about the Black history of San Antonio.

09:09:08

Q. Thank you.

I am going to move up north to this middle section of old CD 35 here. And are you generally familiar with this area?

A. Yes.

09:09:22

Q. And how do you know this area?

A. There is a Buc-ee's in New Braunfels that I frequent. And when I was pregnant, my OB specialist was there. I have -- before I was engaged -- dated a few men that are from San Marcos and -- yeah.

09:09:39

Q. Would you describe it as being urban, suburban, or

rural?

A. Suburban.

Q. Do you know of any Black communities in this highlighted portion of CD 35?

09:09:49 **A.** Not in New Braunfels specifically but in San Marcos because of experiences.

Q. Thank you.

Now I'm going to move up to the final top section of old CD 35 here. And are you similarly generally familiar

09:10:12 with this portion of CD 35?

A. Yes.

Q. And how are you familiar with this area?

A. The airport. And I go there for events. And, again, restaurants.

09:10:23 **Q.** And do other Black members of your community also go there for things like that?

A. Yes. They have concerts and R&B nights and, again, restaurants.

Q. How would you describe this area? More urban,

09:10:37 suburban, or rural?

A. This is urban.

Q. Thank you.

Now I'm going to switch over to what we've marked Texas NAACP PI Exhibit 223. That will also be part of the

09:10:55 amended exhibit list that we file today.

And, Ms. Stokes, can you tell us what the image on the screen is?

A. Yes. U.S. Congressional Districts Proposed Plan C2333.

09:11:42 **Q.** I will represent to you that is the brand-new 2025 enacted congressional plan.

And what congressional district do you live in under this map?

A. 35.

09:11:55 **Q.** So I'm going to zoom in on new CD 35 under the map here. And can you tell the Court what counties comprise new CD 35 under this map?

A. Bexar, Wilson, Karnes, and Guadalupe.

Q. And like we did last time, I'm going to put up a more

09:12:21 detailed version of that same new CD 35 District.

Now, are you familiar with some of the areas inside this highlighted portion of the district?

A. Some, yes.

Q. Zooming in on the Bexar County portion of this

09:12:42 district here.

MR. LEWIS: May I approach, Your Honor?

JUDGE GUADERRAMA: Yes, sir.

BY MR. LEWIS:

Q. Can you just mark on this map where you currently

09:12:55 live?

A. (Witness complying.)

Q. Thank you.

And do you see any other Black communities in this highlighted portion of new CD 35?

09:13:18 **A.** Yes. The ones that I mentioned previously, the Live Oak, Windcrest, what's left of Converse, Universal City area.

Q. What about those other ones you mentioned previously?

A. No.

09:13:33 **Q.** Those are no longer in the district?

A. No.

Q. What other changes do you see about CD 35 here?

A. It has expanded out a little bit further into the more rural areas.

09:13:56 **Q.** Are you talking about those areas in Wilson and Karnes County and Guadalupe County?

A. Yes.

Q. I'm going to zoom out to the Karnes and Wilson County portion of new CD 35. Do you know of any Black

09:14:19 communities in this area?

A. I do not.

Q. Do you have any reason to go to this area in your day-to-day life?

A. No. Not in my day-to-day life.

09:14:28 **Q.** Do you know any Black members of your community who go

to this area regularly in their day-to-day life?
A. No.
Q. I am going to switch over and show the Guadalupe portions of the new CD 35. Not including the area we just
09:14:47 talked about here where you live, do you know of any Black communities in this area?
A. No.
Q. Do you have any reason to go to this area in your day-to-day life?
09:14:54 **A.** Not in my day-to-day life.
Q. Do you know any Black residents in your community who go to this area regularly?
A. No.
Q. And, Ms. Stokes, what do you feel the impact is of
09:15:06 being put in a congressional district with these new portions of CD 35 that you aren't so familiar with?
A. I've traveled to, like, La Vernia and into Guadalupe County twice in previous -- like for previous employment. They are really, really rural areas. I feel like the
09:15:26 impact is that we have different needs in the community which I live in that was the old 35, because we had more urban things than those that live out with the horses and the farms.
Q. And what do you feel that -- what kind of impact do
09:15:45 you think that will have on -- when it comes to elections

in new CD 35?

A. I think it will dilute the voice of, you know, people voting in the urban area.

MR. LEWIS: I have no further questions. I pass the witness, Your Honor.

JUDGE GUADERRAMA: Plaintiffs. State? Mr. Bryant.

CROSS-EXAMINATION

BY MR. BRYANT:

Q. Ms. Stokes. My name is David Bryant with the Attorney General's office representing the state defendants. Thank you for traveling out here to testify. I just have a few questions of you.

Are you currently represented in congress by a Black member of congress?

A. Are you asking me who my congressperson is?

Q. That's part of that answer, yes.

A. No. I'm not currently.

Q. And have you been represented in the past at any time by a Black member of congress since you have been in San Antonio?

A. Not that I'm aware of.

Q. Are you a Democrat?

A. I typically vote Democrat.

Q. And you testified that you regularly vote. Do you

regularly vote for Democrats?

A. Typically.

Q. And would you like to see more Democratic members in Congress representing Texas?

09:17:21 **A.** I would like to see more members in congress who represent the needs that I feel are important.

Q. Would you like to see more Democrats representing Texas in congress?

A. I would like to see members of congress represent the

09:17:38 needs --

JUDGE SMITH: Excuse me. That was a "yes" or "no" question. He has asked it twice. Answer the question that he has asked you.

Why don't you repeat your question.

09:17:48 MR. BRYANT: Yes, Your Honor.

BY MR. BRYANT:

Q. Would you like to see more Democrats representing Texas in Congress?

A. Yes.

09:17:57 MR. BRYANT: Pass the witness.

MR. LEWIS: Just briefly, Your Honor.

REDIRECT EXAMINATION

BY MR. LEWIS:

Q. Ms. Stokes, if you felt that there were Republican

09:18:13 candidates who represented your interests and the needs of

your community, would you vote for them and like to see them in Congress?

A. Yes.

MR. LEWIS: That's all I have, Your Honor. Thank you.

JUDGE SMITH: Just a quick question.

Do you have any problem with the plan that was in place before the 2025 special session enacted the plan that's now being reviewed?

THE WITNESS: Can you repeat it? I'm sorry.

JUDGE SMITH: Yes.

The plan that has been in place for the last couple of congressional elections, the one where you started off with your map and said you live in 35 and you talked about the areas that you were familiar with.

Do you have any problem with that plan?

THE WITNESS: The 2021 plan you are saying?

JUDGE SMITH: That's right.

THE WITNESS: No.

JUDGE SMITH: Thank you.

MR. BRYANT: No further questions, Your Honor.

JUDGE GUADERRAMA: Mr. Lewis, may this witness be permanently excused?

MR. LEWIS: Yes, Your Honor.

MR. BRYANT: Yes, Your Honor.

JUDGE GUADERRAMA: Ms. Stokes, thanks so much for coming down. You are excused and free to go, ma'am.

Who is your next witness?

MR. DUNN: The plaintiffs call Dr. Matt Barreto.

09:19:29 Dr. Barreto is taking the witness stand with black and white copies of his three reports.

JUDGE GUADERRAMA: Good morning, Dr. Barreto. If you would raise your right hand, sir.

Do you solemnly swear or affirm the testimony that you

09:19:47 will give in this proceeding will be the truth, the whole truth, and nothing but the truth so help you God?

THE WITNESS: I do.

JUDGE GUADERRAMA: Thank you, sir. Have a seat, please.

09:19:56 THE WITNESS: Thank you.

MATTHEW BARRETO, Ph.D,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. DUNN:

09:19:59 **Q.** Please tell us your name.

A. My name is Matt Barreto.

Q. And are you --

A. Do you want me to spell it? B-a-r-r-e-t-o.

Q. The Court has heard from you three times in this

09:20:11 matter; is that true?

A. That sounds right.

Q. But just to reintroduce yourself, can you give us a bit of your background?

A. Sure. I am currently a full professor with tenure of political science and Chicano studies at the University of California in Los Angeles.

And I'm also the faculty director of the UCLA Voting Rights Project.

Before that, I was a full professor of political science at the University of Washington in Seattle for about ten years.

Q. All right. Where did you grow up and get your education and that sort of thing?

A. I was born in San Juan, Puerto Rico. I then moved to the Kansas City area, and I went to -- grew up on the Kansas side, went to high school and graduated in Topeka, Kansas.

I got a bachelor's degree in political science from Eastern New Mexico University.

I then pursued graduate education in California and completed a Ph.D at University of California at Irvine in 2005 in political science and political methodology.

Q. Who was your advisor at the University of Irvine?

A. Dr. Bernard Grofman.

Q. What notoriety does he have, if any, with regard to

voting rights?

A. He was an expert witness and political scientist, data scientist, in the *Thornburg v. Gingles* case, which is very well-known now. And, in fact, I teach about it in many of my classes. And he was the expert who analyzed racially polarized voting in that case.

Q. Was he cited by the United States Supreme Court in that case?

A. Yes, he was.

Q. Is his experience with racially polarized voting part of the reason you sought him out as an advisor?

A. Yes. That was a topic -- I wasn't familiar with that exact phrase, but that was a topic of the voting patterns of racial and ethnic minorities in the United States that I was quite interested in. And he had established expertise, and I was very happy to be able to work directly with him at Irvine.

Q. With regard to Dr. Grofman, has he trained a number of other specialists in racially polarized voting?

A. Yes. Over the years, before I was there and after I left, he was well-known at Irvine for training students. Some of them went on to continue to study voting rights. Others were more data scientists and professors. But he was a very highly reputable professor.

Q. Have you continued that training and mentorship on

racially polarized voting in your capacity now as a full professor?

A. I have.

Q. Approximately how many students have you trained?

09:22:50 **A.** Ph.D students you mean?

Q. Yes.

A. Between my work at the University of Washington, where I was for about ten years, and now at UCLA, where I have been another ten years, I've probably been the primary

09:23:06 dissertation advisor of about 20 students and then a committee member, secondary committee member for probably another 20 students. So somewhere -- maybe as many as 40.

Q. I want to call your attention to Brooks Exhibit 269, which is on your screen, at page 70. And you have a list

09:23:26 here of a number of people. Who are these?

A. I see this. This is -- the ones we're looking at, at least at the top with the bullet points, are the students who earned their Ph.D under my training and I was the committee chair.

09:23:39 **Q.** Are a number of these now testifying experts in voting rights cases?

A. Yes. As I look at the names, there is a number there who had voting rights or voting rights methodology as part of their dissertation. And many of them have gone on to

09:23:54 practice and write expert reports and offer testimony.

Q. I note you notice the appointment universities for each of these professors, but have you updated that?

A. Updated their appointments? No. The practice is to put the appointment where they got their job. And so 09:24:13 essentially under my tutelage these are the universities where they landed a job and became a professor. And then sometimes they move on and go to other places.

Q. And then you show here at the bottom of this page a list of other individuals for which you were a committee 09:24:29 member. What does that mean?

A. So typically a dissertation committee will consist of anywhere between three to five faculty members and experts that have expertise in that student's topic that chair or co-chair the committee who just has the primary 09:24:44 responsibility of working closely with the student, advising especially their research design and methodology. But then they need to hear from other people, sometimes even get competing feedback. That's part of the peer-review process.

09:24:58 And so these additional students are ones where another faculty member might have been the lead chairperson of their committee, but I was involved in training and overseeing their dissertation as well.

Q. How many Ph.D students do you have right now?

09:25:12 **A.** Right now I have probably four that are directly under

my supervision and probably another six that I'm working with. So maybe ten out of our active students.

Q. Now I also have an appointment at UCLA; is that true?

A. That's right.

09:25:24 **Q.** Have I served with you in the capacity as a committee member for dissertation committees?

A. Yes. My appointment is in political science. I believe yours is in the school of public affairs and law school. But through the Voting Rights Project some

09:25:37 students have sought you out and asked you to serve as a dissertation committee member.

Q. All right. I'd like to call your attention to Loren Collingwood in particular.

How did you get to know him?

09:25:50 **A.** He was I think the first student I recruited at the University of Washington. And he was the first student I had that came in directly to work with me. And so one of my -- one of the oldest students that I've had and had the longest relationship with.

09:26:11 **Q.** And has he gone on to other jobs at this point?

A. Yes.

Q. All right. We heard some testimony in here yesterday about a case called *Pierce* out of North Carolina.

Are you familiar with this?

09:26:22 **A.** Yes.

Q. What is your involvement in that case?

A. I worked on an early portion of that case as a -- and wrote an expert report for a PI.

Q. And give us a sense of what the scope of that was, when you were hired, how long it lasted, that sort of thing.

09:26:36

A. My recollection was -- I didn't have a lot of involvement. My recollection was that was in November of 2023, that some lawyers who were working directly with the governor of North Carolina reached out to me and said they had a very fast moving timeline and would I be available to analyze racially polarized voting for a PI and that they needed a report right away.

09:26:50

Q. Did you do that?

A. I did.

09:27:02

Q. What does "right away" mean?

A. They had called me and said they had to turn something in I think, you know, within less than a week. It might have been five days. And they had just got notice -- the person I talked to told me, you know, two or three times that this was something the governor really wanted and that this was the law firm that represented him. And so they were trying to really make sure that they could put their best foot forward, and they wanted to get a report out right away. So it was about four or five days, I

09:27:16

09:27:29

think, once I got the data and the analysis.

Q. At some point did you do another kind of analysis in addition to racially polarized voting?

A. Yes. It started with racially polarized voting analysis. Near the very end the attorneys also asked if I could add a performance analysis of the districts.

Q. And did you do that?

A. Yes.

Q. Is that what became an issue in the case?

A. Yes. One of the components of the performance analysis.

Q. What was the issue?

A. During one of the hearings it came up that one of the rows -- I believe we did 36 elections. One of the rows, meaning one of the elections in the performance analysis, contained an error.

Q. How was that addressed?

A. I wasn't at the hearing. So one of the attorneys who was at the hearing came back to me and notified me that there was a discrepancy with one of the rows and could I take a look at it. And so I did. There was an error.

Q. What was that error?

A. There was an error. One of the rows did not include an uncontested election. I had tabulated for performance analysis the results of elections; and I had only

tabulated the result of an election where there were two candidates running, a Democrat and Republican. But another Senate District had an uncontested Republican running; and I hadn't incorporated that, because I was looking at two-party contested elections.

09:28:55

And so that was an error on my part. I had failed to incorporate that uncontested election. And so I wrote an affidavit saying here is the results with the contested election.

09:29:07 **Q.** And the Court ultimately found you unreliable on that basis; is that true?

A. Yes.

Q. What happened next with regard to your work in that case?

09:29:15 **A.** There was no other work. After that, I had no other communication with the attorneys. My understanding was I was just involved for the PI. We lost the PI, and so my work was done.

Q. So how did you arrange for the plaintiffs in that case

09:29:28 to hire Dr. Collingwood?

A. I did not. I had no other communications at all with the attorneys and was not aware of the case until very recently.

Q. Did you have anything to do with preparing his

09:29:42 analysis?

A. No. I did not even know he was working on the case until the decision came out and I saw his name in it.

Q. Earlier this week?

A. Just a few days ago.

09:29:54 **Q.** All right. Now how many times approximately have you testified in court?

A. Between state and federal, I would say probably 50 or more.

Q. And approximately how many times has the Court found

09:30:06 you credible?

A. Almost in all of them. Even if they don't side with the side I'm working on, they usually still credit myself or other experts as giving credible testimony. So I would say almost always.

09:30:20 **Q.** How many times have you been published on matters related to the issues in this case?

A. Voting rights in general or topics of racially polarized voting or districting, I would say consumes a majority of my academic publications. I would have to

09:30:37 scroll back up and look at my CV to give you an exact number but, you know, dozens. Dozens of my publications are directly related to these topics.

MR. DUNN: And for the Court's record, the full curriculum vitae is Brooks Exhibit 269 in the last pages.

09:30:48 BY MR. DUNN:

Q. All right. I want to talk about the software R now. And I'd like to take you to your report at Exhibit 284 and specifically page 33.

What is it that I have shown here on the screen?

09:31:11 **A.** I believe this is our rebuttal. And this would include the script that myself and Mr. Rios used in this rebuttal report. This is code or script in the software package R.

Q. Had you produced a code for your earlier analysis in

09:31:32 this, in this case, in this proceeding, the preliminary injunction?

A. I did.

Q. Had you produced your code in the earlier two trials we had in this matter?

09:31:41 **A.** Yes.

Q. Stepping back just a minute: What exactly is R?

A. R is a software package that many social scientists use for statistical analysis and data science. You can use it for anything from running a regression to drawing

09:31:59 maps and a lot of stuff in between.

It's very popular. One of the things that makes it popular is that it is free to download. All of the packages and functions that come with it are free. And a lot of professors might write their own pieces of this

09:32:17 software to make it more inclusive and available to them.

Q. How long have you been working with R?

A. I would say about 15 years. Maybe about halfway through my time at the University of Washington it started to become very popular.

09:32:36 **Q.** What did it sort of replace?

A. A lot of folks I would say before working in R, at least in political science and the social sciences, were often using a program called Stata. It was actually developed by a professor who used to be at Texas A&M who

09:32:53 was an extremely prominent economist. And that was the main program that a lot of folks were using.

Other folks were using a program called SPSS.

But R came along after I was in -- I had finished my graduate training, I was an assistant professor, and it

09:33:08 started to become very popular and allowed for a lot more precision and functionality in the coding.

Q. Well, I spent a few years with SPSS at U of H when I was in a Ph.D program for a brief time, but it's what convinced me I needed to just stick with being a lawyer,

09:33:26 so...

A. That makes sense.

Q. Let me ask you: How does the R program work?

Well, let's step back. You used a package. What was it called?

09:33:32 **A.** In this case we used two different packages in R. One

was called eiCompare, which is an R software package that analyzes racially polarized voting. Included that in our August 2025 report.

We used a second package called redist, r-e-d-i-s-t, and used that in all three of the reports I believe that I submitted.

Q. We'll get to your opinions in a minute. But both of those, the eiCompare that you used for racially polarized voting and redist that you used for your simulations, just to be clear, both of those are run in this software called R?

A. That's correct.

Q. Now, turning your attention back to page 284 and the code that you have there, what is this code for?

A. This code is for the redist simulations that we completed during our rebuttal. And it tells the package exactly, you know, what districts to draw, how many simulations to draw, and then the plots to make it.

Q. Well, focusing for now on the simulations, you know, walk us through how the software works. What is it doing?

A. Well, the first thing it needs to do is to pull in the dataset that it will draw the districts from. This is based on the underlying data. And this data is election result data, usually at the VTD precinct level.

Maybe some census race data oftentimes at the block.

It could be block group level.

And then you need lines. You need those shapefile lines for one of the maps.

And so those three pieces of information are merged together.

Q. Let me stop you there.

Where did you get those three pieces of information?

A. Well, for the VTD election results, we got those directly off the TLC website. They maintain a very nice database for everyone to access. We retrieved the 2024 presidential election results at the VTD level there.

The shapefiles, which are the boundaries of different maps, also are posted publicly on the TLC website and available to download.

Then the third source of information is from the U.S. Census Bureau. Those are race and ethnicity estimates for census geographies.

Q. Are all three of those publicly-available?

A. Yes.

Q. Nevertheless, did you produce them with your reports in this case?

A. Yes. We have produced copies of all the VTD analyses, shapefiles, census data, et cetera, really going back all the way I think to 2022 when we started this and tried to provide direct information on exactly which datasets we

were using and where they were available.

JUDGE SMITH: This is census, not ACS? I just want to be sure that I understand.

THE WITNESS: In this case, Your Honor, I believe the citizen voting age population data does come from the ACS. I'm referring to the census overall. Not the decennial census, but as a bureau. And so if you are using citizen voting age population, that does come from the ACS five year.

09:36:35

09:36:51

JUDGE SMITH: Okay. Sorry for the interruption.

THE WITNESS: No. Thank you for that clarification.

BY MR. DUNN:

Q. Now, in the earlier trial we had in May and June of this year in this case, Dr. Trende also used R and the redist package. Is that your recollection?

09:36:58

A. I believe so. Both in that, as well as in his previous analysis.

Q. Did he also use those datasets you just mentioned?

A. Yes. Looking at his code, he did this exact same process. It's the first step that every expert will take in pulling together election data, census data, and shapefiles. And his code is quite similar to mine and Mr. Rios in how we build those files.

09:37:11

Q. Now, when you have these datasets available, you are

09:37:30

in R, then what is the next step?

A. Then you need to start setting your geographies of interest where you are going to analyze. In this case, we have analyzed statewide simulations where we have looked at all 38 congressional districts across the entire state of Texas. And then we have also honed in on just counties or just specific congressional districts in different regions.

09:37:45

Here we focused on the Harris County region, the Dallas-Fort Worth region, and then the Austin to San Antonio region that we were just hearing testimony about.

09:38:02

Q. And when you focus in on a particular geography, are you working from the statewide boundaries or the statewide shapefile?

A. Yes. You are still working from the same file, you're just using a process called filtering where you are filtering your analyses down to just one region or sets of counties or sets of districts. You can tell it exactly where to filter its analysis.

09:38:19

Q. Are you familiar with the term "interim shapefile"?

09:38:33

A. Not directly, no.

Q. Well, you recognize there is a criticism Dr. Trende had in this case that you had not produced some type of interim-type shapefile.

Do you recall that generally?

09:38:51

A. Yeah. I was believe it was related to the interim simulation results.

Q. I see.

So once the shapefile is then focused on a particular area through this filtering, then what happens?

A. Well, then you set up the parameters for how many simulations you want. There is something called a warm-up, which is it starts to run simulations before it starts keeping track of them. You can tell it how many chains to use, those are the independent ensembles that comprise the simulations. So you sort of set up all of the rules that your simulations or ensembles are about to go pursue.

And then you tell it to run. And then it runs, you know, 20,000 or 200,000 or 2 million total districts across these simulations. And that's where you have something that is the simulation results. This is an object in R, which is a very, very large data file.

Q. Well, in your case -- and we'll get to the opinions later, but in this case, about how many simulations did you run?

A. Across the three reports, we used the redist software in all three of the reports here, August, the September 5th supplement, and then the September 29th rebuttal. There were probably 12 different geographies or

maybe 18 different runs that we did. The most simulations we did in any one run I think was 2.7 million. Others have 1.9 million. Sometimes they have 300,000.

So adding those all together, you know, you are talking millions and millions. More than 4 million, 5 million total district simulations.

09:40:30

Q. So once you get to that step in the process, I mean, give us a sense of like how much memory is used up.

A. Well, for any individual run, when you are setting it, these are extremely memory intensive. In fact, these are processes that wouldn't have been possible 10 or 20 years ago for sure. The authors of the package are updating it to match what computing is available.

09:40:46

And even today, with a state as large as Texas, it is quite difficult to run statewide simulations under the constraints that we were trying to match exactly what the state did. Just running the statewide constraints is extremely difficult for the software to be able to get its hands around. So you are talking huge, huge data files of simulation results that the R software is dealing with.

09:41:07

09:41:23

Q. Where is that while the system is waiting for its next command?

A. It's essentially in the environment, which is what we call it, in the R environment. And so it's a temp file that's created in the environment that you could then cull

09:41:41

and access and essentially ask questions of, make tables out of. But it is a very, very large file.

Q. And you understand the criticism was why didn't you produce the interim shapefiles; is that right?

09:41:56 **A.** That was the criticism, yes.

Q. What is your opinion?

A. Well, the first answer is that it's not necessary. In keeping with the actual standards that we use in publishing, that interim file is one that's created by the

09:42:09 code. And it could be easily recreated as long as you have the code and you know the data you are working with.

It's not something that journal editors, if you were publishing this, would ask of you as a scholar to deposit these huge interim objects or simulation results. And so

09:42:30 it's simply not necessary.

If you take these extra steps to save those, your entire process will slow down dramatically. You have now devoted almost all of the computer's memory just to holding that object.

09:42:44 And because you can just run it again by running the code that you see here on the screen, it's -- it's not something that's necessary or that the practice in publishing is not to keep that and report that.

Q. Well, one of the -- well, let me ask it this way:

09:43:04 The -- what are you -- what is the end product you are

trying to get to when you are running the redist?

A. The end product is to try to get these tables, which I put in and histograms and plots, to understand what is possible and what are the probabilities of different

09:43:22 outcomes.

And so, again, if you look at published journals, typically you'll see a lot of images and histograms and tables that show you some of the results. That's what we're drawing our analyses on, are those histograms and

09:43:43 plots and tables. And so that's what the end result is, is to ask a question.

I'll just give you one example. In the case of our analysis in the DFW region, whether or not drawing a majority Black district was a likely outcome. And so I

09:44:01 wanted to know the answer to that. I told the computer to run hundreds of thousands of simulations of different types of maps in the DFW region. And I asked it how often do you result in a 50.0 or higher Black majority CVAP district.

09:44:18 And based on those simulation results it can draw tables, charts, plots, to show you what is the answer, what is just the summary of those simulation results.

Q. And is this a similar type analysis to what Dr. Trende did back in May and June?

09:44:36 **A.** Yes. Almost the same.

Q. These interim simulations, did he help with those in his analysis?

A. I don't believe in his first report he did. I don't recall off the top of my head. As I said, it's not something that would be required. We would just need to see his code, and then we could easily re-create the analysis.

Q. Now the matter of seeing his code, the other criticism that was leveled was about this thing called a set.seed.

Do you recall that?

A. Yes.

Q. What is that?

A. That is where you come up with a random number, and then essentially you tell the computer always follow this path. Never deviate off this path. You can only go on this path.

So it could be used, and I mention this in my rebuttal, if I was teaching first-year students, first-year Ph.D students and I wanted to make sure that all of us, while we were running some analysis, had -- were on the exact same path and I could ask them, now look and see what this says.

But it takes the randomness out. And so you could imagine if there was hiking trails or running trails somewhere in the mountains here, you might say there is

any number of endless ways to get up to the top of this mountain or this park, but when you set a seed you're saying you may only go on this path and never deviate from it. And when you come back the next time, you won't take a random draw. You'll just only go on that same path.

09:45:56

So it's something that in my practice I believe takes away from the randomness of the science, and so I don't believe it's necessary. And it is not something that, again, in publication is required.

09:46:13 **Q.** Now, have you taught R before in your teaching experience?

A. Yes. We use R in most of my classes, especially in those for graduate students, especially for related to anything about voting rights. And both of these packages,

09:46:31 eiCompare and redist, would be popular to use.

Q. When you say you don't think the set.seed is appropriate, why do you say that? Appropriate to use in this kind of situation.

A. It takes the randomness out of the data science.

09:46:49 **Q.** Why do you want the randomness?

A. The entire point of simulations of any draws is not to say there is only one path; but to say if I tell the computer to randomly draw me districts, and I could tell it to do hundreds of thousands or millions, what do those

09:47:09 come back and look like?

And then another person could come along and say now let me tell it to draw, randomly draw a hundred thousand or a million districts.

We want that randomness. We don't want to always be on the exact same path. And you think about it in the same way as polling during elections. We don't want just a thousand people that we always call those same thousand people. Every pollster, whether it's a campaign pollster or the New York Times pollsters, surveyors, they are going to randomly call. What makes the data so much better is that every pollster or every redist simulation is doing a random draw. And then what redist is doing is averaging those.

When you set the seed, it might be useful, as I said, if you are teaching a first year Ph.D student class and you want to make sure everyone's computer has the same data on it.

But for the actual data science you want a random draw every time. It's the entire point is that you want -- you want the computer to randomly come up with results.

Q. And so each time it's run randomly, assuming it's being done correctly, would you expect these histograms at the end to look roughly the same across different experts running the same package randomly with the same data?

A. Yes. Yes. The idea is they should look very similar,

but they are not going to be identical in the same way that two surveys of a thousand people. They should be similar, but they shouldn't be exactly identical because there is randomness involved.

09:48:35 And the idea is that averaging all that randomness is always going to get you a distribution within that histogram.

Q. Now, despite the controversy of your alleged non-production of items, was Dr. Trende able to replicate

09:48:47 your analysis?

A. Yes. In reading his report that he submitted in this case, he uses that phrase on one of his pages, I then replicated the Barreto/Rios analysis; and in my review of his code and analysis, he was able to do it quite easily.

09:49:05 **Q.** And were his histograms roughly similar to yours?

A. Well, he produced a different set and type of histograms, but they are based on an extremely similar set of results through his random draw, yes.

Q. Now also one of the criticisms that was focused on you

09:49:22 on this analysis is that you -- and we'll get to the specific opinions later -- but is that you -- there weren't enough iterations, too many plans, you know, were similar and so it was less probative.

Do you recall that generally?

09:49:35 **A.** Yes. He was referring to what is called the map

diversity.

Q. Having another expert run it without a set.seed and getting also another random set of examples also addresses whatever lack of diversity there was in the output that you had; is that true?

A. That's true.

Q. Now, I want to take you to Brooks Exhibit 284 at 31, pages 31 and 32.

Now, when this controversy arose about what you had produced in this case, what did you do here with respect to this email that's on the page?

A. I reached out to two scholars who I know to be experts with this exact software package redist and asked them what their practices were and if they had time to review the code that I had submitted and report that I had submitted and asked them what their opinions were.

Q. And what was -- the first email was with a Cory McCartan, if I'm saying that correctly.

Who is that person?

A. That is Dr. Cory McCartan. He is a professor at Penn State University and is one of the co-authors of the current version of redist.

Q. Why did you reach out to him particularly?

A. I had come across Dr. McCartan on a previous voting rights case. He was an expert witness running redist

simulations. And I had gotten to know him and talked to him. Someone who I felt to be highly qualified and capable. In fact, he was a co-author. He wrote this software, the most recent version.

09:51:16 So I reached out to him and asked him what was his general experience in publishing and in -- as well as in his expert work.

Q. What was his response?

A. Well, he said that he reviewed what I sent him and 09:51:28 that it looked quite consistent with what he had done. And that he agreed that there is no need for those interim objects or simulation results. That as long as someone had the code, they were totally fine to be able to replicate.

09:51:45 He, in fact, says in here that the point is to have random simulations each time, that the randomness of each iterative draw is the entire point of the software he wrote.

And that his experience in previous cases, as well as 09:51:58 publication, was that you did not need those interim objects, which were very large in size.

Q. And then on page 32, you know, quickly, who is this?

A. This is an email from Dr. Kosuke Imai.

Q. Who is that?

09:52:16 **A.** He is a professor at Harvard University who is the

lead author of the redist package. He was also Dr. McCartan's dissertation advisor. And they have co-authored papers together about redist.

Q. And what was his conclusion with regard to the code you provided?

09:52:29

A. He gave the same answer. That in his experience, and especially in publishing journals on this topic, publishing articles in social science on this, that the simulation results were not necessary. That people are able to replicate based on code. And that's the general practice today in social science.

09:52:43

Q. So when you heard and it was communicated to you that there were these concerns raised about the -- from Dr. Trende about this -- the interim simulations and the set.seed, what was your reaction? Did you expect this or was it a surprise?

09:52:59

A. It was a complete surprise. It's not necessary at all. I know Dr. Trende. I know that he knows how to use redist.

Q. And in fact he did?

09:53:12

A. Yes.

Q. Both before and after; isn't that true?

A. He used it in this case back in 2022. As well as in the 2025 trial we had previously in this room, he used it again. I have seen him use it in other cases in

09:53:24

Washington, Florida, Kansas, other places. He knows the package quite well. He knows how to use it.

And I was surprised that he would have not been able -- knowing that he already created a statewide file that I described, I was surprised that he would not be able to run it.

09:53:42

Q. All right. Let's transition and talk about what you did with respect to your reports in this preliminary injunction hearing.

09:53:55

When is it that you first sort of started to work on your analysis of your first report in this case?

A. It would have been late August. I know there was a lot of uncertainty over whether Texas was going to pass a map or not. Sometime in late August Mr. Gaber reached out to me and said that it looked like a map is going to pass and that he wanted to talk to me about another expert report.

09:54:16

Q. All right. Did you understand that there would be a very short window of time for you to produce this report?

09:54:31

A. Yes. There was a lot of uncertainty that it could have been from something like two days to six days. And we were waiting to see what would happen with the legislature.

Q. The record reflects that the bill passed the Senate on a Saturday morning and was ultimately sent to the

09:54:45

governor. The record also reflects that within a day or two several of the plaintiffs, including the Brooks plaintiffs, had filed a preliminary injunction motion. With it, the Brooks plaintiffs included your report.

09:55:03 Do you recall those events that way?

A. Yes.

Q. So I'm not asking you to be precise, but just roughly, did you have a week? Five days? Two weeks? How long did you have to work up your assignment?

09:55:12 **A.** Maybe about a week.

Q. And what is it you were asked to do?

A. In the first report, the August 2025 report, Mr. Rios and I were asked to take up two primary issues. The first was to assess racially polarized voting in the new

09:55:31 district boundaries -- that's what I'm calling the C2333 plan -- and whether or not White, Hispanic, and Black voters continued to exhibit racially polarized voting. And so we looked at that.

The second was to assess the new map as compared to

09:55:56 the 2021 map, which is the C2193, and to look specifically at boundaries and whether or not we could draw any conclusions as to whether racial boundaries appeared to be the focus of the map drawers.

Related to that, we also ran the redist simulations

09:56:22 that we just spent some time talking about.

Q. We'll get to your opinions in a moment. But that was filed with the Court. The Court held a hearing. This proceeding was scheduled.

Were you then asked to do another report?

09:56:32 **A.** Yes. That's the September 5th supplement.

Q. What did you do in that report?

A. There, as I indicated in my first August report, because that was a very limited time frame, there was additional analyses that I wanted to continue doing, in

09:56:49 particular with the redist simulations, to continue honing in on the different parts of the state.

Q. Why didn't you just do them with your first report?

A. Frankly, there wasn't enough time. The -- we weren't even certain if we were going to be able to run the

09:57:08 statewide, entire state 38 districts in enough time for the first report, because it is so computing power intensive, with the constraints that we had to match.

Q. Like, roughly, how many hours did it take?

A. Just to run one statewide simulation -- first of all,

09:57:27 many times it crashed and said it couldn't converge and report results. But many times these might run for 48 hours to try to draw 38 districts with the constraints and the types of simulations that we were looking for.

And so these are very time intensive efforts. And so

09:57:45 we were able to get to those by having a few more days on

the September 5 supplement.

Q. And I mean not to be overly simplistic, but at some point you hit enter on the code and it starts running and you walk away from it for 48 hours?

09:57:58 **A.** More or less. You need to make sure that it doesn't crash in the interim, because depending on how the ensembles or the chains are reacting, they may not be able to continue under the constraints imposed.

Again, we're trying to match the exact constraints

09:58:12 that Texas was using so that our process is exactly similar to theirs.

But, yes, it's running and it's doing its thing during this time.

Q. All right. And we'll get -- we'll unpack your second

09:58:24 report. But then finally, you have a third report; is that right?

A. Yes.

Q. What is it?

A. That is the rebuttal in response to the report

09:58:34 submitted by Dr. Trende and Dr. Lewis.

Q. And then you mentioned several times a Michael Rios. Who is that?

A. Michael Rios is the senior data scientist at the UCLA Voting Rights Project and is my co-author on this report,

09:58:51 these three reports, and has been my co-author on all

matters on the *LULAC v. Abbott*.

Q. Why do you involve him?

A. He is an expert in the software R, both eiCompare and redist, as well as in the datasets, merging datasets, overlaying files, has extensive training, has testified himself as an expert witness in cases, and is someone I have worked very closely with for about five or six years.

Q. Is it customary for a political scientist in your position performing this kind of analysis to involve qualified assistance?

A. Yes.

Q. Did Dr. Alford do that earlier in this case, have an assistant that worked with him?

A. Yes. He has for almost all his career.

Q. Have you found Mr. Rios's analysis to be reliable?

A. Yes.

Q. And have you confirmed and checked it and -- with your own expertise to have confidence in the work that you have produced here?

A. Yes.

Q. And in terms of the opinions that you produce in these three reports and that you would offer today, are you basing them on the social science and what the standard practice would be among political scientists in the field?

A. That's correct.

Q. Do you have experience with mapping, redistricting?

A. Yes. Extensively.

Q. How so?

A. It's not only something that is involved in all of the teaching I have been doing on the voting rights analysis for almost all 20 years that I have been a professor, but I have also been a testifying expert specifically on mapping and redistricting in front of three-judge panels in other states.

Q. Is that including analyzing plans?

A. Yes.

Q. Have you been hired by governments to assist with mapping and map analyzation?

A. Yes. In both the 2011 and the 2021 redistricting cycles, I was hired by either states, counties, cities, to advise them and assist them with the redistricting process in mapping.

MR. DUNN: All right. Dr. Barreto has been previously recognized or accepted in this -- by the Court in this case as an expert in political science, voting analysis, demographic analysis, and the application of the *Gingles* factors. We added today as an expert also on mapping analysis and tender him for that purpose.

MR. KERCHER: Maybe I should change things up and object this time. But no objection.

JUDGE GUADERRAMA: The Court receives him as such.

MR. DUNN: At this point in time I'd move to admit Brooks Exhibits 269, 283, and 284.

10:01:21 (Brooks Exhibit Numbers 269, 284, and 284 offered into evidence.)

MR. KERCHER: Those are Dr. Barreto's August report, his September supplement, and his rebuttal; is that right?

10:01:35 MR. DUNN: Yes, sir.

MR. KERCHER: No objection.

JUDGE GUADERRAMA: Brooks Exhibits 269, 283, and 284 are admitted.

10:01:44 (Brooks Exhibit Numbers 269, 284, and 284 admitted into evidence.)

BY MR. DUNN:

Q. I want to take your attention to your report that's been admitted, Brooks Exhibit 269. And I want to get down to what you did here on racially polarized voting.

10:01:59 So kind of set the table on what analysis you were doing there.

A. Well, the first is that Mr. Rios and I see this as really a continuation or follow-up to the extensive volume of analysis we have done on racially polarized voting going back to 2022 in this matter. And here we were asked

to update that for some recent elections using the new C2333 map boundaries.

Q. And how did you select these elections?

A. These are -- we wanted to get the most recent elections, since this is a recent matter. I felt that I had already analyzed and provided to the Court data going all the way back to 2014, I believe in some of the reports that have already been submitted. So here we just chose to focus on some elections from 2022 and 2024 to sort of look at what the most recent trend is in voting patterns in Texas.

Q. And was it you who determined which of these elections to analyze?

A. Yes.

Q. Did you include the 2024 Harris/Trump presidential election?

A. I did.

Q. And how is it that you under -- we have heard some testimony from two experts, I should tell you, Professor, on RPV, so we don't need to reinvent that wheel. But what were the methods of RPV analysis that you went through?

A. On this we used the software program eiCompare, which is a software program in R that allows analysis of two types of ecological inference. The first is called EI iterative. Sometimes it's called King's EI. And the

second is called EI RxC and it's abbreviated as capital R and x and then a capital C.

Q. Who originated eiCompare?

A. eiCompare is a software package that myself and Dr. Collingwood, along with Dr. Oskooii and Dr. Garcia-Rios published in two academic journals and have made publicly-available.

Q. Is it now widely used by other experts, including some you have never met or known?

A. Definitely. We get inquiries a lot of times from other folks, both in academia but also at research centers or civil rights organizations, saying that they have downloaded the software and they have a few questions.

Q. All right. You report in your report both the CVAP-based RPV analysis and a BISG-based RPV analysis; is that true?

A. That's correct.

Q. What is the CVAP-based RPV analysis?

A. The CVAP is based on the citizen voting age population, which we get from the census ACS, and incorporate the race and ethnicity of the citizen eligible voters in every VTD to produce estimates of voting. And that is separate from the BISG in which we use the actual voter file.

Q. And we got an explanation of BISG yesterday, but just

your quick explanation about that.

A. Well, BISG goes to the actual voter files. So the citizen voting age population data is often quite useful, but many of those people aren't registered and they may not vote. And so for precision I would say most experts agree that you should get your data off the voter file and try to impute the race and ethnicity directly of people off the voter file, because we know they voted. We're trying to understand voting behavior. Let's use votes. And so that's what BISG does.

Q. All right. Have you been published on BISG?

A. Yes.

Q. Were -- in fact, would you say you are one of the most published persons in academic journals on BISG?

A. I have published a number of articles on BISG. It's now starting to become a quite popular topic in political science; and within the last three to four years, more people are jumping in and using it for different applications and tweaking the methodology.

Q. Have you published papers on validating BISG?

A. Yes.

Q. What does that mean to validate it and how did you do so?

A. So to validate BISG, because we are estimating someone's race and ethnicity on the voter file, to

validate it, you go to a state that has self-reported race and ethnicity; and then you compare your estimates for VTDs. Very importantly, we're not trying to predict any single individual. There might be 20 million people on the voter file. We're trying to predict for that precinct, for that VTD, that -- what is called an ecological unit.

And so we get the self-reported real data from a state like Florida or North Carolina or Georgia, where you have to put your race on the voter file. And then we compare how our estimates work to the real actual answer that voters did. And it comes back as extremely accurate.

Q. And did you do that validation with those states you mentioned?

A. Yes. As well as we have ongoing validation right now for the state of California, which has started to roll out self-reported race on the voter file, so we can validate it in California as well now.

Q. Have you been published on the validations?

A. Yes.

Q. Who was one of your co-authors?

A. Dr. Loren Collingwood.

Q. Now I want to call your attention to page 12 of your report, which should be on your screen. And this -- would you call this sort of your takeaway conclusion about

racially polarized voting, the top part?

A. Yes.

Q. What is that?

A. Paragraph 12 summarizes what we found here in this August 25 report, which suggests that across all the models we ran, here we ran about 600 models, when you take the CVAP models, the BISG models, the two different types of EI that we did, iterative and RxC, the finding is extremely consistent, and consistent with all the previous reports I've produced in this, that there continues to be very prominent racially polarized voting here across the different congressional districts in Texas.

Q. All right. I'm going to jump to page 44 of your report, which is Brooks Exhibit 269, and ask you to just talk about a few of these --

Well, first, what are we seeing here? We see a bunch of these similar looking tables over and over again. What are they generally?

A. These are the summary results of how different racial and ethnic groups voted, and you can see that there are -- these ones we're looking at are for the CVAP input, citizen voting age population from the ACS.

And there is two sets of results for each racial group. There is EI on the left part of the screen, and then there is RxC. And those are just the two different

regression models that you can use in eiCompare.

Q. You have done this for the newly enacted Plan C2333?

A. Yes. Across a variety of congressional districts. Up on the screen I see Congressional Districts 2 and 5, and I believe we went all the way down to the districts in the 30s.

Q. And you have previously done that with the enacted Plan C2193; is that true?

A. Yes.

Q. All right. Just to -- as an example, I'm going to go to page 51 and ask you to look at Congressional District 9 and tell us what is shown here.

A. This is the BISG input, which is the actual race of the voters on the voter file. And here it is showing how, in Congressional District 9, Anglos or Whites, Hispanic/Latino, and then Black are voting.

And so just to start on the first set of elections, we have the Trump/Harris election in 2024. The first sets of results suggest that in this part, I believe this is in the Harris County region, White voters gave 93 percent of their vote to Mr. Trump. Hispanic voters gave 59.7 percent of their vote to Ms. Harris. And Black voters 93 percent of their vote to Ms. Harris.

So it shows on that particular election racially polarized voting. And then we have three or four other

additional elections beyond that.

Q. Do you notice, for this table and the other analysis that you have done, a difference between the Trump/Harris election on racially polarized voting and other down ballot elections?

A. Yes. Definitely. In this case you can see, just by going two rows down, you have the Cruz/Allred election in the same year, on the same ballot, so the same sets of voters. And you can see in particular for Hispanic and Latino voters, Mr. Allred does an additional 8 points better.

Or really what the finding in the literature is, is that Mr. Trump outperforms Mr. Cruz by about 8 points. And we see about a consistent 6 to 8 point increase from Mr. Trump among Hispanics that's not applicable to other Republican candidates in '24.

And then backing out to '22, the election just two years previously, we see Republicans doing even worse and Democrats doing even better with Hispanic voters. For example, the Attorney General's race, 74 percent of Hispanic vote for Garza, compared to 25 percent for Paxton.

And so one of the takeaways that I have of this election, and I believe I testified about this a bit back in May, was that there was an increase or a shift in

support for Mr. Trump among Hispanics. It was not consistent with other Republicans. It was just really about President Trump. And at the same time, we still document, and I don't think any other expert has disagreed with this, that a majority of Latinos here in Texas still continue to vote for Ms. Harris in 2024.

10:11:37

Q. The Court has heard evidence of the governor recorded on a television conversation with the media alleging that Hispanics in Texas have shifted Republican and that they were drawing four new Hispanic majority districts that would elect Republicans as a result.

10:11:53

My question to you is: What does the RPV data say as to whether that is an accurate assertion, that Hispanics in Texas have become majority in support for Republicans?

A. That is false. I believe this District 9 is one of the districts in particular that the governor had talked about drawing majority Hispanic. You can see that while there was a shift, it's still a clear majority. And about a 60 to 40 spread of Hispanic voters in this part of Texas voted Democrat. And even on the same ballot, on the Cruz/Allred election, it was 2:1. It was 67 to 32. And if we go back to '24, it was close to 3:1, 75/25.

10:12:07

10:12:24

So, yes, there is no doubt that Mr. Trump did better than other Republicans. But the average is still, in this part of Texas and across all of these, you can look at any

10:12:43

of these maps, these charts, a majority of Latinos are voting Democrat and especially for other Republicans beyond Mr. Trump, who presumably will not be on the ballot again.

10:12:57 **Q.** In the earlier two trials of this case, the expert for the other side was Dr. Alford; is that right?

A. Yes.

Q. Even though you may disagree on the results and the import of the results, was there any significant

10:13:11 disagreement between you two on the actual data outputs of the RPV analysis?

A. No. Not at all. My recollection was that Dr. Alford, in recent reports, didn't even run his own analysis. He just agreed with -- whether it was mine or

10:13:28 Dr. Ansolabehere, he just agreed with others and he had a different interpretation of them.

So there wasn't a disagreement that 59 percent of Hispanics voted for Ms. Harris in CD 9. Dr. Alford had just a different interpretation of why that might have

10:13:44 been. The data are the data. There is really no disagreeing with the data.

Q. Is Dr. Alford an expert for the State in this proceeding we're at today?

A. I don't believe I saw a report from him today, no.

10:13:54 **Q.** Who is the State's expert on racially polarized

voting?
A. Dr. Jeffrey Lewis.
Q. And does -- have you looked at Professor Lewis's report in this case?
10:14:02 **A.** Yes.
Q. And who is he, if you know?
A. I do know. I know him quite well. He is also a professor of political science at UCLA in my same department.
10:14:14 **Q.** You are colleagues, I assume?
A. Yes.
Q. And friends?
A. Yes.
Q. And you can disagree on things and debate about the
10:14:19 science. Is that fair to say?
A. Definitely. I have had dinner at his house. He has had dinner at my house. I have known him even before I was at UCLA. I have known him for probably 15 years.
Q. Does his report mention you at all?
10:14:31 **A.** It doesn't. It doesn't mention me by name at all. But it certainly is about racially polarized voting.
Q. So first, in terms of just the outputs, does Dr. Lewis perform his own EI?
A. He performs something I would say similar to EI; but
10:14:48 he doesn't perform ecological inference directly in the

way that Dr. Gary King has devised it, no.

Q. What does he say, if anything, about whether or not one of the plaintiffs' experts has produced reliable EI estimates?

10:15:04 **A.** My recollection of his report is that he decides to use and input into his models the results of Dr. Stephen Ansolabehere. He says I take those RPV results and plug them into my models. And then he also goes on to say that he believes Dr. Loren Collingwood is correct in deciding

10:15:28 to rely on the voter file.

Dr. Lewis states that -- which I think almost any political scientist would agree with -- we would rather have data for race directly off the voter file than CVAP. CVAP is eligible voters. When we are estimating behavior

10:15:43 we want to know the actual voters.

And so he says something like he agrees with Dr. Collingwood that this is the most accurate type of data to use.

Q. How would you describe Dr. Collingwood's results to

10:15:54 your own?

A. His BISG results for racially polarized voting are within 1 or 2 percent of mine. As I said earlier, the data are the data. They are going to almost always return the same results with a good model.

10:16:08 **Q.** Well, why would they be different at all, even at the

tiniest detail?

A. In the case of eiCompare and eiPack, the other software, they do similar to what we talked about before. They are running thousands and thousands of simulations and they are averaging those simulations. And so you would never get the same exact identical result. You would always get something within 1 or 2 percent if you are using the same data inputs.

Q. And so in terms of the experts who have performed this analysis, is it -- are the results consistent?

A. Yes. In this case, including going back to the trial we had in May and June, my read of those is that all of the political science experts are documenting tables such as these showing very big disparities between how Anglos, Hispanics, and Blacks in Texas vote.

Q. Now, whether we're talking about RPV or we're talking about these redistricting simulations, let's say you and I got in a room and we decided to commit a fraud on the court; and we wanted to just manufacture results that weren't true.

What would happen, in your opinion?

A. Well, an opposing expert would find it immediately because we're all operating off the same datasets. That's why I said the results -- in fact, probably like Dr. Alford doesn't even run his own analysis in many of

these cases. He just defers to the plaintiffs' data because the data are going to produce the same results. It's not possible to come up and change these racially polarized voting results. When you run eiCompare or eiPack, you are going to get results like this.

Q. Now as a practical matter, other than seeing the final result and helping finalize the reports you did, did I or Mr. Gaber have anything to do with the math, analysis, or running R that you have described here?

A. No, not at all.

Q. In the room, on the phone, connected with you at all when you did it?

A. No.

Q. All right. Now, if you'll go with me to page 52 of Exhibit Brooks 269. What -- on the Congressional District 29 table, what is shown here?

A. Congressional District 29, it's showing the BISG results. Again, it's showing the results for Anglos, Hispanic/Latino, and Black using the two different methods, iterative EI and RxC.

Q. How do you interpret these results?

A. These results are quite similar to the previous page. It shows that, first of all, African Americans are quite cohesive in all of these elections. Over 90 percent in support of the same candidate. That in the

Hispanic/Latino community, their communities continue to be a majority support for Democrat, but that President Trump did do better than other candidates.

Again, here you see about a six- to seven-point
10:19:04 difference in the same election between Trump and Cruz. And then you see some stronger results, as high as 66 percent, for Mr. O'Rourke in the 2022 governor's election.

So there is a little difference in terms of what the
10:19:20 exact percentage points are, but the pattern is extremely similar to the CD 9 that we just reviewed.

Q. When you look at the RPV table like this, what are you able to conclude, if anything, about what that tells you about how the state drew CD 29 in its new iteration?

10:19:36 **A.** Well, you can see here that these are communities where the Latino community is cohesive. The Black community is cohesive with the Latino community. And the White community in this electorate is voting majority Republican, but not nearly at the same rates as it was in
10:19:57 CD 9, where it was in the 90 percent range.

And so this type of information gives a map drawer information about race and partisanship and allows them to make selections based on race because they can understand these partisan voting patterns within each racial group.

10:20:17 **Q.** And then just one last example on the RPV. Let me

take you to page 54, the top table, Congressional District 35.

What is shown here?

A. Here we see the vote choice in the '22 and '24 elections. Again, by the same three racial groups. And, again, you'll see, you know, a slight increase here in the Latino columns, but the pattern is exactly the same.

So starting with the Trump/Harris election in '24, here in this CD 35 region, which is Bexar County and those outlying counties that we just heard about, about 65 percent of Latinos voted for Harris compared to 35 for Trump.

On the Cruz/Allred election, again, we see the same pattern. Mr. Trump outperformed Mr. Cruz by about six points. And we see that same trend continuing back into '22, where a candidate such as Governor Abbott was yet another six points lower than even Cruz in '24.

So we see these almost exact same patterns in every part of Texas we look at, where there is still a majority Democratic cohesive vote among Latinos. Mr. Trump did do better, but it is more of an outlier than compared to the other elections.

Blacks are still quite cohesive here, between 78 and 95 percent. And a very strong majority of Whites are what we would call bloc voting in the opposite direction, here

into the 80s voting Republican. So really canceling out the Black and Latino votes.

Q. Did you analyze then cohesiveness amongst minority voters and bloc voting by White voters in each of the three regions at issue today, the Houston metro, Dallas-Fort Worth metro, and San Antonio-Austin metro?

A. Yes.

Q. And are all those tables reported here?

A. Yes, all those tables are here.

Q. Now I would like to call your attention to what has been marked and not yet admitted as Defendants' Exhibit 570_PI, Dr. Lewis's report and, in particular, this figure on the screen.

What is it?

A. This is an analysis that Dr. Lewis carries out to compare whether or not race and ethnicity predicts the Trump '24 outcome better, or whether or not other partisan metrics predicts the Trump outcome better. And he gives us two plots of his results. One that he calls the "Abbott," and that's on the left plot. And the second that he calls "race ethnicity."

Q. What is the Abbott plot showing us?

A. Here he is showing how well using Abbott 2022 vote choice in each VTD is correlated with Trump 2024 vote choice in each VTD. And the blue line in the middle is

showing the -- how good of a prediction. The dash line would be a perfect 100 percent correlation. It's there for illustrative purposes.

The blue line is his actual regression result of what the model is performing. And so in that first panel on your left, he is showing that, you know, the blue line curves a bit, starts out below the dash, but comes up above, but it's otherwise, in his opinion, a very close fit using Abbott '22 to predict Trump '24. That's on the left side of the screen.

Q. And then what is shown on the right side?

A. On the right side, he has his race and ethnicity model. And here you can see that there is what he would refer to as a bit more noise in the model because those circles, which represent every single VTD in Texas, are a bit more scattered. They are away from the line a bit more. And so there is more -- there is more noise than in the first model.

But the model fit is essentially the same. You can see that by looking at his blue line. That it's right on the money for predicting Trump vote when you use his race and ethnicity model, even though there is more noise in the model. And so both of these show that there are good predictions of Trump '24 vote using either Abbott or race and ethnicity.

Q. What is Dr. Lewis's point?

A. He is trying to make the point that the partisan vote in the previous cycle predicts the partisan vote in the next cycle. I would say that's something that we would never run in a statistical paper as a political scientist, because we know that if Precinct 22 voted 76 percent for Abbott, it's extremely likely that if those same exact voters are there two years later, they might vote 77 percent for Trump.

This is just using basically the same variable on both sides. You are not learning anything new. You are just seeing a correlation that you would expect. And he is trying to show that. He is trying to show, look, if I use partisanship to predict partisanship, I get a very strong correlation. We would expect that.

Q. Why?

A. Well, because partisanship is a choice that people make. And they usually stick by that in their votes two years later. It's a deep literature on party affiliation. And that when people affiliate with a party, it is a good prediction of their vote.

What he doesn't get into is the -- and I talk about in my rebuttal, as well as previous cases, is the volumes of literature that explains what predicts partisan affiliation in the first place. And that is racial

attitudes and race and ethnicity.

So he is kind of mixing things up here. But as I said, my takeaway of this is that both models, that blue line is a very good fit. It comes very close to the dashed line, which means even in his race and ethnicity model, where he is admittedly using worse data from his perspective, he said CVAP data is not good data to use. We scroll up to paragraph 5. He says you should use voter file data. He is not. He is using CVAP data. Even so, he has a very good model fit on that second panel.

Q. Is race and party heavily correlated here in Texas?

A. Yes.

Q. Is that what your 300 election RPV analysis shows?

A. It has shown that in almost every election we have seen here in Texas.

Q. You made a point about using actual voter files. When you say that Dr. Lewis said it's ideal to use actual voters, is that referring to the BISG?

A. Yes. That's a technique that -- that's the leading technique that political scientists would use, including Dr. Lewis.

Q. But Dr. Lewis didn't use BISG. He used CVAP.

A. That's right. He says -- just above here in paragraph 5, he says voter file is preferred. It gives you more accurate data. Then he said something like he

just didn't have enough time, so he was going to use CVAP. And that I believe explains part of the noise in his model.

Q. Well, that's what I was going to ask. Is that the noise that he complains about on the race/ethnicity side, the right side of the figure? What do you think is causing that noise?

A. We have seen it time and again. That once you take account of the actual voters who vote, your model has a much better prediction and a better fit. These are just eligible voters. That may not even be registered. And that's what Dr. Lewis is saying. He is saying that's not as good of data. We would rather have the actual voters on the voter file. And I agree with that.

And I think that's why there is a bit of noise in here because he is using CVAP.

Q. All right. Let's turn to the Exhibit 283, Brooks Exhibit 283, the report. This is the report that you produced after the Court scheduled this hearing and you had more time to run some additional analysis. You produced this report before the State had produced its reports.

Does that sound right to you?

A. Yes.

Q. All right. I want to take you to page 7 -- excuse me.

I want to take you to paragraph 5 first.

All right. What is it that you're describing or doing here?

A. Here, I am going in to the redist simulations that we ran in here.

Q. Let me stop you. I left something out of the 269 report, so let me finish with that.

All right. In the 269 report, did you also do simulations?

A. Yes, we did.

Q. And what were those?

A. We did simulations for statewide, as well as county-based regional simulations in the Harris County region and the Austin-San Antonio region.

Q. So again on Exhibit 269, let me take you to page 41 and this figure here or plot or what?

A. Plot.

Q. Plot.

On simulation plot 1, what is depicted?

A. This is using a four-county region that we just heard referred to in the previous testimony: Bexar, Guadalupe, Wilson, and Karnes. That's the county region where the new CD 35 is.

This is showing the probability that you would create a majority Hispanic district, CVAP district, that Trump

carried by approximately ten points in this region. And each one of those dots is essentially one of the outcomes of the 332,000 simulation draws.

Q. So did the State map C2333 result in a district in the Bexar County region, a new district under the new map that was more than 50 percent Hispanic CVAP?

A. Yes. It was 50.4, something like that. 51.1. It was very -- just above 50.

Q. Is this the southeast Bexar County that goes out to Wilson County and some other districts?

A. Yes. These counties here. Here we are doing a county-based analysis. That's CD 35. We were asking the computer to tell us what is the probability or the likely outcome of achieving a majority Hispanic district. The most likely outcome in this chart is that black dot. That's the mean average of the draws, which you see comes in and it estimates somewhere around a 37 percent Hispanic CVAP district. And it could go as high as -- in 0.01 percent of the cases, as high as 48 or 49.

Q. How many green dots are there?

A. 332,000.

Q. Why is it that number? Why do you know that?

A. That's the number of simulations that we drew in this four-county region that were able to draw a Trump-plus ten district in this four-county area.

Q. And what is the dotted black line that had .50?
A. That's the 50 percent Hispanic CVAP. That's telling us -- and all of those numbers below, the .45, .40, .35, that's telling us for each one of those green dots, the
10:31:14 maps, what was their Latino percent.
Q. And out of the 332,000 maps that the software drew, how many of them achieved a 50 percent Hispanic CVAP district in this region?
A. Zero.
10:31:24 **Q.** And what did you tell the system were the parameters to draw these 332,000 maps?
A. We tried to match the State parameters as much as we could. And so we tried to tell it to put in constraints for drawing a district that President Trump carried by
10:31:46 about ten points.
Q. Why did you pick that benchmark?
A. Ten points, my understanding, was the exact number that Mr. Kincaid had given in a deposition of what he considered a safe district. And so we were operating
10:32:01 under the assumption that that is what the State was using and that's what map drawers would be using to create safe districts, and so we did 55 percent, which would be 55/45 as our metric.
Q. Did you have other parameters that you provided it?
10:32:17 **A.** Yes. It also has parameters on county splits and

compactness and other redistricting standards, contiguity.
Q. Similar to the ones that Dr. Trende used in the May-June report of his?
A. Yes. These are items that you set in the redist software, and Dr. Trende set those himself in his own analysis.
Q. Now I take you down to plot 3. What is shown here?
A. Plot 3 is the result of a four-district skein in the Harris, Liberty, and Fort Bend Counties, where those three counties have four districts that were majority Trump by ten points or more. And we wanted to see what is the probability of drawing one majority Hispanic CVAP district if you just centered your simulations to those three counties.
Q. What does this show?
A. This shows that across those four districts what their expected average would be and their range shown by the green dots again. And you can see that none of them cross 50 percent. You get as high as something around 42 to 44 percent.
Q. Now, again, we see these somewhat neat looking green squares. What makes up those green squares?
A. Well, each one of them has hundreds of thousands of dots in them. These are the actual simulations from the map. And it's showing where on the spectrum they are. So

they look like just a square, but they are really made up of them. You could see that a little bit better when we only had one on the previous slide. They are made up of hundreds of thousands of little dots.

10:34:00 You can kind of see at the top or the bottom of each -- and those are what we call the tails of the distribution -- there is less dots there. And so each of them, they look a little jagged on the top and the bottom and that's just because there is less dots there.

10:34:14 **Q.** And the black square, I notice, here is larger. Does that mean anything?

A. No. I think that's just the, you know, preference that Mr. Rios probably had in drawing these particular plots. It's still the mean. It's still the average of

10:34:29 the draw. And so here they are just right in the middle.

Q. Okay. Now let's go to 283. So 283. Now you have received a report from other parties; but you keep working on analysis, given that the trial in this proceeding has been set later.

10:34:47 Does that sound right to you?

A. Yes. That's correct.

Q. What additional analysis do you choose to do?

A. Well, as it says here in paragraph 5, which I think we were talking about, we were building on that regional

10:34:57 analysis that we just discussed. So we did some regional

analysis in that first report in August, and we wanted to continue that.

And so a big part of this September 5 supplement was to go in into additional regions, including DFW, and to
10:35:14 use the exact district boundaries that the State had used. So rather than using a county approach, which is still a rough approximation of where the districts are, here we wanted to use the exact same boundaries that the State had used.

10:35:29 **Q.** And let's go then to page 7. Is this -- in Appendix A, is this where it starts the results of those analysis?

A. That's correct.

Q. All right. What is this -- what is shown here in
10:35:48 Figure S1?

A. Figure S1, I believe, is the Harris County region. And we looked at the CD 7, 18, and 29 boundaries. And we wanted to simulate the probability that you would draw a majority Black CVAP district in this region in that area.

10:36:08 So if you were confined to these areas, this specific geography, not just Harris County but the very specific same geography that the State used, how many times -- and here we had 1.1 million district draws -- would you get a Black CVAP district.

10:36:26 **Q.** And why did you pick CD 7, 18, and 29?

A. Well, this is the region in which the State drew one Black majority CVAP district, and where they would be drawing their population from to possibly draw a Black majority CVAP district.

10:36:44 **Q.** And to be clear on these figures that we're going to walk through now, they relate to the geography in Plan C2333?

A. That's correct. In the new Plan C2333, in these exact boundaries, the State has drawn a Black majority CVAP

10:37:00 district. We wanted to tell the computer, take those same exact boundaries and tell us how often, out of your million draws, do you get a majority Black CVAP district.

Q. I should have brought this up at the earlier statewide histogram. Is this what -- what is this called?

10:37:15 **A.** Histogram.

Q. Histogram. All right.

If another expert then were to take your code and run it without a seed, and they get -- and they also ask it to do 1,180,824 simulations, what do we expect their

10:37:32 histogram is going to look like compared to yours, if we can expect anything?

A. It should look roughly equivalent to this. This is what Dr. McCartan explains in his email to me. That each simulation should have exactly the same shape. One of the

10:37:48 bars might be slightly higher or lower because it's a new

fresh random draw. But it should have the same shape and it should have the same bounds. The higher and the lower point should be roughly the same. And that's the whole point of data science, is to take a new random draw.

10:38:04 **Q.** And what is the conclusion you reached from this histogram?

A. In this, that there was a zero possibility of drawing a majority Black district through the simulation draws. It would have to be something that was purposefully done.

10:38:17 **Q.** Then if we go to the next figure, S2, what is shown here?

A. Here we moved the geography to the Dallas-Fort Worth, Dallas, Tarrant County region. We're looking at two districts, CD 30 and CD 33. So, again, confining to just

10:38:32 those bounds, just the shapes that are in CD 30 and 33. Here we ran 778,000 district possibilities. And it shows the distribution of what those two districts would look like.

Q. And what is the takeaway conclusion?

10:38:46 **A.** Neither district has a probability of being over 50 percent. There is an extremely low possibility, that's that very last purple bar, that you could get as high as 47 percent. But that -- even that is a very low probability.

10:39:01 The highest bars you can see are the main average.

And it's showing those somewhere around maybe a district that's 42 percent and another district that's around 32 percent Black.

Q. I note here that there are, as you have mentioned, there are 787,216 simulations in this. There was a number over a million in the prior.

Why are those different?

A. Well, the other one, we are doing a three-district simulation, so each one is probably having a similar number of ensembles that are being run. And here we're plotting the outcomes of all the districts. So just because there was a third district in that 7, 18, 29 configuration in Harris, it added another roughly 350,000 or so district possibilities.

Q. So then we'll go through these somewhat quickly. What is Figure S3 showing?

A. S3 now takes us to the seven-district region that comprises the larger Harris County region. There are seven districts in this region; and they are enumerated there, 2, 8, 9, 14, 22, 36, 38. Those are the seven districts using that geography. There are seven districts in that region that are plus 10 or greater for Mr. Trump.

We wanted to say, if you had to draw seven districts that are plus 10 or greater, what is the probability or possibility that you would get one 50 percent Latino

district.

Q. Well, and why does this look different? The other one had bars, pink bars, and a line vertically. This one has a horizontal line and green boxes. Why are they different?

A. They are just two different types of plots. This is more of a box plot that's showing each of the seven districts. The other was a histogram, also for each of the districts. But this is showing us for each of the seven districts what is their individual probability of being over 50 percent.

Q. And what is the takeaway conclusion?

A. Well, none of the districts here approach 50 percent. There is a zero percent probability that you would draw a majority Latino district if you had to draw seven Trump districts in this region.

Q. Well, and that's an important point. Are you dealing with partisanship at all as you are running these?

A. We are controlling for partisanship. We are using --

Q. How so?

A. We are using the same exact constraint that the State has set. They had said we want these districts to be plus seven -- or excuse me -- plus 10 Trump or greater. And so we have programmed it to say use that constraint. Draw me seven districts in this geography that are plus 10 or

greater for Trump and then tell me what is the expected Hispanic CVAP of those.

And so here we're seeing that the highest you might get is somewhere around 43 percent in that Number 7, but none of them cross over 50.

Q. All right. Now let's go to Figure S5. What is shown here?

A. Figure S5 is a similar plot. This is for the -- what we're calling South and Central Texas region that comprises CDs 21, 23, and 35. The same exact question. If you draw these districts plus 10 or greater for Trump, what is the probability that you would get majority Hispanic districts.

Q. And what is the conclusion there?

A. The conclusion here is that on balance you should get one majority Hispanic CVAP district. I believe in practice that has historically been CD 23, a district in South Texas that is a majority Hispanic that Mr. Trump carried.

But even that, you see there on that Number 3, there is at least some probability that it could be below 50 percent. That's the green portion underneath. And then there is a second district that might have a slight 10 percent probability of being over, but really is sort of canceled out by that green in the third column.

So really on balance, if you were drawing three districts here, one should be expected to be majority Hispanic, not two.

Q. All right. Let's go to Figure 7. What is this thing called? It looks different than the other things.

A. It's basically the same as the plot we were just looking at. It looks different because there is 38 -- there is 38 districts here now. And so this was our first effort to imply a statewide. And, again, it took us until September 5th to be able to run this.

Q. Why?

A. Because it was very computing power intensive. The constraints were very limiting that we were using, because we were trying to match exactly what the State did. And we finally were able to get it to run. We put in a 55 percent constraint, saying draw districts that are 55 percent or greater for Trump. And we told the computer you need to draw 30, because that's what the State did.

When we put that constraint in, this data is showing -- this plot is showing it was only able to return 29. It was not even possible, according to the computer simulations here, to return 30 districts if we had a hard 55 percent threshold. And so that's what we were just plotting here is that, in fact, we only came back with 29.

Q. Well, how many districts did the State draw?

A. The State drew 30. So we continued on that exercise to try to match them. But at the 55 percent limit, it only came back with 29.

Q. All right. Well, since the State was able to do it, doesn't that mean that this doesn't tell you much?

10:44:31

A. Well, we were able to do it. We just had to lower the threshold a little bit.

Q. Is that what you are showing in S10?

A. In S10 we lowered the constraint to 53. And you can see that when we do that, it is able to draw 30 districts that Mr. Trump carries. And they are not necessarily at 53, we just -- we were able to lower the threshold there. So some of these are 54. 54 1/2. But the 55 percent threshold was one that we weren't -- that the computer was not able to replicate what happened. When we lowered it to 53 and gave it a little bit more flexibility, it was able to draw the 30 districts; and that's what we used for this plot and the subsequent.

10:44:46

10:45:04

Q. On these -- I'm using a mouse. I'm not sure if you can see that on the screen. Can you see that?

10:45:21

A. Yes.

Q. All right. So where the last three red sort of boxes close to the dotted line then meet the blue boxes below the dotted line, are those the districts that are in the high 40s?

10:45:31

A. High 50s, yes.

Q. Okay.

A. So those are, at least on the plot, just to be clear, 9, 10, and 11. And those are the ones that are probably in that 54 range, maybe not quite to 55; but it's still able to produce, you know, these might be plus 8 1/2 or plus 9, 9 1/2 for Trump.

Q. And the C2333 plan that the State passed, did it end up with some districts in the 54 range?

A. Yes, they also did. We had been using 55, because of the deposition testimony of Mr. Kincaid. But when I actually looked at the real results of C2333 of the plan, there are three districts that round up to 55; but they are actually below 55. They are like 54.6, 54.7, and 54.8. And so I think they were probably doing something similar where they had to relax the assumptions a little bit in order to hit those marks.

Q. All right. Now Figure S11. What is shown here?

A. So this is that same map that we just looked at. But instead of showing the Trump vote, here we are showing on the y-axis how heavily Latino these 30 -- just the 30 Trump districts are.

Q. And --

A. Go ahead.

Q. What is the takeaway?

A. Well, the takeaway is that you see in purple those that eclipse 50 percent and are a majority, but there is only four. And the State has drawn many more than four majority Hispanic districts out of their 30.

10:47:05 What this is telling us is that the natural draw with the Hispanic population in Texas, when you draw 30 Trump districts, you could get four that are majority Hispanic CVAP but you should not get more than four. Those are all the rest in green as saying they should be below

10:47:24 50 percent.

Q. And why do you think that matters, that conclusion matters?

A. Well, because it shows that what the State did is a statistical outlier. It doesn't show six majority

10:47:36 Hispanic districts out of those 30. In fact, it shows for those next districts they're, you know, down in the 40s, which is what our other simulation shows. It wasn't something that the computer was able to produce six majority Hispanic districts out of the 30 Trump districts.

10:47:52 **Q.** All right. Let me go back to page 5 and paragraph 18. What are you discussing there?

A. Here in paragraph 18 we're looking at the total number of districts in which there was a single race which was a majority, something that the State had talked about at

10:48:17 least in the media, between state leaders and the

governor, about trying to create more districts in which there was a single-race majority. And here we ask the simulation to tell us that as well.

If you were drawing districts -- and the reason this 10:48:33 is important is that Texas is a very diverse state. And there is large populations of Anglo, Black, and Hispanic, and now increasingly today Asian American. And so single-race districts may not be just an automatic natural outcome in Texas. If you just have a computer blindly 10:48:50 draw districts, you may not get that.

And so that's what we've attempted to show here is that you would and you would normally get a lot of districts in Texas in which no group, no single group is a majority. But the State plan appears to preference 10:49:09 single-group majority districts; and they have drawn many, many more single-race majority districts than what the computer simulation did.

Q. Let's transition to a different type of analysis that you included in Brooks 283. And starting on Figure S12, 10:49:29 what is shown here?

A. These are the changes to Congressional District 9. I believe I talked about this in Section 3, paragraph 19 of the report. And these are the accompanying images, as well as data charts that document the final changes that 10:49:49 the State map drawers undertook in CD 9.

Q. So there was a plan that was 2331 and it was later changed and labeled 2333.

Do you understand that?

A. Yes. That's correct.

10:50:02 **Q.** So what you are showing here are the changes between those plans in the Houston area?

A. Yes. That's correct. In this particular image what is highlighted in yellow, those are the 2331 boundaries. And so you see what used to be CD 9, it was wholly

10:50:18 contained in Harris County. It's outlined in yellow there. The red outline is showing where the new and ultimate 2333 map put the boundaries.

Q. And then what is this data table on the side?

A. The data table is telling us the existing population

10:50:34 of District 9. District 9 had been 57 percent Republican. You can see there at the bottom. And it had been 50.4 percent Hispanic.

Q. Where did you get the data in this table?

A. This data is data that's preloaded into the DRA

10:50:52 software.

Q. Is that a software that experts on both sides of this case have relied on?

A. Yes.

Q. All right. So is it fair to describe what we're going

10:50:59 to go through here in these figures as walking through the

kind of anatomy of the changes made?

A. That's correct. And not only visually looking at how the picture changes, but that data table on the left is going to document how the population and partisanship changed each time a county or a VTD was added or subtracted.

Q. All right. Then going down to S13, what is shown here?

A. Well, this is the first thing that map drawers in Texas did, is they added Liberty County. They publicly stated that their goal was to try to decrease the partisanship of this district. It was only 57 percent for Trump. And they had indicated they wanted to make it even stronger performing for Mr. Trump. And so they added Liberty County. And by adding Liberty County, you can see it went up to 60.2 there at the bottom. So they added three points of more partisanship by doing this.

But now it's overpopulated. Down there at the bottom, this district has 858,000 people. That's 91,000 too many people. So the subsequent changes they are going to have to make is going to have to be to take people out of this district in order to get it to the equal population balance.

Q. But by moving Liberty County into it, what did that do with the citizen voting age population between Hispanics

and Whites?

A. Well, you can see that Liberty County is very heavily Anglo, has brought the Anglo/White percentage up to 38. And it dropped the Hispanic percentage down to 46. So about a four-point decrease in Hispanic population by adding Liberty County, which is majority Anglo.

Q. And then what is shown here at S14?

A. So these are then the steps of getting -- of what took place after adding Liberty County. The first thing we estimate is that they removed this portion of Harris County which bordered Liberty County, which I have the number 1 in. And by doing this, this helped them get rid of about 65,000 people.

So now they are closer to their target. Remember, they were 91,000 people overpopulated. So they removed that area of 1. And now they are only 28,000. So they have still got to remove 28,000 people, but they are getting closer.

Q. What does that do to the CVAP and the politics?

A. Well, you can see that the politics are now going down. It's now only 58.6 percent Trump. So they are going backwards. They are making it less Republican performing, but they have now increased the Hispanic number getting closer to that 50 percent number that we believe they were targeting. So it's 49.8 now. It's not

quite yet majority; but it's getting closer, even as it is guessing less Republican.

Q. Then what is shown here in S15?

A. Here I'm just pulling out the details of that red area 1 that was just removed. And that red area 1 that was removed from the district is 75 percent White and only 12 percent Hispanic. And it's 69 percent, almost 70 percent Republican, you can see there at the bottom.

So that area that they moved out -- they had to move some people out because of that 91,000 too many people when they added Liberty County; but they extracted these 60,000 people or so who were 70 percent Republican and 75 percent White.

And so my conclusion of that is that is not achieving the partisan performance. You are taking out a racial population and trying to replace it with a separate racial population. And the partisan performance is actually now increasingly getting worse at each step.

Q. What is shown then at S16?

A. 16 here is an alternative map of what could have been done if they wanted to add Liberty County, if that was an objective. And, you know, that might have been something that the mapmakers wanted to join Liberty County in. And so this is an alternative map of CD 9 where they could have kept the Republican performance at 60 percent if that

was the objective, if that was their true objective. They could have kept it at 60 percent. But they would have been below 50 percent Hispanic. This one shows only 49.7.

Because by including that little yellow sliver that borders Liberty County, we just discovered on the previous image that that's very heavily Anglo and very heavily Republican. And so they can achieve their partisan performance numbers that they want and get population balance, but they are going to have to sacrifice the Hispanic population.

Q. What is shown in S17?

A. 17, I'm just showing the additional steps going back to what they did. Now you see two additional areas in red that were cut out. These had formerly been in 2331. Now these two other areas in red on the map were cut out. And now by cutting those out, they have underpopulated the district. So they have cut out -- they were 28,000 over. They are now 8,000 under, 9,000 under almost.

And so the district itself is getting less heavily Republican as the part that they are cutting out -- you can see here, the part that they cut out here is 62 percent Republican and 55 percent Anglo. But they had to make those cuts, not those, they had to make some cuts because they have get the population balance right. And so I'm trying to explore why did they make these cuts.

Q. And then what is shown in S18?

A. S18 is now what does the overall district look like with those additional cuts. They are now underpopulated, so they are going to have to add back 9,000 people. They are doing better on partisanship. They actually went up a tiny bit. They are at 59. But the Latino number is still not at 50 percent yet.

And so we estimate that they now -- they have to find 9,000 more people to add back in their district. And we're going to see where they are doing that over here on the right side of the screen over bordering Chambers County.

Q. Now we're on S19. Is this what we've been referring to as the Baytown 8?

A. Yeah. This we're sort of calling the Baytown 8 because the two images there together kind of look like a figure eight. The bottom part that has the number 3 in it and then the top part that's got the red outline and kind of looks like a number -- just an infinity loop number 8. And this is Baytown. That's the name of the community there.

And here what I've documented is this area here, 3, this is the area they added in next. Remember, they are now 9,000 underpopulated because of those cuts they made. So they have to add people in. This area has

approximately 19,000 people. They don't need to add 19,000 people. They need to add 9,000. They added 19,000 people because they wanted that whole area because this whole area is majority Hispanic, 54 percent. You can see
10:57:40 to the side of your screen. Only 31 percent Anglo.

And this area that they added in is 52 percent Democrat. This is a majority Democrat area and a majority Hispanic area.

Q. What is shown on S20?

10:57:52 **A.** Well, they still had to make one more cut because they were now 10,000 over. Because they added 19,000 people. They could have just added half of that part of Baytown. They didn't need to add all 19,000.

We estimate that they wanted to add all of it because
10:58:05 they were trying to get the Hispanic number back up, not the partisan number. Here, the population they cut, this is the other part of Baytown that they cut out now in 3 to get to their perfect deviation population, is actually majority White. It's 53 percent White, only 38 percent
10:58:22 Hispanic. And this area that they cut out is 66 percent Republican.

So these final cuts, these changes, they are prioritizing getting that Hispanic number back up to over 50 percent. And they are removing, constantly removing
10:58:38 Anglos and Republicans.

Q. So once the Baytown 8 swap is made, how does the district -- what is its characteristic based on CVAP?

A. I think we might have that in the next chart. This is the final detail, Figure S21. You can see they are now over majority Hispanic. It is 50.1 percent Hispanic it shows over there. It's 59 percent Republican.

So they weren't able to achieve what they did in the first, which was over 60. But they were able to get the Hispanic number over 50 percent.

Q. Now, to be fair, do you actually know, you know, that this is the order that whoever drew the map went in?

A. I don't know the order. This is the most logical order when Liberty County was added. Liberty County had to have been added first because they added an entire county. They couldn't have done all these other cuts and then -- so that was -- we know that had to have been first.

And then these other cuts are going in the order that appears to be the most logical of how they arrive at the exact population distribution.

Q. And to be clear, this change, these changes you have just chronicled through these figures, that was made after legislature started taking up the plan when it transitioned from 2331 to 2333?

A. Correct. These are two of the plans that were

proposed and debated.

Q. Do we know whether it's legislators that made these swaps or the mystery map drawer?

A. I don't know who made these. I'm just sort of showing you, like, from like a data forensic science perspective, what my intuition is telling me about the addition of Liberty County and the removal of these other Republican areas. They could have easily added Liberty and then cut out other Hispanic areas if they wanted to make this map more Republican. That would have made it more Republican. But they didn't. They kept coming back and adding Hispanics back in to get that number over 50.

Q. So what is your takeaway conclusion from the Baytown 8 swap?

A. Well, that part in particular in Baytown is very clear. They added in more people than they needed to who were majority Hispanic and majority Democrat. And they removed a majority White, majority Republican area. That suggests that race was being focused on and not partisanship.

Q. All right. Now I want to go to a different kind of analysis and show what you have here in the next section of your report.

What do I have here on the screen as S22?

JUDGE GUADERRAMA: Mr. Dunn, before we get to the

next section, it's 11:00. It's time for our morning break. Let's take that and come back at 11:15 and get to the next section.

MR. DUNN: Thank you.

11:01:23 COURT SECURITY OFFICER: All rise.

MR. VELEZ: This court stands in recess.

(Recess from 11:01 a.m. to 11:16 a.m.)

JUDGE GUADERRAMA: Be seated, please.

Dr. Barreto on the witness stand. Mr. Dunn.

11:16:34 MR. DUNN: Thank you, Your Honors.

BY MR. DUNN:

Q. So to get us back in our place, we were looking at Brooks Exhibit 283 and transitioning to Figure S22, which should be on your screen.

11:16:47 All right. Dr. Barreto, what have you done here?

A. Figure S22 takes that District 9 and shades each VTD by the Trump/Harris vote in November '24, just by the degree of red or blue.

Q. Why did you do that?

11:17:04 **A.** Well, to highlight that those areas that we were speaking about, in particular that region in Baytown that forms the Figure 8 where your cursor is there, showing that that area that was included here is a majority Democratic area. The area that was excluded was a

11:17:23 majority Republican area. And you can see some of the

other changes that were made to this map, you know, as per the partisanship.

Q. And why -- just to put a fine point on it, why does it make a difference to you that the part in the Baytown 8 that was included is shaded Democratic vote and the part that was excluded is shaded Republican vote?

A. Well, we're trying to determine whether or not the map changes that were made and the map that was made was for partisan performance. And here it would indicate that it wasn't, that it was made, as we just reviewed, by prioritizing race and trying to get that Hispanic area of Baytown into the district and excluding the Anglo area.

This now adds, on top of that, that that area there that was included is majority Democrat and the area that was excluded is majority Republican. As well as some of those other areas of Harris County that border Liberty County that were taken out. Those are bright red. Those are very high-performing Republican areas that were excluded on that map.

Q. Where I'm pointing here?

A. Yes. That region here had formerly been part of the C21 -- or 2331, the previous map; and then it was excluded in the final map.

Q. Now, have you done these partisan shading maps for each of the three regions at issue in this proceeding?

A. Yes, I have.

Q. Well, those will be in the record for the Court if it's interested in looking at them. I'll just look at one more, which is S26.

11:18:54 All right. What is shown here?

A. S26 is showing the Dallas-Fort Worth, DFW, region. And here Congressional Districts 30 and 33 are sort of in the middle of the screen in the Dallas region and, again, just showing the partisan shading of the Trump/Harris 2024

11:19:15 vote.

Q. Why did you do that?

A. Well, because, again, if partisanship were the real indicator, we would expect, as we compared the old bounds of CD 30 to the new bounds of CD 30, there were plenty of

11:19:29 Democratic VTDs in Dallas, including in the old map, that could have been drawn on. In fact, the old map was just as Democratic as the new map.

But changes were made to the old map. And the changes, as we show in other parts of the report, were

11:19:46 based on the African American population, not on the partisanship. So we can see the partisanship in here and we've used that to contrast to the race on other maps.

Q. After you produced this report, was it then that you received the reports from the State?

11:20:01 **A.** That's correct.

Q. And with regard to the simulations, what was the critique?

A. Well, there were two main critiques, I think, from Dr. Trende. The first was with respect to the VTD splits and the analysis of the VTD splits. And he has 20 pages of charts on split precincts.

And then with respect to the simulations, his main critique is that there is low -- what he calls low plan diversity. Meaning that out of the hundreds of thousands or millions of simulations that we have already discussed, many of them are quite similar to each other and they don't represent unique plans.

Q. And did you produce a rebuttal report to address these issues under the agreed schedule?

A. Yes, I did.

Q. Was that produced this Monday of this week?

A. That's correct.

Q. Turning to Brooks Exhibit 284, is this your rebuttal report?

A. Yes, it is.

Q. And now I want to look at paragraph 4. What is it that you are expressing here?

A. On paragraph 4 I start by addressing some of these split VTDs, or split precincts, that Dr. Trende is discussing. The issue at hand is whether or not racial

data or partisan data was informing the maps. Our critique was that when you split precincts and you go down to census blocks, you only have data on race.

At a census block level, there is no data on how people voted in just one block. You only know the race and ethnicity of people. And so by having so many split VTDs, it gives the map drawer the ability to sort people based on only race. They cannot be sorting people any more at this point on partisanship because there is no partisan data at the census block level.

Dr. Trende responded in his own declaration and provided images of 19, I believe, split VTDs. And he made the case that it was no big deal that, you know, there was Black and Hispanic and White populations and are included or excluded.

Q. Well, what -- in the response to that they said this is a congressional map and the population deviation has to be near perfect and so you have to split some census blocks? Isn't that the answer?

A. Splitting census -- splitting precincts is inevitable for a congressional plan because you do have to get to population deviation. The question is: What choices are made when you split a precinct? Are you purposely still getting the more high density Black population and putting it in a district to make it majority Black? Or are you

just drawing lines to try to hit perfect population?

And so that's what I have looked at here in Dr. Trende's analysis is what decisions were made by the map drawer on what part to include in a district and what part to exclude once they got to the splitting.

Q. Let's go to paragraph 6. What are you reporting here?

A. Well, here again, I'm looking at the -- just the 19 split VTDs that Dr. Trende is reporting on. I'm using his data in his declaration.

And he is using split VTDs as they relate to District 18, which was drawn as a majority Black CVAP district. And so here, looking at his own data, we can see in this first example, it's Precinct Number 83. He highlights it on page 14. The part that Dr. Trende says was included in District 18 by the map drawer had a Black population four times higher than the part that was excluded.

So when the person made the decision of, all right, we've got to split Precinct 83 up, part of it is going to have to go in District 18, part of it is going to have to go out, they put the higher Black part in District 18.

Q. Well, couldn't have that happened by chance?

A. It should happen by chance occasionally. But in inspecting the VTDs that Dr. Trende is reporting on, almost all of them, when they were split, and this is -- I

didn't do this data. He presented this data. They are putting the part -- when they break the VTD apart, they are putting the part with the higher Black population in 18 and they are putting the part with the lower Black
11:24:07 population out of 18.

So that to me suggests that it's no longer just coincidence at that point. There is a pattern there. And I detail that in 6, 7, and 8.

Q. Let's go to 7. What are you reporting here?

11:24:19 **A.** 7 here is just another example. Here this is page 13 of Dr. Trende's report in which he says [as read:] After splitting a precinct, the portion included in 18 had a BVAP of 50, and the portion excluded had a BVAP of 41.

He then gives another analysis on page 6 of the
11:24:35 precinct in 2022. The part that was included in District 18 had a BVAP of 40 percent. The part that was excluded had a BVAP of only 9 percent.

So in each of these examples, yes, you have to split a VTD at some point. It looks like, by his own data, the
11:24:53 parts that are getting included in District 18 seem to have a higher Black voting age population.

Q. And then what are you reporting in paragraph 8?

A. In paragraph 8 I'm just resummarizing the fact that when you split precincts and you go to VTD census bloc
11:25:12 data, you do not have partisan data anymore. So if you

don't have any shading turned on at all, you are just going to be grabbing blocks and putting them in and you won't see a pattern because you are just trying to get to that population deviation.

11:25:26 At a certain point, the map drawer may not even care if they hit this neighborhood or that neighborhood. They are trying to hit a number. I think it was 787,692.

In this case, there is consistent evidence just from Dr. Trende's splits that the higher BVAP is going in 18

11:25:43 and the lower BVAP is going out. So it would suggest -- and he has got images of it -- that there was a pattern here.

Q. What is the sort of smallest to largest between block and block group and VTDs?

11:25:58 **A.** Block is the smallest. VTD is the largest. Block group is exactly what it sounds like, a group of blocks.

Q. And the census bureau reports data on block, block groups, or both?

A. The census data reports race data on block. That's

11:26:14 the lowest level. But they also have block groups. And then to match the redistricting dataset that comes out with the decennial census, they will report data on the VTDs as they exist in that census year.

Q. And election results that you obtained from TLC, how

11:26:31 are they reported?

A. Only at the VTD level because the votes are tabulated at a voting tabulation district, at a VTD.

Q. Now, I know -- you've given testimony prior in this proceeding about how CVAP data is created by the American Community Survey and how it's interpolated, am I using the right word, to a different geography?

A. Yes.

Q. Okay. So why can't we just take the voting results that the State reports at VTD levels and interpolate them somehow to block or block groups?

A. Because you don't know where in that VTD the Democrat or Republican voters are. You just know that for a VTD as a whole, it voted, let's say, 64 percent for Trump, 36 percent for Harris. But you don't know if this block over here was 80 percent for Trump and this block over here was 80 percent for Harris. You just know for the entire VTD. You don't know anything about the sub-characteristics of the census blocks.

The only thing you know about the census blocks is the race and ethnicity of the adults that lived there when they filled out their census form. You don't know anything about their political preferences.

Q. Is the interpolation of election results down to the block level something that you've seen in academic literature that's relied upon?

A. I would say it's fairly rare. VTD is our most commonly used level of analysis because it's already a small level of aggregation. For example, in the ecological inference analysis, we are using VTDs and that's the standard.

Q. Now, if the map drawer was using some kind of interpolation of election results down to the block level, would we expect to see these racial splits that you have identified from the Trende data on split precincts or split block groups?

A. If they were not looking at race, the map drawer was not looking at race, it would not be the case that in a majority of his example there is a higher BVAP in District 18 and a lower BVAP that was excluded. Those are decisions that are being made by the map drawer. They are literally clicking on these blocks and saying include, exclude.

Q. Yeah. Well, tell us how that works. When you are in the redistricting software and you are trying to equalize population, what do you do to get a block group split? How do you draw the line to tell it where to split it?

A. So it might show up first as VTDs. You might be drawing most of your map on VTDs and selecting VTDs to include. But then as you zoom in and you need to split and go to block, you'll select block. You'll click on a

VTD. And once you click on a VTD, you'll see, you know, 10 or 50 blocks that are inside there. If it's a dense area, there might be as many as 50 different blocks that are in there. And then you've got to start selecting those individual blocks to include in your map or to include in an adjacent district.

So the map drawer is making those decisions and clicking on those, or perhaps drawing a circle around the blocks they want to include. And the only type of data they have available to them is race data. They don't have partisan data when they get down to little individual neighborhood blocks.

Q. So unless they turn it off or shield their eyes as they are picking these individual blocks, what they are going to see in the commercially available redistricting software is race data for each of those blocks?

A. For blocks, race data is regularly available.

Q. All right. Let's go to paragraph 12.

A. And those are the maps -- I'll just say, those are the maps Trende puts in his report. He puts race voting age population maps in his report.

Q. Okay. All right. Now I'm on paragraph 12. What is it you are discussing here?

A. In paragraph 12 I start to get into a second response to Dr. Trende where he shows us a lot of maps with either

race data or partisan data with just 2333, the new boundary. What I think is the interesting question is what was the old boundary and what changes were made. Not just where are we right now, but what changes were made to
11:30:41 get from 2193, the old map, to 2333.

And so here I'm talking about the importance and that Dr. Trende doesn't have a single map for us where we overlay both lines and we can see, oh, so this line used to be over here and then they shifted it over here.

11:30:58 In order to understand the decision-making process, we need to see both; and he doesn't give us that. We do that, and I include a number of figures, as I see there Figures 1 through 18 I note, that have both map boundaries.

11:31:12 **Q.** All right. Well, let's go to page 8 -- excuse me -- page 13 of the report and Figure 1. And just generally, what is this? And we'll go down and look at some examples.

A. So there are -- I think, as I said, there are 18
11:31:25 figures here. Here what we have attempted to do is to show the racial shading, as well as the partisan boundaries indicated by the red or the blue lines; but the racial shading is the pink or the green.

And then we also have the both old and new boundaries.
11:31:42 We have the C2193 boundaries of the district always in

gray, and the C2333 boundaries always in yellow.

Q. I note here in Figure 1 that you are working from the 2022 Garza/Paxton race. Why did you select that?

A. Well, this is data that was already in the system. In fact, it was already in my expert reports. We discussed maps very similar to this, I believe at length, in the previous trial here in May for Bexar County. And so this is data that already existed. The only addition I had to do was add the new 2333 boundaries that didn't exist back in May.

Q. Did we use a drawing like this to discuss HD118 during your testimony in the May-June trial?

A. That's right. We discussed like six or seven images that looked like this that allowed the Court to see both racial shading and partisan shading at the same time so that they could see where the two interact.

Q. All right. So did you also prepare these for the Trump/Harris race?

A. Yes. I updated it with the Trump/Harris 2024 data.

Q. Have you prepared these for each of the three regions at issue in this case?

A. Yes. Throughout here in Figures 1 through 18 of this appendix, we have them for each of the Harris County, DFW, and the South Bexar County -- South Texas Bexar County region.

Q. Let's go to figure -- whoops -- Figure 14 on page 20. What are you showing here?

A. So here we're back into District 30 in Dallas-Fort Worth. And you can see two pieces of information. You can see the racial shading that's indicated by the pink or the green colors here. Pink density indicates higher density African American. Green indicates less African Americans based on the density.

So you can see -- you can see both of those pieces of information in here. So you can see that the yellow boundary is the new boundary, 2333. The gray boundary is the old boundary, 2193.

Q. All right. Now, let me zoom in here for a minute. And I note that there are these smaller pieces of geography. Some of them have blue lines, and some of them have red lines around them. What is that showing?

A. Those are VTDs. Those are each individual voting district.

Q. Why are some blue and some red?

A. That shows whether or not it was a Harris VTD or a Trump VTD.

Q. So focusing here on the section to the west of downtown Dallas where I'm circling with the cursor, I guess it sort of looks like the little ball they put under giant ships in the ocean out around here.

Do you see that area?

A. I do.

Q. What is it that you can observe by being able to look at the racial shading with the partisanship of each VTD in that area?

A. Well, this is an area that has been added in to the district. And you can see that there are some pink areas which indicate that there is an African American population there. And they are all blue outlined VTDs, which suggests that this area had more African Americans and so it was added into the district. And these are Democratic areas.

Q. And what does that tell you?

A. That tells me that -- and there is more of those and we can walk through them and see.

Q. What other ones?

A. Over to the west into Tarrant County, that area there that your cursor is around, that is an area that was not in the old map. And so it has been expanded. The new map has been expanded for District 30 into Tarrant County further to pick up a lot of areas that have that pink shading, which means that they are high density in African American. There at the top as well, you can go right over there and you see areas.

So a lot of these areas have high density African

American populations. And they're also Democrat. And they were added into the district.

And I contrast that with the area in sort of central downtown Dallas that used to be in CD 30 but has very, very little pink. It has more often green. Even though all of those VTDs are outlined in blue. And as we saw on a previous chart, these are very heavily Democratic precincts in downtown Dallas. They just don't have a large Black population.

11:35:59

11:36:15

Q. All right. Let me go to Figure 18. What is shown here?

A. Figure 18, now you are back in the sort of Bexar County region, San Antonio, that has the higher density area. And we see a similar thing here, where we see the yellow line is the line of the new boundaries and the gray line is the line of the old boundaries. Here, the green shading, as it says in the index, is high density Hispanic. And the pink shading is low density Hispanic.

11:36:33

And so one of the things that you can notice -- and this is a zoom out showing the entire district. You can see that there is a lot of areas that are combined in that Bexar County/San Antonio area where there is high-density Hispanic. You can also see that those are all blue. Those are Democratic areas. And they have been combined with these areas that are pink, which means there is very

11:36:50

11:37:07

few Hispanics there. And those areas are more likely to be outlined in red. And so those are areas that Mr. Trump won.

But if you go back into Bexar County and if you go back to the plot you were on before that had the zoom, I think it's below, you can see here in Bexar County that these Hispanic areas were added. And then in particular, right around downtown San Antonio, the more urban part of San Antonio that was added into CD 35, these are very high-density Hispanic and Democratic areas that were added into this district, which is a Trump plus 10 district.

So they were creating a Trump plus 10 district and they added a very large number of high-dense Hispanic Democratic areas and grouped them with, what you can see just to the right part of your screen, very low-dense Hispanic areas that are Republican.

And the other thing I want to note is just above the part that was excluded, if you just kind of look -- no. Stay down where you were, Mr. Dunn. I'm sorry. Right in that middle part of the chart, there is a part that's outlined there as well as to the right. It's outlined in gray.

These used to be part of CD 30. And particularly there, where your cursor is and a little bit to the north, you see that those areas are all Democratic, if you put

your cursor up a tiny bit more, but they are not green. So there are Democratic areas if they were drawing on partisanship they could have brought in. These are all outlined in blue. There are Democratic areas. But there's very low Hispanic density there.

Instead, they got that area to the south, which is very high Hispanic density and is Democratic, which would appear to go against the partisan performance objectives.

Q. Now we, in the May-June trial, had an exhibit on HD118 here in this southeastern corner of Bexar County.

Do you recall that?

A. I do.

Q. Is CD 9, although not exact, roughly HD118 added to these rural counties?

A. It adds a great portion of what was in the new HD118 in that sort of southern part of Bexar County. And then it adds these additional majority Anglo counties.

Q. All right. Let's go to Figure 18 -- Figure 22, excuse me.

What are you showing here?

A. So here we have added one more layer for folks to consider. This is turnout. And so if you scroll up to the one right before it, we might be able to see it first and then come back to this. Yeah.

This has a lot of data on it. I understand it's

messy. But you can see places that have red dots, that means you have below average turnout. Places that have black pluses means you have above average turnout.

And so you can see a clustering of red in that area that is very high-dense Hispanic. And we saw in the previous chart, very high-dense Democrat. But very low turnout according to this chart.

Now, if you scroll down to the next, you can see it just with a little more detail. That area just below the yellow line, still with inside the loop of San Antonio, is just almost all red dots, which means every single one of these VTDs has very low turnout.

So you have a high Hispanic CVAP, eligible adults. A lot of Democrats there. But very, very low turnout. So you are not getting a lot of votes on election day here, but you are getting a lot of Hispanic citizen adults.

If you contrast that to what you see on the right side of your screen where it's pink, almost every single one of these VTDs has black pluses in it, which means these are higher than average turnout VTDs.

So they clustered dense Democratic Hispanic areas that have very low turnout with low dense Hispanic areas, Anglo areas, that have very high turnout, to create CD 35.

Q. Okay. Before I leave this, I want to look at one more here that I just need to locate real quick. I want to

take you to Figure 11 in this report, which is on page 18.

All right. Here we have the Dallas-Fort Worth area; is that right?

A. Yes.

11:41:43 **Q.** Now, actually, I'll come back to this. Let's move on to a different subject and look at paragraph 21 in this report, which is on page 7. Excuse me. Page 6.

What are you discussing here?

A. Here we are talking about the importance of comparing 11:42:09 these two district boundaries. And in order to be able to compare -- sorry -- not district boundaries, different iterations of the map. And one of Dr. Trende's criticisms was that our maps had what he called low diversity. And he said they are too similar. You might have only moved 11:42:32 five VTDs and you are calling that a new map.

Here in paragraph 21 I looked at the actual maps that Texas drew. And I give two examples: 2308 and 2331. These are two predecessors to their final map.

In 2308 every single VTD in the entire state is 11:42:54 exactly the same as 2331, except they moved one precinct or set of blocks in El Paso to move Fort Bliss. So those are two separate maps submitted that have a diversity score of basically zero. They are the exact same map.

I show a second example of that in 2331 and 2333, in 11:43:17 which almost all the boundaries are the same, but they

just moved a couple of VTDs around.

So my point is that in the real world when you are drawing maps sometimes you have two versions of maps that are quite similar and you just made one change over here.

11:43:29 **Q.** Like 2331 to 2333, right?

A. Exactly. Or 2308 to 2331, where all they did was take Fort Bliss out. Those are two separate maps. So it's not unusual that the ensemble would also find two maps that are somewhat similar.

11:43:43 **Q.** So is this another reason why you don't set a seed?

A. You don't set a seed because you want it to always be random and you don't want to always get the exact same map every single time.

Q. And if there was a circumstance where you ran it and

11:43:56 you happened to get a bunch of maps that weren't representative of the sample, when you run it again without a set.seed you would --

A. You would get the exact same thing. It would completely stunt your ability for randomness or diversity.

11:44:10 **Q.** Now let's go to paragraphs 28 and 30, which begin on page 8 of this report. What are you discussing at 28?

A. 28 is where we get into our direct rebuttal to Dr. Trende's criticisms of our map. So at this point he has taken our code. He has replicated our maps. He

11:44:31 doesn't report any problems with the replication. He in

fact is able to replicate them and then critique them, which is what I would have expected.

And so his first big critique is this one we have been talking about related to plan diversity, map diversity. And here we go through and outline why this is not applicable to the maps that we're drawing and why the diversity issue is one that is really bound by the constraints of the state of Texas.

If we had no constraints at all and someone just said draw maps in Texas, you would achieve high diversity because you might draw, as we did in our first report, only 24 Trump districts. That's the natural draw, totally partisan blind, is to draw 24 Trump districts in Texas. Not 30.

But then you start adding constraints to the program. You tell the program no, no, no, we want 30 Trump districts and we only want to split this many counties and we only want to have this many splits.

Q. We want this Trump election number, right?

A. We have to achieve 55 or greater. So those are constraints that you are typing into the program.

That's limiting the ability of the program to find lots of diverse outcomes. And so we're explaining that the reason that, in some of these instances, there are low map diversity is because of those constraints imposed on

us because we're trying to match what the State of Texas is doing.

Q. So when you tell the software to draw the simulations, at first it creates a huge number. And then as you add the parameters to it, it gets to a smaller number?

A. Correct.

Q. But in the environment are all of those simulations sitting there while you are doing this analysis?

A. Yes. And then we eliminate those maps that didn't draw 30 Trump districts, for example, and then just focus our analysis on the ones that did draw 30 Trump districts.

Q. So however many million or whatever you have ultimately works down as you add these parameters?

A. That's correct.

Q. All right. Then let's go to Figure 25. An example of check everything twice. I didn't put the page number.

All right. What are you showing here in Figure 25?

A. So in Figure 25, to engage Dr. Trende on his critique about only assessing unique plans and more diverse plans, we further eliminated all the plans in our map that were duplicates or identical or extremely similar. So we're now only looking at the remaining maps that our simulations drew which are unique.

Q. How do you do that?

A. Well, you can go through in the R code, and we

provided this in the rebuttal in Appendix C, to show how we went through, and tell it find the maps that are identical to each other or duplicates and set those apart and now only draw me histograms and plots of the unique maps. So in here every map is unique.

Q. Do you give it some percentage? I mean, is it one-for-one unique or 99 percent unique or how is that?

A. Here I think we removed anything that appeared to be identical or a duplicate.

Q. What is shown in 25?

A. So 25 is a replication of Figure S1. We previously looked at another chart that included all of the maps, including some that might have been too similar or had low diversity. This is just a replication of that when we only have unique maps, and you see the exact same trend here in the Harris County region. No probability of a majority Black district when looking at the unique map simulations.

Q. All right. Then let's look at Figure 26.

A. 26 is a replication of S2 that we previously talked about here, looking at the DFW region and looking at the 3033 area. And it shows that, again, it's not possible to draw a district that's majority Black CVAP when only looking at the unique plans. It doesn't come out.

Q. And to be clear, you're -- in these simulations, you

are again limiting your geography to just the area that the State used to draw those three districts in this example?

A. That's correct.

11:48:59 **Q.** Then let's look at 27. What is shown here?

A. 27 is a replication of S3. That was the Harris County region where there are seven Trump districts plus 10. And what is the probability of getting one majority Hispanic CVAP district. And, again, we're subsetting the only

11:49:18 unique plans, and we don't ever get an outcome where there is a majority Hispanic district.

Q. And then 29?

A. 29 is the South Central Texas area centered around Bexar County. Again, it looks very, very similar to what

11:49:36 was Figure S5 in the original, only subsetting to unique plans. We see, yes, you should get one majority Hispanic district that's presumably CD 23, but not two.

Q. And 30?

A. 30 is the replication of the original report. So we

11:49:55 replicated everything using Dr. Trende's sense of only looking at unique plans and having higher diversity. So this is a county-based simulation we did in the first report, saying will you cross the 50 percent threshold if you try to draw a Trump district in this Bexar, Guadalupe,

11:50:17 Wilson, Karnes region. And the answer is no.

Q. And in this particular example, on each of these however many thousand simulations, do any of them even get close to 50 percent?

A. No. There is nothing above 47, it looks like, in this map. And the median, again, the average is down there where there is a higher density of green below 40 percent.

Q. And then in Figure 32, what is shown?

A. Figure 32 is a replication of, again, report one, the August report, of whether or not you could draw a majority Hispanic CVAP district that Trump carries in the Harris, Liberty, and Fort Bend County regions. And, again, the answer is, no, it does not cross 50.

Q. And then finally, Figure 33 looks a bit different. What are you doing here?

A. Figure 33 is a replication of Figure S10 in the original report. This is the one where we draw 30 Trump districts. One of Trende's criticisms was that we had to lower the threshold to 53. We didn't actually draw it at 55. And so what we wanted to do to assess how close we were to the reality was we plotted in pink the actual vote that President Trump got in each of the districts. And the districts in question are really those first three in numbers 9, 10, and 11.

Q. What does this show comparing those two things?

A. Where your cursor is, yeah.

So the maroon with the black dot, that's our simulation. And what you can see is there is a pink dot just barely above it. And so it shows the simulations. When we lowered it to 53, we are still extremely close to what the reality was on the ground. And those three pink dots are just right there on the tail of the distribution, showing that we weren't far off. As I said before, even the State's three districts were below 55. They were like 54.7.

11:51:51

11:52:05

Q. So does this tell you whether or not the software was able to recreate plans that matched the political performance of C2333?

A. Yes. This indicates that it was a very close match. It was able to take the constraints put in by the State and use those to assess the partisan but also the racial implications.

11:52:22

Q. And these plans that the system created that matched the State's political performance, did they have the racial effects that we have described about C2333 here today?

11:52:35

A. In the simulations we did, we always found -- well, first, we found two things. Zero majority Black districts were drawn. That had to be purposefully done. There is not a single simulation that results in a majority Black district.

11:52:48

Secondly, out of the Trump districts, there is only four majority Hispanic districts and the State has drawn more than that. No simulation ever achieves more than four majority Hispanic Trump districts.

11:53:00 **Q.** So what does that tell you about C2333?

A. That even when holding the partisan objectives constant, there were racial objectives in there. And that was to create those two Black majority districts. The simulations would not have done that. Those weren't for

11:53:15 partisan reason, because the partisanship of those Black districts is basically the same in the old map and the new map. The only thing that's changed is now they are suddenly majority Black.

Q. In other words, President Trump could have gotten his

11:53:26 five more Republican districts without the racial effects that are in C2333?

A. Correct. Absolutely.

Q. Professor Barreto, based on this analysis and your experience as a testifying expert in four scores of cases

11:53:41 and more, what is your opinion -- or do you have an opinion on whether or not race was a factor to the map drawer with respect to Plan C2333?

A. Yes, I do.

Q. What is that opinion?

11:53:50 **A.** My opinion is that while there were partisan

objectives, they achieved those partisan objectives by focusing on race. Whether it is in the CD 9 District of Baytown, or whether it is in the creation of majority Black districts in Dallas and Houston, or the majority Hispanic district in Bexar County CD 35, there were clear objectives to try to hit specific Hispanic numbers that cannot be explained by partisanship.

MR. DUNN: I pass the witness.

You want to give me a second?

MR. KERCHER: Sure.

JUDGE GUADERRAMA: Mr. Kercher.

MR. KERCHER: Mr. Dunn asked for a moment to set things up; and I need a moment as well, Your Honor.

JUDGE GUADERRAMA: All right.

MR. DUNN: May I stand on that side of the room?

JUDGE GUADERRAMA: Yes, sir.

MR. KERCHER: May it please the Court?

JUDGE GUADERRAMA: Yes, sir.

CROSS-EXAMINATION

BY MR. KERCHER:

Q. Dr. Barreto, we have to stop meeting like this.

A. Nice to see you, Ryan.

Q. Likewise.

Early in your direct examination this morning you talked about studying under the tutelage of Dr. Grofman;

is that right?

A. Yes.

Q. A famous *Gingles* expert, right?

A. Correct.

11:56:01 **Q.** An important part of your training, I imagine?

A. Sure. Yes.

Q. Sometimes, though, mentors and students grow apart. Fair to say?

A. Yeah.

11:56:11 **Q.** But you've still got Dr. Grofman's name prominently displayed on your CV, true?

A. I think that's been there since I was a grad student. I haven't really changed that part of my CV. I don't know if it's prominent, but it's definitely on there.

11:56:28 **Q.** Are you a full professor, sir?

A. I'm a full professor.

Q. Did you take Dr. Grofman's name off of your CV when you were hoping to become a full professor?

A. I have not changed the top half of my CV. I think 11:56:41 some people do that. I have just added to my CV at the bottom. It's getting longer as I get older.

Q. Mine stays the same length.

Now, some of your reports make reference to what we have been calling in this hearing the Dhillon letter.

11:57:00 Are you familiar with that?

A. I would assume that's the DOJ letter.
Q. We're talking about the same thing. Yes, sir.
A. Okay. Yes.
Q. Were you provided that by counsel as part of the work
11:57:12 that you did for this hearing?
A. I probably found it myself originally, like when it was newsworthy. But, yes, I think that it was -- might have been something counsel has provided.
Q. That's not something for which you performed any
11:57:24 calculations or analysis. That's just something that you read and were aware of as you did your work in this case, true?
A. That's true.
Q. And that's what social scientists call, I think,
11:57:32 contextual evidence. Do I have that right?
A. Sure.
Q. Or political scientists. I don't know if political science falls into social sciences now. I don't want to put you in the wrong group.
11:57:44 **A.** Yeah. You've got it right.
Q. Okay. Another piece of contextual evidence that you might have put into your report are -- is perhaps the history of the ratification of the United States Constitution.
11:57:59 Are you familiar with that?

A. I am aware of it, yes. I don't have it memorized.

Q. Neither do I.

Something that I remember, and I wonder whether this is something that you studied or taught, is that

11:58:12 immediately following the constitutional convention, the Federalists in the Pennsylvania legislature were hoping to ratify quickly.

Do you remember this?

A. Yes.

11:58:24 **Q.** Do you remember that the anti-Federalists in the Pennsylvania legislature in 1787 broke quorum to prevent ratification of the Constitution?

A. That sounds right.

Q. And do you remember -- and I love the historic

11:58:40 phraseology here -- that the Pennsylvania Federalists got a group of gentlemen volunteers to find two of the anti-Federalists in a local pub and they dragged them back to re-establish quorum.

Do you remember that story?

11:58:58 **A.** I have heard a story like that, yeah.

Q. You also talked a little bit about what you called I think a shift in Hispanic voting that's evidenced, at least in part, by the way Hispanics voted in Texas in 2024, right?

11:59:17 **A.** Yes.

Q. And you talked about how, in many cases, President Trump won the Hispanic vote sort of at the top line; but perhaps Congressman Allred won the Senate vote on that same ballot in multiple counties, right?

11:59:34 **A.** I think the way I characterized it was that a majority of Hispanics in the districts I analyzed still voted for Vice President Harris; but that President Trump outperformed Senator Cruz, which would also mean that Congressman Allred outperformed Vice President Harris.

11:59:54 **Q.** And I think you said something like Hispanics even in 2024 were voting cohesively at something like 60 percent for Democrats.

Do I have that right?

A. I would say that's about right in Texas.

12:00:05 **Q.** And when you say that's a shift, that means ordinarily Hispanics are expected -- would have been expected to vote more cohesively, that is greater than 60 percent for Democrats, true?

A. In previous elections in my data I think I document

12:00:18 that sometimes as high as 75.

Q. And so when you talk about a shift in Hispanic voting, evidenced by the 2024 election, you are talking about a shift in Hispanic voting in that election from Democrats towards Republicans, not to a Republican majority, but

12:00:35 simply a shift from left towards the right. Is that fair?

A. The way I've characterize it is that it's mostly a shift towards President Trump. And that, as we saw in that same election, not just Senator Cruz but other Republican candidates for congress or other office were not able to match the same numbers.

12:00:55

And so the most prominent shift was really a shift centered around President Trump and able to attract Hispanic votes. But, yes, there was a shift in that direction, even as majority still stayed with Vice President Harris.

12:01:09

Q. And as a part of some of the contextual evidence that you analyzed for this hearing, you are generally aware of the story where President Trump says to the media that he hopes to get five more congressional seats out of the state of Texas.

12:01:22

You read about that surely, right?

A. Yes.

Q. You said you are familiar with the DOJ letter that was sent to Texas telling them that they needed to redistrict, right?

12:01:31

A. Yes.

Q. Then the Texas Legislature, predominantly Republican, did in fact redistrict, right?

A. Correct.

Q. So in the analysis that you are doing here, help me

12:01:37

understand the theory. Is the idea that President Trump said to Texas, I want five more Republican districts and Texas Republicans then said, aha, finally, an opportunity to dilute the vote of a group who has been moving towards
12:02:05 our party for the past several elections? Is that the theory?

A. That's not the theory.

Q. In forming the opinions you have expressed today, it goes without saying, you did not interview members of the
12:02:28 legislature. That's not part of your process, right?

A. Correct.

Q. You also did not speak with whoever it was who drew the map, right?

A. I did not.

12:02:37 **Q.** You did, though, on direct mention Adam Kincaid, right?

A. Yes.

Q. Have you ever met the man?

A. I have not.

12:02:55 **Q.** It sounded like from your direct testimony you have reviewed Mr. Kincaid's deposition for the earlier iteration of this litigation; is that right?

A. Yes.

Q. All 14 hours of it?

12:03:08 **A.** I don't think all 14 hours of it. But I have a text

file, and I don't know if there is a video file. But I have a text file that I have read at different points.

Q. And did you review that deposition testimony just for this hearing or had you done that in preparation for trial as well?

12:03:23

A. I think I might have seen it before the May trial as well. I know that, as I was thinking about these specific constraints that we put in, that I did review that because I had remembered seeing that 10 percent margin somewhere.

12:03:44

Q. And why did that matter to you, sir?

A. Well, we wanted to match the constraints that the State was using in drawing their districts. And so we wanted to try to get as close to what they were doing when we wrote our simulations.

12:03:58

Q. Well, when you say you wanted to match the State's constraints, you are telling us that you reviewed a deposition about constraints used in 2021, right?

A. Correct.

Q. And you don't know whether whoever drew the map -- and I'll represent to you I think the testimony has shown that it's Mr. Kincaid, but the map -- you don't know whether Mr. Kincaid had the same constraints or the same goals in 2021 as he might have in 2025, right?

12:04:14

A. I don't know his goals, but I do have a 2025 map. So based on --

12:04:30

Q. Let's talk about that.

A. Yeah. Based on his testimony and then the fact that in the map there are Trump plus 10 districts, I think that's what guided us.

12:04:39 **Q.** Something that came up during trial was -- and I can't remember if this was you or Dr. Duchin, let me know -- was that there was a critique of the State's defense of the '21 map as being a partisan draw. And that critique was, if this were a partisan draw in 2021, the State would not

12:05:01 have left so much partisanship on the table.

Was that your critique?

A. I don't recall that.

Q. We agree, though, that the political makeup of the 2021 map was designed to create Republican partisan

12:05:15 strongholds rather than to maximize the number of Republican partisan opportunity districts, right?

A. I don't agree with that.

Q. I think you said that you reviewed parts of Mr. Kincaid's testimony. Is it fair to say you didn't

12:05:39 read the whole thing? I wouldn't blame you.

A. I think it's fair to say I didn't read all 14 hours.

Q. Who decided which parts you would read?

A. Me. At some point I probably got bored.

Q. I cannot imagine being bored with redistricting

12:05:57 material. Let's --

MR. KERCHER: Richard, if we could go to Brooks Exhibit 283, page 23.

MR. DUNN: Mr. Kercher, I'm going to move this until you use it.

12:06:20 MR. KERCHER: Yeah. Sure. I apologize for that.

BY MR. KERCHER:

Q. Can you see that okay, Dr. Barreto?

A. Yes.

Q. This is Figure S20 from your September supplemental

12:06:40 report.

Do I have that right?

A. Correct.

Q. And we looked at this and several other iterations of this as you were discussing some of the redraw that

12:06:50 happened in the 2025 mapping process around Harris County; is that right?

A. Yes.

Q. And you talked about the Baytown area, where one of my brothers lives, right?

12:07:00 **A.** Yes, I did.

Q. But when you talked about the way that you thought the map drawer probably went through this process, you did not talk about the partisan effects of these changes on CD 2, which is adjacent to this area, right?

12:07:17 **A.** Correct.

Q. You agree with me that CD 2 wound up being Trump plus 60.8 in the final enacted map in 2025?

A. I don't have it in front of me; but if that's the number, then I won't dispute it.

12:07:34 MR. KERCHER: Richard, can we please bring up State Defendants' Exhibit 984.

BY MR. KERCHER:

Q. Dr. Barreto, you recognize this as a red report, right?

12:07:53 **A.** Yes. I have seen many of these.

Q. Same.

And this is for Plan C2333, which is the enacted map, right?

A. Correct.

12:08:02 **Q.** And you can see that the table on State Defendants' Exhibit 984, it shows -- that's not what I was looking for. We'll come back to it.

I'm told that we should just go to the correct page. There we are.

12:08:25 MR. KERCHER: Thank you everyone else in the room.

BY MR. KERCHER:

Q. If we go to -- if we look at President Trump's performance in CD 2, which is the second line, you can see

12:08:36 there that in the enacted CD 2 from 2025, President Trump

would have won by 60.8 percent, right?

A. I see that.

MR. KERCHER: Thank you, Richard.

BY MR. KERCHER:

12:08:51 **Q.** You also talked about, as you were getting ready for this hearing, the time constraints necessary or the time constraints on the work that you were doing, right?

A. Yes.

Q. And it takes some time to run simulations, right?

12:09:02 **A.** Correct.

Q. Now, when we talked to Dr. Duchin about running simulations at trial, I think I asked her how long it takes to run 100,000 simulations and she said about an hour.

12:09:15 Is that the same for your simulations?

A. I don't know what program she uses.

Q. Well, my question is: Is that the same for your simulations?

A. Some could be done. It depends on a huge number of

12:09:24 factors. Some could be done in an hour, depending on the number of ensembles and constraints. Some, I think the longest we have had, take as many as 48 hours.

Q. So when you say -- when you said on direct that it can take 48 hours to run these maps, that's not how long it

12:09:44 typically takes. That's the outer limit. Fair to say?

A. That's the outer limit I have encountered for doing statewide, trying to draw 38 districts with the constraints in Texas.

Q. When was the first time that you ran a simulation based on any redistricting effort in Texas in 2025?

A. In 2025?

Q. Yes.

A. For this litigation.

Q. When?

A. August.

Q. Did you attempt to begin running simulations when a proposed map was first introduced in the Texas Legislature back in July?

A. No.

Q. Do you know that at one point the plaintiffs in this case were asking the Court to hold this hearing in as few as 48 hours?

A. I am not aware of that at all.

Q. If it takes 48 hours to run simulations, that would have given Dr. Trende precious little time to prepare his simulations, much less review yours. Fair to say?

A. 100 percent agree.

Q. As it worked out, from the time we had between when the plaintiffs filed preliminary injunction motions and this hearing, you were able to produce not one, not two,

but three reports, right?

A. That's correct.

Q. Your first report for this hearing, your August report, repeats -- it's not exactly the same, but you again take up an RPV analysis, as you did and as we discussed at trial, right?

12:11:12

A. In the May trial, yes.

Q. Now, I'm going to try to be consistent about referring to this as "the hearing" and about what we did in May and June as "the trial." If I mess that up, let me know. Okay?

12:11:24

A. Okay. Thank you.

Q. Something you pointed out, as you were talking through that portion of your analysis, is that the Texas Legislature in the 2025 enacted map drew a 50.4 percent HCVAP district in Bexar County.

12:11:43

Do you remember that?

A. Yes.

Q. You also testified, and we talked about this just a minute ago, that your analysis showed that in 2024 Hispanics were voting at something like 60 percent cohesion for Democrats in the state, right?

12:11:58

A. Sometimes higher, like the Cruz/Allred. But sometimes slightly lower. So I think I used that 60 percent as an average.

12:12:15

Q. Sir, I'm not asking for precise numbers here; but if we take that general understanding of a 60 percent cohesion for Democrats among Hispanic voters in '24, and you have a 50 percent Hispanic district in Bexar County, then that means something like 30 percent of the voters in Bexar County will be Democrat. Not exclusively 30, but you'll have probably close to 30, something like that, right?

A. If you have a district that's 50 percent Hispanic among the voters -- which is different from CVAP, as we established. Let's assume it's the actual election day voters -- and 60 percent of them vote Democrat, now the Democrat is up to 30 points.

Q. By themselves probably not enough to elect a candidate of their choice, right?

A. It would entirely depend on those other 50 percent of the voters that you put in this Hispanic district.

Q. But if you had this 50 percent Hispanic district and the Hispanic voters were voting with a higher level of cohesion, like 80 or 90 percent, they would have a better chance of electing a candidate of their choice in a 50 percent district. Fair to say?

A. If the district was only 50 percent exactly or 50.4 among the actual voters, yes, as the cohesion goes up, you would have a better chance; but you would still never be

able to elect your candidate of choice without crossover vote if you were only 50 percent.

Q. Well, we talked at length, at exhaustive length in trial about your RPV analysis, right?

12:13:49 **A.** That was my recollection, yes. It was exhaustive.

Q. I remember it the same way.

In fact, you and Mr. Thompson, my colleague here, spoke about your RPV analysis at the 2022 preliminary injunction hearing, you may recall.

12:14:02 **A.** I do.

Q. He says hello.

A. Yes. Hello.

Q. And, of course, you have not since then changed your position on your RPV analysis when we discussed my

12:14:10 critiques of it since trial. Fair?

A. My RPV analysis has remained constant, and my interpretation has remained constant.

Q. And do you remember one of the big points that was discussed at the last preliminary injunction hearing in

12:14:24 2022 is about the importance of primary elections for RPV analysis to help disaggregate whether different sets of minorities preferred different candidates within the same party, right?

A. I remember that discussion mostly I think in the '22

12:14:43 trial in the PI.

Q. And you have not changed your position on that, right?
A. No.
Q. Have you had an opportunity to review a transcript of Dr. Ansolabehere's testimony in this hearing?
12:15:00 **A.** No. I think that was just a few days ago. I know he testified, but I have not seen the transcripts of anything yet in this case.
Q. Are you aware that he testified that the use of primaries to disaggregate whether minorities prefer
12:15:17 different candidates within the same party is not well developed?
A. I am not aware that he said that.
Q. Do you agree with that?
A. I don't know. I would have to go consult the
12:15:30 literature and assess it.
Q. You said on direct examination -- and I don't want to pick on you, but I think it's important to be precise here. You said that Dr. Alford in the trial agreed with your data.
12:15:47 My memory is -- and tell me if we're saying something different -- that Dr. Alford took your analysis sort of as a given and then critiqued it anyway. He said even if Dr. Barreto is right. He didn't express a position on whether you are right, but said even if Dr. Barreto is
12:16:06 right on these numbers, his analysis still doesn't say

what he says that it says; isn't that correct?

A. That might be. We would have to look at the language he used in his report. Sometimes he says things like that. Sometimes he actually says I don't disagree with these results, I just think they are the result of partisanship.

Q. And you are aware that there are no VRA claims at issue in this hearing?

A. That's my understanding.

Q. Now, during trial you testified that you were not able to disaggregate racial data from partisan data using an RPV model, right?

A. I remember that.

Q. And you stand by that testimony? Your opinion hasn't changed there?

A. My opinion is that in the EI model -- I don't remember exactly what I said. I stand by my testimony. But in an EI model, it should be bivariate and you should just use race as the input, which is the established norm in social science.

Q. You said, though, that there was -- you said in that trial, I think I heard you reference it again today on direct, that there is literature demonstrating that race causes partisanship affiliation.

Am I putting that too broadly?

A. I would say predicts or is associated with partisanship. But, yes, there is -- and I did talk about it in the trial, and it is in one of my reports, that there is a long history of literature showing that racial attitudes and racial characteristics influence people's partisanship and predict their partisanship.

12:17:38

Q. We talked a little bit about that literature at trial. But by way of example, some of the literature that you are talking about would be "Beyond the Trump Presidency: The Racial Underpinnings of White Americans' Anti-Democratic Beliefs" by Ferrer and Palmisano; is that right?

12:17:51

A. That might be. I can't remember if I cited that in my literature review or not, but...

Q. What about "Are guns the new dog whistle? Gun control, racial resentment, and vote choice," by Schutten, Pickett, et al?

12:18:08

A. I don't think I am familiar with that specific piece. But there is a lot. There is a lot in this domain that looks at social issues, race, and partisanship.

12:18:24

Q. One last one, see if you are familiar with this one. How about "A History of the New Racisms," published in the "The Cambridge Handbook of Implicit Bias and Racism."

Have you read that one?

A. I don't think so. Who is the author --

12:18:37

Q. Can we agree -- what?

A. Who was author? Who was the author of the last one or you just have the title?

Q. I'm sorry. I didn't write that one down.

12:18:44 **A.** All right.

Q. Are there a lot more authors who publish in the "The Cambridge Handbook of Implicit Bias and Racism"?

A. It probably has 18 pieces in it. And probably comes out every few years.

12:19:02 **Q.** Something I think we can agree on -- and this would be a rare light moment for us, I think, Dr. Barreto -- is race and party are correlated in Texas to some degree, true?

A. Yes.

12:19:12 **Q.** You know that the Supreme Court has said -- I'm not trying to make a lawyer out of you, but you've testified a lot. You know the Supreme Court has said that when race and party are correlated, the Court expects partisan gerrymanders to resemble racial gerrymanders, right?

12:19:26 **A.** I don't have a lot of Supreme Court opinions memorized; but if you are quoting it word for word, I have no reason to object.

Q. Well, again, you have spent more years in school than I have. I'm not trying to give you a law degree.

12:19:41 But you do know generally it will be the plaintiffs'

burden in this hearing to disaggregate race from partisanship, right?

A. I don't want to get into any of the legal standards. I've provided a bunch of social science data. I believe it's up to all of these smart lawyers at the table over here to try to convince the Judges of the legal arguments. But I don't know exactly what the standards are and what needs to be met.

Q. For this hearing you have conducted an intent analysis, right?

A. Yes.

Q. Sort of taken a page from Dr. Duchin and what she did in trial, right?

A. I don't believe I saw her testimony. I don't know what she did.

Q. Well, you know that she works with a map drawing robot, right?

A. I don't know that.

Q. You worked with a map drawing robot in this case, right?

A. I remember you stated that, but I don't think that's how we described it.

Q. Have you ever used a map drawing robot before?

A. By "robot" do you mean computer simulation?

Q. I think robot is probably shorter. Yes.

A. I'm familiar with the redist package. It's a quite popular package. As I said on direct, it's one that I have used in teaching and for a lot of analysis.

Q. That's not my question.

12:21:12 I'm asking you whether you have used it to draw map simulations.

A. Yes. I have used it to draw map simulations. I use it in class. When I use it in class, we draw map simulations and show people how to use it. I've used it

12:21:25 in other reports and talks.

Q. And reports in litigation?

A. I think this is the first litigation that the questions that I was answering were appropriate for the simulations.

12:21:38 **Q.** And you remember why I'm asking you, right, whether you have used this kind of methodology to do an intent analysis, right?

A. I don't know why you are asking me. I hope to find out soon.

12:21:53 **Q.** You recall that I took your deposition earlier this year in preparation for trial, right?

A. Yes.

Q. And one of the questions that I asked you in that deposition was whether you had ever conducted an intent

12:22:05 analysis. And you said, yes, I have.

Do you remember that?

A. Yes. I remember this.

Q. And then I asked you, okay, can you give me a sense, not an exhaustive list, but can you tell me what kinds of methodologies you have used when conducting an intent analysis?

Do you remember that?

A. Yes.

Q. And do you remember that at your deposition you refused to give me even a single methodology you had ever used in an intent analysis?

A. I wouldn't put it that way. I believe I said it depends entirely on the questions being asked, which is consistent with the testimony I just gave. So depending on the questions that are before you, you'll use different methodologies and tools to try to prove something up.

Q. And I remember this part because I want to know what kinds of methodologies you have used. The question you are answering is there are different kinds and which one I might use depends.

A. Okay.

Q. I asked you at your deposition, right, which methodologies you had used, right?

A. I don't remember. You can pull it up and show me. I remember we talked about this for like six or seven

minutes. I wasn't doing an intent analysis at that point in the trial, so I wasn't prepared to talk about intent analysis.

I remember the discussion as me saying it depends on the question. Depending on the question, there is a lot of different types of data or analysis you would do for intent.

Q. We agree, though, sir, that at that deposition you never did give me a single methodology you had used, true?

A. I think that's right. I don't recall. But I agree with you. It was kind of a tense exchange. I didn't understand it at all. I wasn't doing an intent analysis at the time. And it does depend on the question.

Q. But then in trial I asked you the same question. What kind of methodologies you had used in intent analysis. And suddenly you had an answer for me. True?

A. I did answer with some specificity at trial. I recall that you were quite frustrated. And so I thought maybe you would be happier if I told you what I did in my Florida case in *Alvarez*, which is why I explained it at trial.

Q. As an experienced expert in litigation, you understand that it is important for opposing parties to be able to evaluate not just whether they agree with your conclusions but whether you did the work correctly in reaching your

conclusions, right?

A. I agree that the opposing side should be able to offer all of those criticisms. They should be able to offer any criticisms they want of the work. Whether it's they didn't like the dataset, they didn't like the figures and tables, I think all of it is fair game.

12:25:03

Q. And there are a couple of ways for experts who are dealing with map drawing robots to evaluate whether or not an expert like yourself, who has drawn simulated maps, has drawn simulated maps correctly, right?

12:25:22

A. I think the word "correctly" is wrong. I think you can evaluate whatever maps come out. There is not a "this is the only way to draw it." So I think your question is not correct.

12:25:44

Q. Is there a wrong way to do it? Can you mess it up?

A. There are different choices you can make in using the redist package or other packages. But when you implement your code and implement your maps, you will come up with maps.

12:26:05

Another person can criticize them for any number of reasons. They can say you didn't follow the Texas constraints or you didn't do this.

But you still produced maps, and you have used the package correctly. The incorrect way to do it would be

12:26:21

that it doesn't converge. It stops. It doesn't produce

maps.

But if you have produced maps, you have produced maps. And anyone can come and look at them and look at the results and say whether they agree or disagree. But I don't think it's as simple as there is only one correct way to do a map.

Q. And that's not my question.

A. Okay.

Q. There is a difference between there being more than one way to skin a cat, and also a definitely wrong way to skin a cat, right?

A. I'm not familiar with this.

Q. But you understand the analogy, I bet?

A. I am not really.

Q. Well, let's see. When I asked you about being able to evaluate whether or not your methodology was conducted correctly, you said, I'm not sure that there is a correct methodology. You just have to do the thing. And if you do the thing and you get maps, that's all anybody should care about. Is that right?

A. I don't think I said that.

Q. Does it require expertise to apply this methodology or not?

A. Sure. You have to know how to use the redist package --

Q. And if you don't, you can do it wrong. True?
A. You could make mistakes.
Q. And just like any other kind of expertise, in order to evaluate, in this case the maps, but whatever the
12:27:32 conclusions of the expert opinion are, I need to be able to know how you came to that conclusion, what your methodology was, what steps you took. True?
A. I agree you need to know what steps I took, yes.
Q. Something that you could give me or my experts to help
12:27:48 me evaluate the steps that you took would be to disclose code and inputs, right?
A. Code and underlying files. I think that's what you mean by "inputs."
Q. And we'll talk about specifically what some of these
12:28:04 terms mean.
Another way that -- another set of information you could give me or my experts to evaluate whether or not you applied the correct methodology would be to give me your outputs or the actual maps you drew, right?
12:28:18 **A.** No.
Q. You cannot give -- you could not give me outputs? Is that right?
A. My -- the question is you don't need those.
Q. My question is: Could I evaluate your methodology if
12:28:31 I had them?

A. No. Not my methodology.

Q. Could I evaluate whether or not your maps were the correct kind of product for your stated methodology if I had those maps?

12:28:44 **A.** No.

Q. Did you rely on the maps that were output by your methodology?

A. I relied on the simulation ensemble results to --

Q. Which are maps, right?

12:28:55 **A.** Yes -- to create the histograms and tables. They are stored in the memory as a temp file. And then they are the direct result of the code. So anyone who puts the code in will get the same exact random distribution of maps.

12:29:12 **Q.** The same exact random distribution, which is different from the same exact maps.

Do I have that right?

A. Absolutely. It should be.

Q. Let's talk about what some of these terms mean. We

12:29:26 have used the term, you and Mr. Dunn talked about, "code," right?

A. Yes.

Q. And we're talking here about computer code, right?

A. It is what we would probably say is the script or just

12:29:38 the what you type in into the software program R.

Q. It's how you tell the robot that you want it to draw maps, true?

A. How you tell the computer program, yes.

Q. And it's a language of commands and it's the only way that the robot and the computer program knows what to do, right?

A. Correct.

Q. Another term that we have been talking about -- and we may use this differently, so I'm glad that you brought this up -- is the term "input," right?

A. We have talked about the term "input," yes.

Q. Input, as I understand it, is the specific information that you give to the robot or the computer program or the algorithm in order to be able to draw maps the way that you want for the computer to draw maps, right?

A. I would disagree with that.

Q. How do you use the term "input"?

A. Well, input can be any number of things. You seem to be referring to data files. And so I would refer to those as underlying files or databases.

Q. Why underlying? Underlying what?

A. Underlying the final tables that come out or any merged files that are created.

Q. What do you mean by "merged files"?

A. Two files that are joined together during the

following of the code.

Q. Do you have to -- are there times when you have to merge files before you place them into the code?

A. With redist or just any time in my life?

12:31:12 **Q.** With the robot you are using is only one I care about.

A. In redist you can draw on a number of different files and you can merge them in.

Q. How?

A. By typing those commands into R. That would be a

12:31:28 piece of information. So to clarify, as you give the -- as you try to explain what you've done, you tell people the information you are using. So there is a lot of ways to tell someone the information you are using, which is take this data file, which has VTD election

12:31:47 results for Trump/Harris, and merge it into your shapefile or overlay your shapefile.

Q. How do you do that? Is that in the code that you produced here?

A. The merging process is a process that takes place

12:32:02 before redist runs.

Q. Well, I want to make sure I understand before you move on.

MR. KERCHER: Your Honor, may I use the whiteboard?

12:32:16 JUDGE GUADERRAMA: Yes, sir.

MR. KERCHER: Any there color-blindness concerns before I choose what markers I'm going to use?

JUDGE BROWN: No.

MR. KERCHER: Dr. Barreto?

12:32:30 THE WITNESS: No.

BY MR. KERCHER:

Q. Can you see this okay?

A. Yes.

Q. All right. So you have got your robot that's going to

12:32:40 draw maps, right? But this is just code. Without actual data to put into the code, the code won't run, right?

A. The code can call data.

Q. But it needs data, right?

A. It can call data. It can go on the website and

12:32:59 download the data and then merge it in.

Q. I think we're saying the same thing.

It needs data, right? Otherwise, code is just -- it's static. In order for the code to do something, it needs data to run through the code, right?

12:33:09 **A.** It needs to access data. The code itself can access the data.

Q. So you will have data of various sorts that you know the code will need, right?

A. Correct.

12:33:22 **Q.** And you may have multiple kinds of data that the code

will need, right?

A. Yes.

Q. And a moment ago you said that sometimes you need to merge the data, right?

12:33:34 **A.** Correct.

Q. And you said that merging the data happens before you put it into the code, right? Before you pull up redist?

A. It's code that you write to merge the data.

Q. Well, but the code that --

12:33:50 JUDGE GUADERRAMA: Mr. Kercher, I'm going to ask you to use the microphone, please. Thank you.

MR. KERCHER: Can you hear me now?

JUDGE GUADERRAMA: Yeah. I heard it.

MR. KERCHER: Is that better?

12:34:24 JUDGE GUADERRAMA: Okay.

BY MR. KERCHER:

Q. So a moment ago I asked you about merging data files, right?

A. You did.

12:34:30 **Q.** And I heard you say that merging data files happens outside the redist software; is that right?

A. Well, it can happen inside. It happens in the R, too.

Q. Did you produce the code that you used to merge data files?

12:34:45 **A.** I think we just produced statements that said merge

these three data files together, which every single person who has used redist will use the same commands to merge the three data files together. I believe those are the first three what are called comments in our code.

12:35:16 **Q.** Well, while I appreciate you saying folks who are familiar with redist will know how to use R or to merge data files, it's your belief, and I think you said this, that Dr. Trende knows how to merge data files, right?

A. Yes.

12:35:31 **Q.** You understand, though, and I think we talked about how sometimes in litigation, unfortunately, there may be a lack of trust, right?

A. Could be.

Q. You understand that I'm not worried about whether or

12:35:42 not Dr. Trende does his job correctly. I need to see you do yours, right?

A. I mean, I don't know what you want me to say. You just told me what you need. I don't know what you need. I mean, I don't know if the answer is yes or no to that.

12:35:57 I mean, you can tell me it's yes and then I'll agree with you, but I don't know the answer.

Q. You had multiple data files that you merged into a particular kind of file. Is that true?

A. I had three files: two off the TLC website, one off

12:36:10 of the census website. All three files are files that

Dr. Trende had used before in this case. And I said merge these three files together. And then Dr. Trende did his report and replicated my results.

MR. KERCHER: Richard, could you please bring up Defense Exhibit 1522. Can we make that a little bit bigger, sir.

BY MR. KERCHER:

12:36:29

Q. Dr. Barreto, can you see that okay? It's awfully small for me.

12:37:10

A. I can see it.

Q. You recognize this as some of the code that you produced in preparation for this hearing, right?

A. Yes.

Q. I want to ask you a few questions about it. First of all, who wrote this code? Was it you or Mr. Rios?

12:37:20

A. Mr. Rios.

Q. Why did you not write the code?

A. Mr. Rios, when we split up work assignments, often takes the first crack at writing the code. And then I review it. And then we move on to the next steps.

12:37:34

Q. Could you have written this code yourself without his help?

A. Maybe not the entire thing, but probably most of it.

Q. Is it right to say that you don't know?

A. I would say I could probably write the entire -- or

12:37:45

most of it, but not the entire thing. I would have definitely consulted him, which is my normal practice.

Q. There are a couple of coding pieces that I want to ask you about.

12:38:03 MR. KERCHER: I may be going back and forth from the whiteboard, Your Honor. Would you like me to ask permission every time I move about the well?

JUDGE GUADERRAMA: No.

MR. KERCHER: Left my mic.

12:38:22 BY MR. KERCHER:

Q. Sometimes in your code, Dr. Barreto, you will see something that is a percent sign followed by a greater-than sign followed by another percent sign.

Do you see that in your code?

12:38:36 **A.** I don't.

MR. KERCHER: Richard, could you control F for that and let's find an example.

BY MR. KERCHER:

Q. Do you see it now, sir?

12:38:58 **A.** Yes.

Q. What does that do?

A. In this section here we're subsetting the data.

Q. Well, specifically, the percent sign, greater-than, percent sign, what does that mean?

12:39:11 **A.** It's the command that then precedes the filter. So

I'm trying to explain what we're doing in this section here, which is that we're now filtering the data down to just four counties. And it's a subset of the larger dataset that we started with called Texas 24. And we're
12:39:30 telling it to filter down to just these counties, Harris, Liberty, and Fort Bend, those three.

And so the "HLFB" at the beginning is the new object that we're going to have out of Texas 24, which was the one we started with. And the next line below it tells us
12:39:49 where to get that from.

Q. Right. But there is a name, isn't there, in the -- in coding, in redist for percent sign, greater-than, percent sign. That does something. It has a character name, doesn't it?

12:40:03 **A.** I don't know it off the top of my head.

Q. It's called a pipe operator. Isn't that true, sir?

A. That sounds right.

Q. What do pipe operators do in R?

A. In this case, we're using it to filter the data down
12:40:15 to just these specific counties. We started --

Q. Well, when you talk about what it does in this case, what generally does a pipe operator do in the R coding language?

A. It's something that you can use when you are drawing
12:40:29 on a larger dataset and you want to tell it to narrow your

focus or narrow your scope. So it's something that can be used in a number of instances.

Q. A pipe operator allows coders to string functions together more precisely. Isn't that true?

12:40:47 **A.** That's one of the things that it can do.

Q. It's not just a subsetting code. It can be used to string any number of functions together. True?

A. Most commands can be used for multiple functions. In this case I was describing what we were using it for.

12:41:06 **Q.** I understand. But then I asked you a question about how else it can be used, and you gave me the same answer.

Did you know before today that pipe operators can be used to string together any number of functions?

A. I know that it can be used. That it's a diverse

12:41:20 function that can be used for a lot of reasons, yes.

Q. This is -- this is a particular version of a pipe operator in R, right? Do you know what it's called?

A. I told you I'm not familiar with this specific one. This is part of the code that Mr. Rios wrote.

12:41:38 **Q.** It's called the tidyverse version. Does that sound familiar?

A. Yes.

Q. Is there another name for the version, do you know?

A. I don't know.

12:41:45 **Q.** Does "dplyr" sound familiar?

A. Yes.

Q. Let's do another one. Sometimes in code you'll see this vertical bar followed by the greater-than sign.

Are you familiar with that?

12:42:07 **A.** I have seen that command, as well, many times.

Q. And for the Court's reference, if I can show that vertical bar on a QWERTY keyboard is just above the enter key on your keyboard. It is just above the backwards slash.

12:42:33 What does that do in R?

A. Can you show me an example?

MR. KERCHER: Richard.

A. I don't know off the top of my head what its function is, but it's part of up here in redist where we're setting 12:42:56 the constraints and we're being very specific in trying to specify all of the constraints. And so each line is an additional set of constraints.

BY MR. KERCHER:

Q. Why are you being very specific? Is this a 12:43:08 particularly important part of the code?

A. This is a -- we're being specific because we're trying to match, to the extent possible, the constraints that Texas put in their map.

Q. So it is an important part of the code. Fair to say, 12:43:20 right?

A. All of the code is equally important, so --
Q. And this -- and this symbol, this vertical bar with the greater-than sign is used no fewer than one, two, three, four times in this portion of the coding, right?
12:43:33 **A.** On this screen, yeah.
Q. And you don't know what it does in any one of those four instances. Is that true?
A. As I said, this is part of the code that Mr. Rios wrote. I defer to his writing of it based on the redist
12:43:46 package, which we consulted when writing this. But, no, I don't have every character memorized and what it does. That's not what my contribution to the report was.
Q. Well, in fairness, Mr. Rios is not on the stand, right?
12:43:59 **A.** Okay.
Q. True?
A. That's correct.
Q. Do you know that he is not on the plaintiffs' witness list at all?
12:44:06 **A.** I don't know that.
Q. So if I need to talk to him about whether or not this character in your code, in this important part of your code where you are setting parameters for your map drawing robot, I cannot ask him whether he did it correctly,
12:44:17 right?

A. You certainly had opportunities and --
Q. I'm asking about I can't ask him in this hearing. True?
A. I don't know what the rules are. I know that he is
12:44:26 not on the stand right now --
Q. What you know for sure is you don't know whether Mr. Rios used that coding language properly there. True?
A. I trust, based on all of my work with him and his and my consultation with the redist package and based on my
12:44:42 conversations with Dr. Imai and Dr. McCartan, as we discussed earlier, I sent them my code to look at, I trust that it's correct, yes. Fully, 100 percent.
Q. This vertical bar with the greater-than sign is another pipe operator, isn't it, Dr. Barreto?
12:45:03 **A.** Could be.
Q. But this is the pipe operator for base R, isn't it?
A. It could be.
Q. You just don't know?
A. I do not know.
12:45:11 **Q.** Base R is just the basic package that you get when you upload R to your computer in the first place. True?
A. That sounds right.
Q. It's the out-of-the-box version, if you will?
A. That sounds right.
12:45:27 **Q.** ChatGPT uses the base R pipe operator, doesn't it?

A. I have never used ChatGPT in my life, so I don't know.
Q. What about Mr. Rios, does he use ChatGPT to write your code?
A. No.
12:45:43 **Q.** Did you ask him?
A. Yes.
Q. Specifically?
A. I know he writes his own code.
Q. Did you ask him specifically?
12:45:50 **A.** I did not ask him that because I don't have to, because I implicitly trust him. He is a very excellent data scientist and he said --
Q. Why did he flip back and forth between the two kinds of pipe operators that we see in your code? What is the
12:46:02 reason for that?
A. Those are just choices that data scientists make in writing code.
Q. My question is: Why did he make that one?
A. They both are pipe operators that serve an equal
12:46:11 function and can get the job done. This --
Q. Do you not know the answer to the question, sir?
A. I told you already that Mr. Rios wrote this code --
Q. Right. And my question is, since you are relying on him, why he chose to use one pipe operator in one place
12:46:25 and another pipe operator in another place. And if you

don't know, then that may be the truthful answer you have to give.

A. I do not know.

MR. KERCHER: Could we pull up the "upload" portion of this.

(Sotto voce discussion between counsel.)

MR. KERCHER: We're in the same exhibit.

BY MR. KERCHER:

Q. All right. We're back looking at your code. Right now Richard has highlighted words that say "upload merged data."

Do you see that?

A. Yes.

Q. And then the next line down begins with a pound sign or, as my kids call it, a hashtag; and it says [as read:] Dataset needs CVAP 2024 presidential election results and C2333 boundaries merged at the VTD level.

Do you see that?

A. I do.

Q. Next it says Texas_24. And there is a less-than sign, a dash. And then it says F-R-E-A-D, open parenthesis, open quotation, filepath, all one word, closed quotation, close parenthesis.

Do you see that?

A. Yes.

Q. The word "filepath" here is sort of a Mad Libs blank where you can put data into the code, right?

A. This in this case is the result of those three datasets above.

12:48:43 **Q.** So you may be a step ahead of me.

Filepath is not part of the code. It is a place where you will put data for the code to read, right?

A. Somewhere on your laptop or cloud or wherever each operator stores this would be a different filepath.

12:49:06 **Q.** And your code gives a little description of how you fill in the blank that filepath is keeping for us, right?

A. Correct.

Q. In order to run the code, in order for the robot to perform the task that you are instructing it to do, you

12:49:23 have to type something elsewhere where word "filepath" is, right?

A. You put your merged data there.

Q. Well, what did you type in place of filepath?

A. The three datasets that we supplied, our underlying

12:49:40 data, which we supplied both in the May trial and in this hearing. We merged those together using the exact same processes that Dr. Trende and everyone else merges --

Q. Well, I'm asking what you typed. So did you just type in an Excel filepath name and then a semicolon like you do

12:50:01 with an email and in Word a doc file name? What did you

type instead of filepath?

A. I don't know what was in the filepath. I know it is the merged combination of these three datasets, which are the underlying datasets that we provided that Dr. Trende used in his 2022 report and --

12:50:15

Q. I want to go back to the part where you said you don't know what got typed into your code.

Did I hear that part correctly?

A. What was the question?

12:50:28

Q. Whether you know what got typed into the code on which you are relying for your conclusions in this hearing?

A. Mr. Rios merged the filepath together, and so I don't know exactly what the file was part. That was his part of the report.

12:50:57

Q. When I hear the words or the word "filepath," it makes me think that there must be a path to a file on the computer somewhere.

Am I tracking correctly so far?

A. It simply means the location of the merged dataset that you are calling Texas 24.

12:51:11

Q. Okay. And so --

A. It's the object that you are creating. And it is the result of merging those three datasets that we provided.

Q. So the way that I think about it is, is that sometimes on the computer the State has supplied to me from

12:51:24

Microsoft, if I'm looking for a particular file, it may be stored on my desktop, but it may be stored in a particular file on my desktop, maybe I have labeled it work, and maybe I'll have a sub folder inside of work that says redistricting, and a sub file there that says 25. And then maybe another sub file that says Barreto CX.

And if I want to see -- when I'm searching for a file on my computer and I finally find that file, I can see up in the search line of my computer the filepath to where my -- to where that particular file is.

Is that what "filepath" means in your code?

A. It's telling you where the directory, that would be different for every user, where they are putting this merged file.

Q. Right. And I understand that filepath will be different for the user and for the given file. But in terms of the way that filepath works, what it is holding a place for, it's telling the user -- it's telling the robot where the particular file you want for the code to run is. True?

A. It's -- it can be a particular location. It can be the result of a merge process. It can be a number of different things. It doesn't have to necessarily be a physical location on your hard drive. Many of the times these are done where you call three different files, merge

them together, and then you have your data to start analyzing. So it's --

Q. But merging them together happens before they get into the filepath, right? No. Let me ask you a better question.

I'm trying to figure out what the thing is. And I understand that the data path -- the filepath may be different depending upon what data you are using. But when you put something into that filepath, what is it? Is it a PDF? Is it a Word document? Is it something else?

A. It's a -- it's the result of the merge.

Q. What is the result of the merge?

A. It is --

Q. Is that a kind of file?

A. Yes.

Q. What kind of file is it?

A. In this case it's a database file or a shapefile that is the result of these three files coming together. It's not necessarily something that's saved. It's taking these three other files, merging them together, and then start running all the rest of the code that's on there.

Q. Did you produce that merged shapefile?

A. We did not save a merged shapefile.

MR. KERCHER: Objection. Nonresponsive.

THE WITNESS: We don't have a merged shapefile.

JUDGE GUADERRAMA: Sustained to both answers.

BY MR. KERCHER:

Q. Did you produce the merged shapefile?

A. We do not have one. So the answer is no. I have not --

Q. There was a shapefile that went into your filepath code. True?

A. I produced that.

Q. The shapefile?

A. I produced three data pieces that went in: the VTD election results, the C2333 shapefile, and the census block CVAP data. Those three pieces of data are the same three pieces of data that Dr. Trende used and merged together and then started running his analysis. It is not required to stop and save that shapefile, that filepath, and save it somewhere on your hard drive. You can just run it as you have analyzed it.

So we did not save any shapefile to then produce. We created the merge and then kept doing the analysis. That's the normal process.

Q. So what you produced were three individual data files, correct?

A. Correct.

Q. You or Mr. Rios merged these data files, true?

A. Yes.

Q. The code that you used to merge these data files, you did not produce. True?
A. We did not produce it because it's --
Q. You also --
12:55:26 **A.** -- super basic.
Q. -- did not produce the merged shapefile. True?
A. We did not create or save one. So, no, there was nothing for us to produce. Just the three underlying data points which are the starting point.
12:55:38 **Q.** Help me understand how you had a merged shapefile and you are saying you never had it. Is there a merged shapefile or not?
A. Do you understand what a temp file is?
Q. I'm asking you whether there is a merged --
12:55:49 **A.** I'm trying to explain to you --
Q. -- shapefile that you used in your data.
A. It doesn't save. You merge it just like the object simulation results. You have the three underlying files. They merge together. It sits in a temp file. You then
12:56:02 can run the rest of the analysis. You are not required to stop and save that and put it in a folder. You can just keep running your analysis.
Q. I'm not asking you what you think is required or not.
A. I'm telling you what we did.
12:56:14 **Q.** You had a shapefile at one point. Is that true?

A. That's -- I had C2333 shapefile and I had --

Q. And we know, don't we, from the data that you have produced and that other experts have produced in this case that shapefiles are saveable things. True?

12:56:28 **A.** You could have stopped and added code and hit save. But it is not necessary. And it is not part of my normal practice. And it is not part of the practice you would need. You just need the underlying files. And that's what we produced. And that is consistent with what

12:56:44 Dr. McCartan and Dr. Imai said. And that is consistent with our social science practices.

Q. So you neither produced the merged shapefile nor the code you used to merge these data files. True?

A. The -- there is no merged shapefile that was saved, so

12:56:59 we did not produce that. I'm not trying to argue with you. We did not create and then not produce something. It was not saved anywhere.

The only thing that we saved are the three underlying files that go into the program.

12:57:11 **Q.** Is it easy to merge those shapefiles together? Do you have to be an expert to do it?

A. Anyone who knows how to use redist or R. You could also merge these files together for ecological inference, RPV analysis, because you need both race and VTD.

12:57:27 **Q.** So, for example, Dr. Trende could merge these data

files together, as I think you have stated, right?

A. He did merge them together.

Q. But that's different from being -- from me being able to evaluate whether you merged the data files correctly, right?

12:57:40

A. No.

MR. KERCHER: Richard, could you please bring up ECF-1193. And let's go to page 10. And let's zoom in on that first full paragraph.

12:58:16

BY MR. KERCHER:

Q. I'll represent to you, Dr. Barreto, this is from your lawyer's response to our motion to strike. They wrote to the Court [as read:] Despite the explanation reproduced above, defendants continue to insist there is some

12:58:27

foundational shapefile or merged dataset that Dr. Barreto is hiding. There is not. Just as Dr. Trende did with his own simulation analysis, Dr. Barreto instructed R to gather the relevant files from their saved location on the computer, which files have all been produced and

12:58:43

identified for defendants, and run the analysis from there. Defendants also cite for the first time another line in Dr. Barreto's code they insist reveals some subterfuge.

That's that filepath line that we were just talking

12:58:58

about, right?

A. Yes.

Q. [as read:] Defendants assert that in this code filepath is a placeholder for the data to be run through the code, an unproduced shapefile.

12:59:10 [as read:] This is incorrect, they said. Filepath is merely a note to insert the location on the computer where the relevant file is stored, in this case, CVAP data, election results, and relevant redistricting map. All of those files were produced to defendants. There is no

12:59:30 unproduced shapefile.

Did I read that correctly?

A. I think so.

Q. You merged this data into a shapefile. You didn't save it, and you didn't produce it. True?

12:59:43 **A.** We did not save any shapefile after the merge. That is true. So I had nothing to produce.

MR. KERCHER: I think now is a good time to break in the cross if the Court wants to break for lunch.

JUDGE GUADERRAMA: Let's be back at 2:15. We are

01:00:00 in recess until then.

COURT SECURITY OFFICER: All rise.

MR. VELEZ: This court stands in recess.

(Morning proceedings adjourned at 12:59 p.m.)

****

Date: October 14, 2025

COURT REPORTER'S CERTIFICATE

I, Laura Wells, certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter.

/s/ Laura Wells

Laura Wells, CRR, RMR