

**FILED**

October 17, 2025

CLERK, U.S. DISTRICT COURT  
WESTERN DISTRICT OF TEXAS

**UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS  
EL PASO DIVISION**

BY: Diego Cesena

DEPUTY

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4	<b>LEAGUE OF UNITED LATIN</b>	§	<b>3:21-CV-00259-DCG-JES-JVB</b>
5	<b>AMERICAN CITIZENS, ET AL</b>	§	
6		§	
7	<b>V.</b>	§	<b>9:01 A.M. TO 12:50 P.M.</b>
8		§	
9	<b>GREG ABBOTT, IN HIS</b>	§	
10	<b>OFFICIAL CAPACITY AS</b>	§	
11	<b>GOVERNOR OF THE STATE OF</b>	§	
12	<b>TEXAS, ET AL</b>	§	<b>OCTOBER 6, 2025</b>

**PRELIMINARY INJUNCTION HEARING  
BEFORE THE HONORABLE DAVID C. GUADERRAMA,  
HONORABLE JERRY E. SMITH  
AND HONORABLE JEFFREY V. BROWN  
DAY 5 (MORNING SESSION) OF 9 DAYS**

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Proceedings recorded by mechanical stenography.  
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**DAY 5  
(INJUNCTION HEARING)**

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1 **PROCEEDINGS**

2 **(Call to order of the Court.)**

3 JUDGE GUADERRAMA: Good morning, everyone.  
4 Please be seated.

09:01:23 5 Before we get started we have some housekeeping  
6 matters that Judge Smith is going to take care of here  
7 real quick.

8 JUDGE SMITH: Are we going to hear the rest of  
9 the deposition or the live testimony of Dr. Murray?

09:01:38 10 MR. DUNN: We have a live witness first and then  
11 the deposition we were playing.

12 JUDGE SMITH: I thought we were going to finish  
13 the --

14 MR. DUNN: Moon Duchin was our last live witness.

09:01:51 15 JUDGE SMITH: Well, I understand. But you said  
16 there was about, what did you say, 58 minutes left or  
17 something?

18 MR. DUNN: I think it's about an hour and 38  
19 left. There is one more volume.

09:01:59 20 JUDGE SMITH: Well, for continuity, shouldn't we  
21 finish that first?

22 MR. DUNN: We serve at your pleasures.

23 JUDGE GUADERRAMA: Well, if the witness is ready,  
24 let's go with that.

09:02:07 25 JUDGE SMITH: If the witness is ready, that's

1 okay. I just -- it's not what I expected, but maybe you  
2 explained that on Saturday. That's fine. We can do that.

3 MR. KERCHER: A couple of housekeeping matters.

4 First of all, Your Honors, I want to introduce

09:02:22

5 Mr. Grey Johnston, who is a member of my team and as of  
6 this morning has passed the Texas bar.

7 JUDGE SMITH: I am going to interrupt to say that  
8 my two law clerks over here also passed the Texas bar. As  
9 well as a third law clerk, who is in Houston still. So

09:02:48

10 it's a big day for the Texas bar.

11 MR. KERCHER: If there is a moment maybe during  
12 the break, we might ask one of Your Honors to swear  
13 Mr. Johnston in to the Texas bar.

14 The other housekeeping matter that I have concerns a  
15 motion regarding late-disclosed information from  
16 Dr. Duchin, if I could talk to you for about ten minutes  
17 about that.

09:03:02

18 The Court will recall that at trial on  
19 cross-examination Dr. Duchin revealed that she had  
20 performed additional work that was not disclosed in her  
21 report. We cross-examined her about that and subsequently  
22 moved to strike her testimony in that regard. And the  
23 Court took that motion under advisement.

09:03:18

24 Dr. Duchin has, in preparation for this hearing,

09:03:32

25 produced two new reports, one -- as many of the

1 plaintiffs' experts did -- one in August, which was  
2 attached to the plaintiffs' preliminary injunction motion,  
3 NAACP plaintiffs' preliminary injunction motion. And then  
4 once the Court set a hearing with a little bit more time,  
09:03:47 5 she produced another report in September.

6 The Court will recall that the rebuttal report  
7 deadline, according to ECF-1172, was September the 29th.  
8 My experts' reports, which were disclosed on September the  
9 22nd, timely, did not respond to Dr. Duchin's reports.  
09:04:07 10 And for that reason, she is not entitled to either produce  
11 a rebuttal or supplemental report.

12 Last night at about 7:00 p.m. I received an email from  
13 plaintiffs' counsel saying that Dr. Duchin had re-run some  
14 of her analyses using updated data. There was no  
09:04:25 15 additional report or narrative produced. There were a  
16 handful of files, several of which are technical files.  
17 I'm not able to open them because I don't run Python. I  
18 don't have the programming necessary.

19 There were also some PNG files, which are pictures.  
09:04:43 20 And they are new box plots from Dr. Duchin. What happened  
21 was, when Dr. Duchin ran her analysis for her August and  
22 September reports, you remember she is using a map drawing  
23 robot. She is feeding it data about the parameters for  
24 drawing the maps.

09:05:00 25 One of the parameters that she attempted to set

1 concerned incumbent pairing and telling the robot to  
2 prefer against certain kinds of incumbent pairing when it  
3 drew maps.

09:05:15

4 In order to give her robot data to prevent or exclude  
5 or reduce the number of paired incumbents to her preferred  
6 metric, she used incumbent data from 2020, which is  
7 outdated. There were fewer congressional districts there.  
8 There are now I think ten members, congressional members  
9 in 2020 who are no longer congressional members now. It's  
10 the wrong dataset.

09:05:36

11 For the updated analysis that was emailed to me at  
12 7:00 last night, she used updated incumbent information.  
13 That updated incumbent information, I believe, was  
14 provided by me to plaintiffs' counsel at their request  
15 prior to the rebuttal expert deadline. I think I provided  
16 it the Friday before the Monday it was due, pursuant to a  
17 request from counsel.

09:05:55

18 It is our position that Dr. Duchin would not have been  
19 entitled to produce a rebuttal or supplemental report  
20 because we did not respond to her report and she would be  
21 bound by her original analysis. In all events, we are now  
22 four days into trial; and her updated analysis came  
23 14 hours before she is supposed to be called to the stand.  
24 Because of other trial prep obligations I didn't open the  
25 email until 10:00 last tonight. And so we are prejudiced.

09:06:09

09:06:27

09:06:46

1 I haven't had an opportunity to talk to my experts  
2 about what this means, about whether or not we would want  
3 to respond. I was writing a cross-examination for  
4 Dr. Duchin last night and got brand-new information that,  
5 candidly, I have just not been able to fold into that  
6 analysis, other than to point out that it is late  
7 disclosed.

09:06:57

8 Because of all that, we move to exclude, to strike  
9 Dr. Duchin's late disclosed information and ask that she  
10 be instructed not to testify about it.

09:07:11

11 We -- and so that's the first thing I'm asking for.  
12 The second thing I'm asking for is to strike  
13 Dr. Duchin's August and September reports since we now  
14 know that they relied on data that are not reasonably  
15 relied upon by experts in her field.

09:07:31

16 And I will say, the standard under Rule 37 is that  
17 late disclosed information is automatically excluded  
18 absent a showing by the plaintiffs of substantial  
19 justification or of harmlessness. Should the plaintiffs  
20 attempt to make that showing, there is a four-factor test  
21 under *Barrett*: The explanation, if any, for the party's  
22 failure to comply with the order; the prejudice to the  
23 opposing party of allowing the witness to testify; the  
24 possibility of curing such prejudice by granting a

09:07:45

25 continuance; and the importance of the witness's

1 testimony.

2 It, candidly, occurred to me that perhaps I should ask  
3 for a continuance concerning Dr. Duchin's late disclosed  
4 testimony. In light of the urgency, it felt like that  
09:07:58 5 might be a little too cute. There may be a possibility of  
6 leaving the record open to give Dr. Trende an opportunity  
7 to respond if that indeed proves necessary.

8 But by the time I opened the email, it was midnight in  
9 Ohio where Dr. Trende is; and we still have not had an  
09:08:17 10 opportunity to discuss this late disclosed information.

11 So for those reasons, we move both to exclude the late  
12 disclosed information and also to strike Dr. Duchin's  
13 August and September reports.

14 JUDGE SMITH: Are you asking for a continuance in  
09:08:28 15 the alternative as a possibility or not?

16 MR. KERCHER: A continuance in the alternative or  
17 leaving the trial record open until such time as we can  
18 have -- as Dr. Trende can review and we can determine  
19 what, if anything, we would need to say in response.

09:08:43 20 JUDGE SMITH: I guess we need a response.

21 MR. WEINER: Your Honor, Robert Weiner for the  
22 Texas NAACP.

23 The information here, an updated list of incumbents,  
24 was responsive to a discovery request. And we got -- in  
09:09:08 25 the response to the discovery back when this case was

1 first going on, we got the 2020 list. But defendants had  
2 an obligation to update discovery when they had updated  
3 information on incumbents. And they didn't do that. And  
4 they knew they didn't do that.

09:09:33

5 And they knew why. Because in the middle of the  
6 month, around the 20th, Mr. Kercher called one of our  
7 lawyers and said he wanted to know what incumbent list  
8 Dr. Duchin was relying on. And he called twice on that,  
9 and we sent it to them. And they knew at that point

09:10:00

10 that -- they knew we didn't have that. They had not  
11 updated the discovery.

12 We figured out that there was some game, some  
13 attempted gotcha here. And we asked for the information.  
14 And they sent it. And we sent it to Dr. Duchin promptly.

09:10:20

15 And she looked at it. And we didn't realize that she ran  
16 new analyses until this weekend and, when we did, we said  
17 send us the data and we produced the data.

18 But this was never something that we intended that she  
19 testify about. We never intended that it be part of her  
20 direct testimony. It's sort of a minor issue about  
21 double-bunking incumbents. And by its nature, it's not  
22 going to affect a lot of districts. And when she ran the  
23 test, it didn't.

09:10:46

24 So what we wanted to protect from by making the  
25 disclosure was to ensure that Mr. Kercher didn't stand up

09:11:05

1 and ask the question on cross-examination, well, you never  
2 looked at this and be surprised by an answer that, yes,  
3 she did.

09:11:29 4 Now, Dr. Trende has had Dr. Duchin's data since early  
5 September. And they had the updated list for I don't know  
6 how long. They knew since mid-September that her report  
7 originally had been run with the 2020 list, and they could  
8 easily have done their own analysis that would have shown  
9 that this makes no difference.

09:11:54 10 And they could do that now. Our expert tells us that  
11 the data file that she provided, within minutes, you could  
12 look at it and analyze it. So it really is being blown up  
13 out of proportion.

09:12:16 14 The only so-called prejudice that the State suffers  
15 here is they don't get their gotcha. They don't get to  
16 stand up and ask Dr. Duchin did you consider this and have  
17 her say no.

09:12:32 18 And instead, now that she has considered it and found  
19 that it didn't matter, she didn't have to change her  
20 report, they want you to give an instruction that she  
21 should basically give false testimony, that she should say  
22 that she didn't look at it, and that there should be a  
23 counterfactual approach in this case.

09:12:55 24 And I submit to you that that is not the way we ought  
25 to be getting at the truth. Thank you.

1 JUDGE SMITH: So explain, though, in a little bit  
2 more detail why this was not provided to opposing counsel  
3 until 7:00 last night? I mean, you have known this  
4 witness was going to be on for a long time; and I believe  
09:13:15 5 you just told us that she made those revisions or had that  
6 additional information shortly after August 20th, if I  
7 heard you correctly. And correct me if I'm not right  
8 about that.

9 So give us a detailed explanation --

09:13:32 10 MR. WEINER: Sure.

11 JUDGE SMITH: -- of why we should say that it was  
12 okay to send it at 7:00 p.m. on a Sunday night.

13 MR. WEINER: She got the information on  
14 September 26th. She doesn't know whether she was able to  
09:13:45 15 run -- she doesn't remember whether she was able to run  
16 the analysis before September 29th, but she didn't have an  
17 opportunity to rebut anyway because Dr. Trende did not  
18 respond to her report.

19 When we learned -- we didn't learn about the fact that  
09:14:10 20 she had done the re-analysis until she mentioned it on  
21 Saturday. And at that point, we asked her for the data,  
22 Saturday night. And she was traveling for part of Sunday.  
23 And as soon as we got it, we provided it to the State.

24 So it was -- she has -- she has a new job as a  
09:14:41 25 professor at the University of Chicago. So she was not

1 able to turn to this immediately --

09:15:00 2 JUDGE SMITH: But she is getting paid pretty well  
3 for this. And you are saying that she did nothing, if I  
4 understand you, between September 26th and October 5th to  
5 inform you or other counsel of the -- either the change or  
6 the addition. So that's her fault, as far as I can tell.

09:15:27 7 MR. WEINER: Well, Your Honor, I don't think she  
8 has any fault here. This information -- I don't know when  
9 she was able to do the analysis. We didn't learn until  
10 Saturday that she had done the analysis. Frankly, we  
11 didn't think it was very important because she wasn't  
12 going to testify about it. And the reason we made  
13 disclosure is we wanted to be transparent so that counsel  
14 was not surprised on cross-examination.

09:15:50 15 And what has happened here is that they laid a trap  
16 for Dr. Duchin. They produced information way past the  
17 time they should have produced it. They knew that she had  
18 relied on the 2020 data. They could have done their own  
19 analysis to determine whether that had an effect. And  
09:16:20 20 they could have done that by Dr. Trende. He didn't do it.  
21 Or if he did do it, he didn't put it in his report. And  
22 she didn't have an opportunity to rebut.

09:16:42 23 As soon as we found that she had in fact done an  
24 analysis, we debated. We said this -- this doesn't affect  
25 anything. It is not an important factor. And we decided

1 that we would be transparent as we could and provide the  
2 information, even though it didn't have any impact. And  
3 we provided the data, which can be analyzed in a few  
4 minutes, she says, to determine that that is correct.

09:17:10

5 So the notion that the data that was provided to us  
6 late should result in a counterfactual instruction here,  
7 that she should be treated as if she didn't do something  
8 that she did do, that she is not going to testify about in  
9 her direct, but that counsel can ask about and get an  
10 answer that she didn't do what she did, I think is -- does  
11 not serve the interests of justice and would be counter to  
12 the thrust of Rule 37.

09:17:42

13 Thank you.

09:18:03

14 MR. DUNN: Can I say one thing about this before  
15 you respond?

16 MR. KERCHER: I'm sorry. Is it your expert?

17 MR. DUNN: No, it's not. But if there is going  
18 to be some continuance, it affects my clients. I would  
19 like to weigh in on it.

09:18:13

20 As I mentioned, this is not my expert and I haven't  
21 been involved at all; but I do want to state that I think  
22 this might be a tempest in a teapot, because Chairman  
23 Hunter said during their legislative debates that he  
24 didn't give consideration to the homes of the members of  
25 congress. And I have a short clip I could play to prove

09:18:25

1 that.

2 MR. KERCHER: This is my friend on the other  
3 side's I think first appearance in these proceedings. As  
4 the Court knows, we are now in our sixth week together,  
09:18:46 5 between trial and this hearing. This is the first time I  
6 think I have heard an allegation of gamesmanship or laying  
7 a trap.

8 I will remind the Court, as you well know, discovery  
9 is closed in this case. Trial has been done in full. And  
09:18:58 10 at the status conference in which this hearing was set,  
11 plaintiffs represented to the Court repeatedly that they  
12 had all of the information they needed in order to meet  
13 their burden.

14 It is not defendants' job to test that. Plaintiffs  
09:19:12 15 sought no additional discovery during the 30 days this  
16 Court provided for them to do whatever discovery they  
17 thought that they might need. It is not laying a trap to  
18 recognize an error in an opposing expert's report and then  
19 leave her to testify about that report with the errors in  
09:19:27 20 it.

21 That's not a trap. If plaintiffs needed updated data,  
22 they could have asked for it sooner. Indeed, as soon as  
23 plaintiffs asked for that data, we provided it. The  
24 notion that this is gamesmanship is not in keeping with  
09:19:40 25 the professional courtesies that have been enjoyed, I

1 think, through the past five weeks of the proceedings in  
2 this case. And I assiduously, despite getting a late  
3 email on Sunday night, avoided casting this dispute in  
4 those terms.

09:19:54

5 Dr. Duchin's reports are flawed. She has acknowledged  
6 they are flawed. She provided data because she ran a new  
7 analysis because she recognized she relied on data that  
8 were not reliable. In all events, her late disclosed data  
9 is by default excluded. Plaintiffs have not met their

09:20:13

10 burden under the four factor test in *Barrett*.

11 JUDGE SMITH: So --

12 JUDGE BROWN: Hold on. Hold on.

13 JUDGE SMITH: Okay.

14 JUDGE BROWN: The 2020 addresses --

09:20:20

15 MR. KERCHER: Yes.

16 JUDGE BROWN: -- were provided in response to  
17 discovery by the State at some point during the  
18 litigation.

19 MR. KERCHER: Yes.

09:20:29

20 JUDGE BROWN: Are you not under an obligation to  
21 update that without being asked?

22 MR. KERCHER: After the close of discovery, Your  
23 Honor, I don't believe that we are.

24 JUDGE BROWN: Well, what about before the close

09:20:38

25 of discovery? These -- if they moved, did they not all

1 move until after discovery was closed?

2 MR. KERCHER: By the time, Your Honor, we  
3 were -- I will remind the Court we did not ping Dr. Duchin  
4 on relying on the 2020 incumbent addresses when she  
09:20:57 5 testified at trial. We didn't give her a hard time about  
6 that.

7 I think all of the parties at that point were relying  
8 on older incumbent data. But by the time she is providing  
9 a brand-new set of reports under brand-new claims  
09:21:09 10 concerning a brand-new law, and she did not -- and she did  
11 not undertake to update her data, we are entitled to  
12 cross-examine that.

13 And because plaintiffs said they did not -- they did  
14 not need any additional information, no, we did not  
09:21:26 15 supplement our discovery after the close of trial,  
16 particularly because -- and when plaintiffs asked for the  
17 information, we gave it to them.

18 JUDGE BROWN: When you say -- when you suggest  
19 that another option would be to leave the trial record  
09:21:42 20 open, are you saying that when we finish here this week,  
21 Trende may need some more time? Is that what you mean?

22 MR. KERCHER: The short answer is, Your Honor, I  
23 have not been able to speak to Dr. Trende about this at  
24 all. I forwarded it to him as soon as I got it, but he  
09:21:56 25 and I have not been able to connect on that issue.

1 So at this point, in terms of what timing would look  
2 like -- and as I say, I don't want to try and leverage  
3 this into some sort of cute delay. That is not my intent.  
4 But it is I think something I have to ask for in the  
5 alternative. I do not have a time frame yet.

09:22:11

6 JUDGE BROWN: All right.

7 JUDGE GUADERRAMA: So where do you get  
8 the -- because discovery is closed you don't have the  
9 obligation to update? Is that a case? Is that a rule?  
10 Where does that come from, that statement?

09:22:25

11 MR. KERCHER: I'm not -- I am not aware, Your  
12 Honor -- and I'm sorry I don't have a case for you. I'm  
13 not aware of an obligation to update discovery responses  
14 after discovery closes and after a full trial on the  
15 merits.

09:22:41

16 JUDGE GUADERRAMA: But there is an obligation to  
17 update discovery given. And in that rule is there a time  
18 limit, that's what I'm asking for, or any case? Because  
19 there are -- I think the beginning of the rules say the  
20 purpose of those rules is to discover the truth. And  
21 that's how we should interpret it. So that's my first  
22 question.

09:22:54

23 The second thing is, I don't understand this about  
24 you'll be able to cross-examine her on the bad report even  
25 though she knows it's a bad report and then hold her to

09:23:09

1 that.

09:23:25

2 I have tried criminal cases. We suppress evidence.  
3 Suppress. But then if somebody comes back and kind of  
4 shows the jury something that was suppressed in a  
5 different manner, then that party is entitled to bring out  
6 that suppressed evidence to disabuse the jury of that  
7 misimpression.

09:23:41

8 So I don't see how -- and I didn't understand what  
9 Mr. -- the gentleman there at the end --

10 MR. WEINER: Weiner.

11 JUDGE GUADERRAMA: -- Mr. Weiner said that  
12 Dr. Duchin would be required to testify on an  
13 incorrect -- on a report she knows is wrong so that you  
14 can point out that it's wrong.

09:23:55

15 I don't get -- I don't see how that complies with the  
16 part of the rules that say we are here to find the truth.  
17 And I don't see how that would -- you know, if I apply  
18 criminal principles to that, if you open that door, then  
19 she gets to say, well, yeah, I mean, that's true. That  
20 report is wrong. But then I did do another report, and I  
21 corrected it. That's how I think it ought to be.

09:24:10

22 MR. KERCHER: So I think I have three responses.

09:24:26

23 First of all, the 2020 incumbent data would be the  
24 correct data on which to analyze incumbent double-bunking  
25 or incumbent pairing on the 2021 map. So inasmuch as the

1 trial was about the 2021 map, there was no obligation to  
2 update discovery requests concerning information that only  
3 pertained to the 2021 map. Right? So at this -- and I  
4 read all of those discovery requests to concern the 2021  
5 map.

09:24:47

6 And when it comes to the 2025 map, the plaintiffs told  
7 the Court in no uncertain terms that they had the  
8 information that they needed. When plaintiffs learned  
9 that they did not have the information that they needed,  
10 they asked us for it; and we gave it to them. So we're  
11 not trying to hide anything.

09:24:58

12 And my point here is not that Dr. Duchin should have  
13 to say under oath that she did not do work that she did in  
14 fact do. My point is that she cannot be allowed to  
15 testify about work she did not disclose to me until hours  
16 before she took the stand.

09:25:16

17 And so if my question needs to be cabined to your  
18 report does not say, then, yes. Yes, that is -- that's  
19 correct. I should not ask her, you never did this because  
20 then I'm not -- right. I'm not trying to elicit false  
21 testimony.

09:25:33

22 At the same time, when I received this email last  
23 night, there was none of the information that Mr. Weiner  
24 provided to the Court about no intent to discuss this on  
25 direct examination but only to prevent surprise. In all

09:25:46

1 events, that additional work by Dr. Duchin is not  
2 admissible.

3 JUDGE GUADERRAMA: So --

4 JUDGE SMITH: You might be repeating yourself  
5 from what you said first. But specifically, if we were to  
6 agree with you -- I'm not suggesting we will or we  
7 won't -- what specific instruction should Dr. Duchin be  
8 given before she is sworn in about the limitation on her  
9 testimony? I just want to be sure. It's important  
10 exactly what wording you are asking for.

11 MR. KERCHER: Dr. Duchin I think must be  
12 instructed not to discuss work that she performed  
13 regarding the 2025 map that is not contained in either her  
14 August 2025 report or her September 2025 report.

15 And that when she is asked questions by counsel on  
16 either side about either of those reports, she is to  
17 understand the -- she is to understand those questions to  
18 be limited only to the information and analysis provided  
19 in those reports and should not understand those questions  
20 to be eliciting a response concerning work that she did  
21 not contain in those reports.

22 That instruction will, of course, be subject to my  
23 asking the right question. Right? If at some point I ask  
24 a question that plaintiffs' counsel thinks opens the door  
25 to it, if I mess that up, they can stand up and object at

1 that point. This is effectively --

2 I think that the evidence should not come into the  
3 record. At a minimum, it should be held in limine, such  
4 that it cannot come out until after the parties get the  
5 opportunity to confer with the Court about whether the  
6 question elicits it.

09:27:27

7 JUDGE BROWN: I have a question for Mr. Weiner.  
8 Am I saying your name correctly?

9 MR. WEINER: Yes, you are, Your Honor.

09:27:48

10 JUDGE BROWN: All right. It sounds like there  
11 was no change in her methodology.

12 MR. WEINER: That's correct.

13 JUDGE BROWN: And it's just this one data point  
14 that is different from --

09:27:59

15 MR. WEINER: Yes. And it's a data point that we  
16 did not and do not intend to bring up on direct. It's  
17 really -- it's one of the factors. Are you double-bunking  
18 incumbents? It doesn't happen very often. It's in her  
19 list of things. But it's not something that we were going  
20 to have her testify about. And this was -- this whole  
21 issue only concerns what she will testify to on cross.

09:28:23

22 And, you know, Dr. Trende, if he reviews the analysis,  
23 can testify that -- and he is testifying tomorrow or the  
24 next day, he can testify whether it in fact undermines her  
25 analysis.

09:28:50

1 JUDGE BROWN: And none of her conclusions  
2 changed, Mr. Weiner?

3 MR. WEINER: None of her conclusions changed.

4 And I have Rule 26(e) (A) and it does not articulate a  
09:29:04 5 time limit, Your Honor. Thank you.

6 JUDGE GUADERRAMA: Yes, sir.

7 (Sotto voce discussion amongst the Courts.)

8 JUDGE GUADERRAMA: All right. Thanks.

9 So we're going to deny the State's motion with the  
09:30:07 10 understanding that your direct of the expert will be  
11 limited to those things you have said.

12 MR. WEINER: Yes, Your Honor.

13 JUDGE GUADERRAMA: In other words, we're not  
14 going to get into that.

09:30:20 15 MR. WEINER: We are not going to get into it.

16 JUDGE GUADERRAMA: All right.

17 JUDGE BROWN: And cross is as wide open as cross  
18 ever is.

19 MR. KERCHER: Understood.

09:30:36 20 MR. WEINER: All right. Are we ready for the  
21 first witness then, Your Honor?

22 JUDGE GUADERRAMA: Yes, sir. Please. Yes, sir.  
23 Is she here?

24 MR. WEINER: Yes, she is.

09:30:43 25 JUDGE GUADERRAMA: Okay.

1 MR. WEINER: They are bringing her in from the  
2 room next door.

09:30:56

3 JUDGE SMITH: By the way, Mr. Weiner, Counsel  
4 opposite, Mr. Kercher, was entirely correct about the tone  
5 that's been set among and between opposing counsel in this  
6 trial. And perhaps your co-counsel can explain to you how  
7 that has been because you haven't been here.

09:31:24

8 MR. WEINER: I apologize. I did not mean to cast  
9 aspersions. I was simply suggesting that it was tactical,  
10 but I perhaps should have phrased it more tactfully.

11 JUDGE SMITH: This is Texas, by the way.

12 MR. WEINER: I was born here.

13 JUDGE GUADERRAMA: Is the doctor here? Oh, there  
14 she is. Come on up.

09:32:05

15 THE WITNESS: (Complying.)

16 JUDGE GUADERRAMA: Good morning, Doctor. If you  
17 would raise your right hand, ma'am.

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

21 THE WITNESS: I do.

22 JUDGE GUADERRAMA: Thank you, ma'am. Have a  
23 seat, please. Roll into the mic. We'll be able to hear  
24 you better.

09:32:20

25 Mr. Weiner, whenever you are ready, sir.

1 **MOON DUCHIN, Ph.D,**

2 having been first duly sworn, testified as follows:

3 **DIRECT EXAMINATION**

4 BY MR. WEINER:

09:32:24 5 **Q.** Good morning, Mr. Duchin.

6 **A.** Good morning.

7 **Q.** Could you please state your full name for the record,  
8 spelling your last name.

9 **A.** Yes. It's Moon Duchin, and that's D-u-c-h-i-n.

09:32:35 10 **Q.** And were you previously qualified as an expert in this  
11 case in data science and applied mathematics?

12 **A.** Yes.

13 **Q.** So I will not go through all of your qualifications,  
14 but I do want to highlight some.

09:32:52 15 Did you provide an updated CV in this case?

16 **A.** Yes.

17 MR. WEINER: So could we call up NAACP  
18 Exhibit 186.

19 BY MR. WEINER:

09:33:10 20 **Q.** And, Dr. Duchin, I show you what has been --

21 MR. WEINER: Do you want to give her a hard copy?

22 MR. ROLLINS-BOYD: Your Honor, we have hard  
23 copies. May I approach to --

24 JUDGE GUADERRAMA: Yes, sir. Did you show the

09:33:22 25 State?

1 MR. KERCHER: He did, Your Honor.

2 JUDGE GUADERRAMA: Okay.

3 THE WITNESS: Thank you.

4 BY MR. WEINER:

09:33:44 5 Q. Dr. Duchin, is this your CV?

6 A. Yes.

7 Q. Since your testimony in May of this year has your  
8 employment changed?

9 A. Yes. On July 1st I started a new position at the  
09:33:58 10 University of Chicago as professor of data science and  
11 computer science at the college. That's it.

12 Q. Are you a full professor?

13 A. Yes.

14 Q. Are you tenured in a specific area?

09:34:12 15 A. Yes. Tenured in computer science.

16 Q. Are you tenured in public policy as well?

17 A. That's right. I'm on leave this year from Cornell  
18 University, where I'm a professor of mathematics and  
19 public policy, having received tenure in the school of  
09:34:26 20 public policy.

21 Q. Are you currently the head of any research program?

22 A. Yes. I direct the Data and Democracy Research  
23 Initiative within the Data Science Institute at the  
24 University of Chicago.

09:34:39 25 Q. Are there any other areas of academic work on which

1 you focus?

2 **A.** I would say that my research program is firmly  
3 centered on mathematics and computing as it relates to  
4 elections, democratic mechanisms, and redistricting.

09:34:56

5 **Q.** Have you won any awards for academic excellence?

6 **A.** Yes. My CV lists some of the boards and distinctions.  
7 I will mention a few. I am a Radcliffe fellow, a  
8 Guggenheim fellow, a fellow of the American Mathematical  
9 Society. I recently served as a Sloan professor. And I  
10 have a series of awards from the National Science  
11 Foundation, including an Early Career award.

09:35:17

12 **Q.** Thank you.

13 So you submitted a report earlier in this case. And  
14 I'm not going to put them all up. I do want to give the  
15 exhibit numbers for reference.

09:35:33

16 May 23rd you submitted a report that's Exhibit 136, a  
17 supplemental report on June 20th that's 137, a rebuttal  
18 report on August 1st that's 138, and you testified on  
19 May 30th and 31st of this year. I bet you thought you  
20 were done with us at that point.

09:35:58

21 But in August of this year did the NAACP ask you to  
22 provide expert opinions regarding the 2025 redistricting  
23 plan in Texas?

24 **A.** I was asked to analyze the new plans as they were  
25 proposed.

09:36:14

1 Q. Did you prepare a report reflecting your conclusions?

2 A. I did.

3 Q. So we have on the screen what has been marked as Texas  
4 NAACP Exhibit 208.

09:36:32

5 MR. ROLLINS-BOYD: May I approach?

6 JUDGE SMITH: Yes.

7 BY MR. WEINER:

8 Q. Is Exhibit 208 your report?

9 A. Yes.

09:36:53

10 Q. And does it reflect your opinions and analysis?

11 A. Yes.

12 Q. And feel free to refer to the report at any time if  
13 it's helpful in refreshing or describing your conclusions.

14 But could you tell us what the overall conclusion of  
15 your report was?

09:37:13

16 A. Yes. In the report I consider the evidence regarding  
17 whether the changes in the map are consistent with, as I  
18 call it here, the race neutral pursuit of pure partisan  
19 aims. In other words, I considered the signatures of  
20 partisanship and signs that race was used in the creation  
21 of the map and I conclude that there is strong evidence  
22 that race was used in the creation of this map in a manner  
23 that is dilutive of -- that shows racial vote dilution.

09:37:33

24 In the report I describe that evidence and I say that  
25 it's consistent, either with the use of race to

09:37:56

1 intentionally dilute the vote or with the use of race  
2 possibly as a proxy for partisanship in a manner that's  
3 clearly diluted.

4 **Q.** Thank you.

09:38:11

5 Now I would like to direct your attention to  
6 Footnote 1.

7 MR. WEINER: If you can blow that up a little  
8 bit.

9 BY MR. WEINER:

09:38:17

10 **Q.** And what is the point you are making in Footnote 1?

11 **A.** I am trying to describe the relationship of this  
12 report from September with the immediately preceding  
13 report from August. And what I say here is that the  
14 relationship of the two is that this extends and clarifies  
15 the work from earlier but is meant to be self-contained.

09:38:42

16 **Q.** And did you use additional data for this report that  
17 was not described in your 2022 report?

18 **A.** Yes. Definitely. And in particular, a number of  
19 elections have occurred between the 2022 report and the  
20 present; and I tried to update the conclusions to reflect  
21 current conditions.

09:39:09

22 **Q.** Focusing on page 2 of your report, I would like to  
23 talk about clusters.

24 Could you explain what clusters are --

09:39:28

25 **A.** Yes.

1 Q. -- in this context?

2 A. Yes. So what I have done here is set up three of what  
3 I call district clusters. The first is in the  
4 Tarrant/Dallas area. The second is in Harris/Fort Bend.  
5 And the C3 cluster is in Travis/Bexar.

09:39:39

6 And the function of these is to take an analysis and  
7 make it local, but also make it acknowledge that the  
8 drawing of the lines in one district has an impact on the  
9 neighboring districts. So in order to analyze changes for  
10 one district, it's necessary to look at the ones  
11 immediately surrounding it.

09:39:59

12 But I'll just say the point of this kind of modular  
13 analysis is so that any changes that are considered are  
14 also self-contained. They don't ripple out across the  
15 whole state, but they stay in a region that's  
16 circumscribed by choices made by the State.

09:40:17

17 Q. And do each of these clusters contain a number of  
18 congressional districts?

19 A. That's right. They are made up of congressional  
20 districts from the new plan, the C2333 plan.

09:40:33

21 Q. And on Exhibit 208 are the congressional districts  
22 that are included in each cluster indicated by the number  
23 under, for C1, for example, Tarrant/Dallas and there are  
24 some numbers, are those congressional districts?

09:40:54

25 A. Yes. Those are the districts included in that

1 cluster.

2 **Q.** And why did you pick these clusters?

3 **A.** Okay. Right. And as I mentioned in the footnote we  
4 just described, the clusters are slightly adjusted from  
09:41:10 5 the late-August report. What I explain here is that I  
6 looked at collections of districts in several different  
7 ways; and I ultimately settled on this choice as the  
8 clearest, easiest to explain, simplest, and most  
9 straightforward.

09:41:26 10 Namely, these are exactly the districts that touch the  
11 main counties. It's all the districts and only the  
12 districts that touch Tarrant/Dallas in the first case,  
13 Harris/Fort Bend in the second, and Travis/Bexar in the  
14 third. So there is not a cherry-picked collection of  
09:41:40 15 districts to try to make a point.

16 **MR. WEINER:** If we could turn to page 2 of the  
17 report -- page 3. I'm sorry.

18 **BY MR. WEINER:**

19 **Q.** There you discuss population shifts.

09:41:58 20 **A.** Yes.

21 **Q.** What did you conclude about population shifts in Texas  
22 since the 2020 Census?

23 **A.** So in this section of the report I examine population  
24 growth in Texas in a five-year span of time. So I do that  
09:42:16 25 by comparing the 2018 to 2023, which at the time of

1 writing was the most current data available that includes  
2 citizen voting age population. And what I find is that  
3 whether we look at voting age population, i.e., all  
4 adults, or citizen voting age population, either way, the  
09:42:36 5 pattern is quite clear statewide and in the clusters  
6 described in the report, that there is population growth.  
7 And the great bulk of that population growth is made up of  
8 people of color.

9 In fact, in cluster C1 and C2, the non-Hispanic White  
09:42:53 10 population has actually declined by either measure. But  
11 that's compensated by a significant growth in the people  
12 of color.

13 **Q.** And in the counties on which you focused, was it  
14 94 percent of the growth was accounted for by people of  
09:43:16 15 color?

16 **A.** That's the statewide figure. You can see that in  
17 Table 1. 94 or more percent of the growth, that is of the  
18 difference, is accounted for by the growth in people of  
19 color.

09:43:30 20 **Q.** Did the increase in the population of people of color  
21 result in increased opportunities for those communities to  
22 elect their preferred candidates in the 2025 plan?

23 **A.** Well, that's one of the things that is striking about  
24 the new plan, C2333, is that despite the growth in the  
09:43:52 25 number of people of color, a performance analysis makes it

1 fairly clear that that population growth is accompanied by  
2 reduced opportunity to elect preferred candidates.

3 **Q.** So let's -- if we could go back to the prior page and  
4 look at cluster 1. And did you focus on particular CDs,  
5 congressional districts, in that cluster?

09:44:23

6 **A.** That's right. It's the eight that are listed here  
7 that you can see on the screen.

8 **Q.** So you looked at all of them, but for your analyses  
9 did you analyze some of them in more detail?

09:44:40

10 **A.** Well, there are various places in the report that  
11 split out findings by district, if that's what you mean.

12 **Q.** Okay. Let's start with CD 32.

13 **A.** Yes.

14 **Q.** Did you compare CD 32 under the 2021 map and under the  
15 2025 map?

09:45:00

16 **A.** I did.

17 **Q.** And I'd like to show a demonstrative exhibit here to  
18 let you talk about the difference.

19 Okay. This is a demonstrative exhibit. Have you seen  
20 it before? Have you reviewed it?

09:45:31

21 **A.** Yes.

22 **Q.** And what does it show?

23 **A.** This shows you a before and after comparison of CD 32.

24 So in gray you see the way the district was configured in

09:45:45

25 the previous map, C2193. And in green -- in the light

1 green color, you see the new configuration. If you were  
2 to zoom in, you would be able to see a darker green area  
3 that shows you the overlap between old and new.

09:46:09

4 **Q.** And what does this exhibit show about how CD 32  
5 differs in the 2025 plan from the 2021 plan?

6 **A.** Well, it's clear that the prior configuration extended  
7 more into Dallas County and the new configuration goes  
8 quite far into rural Texas, taking whole counties that are  
9 distant from Dallas as part of the district.

09:46:30

10 **Q.** And does this make a difference in terms of the  
11 percentages of particular population groups who are  
12 residents in the district?

09:46:50

13 **A.** Right. This kind of pattern is characteristic of  
14 taking slices of urban and typically diverse population  
15 and submerging them in a district that contains distant,  
16 rural, and often heavily White population.

17 **MR. WEINER:** Can we put up the demonstrative for  
18 CD 33.

19 **BY MR. WEINER:**

09:47:07

20 **Q.** Have you seen this demonstrative before?

21 **A.** Yes.

22 **Q.** And what does it show?

09:47:21

23 **A.** This is the same kind of figure in which gray shows  
24 the prior configuration. Green shows the new  
25 configuration. And the darker green shows you where they

1 overlap.

2 **Q.** And how did CD 33 change?

3 **A.** Well, I think one thing you can see is that it was  
4 quite non-compact before. It's still by many standards  
5 quite non-compact after the change. But it no longer  
6 extends into Tarrant County, and it takes on new territory  
7 to the east of where it used to be.

8 **Q.** And did this change the demographic characteristics of  
9 the district?

10 **A.** It did. Though you can't see that from this plot  
11 alone.

12 **Q.** Let's see if we can get a better sense of that. I'm  
13 looking at Figure 4 on page 11 of your report.

14 Could you explain what Figure 4 represents?

15 **A.** Oh, yes. Absolutely. This is what is called a dot  
16 density diagram. And it's a frequent kind of figure that  
17 you would create to understand how demographics distribute  
18 in an area.

19 And so here I'm showing you district lines and the  
20 colored dots. Maybe we could zoom in just a little bit to  
21 see even better. I have chosen a resolution of one dot  
22 per 25 people, which was chosen expressly for this figure,  
23 to make it as readable as possible.

24 I think the colors indicate how people self-identified  
25 in their census forms. So red for Asian. Kind of a

1 purple lavender color for the White identified people, and  
2 here that means non-Hispanic. A yellower color, amber,  
3 for Black. And a green color for Latino-identified  
4 people.

09:49:09

5 And one thing I'll add about the construction of these  
6 is that a dot density properly executed doesn't simply  
7 layer the points one color at a time. You might worry  
8 that points added later would obscure whatever is  
9 underneath. Properly constructed dot density randomizes  
10 the order of the points so that that doesn't happen.

09:49:28

11 So, for instance, where you see a bulb that looks very  
12 lavender in the middle, that gives the visual impression  
13 that it's heavily or almost exclusively White; and that is  
14 a correct impression.

09:49:44

15 **Q.** And the areas of white on this map, what do they  
16 reflect?

17 **A.** Where you see no color, there are no people in the  
18 census results. Remember, that's one dot per 25 people.

09:50:01

19 And so the areas that look blank, sometimes there is a  
20 natural feature like a lake, and other times there are  
21 different reasons in physical geography. What that's  
22 telling you is that, according to the census, nobody lives  
23 there.

09:50:18

24 **Q.** And CD 32 is not marked on this map, but do you know  
25 which one it is?

1 **A.** Let's see. So I believe 24 is the one with the bulb.  
2 And 32 is the one just a bit next to that. It's a little  
3 bit hard to describe.

4 **Q.** Yeah. Unfortunately, we didn't label it.

09:50:44

5 MR. ROLLINS-BOYD: Wait a second.

6 MR. WEINER: Yeah.

7 BY MR. WEINER:

8 **Q.** What do you conclude from the distribution, the  
9 demographic distribution reflected on this chart?

09:50:59

10 **A.** Well, one thing that I think jumps out is, as I just  
11 identified a moment ago, District 24, it seems to be drawn  
12 in a way that the lines encompass a lot of White  
13 population and carefully exclude non-White population  
14 around it. And that includes both District 33 and  
15 District 32 are impacted by that design.

09:51:20

16 **Q.** Let's turn to the question of minority representation  
17 in these districts.

18 Did you assess how the new map, the C2333, affected  
19 the opportunity of minority candidates -- of minority  
20 voters to elect candidates of their choice?

09:51:44

21 **A.** I did. I did do an effectiveness analysis.

22 **Q.** And you discussed that issue starting on page 7 of  
23 your report?

24 **A.** Yes.

09:51:55

25 **Q.** With the logical heading "Effective Minority

1 Representation."

2 And could you explain how you analyzed effective  
3 minority representation?

09:52:18

4 **A.** Yes. And this is an example of using a method that is  
5 peer-reviewed, has been used in a number of other court  
6 cases; but I'll briefly describe it here.

09:52:38

7 So the idea in assessing the effectiveness of a  
8 district is to analyze, using previous vote history,  
9 whether people of color in that district are likely to be  
10 able to both nominate candidates of choice through the  
11 primary and runoff process and to have them elected in the  
12 general elections. This is why I look at both primaries  
13 which nominate and general contests which ultimately  
14 elect.

09:52:52

15 What I describe here is a choice to focus on  
16 Democratic primaries and not on Republican primaries. And  
17 that's explained on the next page in Figure 3.

09:53:15

18 So the analysis that's done here is to take a look at  
19 the tendency using statistical inference techniques that  
20 are extremely common industry standards in racially  
21 polarized voting. I use inference techniques to decide  
22 whether people of color are choosing Democratic contests  
23 or Republican contests in all the primary and runoff  
24 elections since 2020.

09:53:32

25 And what I find -- and I am happy to explain it at any

1 level of detail that is of interest. What I find is that  
2 people of color are anywhere from an estimated nine times  
3 more likely to choose the Democratic contest all the way  
4 up to 40 times more likely.

09:53:49

5 **Q.** So you then look at Democratic primaries to determine  
6 whether minority voters or minority Democratic voters are  
7 able to advance their preferred candidates to the general  
8 election, right?

09:54:10

9 **A.** That's right. So this piece of the analysis explains  
10 why the focus is on Democratic nominating contests.

11 **Q.** And could you -- I'm sorry.

09:54:32

12 **A.** So then, having established that, what I do is I  
13 choose collections of contests in which people of color  
14 have a clear candidate of choice. And that was done with  
15 regionalized analysis. So in each of the clusters I  
16 separately run ecological inference and figure out whether  
17 there is a clear candidate of choice.

09:54:47

18 It is important to do that separately in each area  
19 because one does not want to make the assumption that  
20 Black voters in San Antonio have the same voting behavior  
21 as Black voters in Dallas, for example. So you do a  
22 regional study in order to find out local preferences.

09:55:05

23 Having done that, I select 14 primary and runoff  
24 contests specific to each cluster in which there is a  
25 clear candidate of choice and then 14 general election

1 contests. And I think, as far as I'm aware, all experts  
2 recognize that the general elections are very clearly  
3 polarized in Texas; and so there is no trouble identifying  
4 14 general elections that will serve for this kind of  
5 analysis.

09:55:25

6 Having picked those out, knowing who is the candidate  
7 of choice for voters of color, and then ask a simple  
8 question in the district, as it's configured in either of  
9 these plans, in how many of those 14 contests did that  
10 preferred candidate of people of color advance from the  
11 primary? In other words, they need to win a majority or  
12 be in the top two, win or have the most votes in the  
13 runoff, or win the general election.

09:55:39

14 Sometimes analysts call this a reconstituted elections  
15 analysis. It's taking actual -- it's not using  
16 demographics to predict. It's taking actual past votes to  
17 predict how the district will perform. Again, completely  
18 standard type of analysis.

09:55:59

19 **Q.** Why did you include primaries as well as general  
20 elections?

09:56:12

21 **A.** Right. So to reiterate, that's because in order to  
22 get representation, a community has to be able to nominate  
23 its preferred candidate so that they advance to the  
24 general contest, and then they have to be able to win in  
25 the general contest.

09:56:24

1 Q. And there is a difference of opinion on that in the  
2 expert community, isn't there?

3 A. Some experts do use primaries and some don't, if  
4 that's what you mean.

09:56:33

5 Q. Yes.

6 Turning to Table 3 on page 9 of the report, is this  
7 table a reflection of the analysis you did of effective  
8 minority representation?

09:56:57

9 A. Yes. This is an attempt to summarize that analysis  
10 and tell you in how many of the 14 contests the  
11 preferences -- the outcome in that district would be  
12 aligned with minority voters preferences.

13 Q. So let's focus on CD 32, which is in cluster 1.

14 A. Yes.

09:57:15

15 Q. And there, what does the second column labeled  
16 "primary" show with regard to the preferences of minority  
17 voters and their ability to elect their preferred  
18 candidates?

09:57:39

19 A. What it shows is that the -- of the 14 primary and  
20 runoff contests, in eight out of the 14 the preferred  
21 candidate of voters of color would have either advanced  
22 from the primary or won the runoff eight times out of 14.

09:58:02

23 Q. And you don't consider or -- well, do you consider  
24 eight out of 14 as reflecting the ability of minority  
25 voters to advance their candidate of choice?

1 **A.** Well, I want to be clear that I'm not proposing a  
2 bright line here. This is intended to take past voting  
3 records and use them to make a conclusion about likely  
4 future behavior. And that prediction is never an exact  
5 science.

09:58:20

6 But what that indicates, the eight out of 14, is that  
7 in some of those 14 contests they are not all equally  
8 polarized. So in some of those 14 contests, White voters  
9 and non-White voters agree on a preferred candidate. And  
10 in those cases that candidate does well.

09:58:37

11 But in some of the contests there is disagreement.  
12 There is more polarization. And what we see here is that  
13 in a significant number of instances, six out of 14, the  
14 preferred candidate of the non-White voters doesn't  
15 advance from the primary.

09:58:53

16 **Q.** And so you don't consider then eight out of 14 to be  
17 performing for the minority community?

18 **A.** Well, in terms of effective opportunity, this  
19 indicates that, in the more polarized contests, it  
20 wouldn't be impossible; but it would be more challenging  
21 for people of color to have their preference prevail.

09:59:15

22 **Q.** Do you discuss this methodology in Footnote 6? I  
23 think it's on the next page.

24 **A.** That's right.

09:59:28

25 **Q.** And did you develop this methodology in a journal

1 report?

2 **A.** Oh. The practice of using past elections in this way,  
3 I'm certainly not going to take credit for that. That's a  
4 well-established practice. For some of the more detailed  
5 structure of developing this kind of score, you can read  
6 in this article in the *Election Law Journal*, which is a  
7 peer-reviewed journal that I think is considered the top  
8 one in the area of election law and political science.

09:59:47

9 **Q.** What does that -- in general terms, what does that  
10 article conclude?

10:00:07

11 **A.** This is a good way -- in fact, in the article, as it  
12 happens, the test case is Texas. So the article is built  
13 around trying to understand voting patterns here in Texas.  
14 And what it concludes is that -- it took us over a year to  
15 write that, incidentally. What we did was a great deal of  
16 work to calibrate our findings against ground truth and  
17 tried to be sure that some of the ways we were cutting off  
18 the scores were reflective of -- the predictions were  
19 good, in other words. And we found that they were good,  
20 that this is a reliable method, generally speaking.

10:00:23

10:00:39

21 But to be clear, every time the method is used, there  
22 is somewhat different data, somewhat different details.  
23 But the broad strokes of how to pick the right elections  
24 to do this analysis soundly are explained in that piece.

10:00:57

25 **Q.** I'm sorry I am jumping around, but let's go back to

1 Table 3.

2 And the candidate of choice in the general election  
3 for CD 32 under C2193 won in 14 out of 14 elections that  
4 you chose?

10:01:18 5 **A.** That's right. And, in fact, in every general election  
6 contest, I'll mention.

7 So this is a reliable -- this was, in 2193, a very  
8 reliably Democratic district.

9 **Q.** Now, in terms of the effect, you say White D. That  
10:01:36 10 doesn't mean White Democrat, doesn't it?

11 **A.** It doesn't mean I'm predicting a White person will be  
12 elected. Here that's shorthand for the candidate  
13 preferred by White voters. A White preferred Democrat  
14 more fully.

10:01:52 15 **Q.** Now in -- to the right, under 2333, the 2025 plan for  
16 CD 32, it shows that the preferred candidate of  
17 minority -- of the minority community prevailed in 9 out  
18 of 14 primaries, right?

19 **A.** Right. And that means there is a slightly stronger  
10:02:14 20 possibility of having the preferences of minority voters  
21 prevail in the primary. But that's probably cold comfort  
22 to these voters because there is a zero out of 14 track  
23 record in the general. So they have a slightly improved  
24 ability to nominate but, practically speaking, no ability  
10:02:31 25 to elect their preferred candidate.

1 Q. And so there is a Republican elected in that district?

2 A. In every instance, yes.

3 Q. Yes.

4 And is that -- do you count that as a loss in your  
5 calculation of the net loss to the minority community from  
6 2333?

10:02:46

7 A. Well, I tried to give a fairly nuanced discussion  
8 where I have analyzed CD 32 and CD 33 together. And  
9 considered together, my view is that 32 is now clearly out  
10 of reach for Democrats. 33 has become markedly weaker for  
11 the preferences of people of color in primaries.

10:03:06

12 So taken together, I would regard that as a clear net  
13 loss of a district that would perform for the preferences  
14 of people of color.

10:03:23

15 Q. So looking at CD 33, just to make sure we have this  
16 right, the chart shows that for C2193 that the candidate  
17 of choice where people of color prevails is in 13 of 14  
18 primary contests?

10:03:48

19 A. That's right. In CD 33 there used to be a very strong  
20 track record. 13 out of 14 contests show alignment.

21 Q. And so a Democrat preferred by people of color is  
22 elected in your analysis in CD 33 under the 2021 plan?

23 A. It's highly likely, given these numbers.

24 Q. And what happens under C2333, the 2025 plan?

10:04:17

25 A. The electoral conditions in the primary are now

1 measurably harder for people of color. And that means in  
2 the instances which, again, isn't every case, but in the  
3 instances where the primary itself is polarized, it's  
4 going to now be measurably harder for people of color to  
5 nominate their candidate of choice.

10:04:36

6 **Q.** And so a candidate preferred by White Democrats is  
7 elected in C2333 under your analysis?

8 **A.** Well, I wouldn't put it so categorically.

9 **Q.** Okay.

10:04:56

10 **A.** After all, we're talking about likelihood. But I  
11 would say even if -- I think reasonable people could  
12 disagree about where to draw the line in the labels. What  
13 would be clear to any reasonable person is that it's  
14 become harder for people of color in that district.

10:05:13

15 **Q.** Let's go to -- back to page 2 to take a look at  
16 cluster 2 now.

17 And what are the principal counties at issue in  
18 cluster -- or that are analyzed in cluster 2?

19 **A.** Cluster 2 contains all the districts touching Harris  
20 County and Fort Bend County.

10:05:34

21 **Q.** And this, again, includes the district numbers?

22 **A.** Yes.

23 **Q.** And were there districts that were the focus of more  
24 analysis than others?

10:05:52

25 **A.** As in C1, I gave a district-by-district analysis of

1 effectiveness.

2 **Q.** Let's look at a demonstrative comparing CD 9 in 2193  
3 and 2333.

10:06:17

4 **A.** Right. And just to be sure, can we see the title of  
5 this figure? Zoom out just a little bit. Great.

6 CD 9. I agree.

7 **Q.** And could you explain what this demonstrative shows?

10:06:36

8 **A.** It's the same kind of figure as before, showing CD 9  
9 in gray as it was configured in the map from which the  
10 sitting representatives were elected. In other words,  
11 2193. And in green you see the new CD 9.

10:06:52

12 This time you would have to look really hard to see  
13 the overlap. But if you zoom way in, there it is, the  
14 darker green shows you a small territorial overlap between  
15 old CD 9 and the new.

16 **Q.** Did the 2025 plan change the numbering of the  
17 districts in this area?

10:07:10

18 **A.** Right. What I would say is that it is standard  
19 practice when drawing a new map to adopt the numbering  
20 that gives you greatest population overlap between the new  
21 districts and the old. And that was done in the new Texas  
22 plan except for three districts.

10:07:23

23 So Districts 9, 18, and 29, there is a little game of  
24 musical chairs with their numbers, where the numbers are  
25 kind of cycled around in a way that doesn't reflect

1 maximum overlap.

2 No particular inference. I'm not making any  
3 particular inference about why that was done, but it does  
4 make it a little bit harder to talk clearly about the  
5 changes to the district, since the numbering is also moved  
6 around.

10:07:38

7 **Q.** And is it unusual to change the numbers in this  
8 manner?

9 **A.** I have seen that happen. I would say the standard  
10 practice is not to do that, but it certainly does happen.

10:07:50

11 **Q.** So let's pull up a demonstrative exhibit that compares  
12 CD 9 and CD 29. CD 9 in the 2021 map -- no. CD 29 in the  
13 2021 map --

14 **A.** Right.

10:08:10

15 **Q.** -- to CD 9 in the 2023 -- 2025 map.

16 **A.** Right. And so here, in making this figure, I use  
17 different colors because I'm trying to flag that it's no  
18 longer the old and new version of the same numbered  
19 district.

10:08:23

20 But yellow is new CD 9. And in the teal color, the  
21 blue, you are seeing the district that it most overlaps  
22 from the old map. This time you can see a more  
23 significant overlap.

24 **Q.** So is CD 29 essentially is it already -- is -- are

10:08:50

25 CD 9 and CD 29 versions of this same district? Are

1 they -- are they -- is that the analysis, the comparison  
2 we should make?

10:09:08

3 **A.** Well, I think this is just meant to highlight that  
4 whether you compare it to the district of the same number  
5 or the one that most overlaps, either way, you can see  
6 that more urban district was altered in a way that takes a  
7 more rural county in as part of it, whichever of the two  
8 baselines you compare it to.

10:09:32

9 **Q.** What is the significance of altering the urban,  
10 rural -- the urban-rural demographics of the county?

10:09:53

11 **A.** Well, this is a kind of configuration that's often  
12 consistent with taking, as I said earlier, pieces of more  
13 diverse urban population and combining them with more  
14 rural population. This is the kind of reconfiguration you  
15 would often see when trying to change the partisan  
16 composition of a district. This is consistent with  
17 partisanship, but it also has demographic markers.

10:10:25

18 **Q.** So let's then analyze CD 9 in Table 3, page 9 of your  
19 report. So that's the fourth one down under cluster 2.  
20 And what does Table 3 show about the ability of people of  
21 color to advance their candidates of choice in the  
22 primaries and elect them in the general election under the  
23 2021 plan?

10:10:50

24 **A.** Well, here new CD 9 is better aligned in the primaries  
25 with the preferences of minority voters than old CD 9,

1 consistent with old CD 29, which it most overlaps. But no  
2 matter which district you compare it to, the net loss is  
3 obvious, that it's now become out of reach to get that  
4 candidate, who will advance to the general, to get them  
5 elected in the general. That is now out of reach.

10:11:07

6 **Q.** Do you treat this as a loss of opportunity for  
7 minorities to elect their candidate of choice?

8 **A.** Oh, this is a perfectly clear net loss of one  
9 district.

10:11:23

10 MR. WEINER: If we could look at Figure 5 on  
11 page 12.

12 BY MR. WEINER:

13 **Q.** Could you explain what this figure represents?

10:11:49

14 **A.** This is a dot density plot in exactly the same manner  
15 as the previous one. And all I'm remarking here is that  
16 you can see visually clear patterns of sorting by race.  
17 You can tell that because the lines cut in a way that, on  
18 the opposite side of the lines, you see different colors.  
19 That's what it looks like to follow demographic lines that  
20 are created by residential segregation and to sort  
21 districts by race.

10:12:09

22 **Q.** And does this give you any clues about the ability of  
23 people of color to advance their candidate, preferred  
24 candidates?

10:12:24

25 **A.** Well, I take the view that it's a mistake to rely on

1 demographic numbers alone to predict performance. That's  
2 why my analysis is really based on electoral history.

10:12:44

3 **Q.** So, for example, if you knew that a district had  
4 50.5 percent Hispanic, could you predict from that that  
5 Hispanics would elect -- that citizen voting age  
6 population, could you predict from that that Hispanics  
7 would elect their candidate of choice?

10:13:00

8 **A.** No. I think that would clearly not be a safe  
9 conclusion. That's clear both in the social science  
10 literature and, also, courts have made clear, and my  
11 understanding that informs my expert work, that merely  
12 crossing the 50 percent threshold doesn't prove anything  
13 about effective opportunity to elect on its own.

10:13:21

14 **Q.** And under this -- in this dot density, do you see in  
15 District 18 a concentration of Black voters?

16 **A.** That's right. Black voters are represented with kind  
17 of a yellow, amber color in the dot density.

18 **Q.** And in District 29, do you see a concentration of  
19 Hispanic and Black voters?

10:13:45

20 **A.** That's right. There are large numbers of both Latino  
21 and Black voters in District 29.

22 **Q.** And there is also a community of White voters there?

23 **A.** That's right.

10:14:06

24 **Q.** Let's look at page 2, just to take a look generally at  
25 cluster 3. What counties does this cluster focus on?

1 **A.** So this contains all the districts that touch either  
2 Travis County or Bexar County. And then you can see where  
3 there are smaller districts. To the eye, those are more  
4 urban. And then to the extent to which these districts  
5 extend out into more rural counties by the -- the larger,  
6 the visually larger districts show a great extent into  
7 more rural counties.

10:14:27

8 **Q.** And what are the significant urban areas in this  
9 cluster?

10:14:44

10 **A.** Well, Travis contains Austin; and Bexar contains San  
11 Antonio.

12 **Q.** And I think we have a demonstrative comparing the  
13 before and after on this. Have you reviewed this  
14 demonstrative for CD 35 under 2193 and 2333?

10:15:04

15 **A.** Yes. I produced this.

16 **Q.** Okay. And what does it show?

17 **A.** This shows, once again, previous and new  
18 configurations for District 35, with the new in green.

10:15:26

19 **Q.** So the green is the new geographic area that was added  
20 to CD 35?

21 **A.** Right. Green is the new district.

22 **Q.** And gray is the old district?

23 **A.** Gray is the old district, yes. And if you zoom in on  
24 Bexar, you can see some overlap between old and new.

10:15:47

25 **Q.** Do you know what the effects of those changes were?

1 **A.** The picture alone won't tell you that. Though it does  
2 suggest that the three more rural counties, compared to  
3 Bexar as more rural, have been added. Once again, you  
4 often see that in a map that's being changed in a way that  
5 will be reflected both in demographics and in  
6 partisanship; but you can't see demographics or  
7 partisanship directly from a plot like this.

10:16:04

8 **Q.** So going back to Table 3, what is the effect of a  
9 minority representation reflected in -- for CD 35  
10 reflected in Table 3?

10:16:35

11 **A.** This is the same picture as in the previous cluster.  
12 You have CD 35, which used to be a clear opportunity for  
13 people of color to have -- to nominate and elect a  
14 candidate of choice. Now it shows the strong potential to  
15 nominate and no ability to elect.

10:16:55

16 **Q.** So that is a loss of a minority district?

17 **A.** So that's a clear net loss of a district where  
18 minority voters can elect candidates of choice.

19 **Q.** Based on the total of Table 3, what is your bottom  
20 line for the loss of minority opportunity as a result of  
21 C2333, the 2025 plan?

10:17:15

22 **A.** I see a net loss of a district in each cluster in  
23 which minority voters can nominate and elect a candidate  
24 of choice. And that's true in a manner that takes into  
25 account primaries. So it is disentangling race from

10:17:37

1 party.

2 **Q.** So let's turn to what I think you've called outlier  
3 analysis or ensemble analysis. It's page 14.

4 It says -- the heading is [as read:] Assessing  
5 Packing and Cracking Through Outlier Analysis.

10:17:59

6 **A.** Yes.

7 **Q.** Now, you do not use the term "simulation." Why is  
8 that?

9 **A.** That's right. That is a term that you'll see coming  
10 up very frequently throughout the use of these and related  
11 methods in court cases. But I have always avoided it and  
12 even written in published papers about the wisdom of  
13 avoiding that term. I avoid simulations because it  
14 invites confusion about the purpose of the method.

10:18:12

15 Simulation, I think, can lead to the supposition that  
16 the point of this kind of analysis is to simulate human  
17 judgment to become like the person drawing the map and in  
18 some way to read the mind of the person drawing the map.

10:18:31

19 And that's not what an ensemble analysis does. I'm  
20 here to speak as one of the people who has created the  
21 method. The point of an ensemble analysis is to answer  
22 what we perceive as a need for a baseline for comparison.

10:18:50

23 So you take the stated rules and priorities and you  
24 try to build a collection of maps pursuant to the stated  
25 rules and priorities. It's a method that lets you test

10:19:08

1 the importance of different rules. You can add a rule or  
2 take it away and see what changes about the maps as you do  
3 that. It lets you test how the rules interact.

10:19:26

4 And so it's a powerful way to understand kind of the  
5 universe of valid plans under different constructions of  
6 the rules.

10:19:44

7 The point of this is just to show you what plans look  
8 like when created by known rules. So it lets you assess  
9 whether a proposed plan behaves as though it was created  
10 by the stated rules. I think that's actually pretty  
11 important. You don't need mind reading to do that. You  
12 just need to say, the rules that I was aware of, the ex  
13 ante framework, does that explain the features that I  
14 observed at this time.

10:19:57

15 So, again, I really would avoid thinking of it as a  
16 simulation of what people do. What it's doing is  
17 constructing a baseline for comparison, as in my  
18 understanding the courts have asked.

10:20:13

19 **Q.** So in this methodology you use a number of parameters  
20 to generate a sample of maps, correct?

10:20:32

21 **A.** Right. I would say this is one of the contributions  
22 of my research group to the study of redistricting is that  
23 we created a class of new methods that I think are now  
24 widely used, in particular by all the experts in this  
25 case, as far as I'm aware, to generate alternative plans.

1 Q. And after you do that first run to generate, about how  
2 many maps do you generate in the first instance?

3 A. As a general matter, it's become quite fast to  
4 generate maps and to understand something about how they  
5 are distributed.

10:20:54

6 I guess it's worth saying, without going into any  
7 great detail, that that matters, too. It's never going to  
8 be sheer volume that gives you a good sample. You need a  
9 kind of mathematical guarantee that you are getting a  
10 representative sample. You need to understand how they  
11 are distributed.

10:21:07

12 That's something that these methods do provide is  
13 theorems that tell you how -- that you are able to get a  
14 sample that represents plausible plans for redistricting  
15 in the first instance.

10:21:20

16 So it's worth saying the basic method creates plans  
17 that take into account population balance that ensure  
18 contiguity and that prioritize compactness, upweight  
19 compactness. But they do that without having to set --  
20 dial a knob to the preferred level of compactness. It's  
21 kind of baked into the mathematical calculation.

10:21:39

22 Q. How did you become familiar with this methodology?

23 A. By introducing it.

24 Q. So you are one of the inventors of the approach?

10:21:55

25 A. Yeah. And to be precise, the approach that I'm

1 talking about here, since the 1960s people have thought  
2 computers could be used to do this kind of thing. But the  
3 approaches that were most popular when I started working  
4 in this area would take a districting plan and change  
5 one -- the assignment of one small particle at a time. So  
6 you would take a single precinct, sometimes even a single  
7 census block, and change its assignment from one district  
8 to another.

10:22:13

9 Think about this as like seeing a picture and changing  
10 the color of one small pixel at a time. That's certainly  
11 something you could do, but it would take longer than a  
12 human life to get a good sample using processes like that.

10:22:27

13 And so the contribution of my research group was a  
14 whole new idea that uses what, in technical jargon, would  
15 be spanning tree methods. That's a construct from  
16 theoretical computer science.

10:22:45

17 What it lets us do is take two whole districts at a  
18 time, fuse them, and draw a whole new boundary between  
19 them. So you can picture this as taking not just one  
20 pixel but two entire districts and just simply redrawing  
21 the boundary between them on each step.

10:23:01

22 Together with that, we came up with very fast  
23 implementations. So now we can, in a simple example,  
24 build you a million alternative plans in, I think the last  
25 speed test was, eight seconds.

10:23:19

1 So what we see here is both powerful computing and  
2 good mathematics under the hood that tells you that we're  
3 able to construct samples that have good distributional  
4 qualities.

10:23:33

5 **Q.** How many times have you performed this type of  
6 ensemble analysis?

10:23:50

7 **A.** One of -- this was the heart of my research program  
8 for at least five years. So I have done this nationally  
9 and in many different local instances and have figured out  
10 a range of techniques for taking additional districting  
11 principles into account. So we can now layer in, in a  
12 flexible way, many other kinds of redistricting  
13 principles, as I did in this report.

10:24:07

14 **Q.** And is there another method that is used for these  
15 ensembles that is called redist?

10:24:28

16 **A.** Redist isn't a method. It's a software package. And  
17 redist implements several different kinds of district  
18 generation methods. But the main ones, and the ones that  
19 I'm aware of in this case, all use the spanning tree idea  
20 that I alluded to.

21 **Q.** Let's turn to page 22 of your report to talk a little  
22 bit about -- in a little more detail about the methods  
23 reflected in your analysis.

10:24:57

24 And you talked about district generation parameters.  
25 What are those?

1 **A.** Okay. This is a piece of the report where I'm trying  
2 to be very transparent without being overly technical  
3 about entertaining all of the choices that went into the  
4 creation of the ensembles. So I have distinguished what I  
10:25:10 5 call here district generation parameters from what we'll  
6 presumably talk about next, which is what I call winnowing  
7 conditions. Let me briefly explain the difference.

8 The way we're creating plans, through the process I  
9 just described, you start with the plan and then you fuse  
10:25:27 10 districts and you split them in a new way. And you repeat  
11 that many times.

12 This means that from the starting point, which is one  
13 plan, jump to the next plan and the next plan and the next  
14 plan; and you do that many times. In math we call that a  
10:25:40 15 random walk.

16 So what I'm describing here is the parameters that you  
17 can think of as instructions along the walk, along the  
18 process of traveling through this space of points.

19 So, for instance, this tells you what is enforced;  
10:25:54 20 what is upweighted; and where, in some cases, a new  
21 proposed plan will face a coin flip about whether to  
22 accept it or not. And that's what is explained in  
23 district generation parameters. So, in other words, these  
24 were the parameters available to the random agent walking  
10:26:11 25 around and collecting plans.

1 Q. Now, I don't want to talk about all of these, but I do  
2 want to focus in on the partisanship parameter.

3 A. Yes.

4 Q. And what is that? And how did you do it?

10:26:22

5 A. And so I -- because I was not made aware of exactly  
6 how partisanship might have been taken into account in the  
7 creation of the new plans, I check that my findings are  
8 consistent with multiple different ways of seeking  
9 partisanship.

10:26:41

10 So I describe here -- across two bullets, I describe  
11 three different ways of seeking partisanship. One is to  
12 take 29 general elections -- so a big span of general  
13 elections -- and assess the partisanship of a plan by just  
14 counting up in how many of its districts the Republican  
15 would have won in one of those contests.

10:26:58

16 Okay. So that's quite broad. Many different kinds of  
17 contests, railroad commissioner to, you know, agriculture  
18 commissioner, lieutenant governor, many different kinds of  
19 contests, many different kinds of candidates.

10:27:15

20 A second style of taking partisanship into account  
21 just looks at the performance of Donald Trump and  
22 particularly in the three elections in which he ran for  
23 president: 2016, 2020, and 2024. There we just look at  
24 Trump wins across those three contests.

10:27:33

25 And then finally, a most limited style of seeking

1 partisanship, if you would just look at Trump's  
2 performance in the presidential contest of 2024. So we  
3 have the most specific to the most broad, and the findings  
4 are entirely constant.

10:27:46

5 **Q.** When you look at Republican wins across the 29  
6 elections, does -- does 50.1 percent count as a win?

10:28:07

7 **A.** Right. So one of the reasons to look at such a large  
8 collection of elections, the big advocate of looking at  
9 many elections rather than trying to boil them all down  
10 into a single election index, is because there is a bright  
11 line in American politics where 50.1 percent is  
12 meaningful, meaningfully different from 49.9.

10:28:24

13 But in a big election dataset like this where you  
14 might have very close wins in some of the contests, you'll  
15 have very close losses in the others. So it gives you a  
16 kind of robustness against that bright line in those  
17 contests. Some post wins and some post losses.

18 **Q.** So these parameters, do they generate a large number  
19 of maps?

10:28:38

20 **A.** Under these parameters I then generate a very large  
21 number of maps, correct.

22 **Q.** And do you winnow them down?

23 **A.** Right. Okay. So what we just went through was how  
24 the sample is collected.

10:28:51

25 The second stage is to filter it. So by winnowing,

1 that's all I mean. I mean I'll take all those maps and  
2 I'll filter them down by whether they meet some checklist  
3 of other conditions.

10:29:05

4 **Q.** And I want to just focus on not all of the items on  
5 that checklist, but just some of them -- well, the  
6 partisan ones, the first Republican performance, the first  
7 one.

10:29:25

8 **A.** Right. Right. So as I said before, some of these  
9 samples were collected by trying to drive up Republican  
10 performance. But trying to drive it up doesn't mean you  
11 succeed. And so the winnowing, the filter, ensures that  
12 they are getting at least as strong Republican performance  
13 as the State's plan.

10:29:41

14 So first I try to do it, and then I confirm that it  
15 worked.

16 **Q.** So -- and then you say in the C1 Tarrant/Dallas  
17 cluster, the number won by Republicans must be at least as  
18 high as in 2333?

19 **A.** Right.

10:30:02

20 **Q.** That is -- right.

21 In your analysis, it would have to be at least as  
22 high?

23 **A.** That's right. This restricts to the ones that have at  
24 least as many Republican wins as C2333.

10:30:15

25 **Q.** And then you have a second winnowing condition which

1 is Trump performance?

2 **A.** That's right.

3 **Q.** What does that have to do?

4 **A.** That checks that the plurality win for Donald Trump

10:30:28

5 matches or exceeds -- the number of plurality wins for  
6 Donald Trump matches or exceeds that.

7 Actually, while we're mentioning this, it's worth  
8 saying -- maybe we'll get to this a little bit later, but  
9 these initially were done -- one set of runs were done

10:30:42

10 under just simple Trump wins. Did Trump have more votes?

11 But later, as a check, I also sought out plans in  
12 which Trump's percentage was at least 55 percent, to make  
13 sure that that 50 percent line wasn't guiding the  
14 findings.

10:30:57

15 **Q.** So let's talk about that analysis. That was the  
16 robustness checks, right?

17 **A.** That's right. It's under the heading here of  
18 robustness checks.

19 **Q.** And you say that you executed a run to match the  
20 number of districts with Trump's 2024 major party vote  
21 share over 55 percent.

10:31:21

22 How did you do that?

23 **A.** So that was accomplished in the first instance with  
24 what is called a parameter here. And so when you find a  
25 new district and you measure whether to accept it or not,

10:31:36

1 in other words, you sort of flip a weighted coin to decide  
2 whether to accept the change, this drives up your  
3 probability of accepting a plan that increases the number  
4 of Trump 55 districts.

10:31:51

5 **Q.** So this robustness check was applied to the original  
6 with -- it was a run that included the Trump 55 percent  
7 among the parameters to generate the large collection of  
8 maps, right?

10:32:09

9 **A.** Right. I think something I would like to try to get  
10 across is that I'm trying to establish a high degree of  
11 scientific confidence in the robustness of the results.  
12 And so I take the entire pipeline, and I execute it under  
13 many different variations.

10:32:27

14 And each time I'm looking at the question: Did that  
15 matter? Did that matter? Did that change the  
16 observations?

10:32:40

17 And I present some evidence that shows that, yes,  
18 sometimes layering in additional principles can change the  
19 observed range. But it never changes the finding that the  
20 State's plan is an outlier in its racial composition. And  
21 that includes the Trump 55 plus.

10:32:53

22 **MR. KERCHER:** Objection to a narrative response.  
23 The question was leading as well, and we would object to  
24 that. I would ask just if we could proceed in question  
25 and answer.

1 JUDGE GUADERRAMA: All right. Going forward,  
2 question and answer, please.

3 MR. WEINER: Yes, Your Honor.

4 BY MR. WEINER:

10:32:57

5 **Q.** The last sentence, is that what you were referring to?  
6 The one that starts "The consistency of findings"?

7 **A.** Sure. Let's read that. [As read:] The consistency  
8 of findings across the variations raises my confidence,  
9 based on my experience researching the sound

10:33:14

10 interpretation of outlier tests, the following results  
11 from Figures 8 to 10 are robust.

12 **Q.** What is the significance of the 55 percent threshold?

13 **A.** Well, it's my understanding that when trying to  
14 execute partisan gerrymandering, you don't just want to

10:33:38

15 win narrowly. You would like it to be durable and  
16 withstand some swing in partisan performance. So 55 is a  
17 threshold that tells you that even if the vote were to  
18 swing by 5 percent you would still win.

19 **Q.** And is the use of the 55 percent threshold a response  
20 to the criticism that you didn't account for durability?

10:34:00

21 **A.** It's the kind of thing I might do with or without a  
22 criticism, but I am aware that durability has been raised  
23 in this case.

24 **Q.** Do these filters allow you to determine whether the  
25 racial composition of the districts is attributable to

10:34:21

1 partisanship?

2 **A.** Well, they allow me to compare the racial attributes  
3 of the map to a baseline that's been constructed according  
4 to these parameters.

10:34:36 5 **Q.** So to put it another way, does it permit you to  
6 disentangle partisanship and race?

7 **A.** Well, that's right. It's an attempt to disentangle  
8 partisanship and race.

9 **Q.** Turning to Figure 8 on page 14 of your report, which  
10:34:55 10 applies these methodologies, could you tell us what  
11 Figure 8 is?

12 **A.** Sure. And if we zoom out so I can confirm this is  
13 cluster C1, which I think it is. Yes. Okay.

14 So this is showing the eight districts that touch  
10:35:15 15 either Tarrant County or Dallas County. And let me just  
16 very briefly explain how to read a figure like this. This  
17 is called a box and whiskers plot or sometimes just a box  
18 plot.

19 What you see first in the blue dots, you see the eight  
10:35:30 20 districts drawn by the State. And I'm showing you what is  
21 abbreviated POC CVAP, which means the minority citizen  
22 voting age percentage in each of the districts.

23 **Q.** And this is under the new plan?

24 **A.** That's correct. This is C2333.

10:35:44 25 **Q.** Okay.

1 **A.** And so they are arranged not in order of the district  
2 numbers but from lowest to highest POC CVAP. That's the  
3 blue dots.

4 Then what you see with the box and the whiskers is the  
10:36:00 5 ensemble. And what I have done here is I have sub-sampled  
6 40,000 plans that were made by the generation process that  
7 I described without the additional filters imposed.  
8 That's what you see in black.

9 So the whiskers go from the 1st percentile to the 99th  
10:36:19 10 percentile. That means 98 percent of the plans are  
11 between the whiskers.

12 The boxes go from the 25th to the 75th percentile.  
13 Meaning that 50 percent of the plans fall in the box.

14 And the line that you see in the box is the median or  
10:36:35 15 50th percentile.

16 So black is showing you a 40,000 plan sub-sample from  
17 the ones made by the generation process that I described.

18 Then I apply all those filtering conditions,  
19 including, as you heard, the rural composition and various  
10:36:55 20 kinds of tests that the partisanship matches or exceeds  
21 that in the State's plan.

22 So you can see in the picture that sometimes the  
23 orange range is visibly different than the black. We  
24 would say that all of these factors explain the racial  
10:37:07 25 composition of the map if the blue dots fell in that kind

1 of observed range from the comparison sample. And in some  
2 cases, they do. Some of the blue dots are in the range  
3 that you would expect. But some of them fall far outside  
4 the expectation that's constructed by the ensemble.

10:37:30

5 **Q.** Is there any blue dot that falls below the expectation  
6 in terms of the CVAP percentage of minorities?

10:37:54

7 **A.** That's right. There are two districts where the  
8 minority citizen voting age population is really  
9 anomalously low. You can see that, maybe the cursor can  
10 show it, in the fourth and the third column from the end.  
11 Right, those two districts.

10:38:09

12 In one case, the blue dot is at the whisker, which  
13 means it's at the 1st percentile. In the other case, it's  
14 below the whisker, suggesting that it is lower than  
15 whatever is observed in this large generation process to  
16 make plans under the assumptions reported earlier.

17 **Q.** What does it mean if it's -- if the dot is in the  
18 1st percentile?

10:38:23

19 **A.** That means that the -- only 1 percent of the plans  
20 have a lower minority CVAP.

21 **Q.** What does it mean if the dot is outside the whiskers  
22 altogether?

10:38:40

23 **A.** What it suggests and what I can confirm in this case  
24 is that no plan I generated in the sample ever had as low  
25 of a minority CVAP.

1 Q. And what do you conclude from the analysis reflected  
2 in this whisker chart about the role of race in the lines  
3 drawn for the 2025 plan?

10:39:05

4 A. Well, the two dots that we just discussed, as we said,  
5 are anomalously low compared to the sample. The next one  
6 is anomalously high, especially compared to the filtered  
7 sample. And that's consistent with what is sometimes  
8 informally called cracking and packing. So that's my  
9 conclusion.

10:39:20

10 And to be clear about what I mean by that, in this  
11 case "cracking" means taking districts in which the  
12 expectation would be around 50 percent minority  
13 composition and suppressing that minority composition to  
14 be significantly lower.

10:39:38

15 "Cracking" [sic] means taking a district in which the  
16 expectation is already over 50 percent and elevating it.  
17 And I just want to point out --

18 JUDGE BROWN: I think you meant "packing" the  
19 second time, right?

10:39:50

20 THE WITNESS: Oh, yes. I'm sorry. What did I  
21 say?

22 BY MR. WEINER:

23 Q. Why don't you just restate it.

24 A. Well, let's restate that simply.

10:39:58

25 Cracking takes districts in which you expect about

1 50 percent, somewhere in the neighborhood of 50 percent,  
2 and depressing composition.

3 Packing is taking districts where you already expect  
4 more than 50 percent and elevating past that level.

10:40:13

5 That's in the context of a plot like this.

6 So what I was -- you asked what's the analysis here.

7 Wherever there are big deviations from the expectation  
8 created by the ensemble, they are consistently in that  
9 direction, cracking and packing, rather than the reverse.

10:40:31

10 So that is suggestive that race was used in making these  
11 plans because these race-blind comparators, even made with  
12 layer upon layer of different assumptions about  
13 partisanship and other principles, don't reproduce that  
14 kind of racial composition.

10:40:49

15 **Q.** Thank you.

16 And let's turn to Figure 9 on page 15 of your report.  
17 And you can see at the top that this is cluster 2,  
18 Harris/Fort Bend.

19 And can you explain what Figure 9 shows?

10:41:05

20 **A.** Well, you see that same signature. So in the third,  
21 fourth, fifth, and sixth district from the left, you see  
22 this clear cracking pattern. And then in the second from  
23 the top, off the charts packing.

24 So I would call this four districts where you have a  
25 signature of cracking and one that's clearly packed

10:41:21

1 compared to every comparator I was able to construct.

2 **Q.** So does this mean that the racial composition of the  
3 district was something you did not see in any of your  
4 maps?

10:41:39 5 **A.** Right. In several of these instances, it's past  
6 anything ever observed.

7 **Q.** And what about -- does this chart tell you anything  
8 about packing in cluster 2?

9 **A.** I think I mentioned that, but just to repeat. The  
10:41:55 10 second from the top is off the charts in the direction of  
11 packing. Where you would expect POC CVAP in the 60 to 70  
12 range; instead, it's over 80 percent.

13 To be clear, this doesn't tell you ensemble  
14 performance. But when you juxtapose this with the  
10:42:16 15 previously described performance analysis, then it's quite  
16 decisive.

17 **Q.** Let's turn to Figure 10 on page 15. And is this  
18 the whisker chart for cluster 3?

19 **A.** This is the corresponding chart for cluster 3, yes.

10:42:39 20 **Q.** And what does this chart show?

21 **A.** Well, while directionally the same, this doesn't show  
22 as extreme or as strong of a pattern. However, you can  
23 see that in one district there is what looks like about a  
24 5th percentile level of cracking. And in that top

10:43:04 25 district there is what looks to be about a 5th percentile

1 showing of packing. So you see directionally the same  
2 pattern, never the reverse. But the evidence here isn't  
3 as strong as in the previous two clusters.

10:43:25

4 **Q.** So you alluded to this. Putting this -- these charts  
5 and your ensemble analysis together with the effective  
6 minority representation analysis that you summarized in  
7 Table 3, what do you conclude about the role of race and  
8 minority representation under the 2025 plan?

10:43:52

9 **A.** Well, this gives us evidence that race was used and  
10 that it was used in a manner that was ultimately diluted.

11 **Q.** And is it your testimony -- do you seek to testify  
12 about intent in this case? About what the legislators'  
13 intent was? What was in their minds?

10:44:18

14 **A.** Well, to be clear, as I said before, it's not an  
15 exercise in mind reading. You can't look into the hearts  
16 and minds.

10:44:34

17 But what you can do is give evidence that's consistent  
18 with an intent to achieve racial dilution or could be  
19 consistent as a proxy for partisanship with the known  
20 effect of producing racial vote dilution.

21 **Q.** And do you draw a conclusion about whether the  
22 legislature used race in order to achieve their  
23 objectives?

10:44:57

24 **A.** This -- these analyses are highly suggestive that race  
25 was used.

1 MR. WEINER: So, Your Honor, Dr. Duchin was  
2 previously qualified as an expert in the fields of data  
3 science and applied mathematics. I don't know whether I  
4 need to tender her again but I will do so, just to be  
5 sure, as an expert in those two fields.

10:45:18

6 JUDGE GUADERRAMA: Mr. Kercher.

7 MR. KERCHER: No objection.

8 JUDGE GUADERRAMA: The Court receives her.

9 MR. WEINER: I have no further questions. I pass  
10 the witness.

10:45:29

11 JUDGE GUADERRAMA: Mr. Kercher.

12 **CROSS-EXAMINATION**

13 BY MR. KERCHER:

14 Q. Good morning, Dr. Duchin. Nice to see you again.

10:45:50

15 A. Nice to see you.

16 Q. Congratulations on your move to U Chicago.

17 A. Thank you.

18 Q. If I -- my son is working on his application essay to  
19 U Chicago, like right now. If I had known you were going  
20 back, I might have structured my last cross a little bit  
21 differently. If you have, in the fall of 2026, a student  
22 named Alexander Kercher in your introduction to proofs  
23 class, no relation.

10:46:05

24 Did I hear you say a moment ago -- this felt like an  
25 offhand comment. I'm not sure I caught it. But it

10:46:25

1 sounded like you said that you could run something like a  
2 million maps in a matter of seconds; is that right?

3 **A.** That's right. As a general matter. In a particular  
4 case, it depends on details.

10:46:38

5 **Q.** Sure. And in order to do that, are you using some  
6 sort of Cornell or University of Chicago or Tufts super  
7 computer or is that on a laptop?

8 **A.** Oh, absolutely not. You don't use a super computer to  
9 do it. You could do it on a digital watch.

10:46:52

10 **Q.** On a digital watch; is that right?

11 **A.** That's right.

12 **Q.** At that speed; is that right?

13 **A.** The number of steps, each -- the compute involved in  
14 each execution is tiny.

10:47:01

15 **Q.** Is it right to say that it might take longer depending  
16 upon all of the parameters that you put in? Is that  
17 something that would slow things down?

18 **A.** That is correct. It can.

10:47:12

19 **Q.** I think -- and if you don't remember either, that's  
20 fine. But I think at trial we talked about -- I asked you  
21 how long it took you to run the hundred thousand  
22 simulations -- 100,000 maps that your robot drew then, and  
23 I think you said it took something like an hour; is that  
24 right?

10:47:24

25 **A.** It would depend. The number will be different for

1 each cluster and each set of parameters, but something in  
2 that neighborhood.

3 **Q.** It's not taking you two days to run these maps?

4 **A.** None of this -- no individual execution took two days,  
5 to my memory.

10:47:36

6 MR. KERCHER: Richard, can we please pull up  
7 NAACP Exhibit 208.

8 BY MR. KERCHER:

9 **Q.** The first several pages of your September report  
10 discuss what I'll call sort of preliminary observations,  
11 like population deviation and compactness. Is that fair?

10:47:59

12 **A.** Those are covered, yes.

13 MR. KERCHER: Richard, could we go to page 5,  
14 please.

10:48:11

15 BY MR. KERCHER:

16 **Q.** Here you discuss population deviations and you talk a  
17 little bit about metrics, for example, right?

18 **A.** Yes.

19 **Q.** And, of course, all of the districts in C2333, because  
20 it's a congressional map, have a de minimis population  
21 deviation, right?

10:48:24

22 **A.** These do, yes.

23 **Q.** They are -- all of them, I think, are 766,987 people  
24 except District 38, right?

10:48:40

25 **A.** That's what it says, right.

1 Q. And that has one fewer or one less person, right?

2 A. Right.

3 Q. You next discuss compactness and other considerations,  
4 right?

10:48:49

5 A. Yes.

6 Q. In the first sentence you compare the 2025 map not  
7 with the 2021 map but with the map from 2012; is that  
8 right?

9 A. It looks like it's compared to both.

10:49:02

10 Q. Okay. You are comparing not just to the 2021 map,  
11 excuse me, but also to the 2012 map; is that right?

12 A. I agree.

13 Q. And in that comparison you say the 2025 map is more  
14 compact by two out of three metrics; is that right?

10:49:16

15 A. Yes.

16 Q. And the metrics that you are talking about here are  
17 Polsby-Popper, right?

18 A. Correct.

19 Q. And that is where the higher score the more compact it  
20 is, right?

10:49:26

21 A. Correct.

22 Q. And the next compactness metric is the Reock; is that  
23 right?

24 A. Well, it looks like the other one I meant was saying

10:49:36

25 more compact with 2 was cut edges.

1 Q. And we'll get there. I may be taking them out of  
2 order. I apologize for that.

3 But you also looked at the Reock score; is that right?

4 A. Yes.

10:49:46 5 Q. And that, again, is where the higher the score, the  
6 more compact it is, right?

7 A. Yes.

8 Q. And the cut edges, which I had not heard of before, is  
9 the third of these -- not in order necessarily, but the  
10:49:56 10 third compactness measure that you are evaluating, right?

11 A. Yes. That's right.

12 Q. Here it's kind of like golf. The lower the score on  
13 the cut edges, the better; is that right?

14 A. That's right.

10:50:07 15 MR. KERCHER: Let's go to page 6, Richard,  
16 Table 2.

17 BY MR. KERCHER:

18 Q. And in this table you provide the Court with a  
19 compactness analysis that includes the 2012 to 2021 and  
10:50:19 20 the 2025 maps, right?

21 A. Yes.

22 Q. And where your discussion on the previous page  
23 suggests that the 2025 map is less compact according to  
24 one measurement with the 2012 map; is that right?

10:50:37 25 A. Yes. You can see its Reock score is a little bit

1 lower than the 2012.

2 **Q.** But when the 2025 plan is compared to the 2021 plan,  
3 it is more compact on all three measurements, true?

4 **A.** That is true.

10:50:52

5 **Q.** The next segment of the table that we're looking at  
6 here discusses certain measures of respect for political  
7 boundaries; is that right?

8 **A.** That's right.

10:51:06

9 **Q.** That is what we're talking about with the county  
10 splits and the county pieces?

11 **A.** It is.

12 **Q.** We can see that both the 2021 and the 2025 maps split  
13 fewer counties than the 2012 map, true?

14 **A.** True.

10:51:16

15 **Q.** A metric that you did not include was whether the 2025  
16 map splits fewer municipalities, fair?

17 **A.** Right. I am not aware of a kind of canonical  
18 definition of municipality for Texas, but I certainly  
19 could provide that analysis.

10:51:34

20 **Q.** But a map drawer could certainly look at municipal  
21 boundaries and consider those when drawing a map, fair?

22 **A.** Sure.

23 **Q.** And, in fact, at trial earlier this year we heard  
24 testimony about how the 2021 map split municipalities like

10:51:49

25 Arlington and Mansfield and Killeen.

1 Are you aware of that?

2 **A.** Yes.

3 **Q.** And this chart shows no such criticism, true?

4 **A.** This chart does not contain -- account for

10:52:01

5 municipalities.

6 **Q.** The final segment of this table, of Table 2 in your

7 September report, discusses core retention, right?

8 **A.** That's right.

9 **Q.** The 2021 map had 64.5 percent core retention compared

10:52:14

10 to its 2012 predecessor, true?

11 **A.** True.

12 **Q.** A little less than two-thirds. Fair to say?

13 **A.** Fair to say.

14 **Q.** I did that math on the fly.

10:52:21

15 **A.** I see.

16 **Q.** The 2021 map has been in place now for four years

17 approximately?

18 **A.** (Nodding head affirmatively.)

19 **Q.** Is that a "yes"? Sorry.

10:52:30

20 **A.** That's a "yes."

21 **Q.** The 2025 map has even better core retention compared

22 to its immediate predecessor. True?

23 **A.** It's 66.8 percent compared to 2021.

24 **Q.** All right.

10:52:43

25 MR. KERCHER: Let's go to 3.2, precinct splits,

1 please.

2 BY MR. KERCHER:

3 **Q.** You next discuss the availability at the block level  
4 of racial and partisan data, right?

10:52:55 5 **A.** That's right.

6 **Q.** Now, census blocks are the smallest units of  
7 population data from the census; is that right?

8 **A.** That's right.

9 **Q.** Or population geography, is that the word?

10:53:06 10 **A.** Well, they're the smallest geographic units on which  
11 there is population data.

12 **Q.** There will be multiple blocks per precinct or per VTD;  
13 is that right?

14 **A.** That's correct.

10:53:17 15 **Q.** Now, racial data are publicly available from the  
16 census at the block level.

17 Do I have that right?

18 **A.** To be precise, yes, for total population and voting  
19 age population but not citizen voting age population.

10:53:32 20 **Q.** Have you ever seen in your work as an expert folks who  
21 are using CVAP data at the block level?

22 **A.** Definitely.

23 **Q.** So is it right to say that just because the CVAP data  
24 does not come from the census off the shelf at the block

10:53:48 25 level, you can derive CVAP data to the block level?

1 **A.** Yes. That's a common practice.

2 **Q.** Likewise, partisan data are not available off the  
3 shelf at the block level. True?

4 **A.** You mean from the census?

10:54:03

5 **Q.** Anywhere. Or if you are aware.

6 **A.** Well, you can get partisan data from many sources.

7 The census doesn't provide it essentially at all. The  
8 TLC -- the Texas Legislative Council, I think that's what  
9 it stands for. TLC does provide partisan data from past

10:54:22

10 elections or provides election results disaggregated to  
11 the block only.

12 **Q.** So if another expert in this case had represented to  
13 the Court that there simply is not partisan data at the  
14 block level, you would disagree with that. Fair?

10:54:38

15 **A.** I would have a slightly more complicated response.  
16 There are various sources from which you can get it at the  
17 block level. The TLC process, as I described in this  
18 report, from what I understand of their description,  
19 doesn't do anything to disaggregate below the precinct

10:54:59

20 level in a way that distinguishes between blocks. I take  
21 their description to be that they proportionally allocated  
22 below the precinct level.

23 **Q.** So if a map drawer wanted to draw a district using  
24 partisan data at the block level, is that possible based  
25 on data available in the world?

10:55:19

1 **A.** In the world, certainly.

2 **Q.** You begin your analysis here by saying [as read:] As  
3 far as I'm aware, the State has not disclosed the use of  
4 any partisan data below the precinct level, while race  
10:55:41 5 data is available at the block level. Therefore, the high  
6 number of precinct splits seen in Table 2 is more  
7 indicative of a focus on race than partisanship.

8 Did I read that correctly?

9 **A.** Essentially, yes.

10:55:56 10 **Q.** Disclosed where, when you talk about the State  
11 disclosing or not?

12 **A.** Well, what I mean is the material provided to me  
13 included nothing with partisan data below the precinct  
14 level.

10:56:07 15 **Q.** If I understood what we just talked about correctly,  
16 then what I think I heard you say is that in the world  
17 there are available both partisan data at the block level  
18 and racial data at the block level.

19 Am I right so far?

10:56:21 20 **A.** Well, to be clear by what we mean by "the world,"  
21 often you can buy a commercial dataset that imputes  
22 partisanship to the household. So that would be an  
23 example.

24 **Q.** Well, I guess my point is that you could buy partisan  
10:56:37 25 data at the block level or, if you knew what you were

1 doing, you could derive partisan data to the block level.

2 True?

3 **A.** Well, not from either the census or the TLC.

4 **Q.** You put a limitation on your answer that was not in my  
5 question.

10:56:50

6 If you know what you are doing, based on publicly  
7 available data, not just from those two sources, though,  
8 you can derive partisan data down to the block level,  
9 right?

10:57:00

10 **A.** I don't know of a publicly available dataset to do  
11 that with.

12 **Q.** You couldn't start with publicly available partisan  
13 data at the precinct level and derive that down to the  
14 block level if you knew what you were doing?

10:57:12

15 **A.** Oh, no, you can't. And I can explain.

16 **Q.** You say you cannot?

17 **A.** Cannot. No.

18 **Q.** So if someone were to testify that they had done  
19 precisely that, you would disagree with them?

10:57:22

20 **A.** Unless they told me the ancillary data source that  
21 they used.

22 **Q.** Why would that matter? I thought you said it could  
23 not be done.

24 **A.** From that alone, from that source alone, no, it can't  
25 be done from that source alone.

10:57:31

1 Q. From which source?

2 A. From a precinct-level dataset alone, you cannot  
3 meaningfully disaggregate below the precinct level.

10:57:42

4 Q. Ah. You would need more data in order to do that,  
5 right?

6 A. That's what I meant by ancillary.

10:57:54

7 Q. Okay. So when we were talking to Dr. Barreto about  
8 his map drawing robot and what data he put in there and  
9 he's talking about having to merge multiple kinds of data  
10 into a shapefile to feed to his robot, does that all sound  
11 familiar?

12 A. No. I'm not familiar with the testimony.

10:58:04

13 Q. Well, but in terms of using a map drawing robot, are  
14 you familiar with the idea of merging multiple kinds of  
15 data into a shapefile?

16 A. Definitely data merging is something I'm aware of,  
17 yes.

10:58:16

18 Q. And so is it possible to merge multiple kinds of data  
19 in order to get -- go from precinct-level partisan data  
20 down to block-level partisan data?

21 A. Again, it would only be as good as the ancillary  
22 source.

23 Q. So the answer to my question is, yes, you can do that?

24 A. If you give me a good data source, sure.

10:58:35

25 MR. KERCHER: Richard, let's please go to page 7

1 and the second full paragraph.

2 BY MR. KERCHER:

3 **Q.** Here I read you to acknowledge that there is at least  
4 one way to allocate precinct-level partisan data to the  
10:58:51 5 block level. Is that fair?

6 **A.** No. I think that is exactly the opposite of what I  
7 was trying to say here.

8 **Q.** Help me understand.

9 **A.** Well, sure. So what I'm saying here is that the plain  
10:58:59 10 reading of the description in the TLC publication is that  
11 they simply prorate it, and that means they are not  
12 getting any sub-precinct-level information out of the  
13 process.

14 **Q.** That's what -- so you are talking here just about the  
10:59:11 15 TLC data, right?

16 **A.** That's correct.

17 **Q.** So if we expand the world into other kinds of data,  
18 this observation may not apply. True?

19 **A.** That's absolutely true.

10:59:32 20 MR. KERCHER: Let's go to Footnote 3, Richard.  
21 No. Footnote 3, the next one. Jumping around the  
22 outline. Apologies. It says Footnote 5. No. No. This  
23 is good.

24 BY MR. KERCHER:

10:59:54 25 **Q.** Dr. Duchin, Footnote 5 on page 7 of your September

1 report, you write [as read:] Beyond this interpretation  
2 of the TLC allocation process, this analysis assumes that  
3 the line drawers used TLC electoral data and not ancillary  
4 sources like voter registration, commercial voter files,  
5 and so on.

11:00:09

6 Right?

7 **A.** Right.

8 **Q.** That's what you were just saying about needing  
9 information about ancillary data sources, right?

11:00:16

10 **A.** Exactly.

11 **Q.** And what I understand your report to say is that you  
12 just don't know whether the map drawer used ancillary data  
13 sources other than TLC data, right?

14 **A.** That's right. I wasn't provided with any information  
15 about that.

11:00:27

16 **Q.** And because you don't know either way whether the map  
17 drawer used those ancillary data, you don't know whether  
18 or not the map drawer used partisan data allocated at the  
19 block level?

11:00:40

20 **A.** Right. I wasn't given a description of the source for  
21 partisan data.

22 **Q.** And next you move on to what you call your effective  
23 minority representation analysis, right?

24 MR. KERCHER: You've lost the page there. I

11:00:58

25 promise you it's true.

1 Richard, will you please bring up --

2 JUDGE GUADERRAMA: Mr. Kercher, before you go  
3 into that next topic, how about we recess for the morning?

4 MR. KERCHER: Perfect timing. Yes, Your Honor.

11:01:10

5 COURT SECURITY OFFICER: All rise.

6 JUDGE GUADERRAMA: Let's break until 11:15.

7 MR. VELEZ: This court stands in recess.

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

9 JUDGE GUADERRAMA: Be seated, please.

11:16:36

10 Dr. Duchin is on the witness stand.

11 Mr. Kercher, whenever you are ready, sir.

12 MR. KERCHER: Thank you, Your Honor.

13 BY MR. KERCHER:

11:16:44

14 **Q.** Dr. Duchin, we have been talking about the effective  
15 minority representation analysis that you had done in your  
16 September 2025 report. But before we talk about it in the  
17 September report, I want to talk to you about your August  
18 report where you perform a similar analysis.

11:16:57

19 MR. KERCHER: Richard, could we please go to  
20 NAACP Exhibit 186, page 8.

21 BY MR. KERCHER:

22 **Q.** Your effective minority representation analysis looks  
23 at minorities' ability to elect the candidate of their  
24 choice, right?

11:17:15

25 **A.** Right. To nominate and elect, as I think I say here.

1 Q. I'm sorry?

2 A. To nominate and elect.

3 Q. To nominate and elect. You are ahead of me. You  
4 anticipated my question.

11:17:26

5 For you, trying to figure out a minority's ability or,  
6 to use your term, people of color's ability to elect  
7 candidates of their choice, it's a two-step process. They  
8 need to be able to nominate in the primary and then elect  
9 in the general; is that right?

11:17:40

10 A. Yes.

11 Q. When we're talking here about persons of color, people  
12 of color, which is to say sort of in a parlance, before  
13 Texas was a plurality racial and ethnicity state, what we  
14 would have called minorities, right?

11:17:59

15 A. Right. Specifically here it means the complement of  
16 non-Hispanic White.

17 Q. And when you are looking at the ability of persons of  
18 color, non-Hispanic White, do they complement non-Hispanic  
19 White in their ability to elect candidates of their

11:18:18

20 choice, you are not disaggregating as among the subsets,  
21 the Hispanic voters, the African American voters, the  
22 Asian American and Pacific Island voters, right?

23 A. In this report, that's right.

24 Q. You go on to say that there is no ambiguity regarding  
25 the partisanship of the districts that you analyzed.

11:18:31

1 Is that a fair statement?

2 **A.** It is.

3 **Q.** A little further down in this paragraph you say that,  
4 depending on how many primaries of the eight that you  
5 examined in the August report won by minority preferred  
6 candidates, there is some ambiguity; is that right?

11:18:43

7 **A.** I don't actually have a copy of this report. Do you  
8 happen to have one?

9 **Q.** Sorry. I do not have a printed copy of your August  
10 report. Do you -- would you like for me to show you the  
11 top page of the exhibit that you are seeing?

11:19:00

12 **A.** Well, it's not that. I'll just try to go by what is  
13 on the screen.

14 **Q.** Fair enough.

11:19:10

15 **A.** I'm sorry. Could you repeat the question?

16 **Q.** Sure.

17 So when you are talking about the partisanship of the  
18 districts that you analyze, you said there is no question  
19 these are partisan districts. They are all won by  
20 Republicans or they are all won by Democrats, right?

11:19:24

21 **A.** Correct.

22 **Q.** But when it comes to looking at the primaries and  
23 whether persons of color are able to elect candidates of  
24 their choice in the primaries, there is some -- there is  
25 some irregularity, right? In some cases you have got

11:19:37

1 eight -- they can do so in eight out of eight, and  
2 sometimes they can do it in four out of eight elections,  
3 right?

11:19:49

4 **A.** Sure. And if you would like me to explain any  
5 particular passage, I'm happy to if you would pull it up.

6 **Q.** Sure.

7 For you, winning eight out of the eight elections that  
8 you are analyzing in this report is a clear opportunity to  
9 elect candidates of choice, right?

11:20:01

10 **A.** It's suggestive of clear opportunity.

11 **Q.** If we are down at four out of eight, that's, in your  
12 view, more consistent with the ability of White voters to  
13 elect their candidate of choice; is that right?

11:20:19

14 **A.** Well, the screen is not entirely easy to read; but  
15 what I see here is when only four of the eight do, that  
16 correlates well with control by White Democrats.

17 JUDGE SMITH: Are we able to focus that report  
18 any better? It's unfair to the witness if she can't quite  
19 see.

11:20:37

20 MR. KERCHER: It is the second paragraph under  
21 Section 4.

22 THE WITNESS: Thank you.

23 BY MR. KERCHER:

11:20:50

24 **Q.** The penultimate sentence says [as read:] When only  
25 four of eight do, that correlates well with control by

1 White Democrats. The intermediate cases of five or six  
2 wins out of eight are less certain.

3 Right?

4 **A.** Right.

11:20:59

5 **Q.** We are on the same page now.

6 **A.** Literally.

7 **Q.** Yeah. And by all means, if you can't see something  
8 that you need to see, let me know.

9 **A.** Sure.

11:21:06

10 **Q.** To be clear, the eight elections that you are  
11 analyzing in your August report are all statewide  
12 elections. True?

13 **A.** That's true.

11:21:22

14 **Q.** And for purposes of looking at congressional  
15 districts, that means that you are looking only at  
16 exogenous elections, not endogenous elections.

17 Do I have that right?

18 **A.** Right. That's what's called exogenous.

11:21:36

19 **Q.** Let's look at the chart you provided in your August  
20 report on page 9, Table 3.

21 MR. KERCHER: Richard -- thank you. You read my  
22 mind, Richard.

23 BY MR. KERCHER:

24 **Q.** Dr. Duchin, can you see that okay?

11:21:46

25 **A.** Yes.

1 Q. So you have got several cells highlighted on Table 3,  
2 right?

3 A. Yes.

11:21:58

4 Q. You have not highlighted, though, all of the POC  
5 preferred Democrat elections in the 2193 column, right?

6 A. That would be POC preferred Democrat districts.  
7 Right. I have only highlighted the ones where I found a  
8 status change.

11:22:17

9 Q. All right. So of the districts that you looked  
10 at -- well, let me ask.

11 Do the districts reflected on Table 3 reflect all of  
12 the districts that you analyzed for this hearing?

11:22:33

13 A. I believe that there was a small update to which  
14 districts are in the clusters in between the August report  
15 and the September report, as I described earlier.

11:22:53

16 Q. And if we look at the POC preferred Democrat district  
17 that is under the 2193 map, the districts where people of  
18 color are able to elect their preferred Democrat, their  
19 Democrat of choice, there are seven such districts under  
20 the previous map, under the 2193 map, right?

21 A. Let's count. One, two, three, four, five, six, seven.  
22 I see seven that I gave that label.

11:23:11

23 Q. And of those seven districts where you say people of  
24 color are able to elect the Democrat of their choice,  
25 three change position, true?

1 **A.** Well, just because I want to be careful. That's not  
2 how I quite phrased it. I said it's likely that people of  
3 color could nominate and elect the candidate of their  
4 choice. Just to be careful.

11:23:24

5 **Q.** Right. And so let me go back and see if I can ask a  
6 more precise and careful question.

7 According to your analysis of the 2193 map, there were  
8 seven districts where people of color were likely to be  
9 able to nominate and elect their preferred Democrat of  
10 choice?

11:23:38

11 **A.** Their preferred candidate of choice. Yes, I agree.

12 **Q.** Candidate of choice.

13 So where you have POC preferred D, "D" is for  
14 district?

11:23:47

15 **A.** Well, excuse me. "D" here is for Democrat.

16 **Q.** Okay. If we look at District 37, which is the last  
17 district on Table 3, we can see that rather than labeling  
18 it in the same way that you have labeled other Democrat  
19 districts or POC preferred districts -- Democrats, you

11:24:11

20 just have Democrat and Democrat, both for the 2193 map and  
21 the 2333 map, right?

22 **A.** Right.

23 **Q.** And we can see that under the 2021 map minorities were  
24 likely able to elect their candidate of choice in five out

11:24:29

25 of eight primaries, right?

1 **A.** No. That's not a matter of likelihood. That's a  
2 precise count.

11:24:45

3 **Q.** Okay. So according to your analysis, in your August  
4 report, in District 37 under the 2021 map, Democrats were  
5 able to elect their preferred candidate five out of eight  
6 times; is that right?

11:24:59

7 **A.** So these eight elections are a combination of the  
8 primaries and runoffs. And the standard is whether the  
9 candidate of choice would have advanced from the primary  
10 or won the runoff.

11 **Q.** And so when you don't say whether it's a White  
12 Democrat or a POC preferred Democrat when you say  
13 candidate of choice, whose candidate are you talking  
14 about?

11:25:09

15 **A.** I'm talking about the preferred candidate of minority  
16 voters as established through an ecological inference  
17 analysis.

11:25:20

18 **Q.** Okay. So when you say five out of eight here in  
19 District 37 on Table 3 in your August report, you are  
20 saying that the -- that the minority -- or that people of  
21 color are able to win five out of the eight primaries that  
22 you analyzed, right?

23 **A.** In five out of eight contests, their preferred  
24 candidate would have advanced.

11:25:36

25 **Q.** And we see that under the 2023 map that improves to

1 six out of eight. True?

2 **A.** True.

3 **Q.** Another point that you make, and we touched on this,  
4 but now that we have got the numbers in front of us, you  
11:25:55 5 talked about how the partisanship of these districts is  
6 clear. And by that you mean that the Democrats are either  
7 winning in this case eight out of eight elections or they  
8 are winning zero out of eight elections, right?

9 **A.** That's right.

10 **Q.** So let's go back to your September report then, your  
11 updated report, which I understand is self-contained.

12 MR. KERCHER: Richard, could you please bring up  
13 NAACP Exhibit 208 and take us to page 9; and if you could  
14 enlarge Table 3 for us.

15 BY MR. KERCHER:

16 **Q.** So, Dr. Duchin, here in your September report you are  
17 not just looking at eight elections. You are looking at  
18 14, right?

19 **A.** That's right. I have added six more recent elections.

11:26:43 20 **Q.** The clarity of the partisanship of these districts  
21 remains intact. True?

22 **A.** Oh, yes. That's true.

23 **Q.** Democrats are either winning 14 out of 14 or they are  
24 winning zero out of 14, right?

11:26:53 25 **A.** Right.

1 Q. And, again, in your September report there are seven  
2 districts where people of color are able to elect their  
3 preferred Democrat, right? Or are likely to elect their  
4 preferred Democrat, right?

11:27:14

5 A. I apologize for the convoluted phrasing. But are  
6 likely able to nominate and elect a candidate of choice,  
7 right.

11:27:32

8 Q. So if we can -- if we can pare that down. You have  
9 identified seven districts under the '21 map where people  
10 of color are likely able to get the candidate they want  
11 through the nominating and general election process and  
12 into office, right?

13 A. I believe you, but I'll just count.

14 Q. Please.

11:27:40

15 A. One, two, three, four, five, six, seven. Yes. I  
16 agree.

17 Q. But you count only three such districts that change  
18 between the 2021 map and the 2025 map. Fair?

11:27:58

19 A. Right. Three of those seven change status. That's  
20 correct.

21 Q. And if we go down now to District 37 in your September  
22 report, you are comfortable now identifying these as  
23 districts where White voters are likely able to nominate  
24 and elect the Democrat of their choice, right?

11:28:17

25 A. Where I designate these districts, now I'm more

1 comfortable with additional contests as saying that it's  
2 more likely that White voters will prevail in the primary  
3 when their preferences are in conflict with voters of  
4 color.

11:28:33

5 **Q.** And if we look, though, at the number of elections  
6 where people of color are able to or likely -- are able to  
7 nominate their candidate of choice under the 2021 map,  
8 it's six of 14, right?

9 **A.** Right. In six of 14 the candidate advances.

11:28:50

10 **Q.** And under the 2023 map, people of color's ability to  
11 nominate the candidate of their choice in District 37  
12 improved to seven of 14. True?

13 **A.** You said 2023, but I think you meant 2025.

14 **Q.** I may have said 2333 or I may have convoluted the  
15 whole thing. Let me ask it again.

11:29:08

16 **A.** Sure.

17 **Q.** Under the 2025 map, the ability of people of color to  
18 nominate their candidate of choice improves from six out  
19 of 14 contests to seven out of 14 contests?

11:29:22

20 **A.** Right. The indicator improves. That's right.

21 **Q.** Following on our description --

22 MR. KERCHER: Richard, if we could see the whole  
23 table again.

24 BY MR. KERCHER:

11:30:02

25 **Q.** -- of these districts as being clearly partisan,

1 that's true both under the 2021 map and the 2025 map,  
2 right?

3 **A.** Right.

11:30:16

4 **Q.** And even where districts flip from Democrat to  
5 Republican, they flip from Democrats winning 14 out of 14  
6 races all the way over to the other end of the spectrum to  
7 Republicans winning 14 out of 14 races, right?

8 **A.** That's correct.

11:30:35

9 **Q.** Can we infer from that that the 2025 map is a more  
10 partisan Republican map than the 2021 map?

11 **A.** That's right. There is a net increase in districts  
12 expected to vote Republican. Definitely.

13 MR. KERCHER: Richard, could we please go to  
14 page 22 of Dr. Duchin's September report.

11:30:54

15 BY MR. KERCHER:

16 **Q.** Now, Dr. Duchin, as we discussed at trial for this  
17 hearing, you have booted up your map drawing robot to draw  
18 some more maps for us, right?

19 **A.** They are new maps, correct.

11:31:06

20 **Q.** And in this section of your report, starting at  
21 page 22 of NAACP Exhibit 208, you talk about how you did  
22 that, some of the parameters that you gave the algorithm  
23 to weight how it would prefer -- how it's going to draw  
24 those maps.

11:31:24

25 Did I say that correctly?

1 **A.** I'm comfortable with that.

2 **Q.** And as we discussed at trial earlier this year, the  
3 parameters that you give to the robot, the choices that  
4 you made, which is I think how you described it on direct,  
5 will affect the outcome, will affect the kinds of maps  
6 that the algorithm of the robot draws, right?

11:31:38

7 **A.** Yes.

8 **Q.** You can have the robot prefer more compact or less  
9 compact maps, right?

11:31:54

10 **A.** That is a parameter you could choose.

11 **Q.** And not to oversimplify it, but you can sort of run a  
12 module of code that says, okay, Hal, I want for you to  
13 prefer compactness to this degree; is that right?

14 **A.** Yeah. You could create such a script.

11:32:14

15 **Q.** One of the parameters that you are programming into  
16 the robot for this map drawing exercise is core retention,  
17 right?

18 **A.** That's right.

19 **Q.** And you are doing that with a surcharge or -- which is  
20 how you are weighting it. You are asking -- you are sort  
21 of asking the robot to prefer maps with a certain degree  
22 of core retention.

11:32:32

23 I can see by the look on your face you don't love the  
24 way I've put that.

11:32:42

25 **A.** Would you like me to --

1 Q. Hit me.

2 A. Okay. Great.

3 So the way this works is, as I mentioned earlier, when  
4 you fuse two districts and you split them in a new way,  
11:32:52 5 you do that with something called a spanning tree. What I  
6 call here a surcharge impacts which tree is chosen. And  
7 so, yes, that has a downstream impact on which districts  
8 are chosen, but it's not like a weighted coin telling you  
9 to prefer certain things over others. It is used in the  
11:33:09 10 tree generation process.

11 Q. The way that you are weighting core retention does not  
12 differentiate between the core retention of Republican  
13 districts, Republican-held districts, and Democrat-held  
14 districts. Is that fair?

11:33:24 15 A. Right. How core -- should I tell you how it's  
16 defined?

17 Q. Well, let's answer my question first.

18 The way that you are talking to your robot about core  
19 retention doesn't say, I care more about core retention of  
11:33:38 20 Republican-held seats than Democrat-held seats, right?

21 A. Right. The measurement doesn't differentiate.

22 Q. We'll talk about some of the other measurements that  
23 you used in drawing these maps, but it does stand to  
24 reason, right, that a Republican partisan who is drawing a  
11:33:53 25 map might well prefer core retention of Republican-held

1 seats to Democrat-held seats?

2 **A.** My understanding is that the traditional districting  
3 principle doesn't look at that; but as we've seen, the  
4 principles do change over time.

11:34:08 5 **Q.** Now, on page 23 you talk -- you describe what you  
6 called your winnowing conditions, right?

7 **A.** That's right.

8 **Q.** That's an elegant phrase, Dr. Duchin. Is that an  
9 original to you?

11:34:19 10 **A.** The word "winnow"? No.

11 **Q.** I'm not asking you if you generated the word; but  
12 winnowing conditions, is that your term?

13 **A.** To apply a winnow to an ensemble is not original to  
14 me.

11:34:30 15 **Q.** It comes from the idea of separating the wheat from  
16 the chaff, right?

17 **A.** That's exactly right.

18 **Q.** So you have got some additional parameters that are  
19 designed to filter out or to make less likely that certain  
20 of the maps drawn are going to be unhelpful to your  
21 project; is that right?

11:34:41

22 **A.** The filtering doesn't make it less likely. It's just  
23 yes/no.

24 **Q.** It's just cutting those out altogether; is that right?

11:34:52

25 **A.** That's right.

1 Q. And so your project here, the purpose for which you  
2 are drawing these maps, is to draw partisan maps so you  
3 can compare the racial features of this sort of baseline  
4 of partisan maps to the enacted maps; is that right?

11:35:08

5 A. Right. I think the way I described it before is the  
6 parameters attempts to achieve partisanship and the winnow  
7 confirms that partisanship is at least as strong as the  
8 map I'm comparing to.

11:35:24

9 Q. One of the winnowing conditions that you set concerns  
10 incumbency, right?

11 A. That's right.

12 Q. And you write [as read:] Incumbency, the double  
13 bunking of incumbents with respect to the address file  
14 provided by counsel, is no greater than in C2333.

11:35:37

15 Is that right?

16 A. Yes.

17 Q. And so, again, with the incumbency parameter that you  
18 are using in this report, you are not concerned about the  
19 partisan nature of the double bunking or the pairing of  
20 incumbents, right?

11:35:55

21 A. Right. What I did -- so this report just looked at  
22 the number of double bunks.

23 Q. Stands to reason that a Republican partisan map drawer  
24 would care more about not pairing Republican incumbents  
25 than pairing Democrat incumbents. Fair?

11:36:08

1 **A.** That goes further than I'm comfortable saying. I  
2 don't --

3 **Q.** In either event, for this report, you did not tell the  
4 map drawing robot or -- to winnow out maps that paired  
5 Republicans, true?

11:36:27

6 **A.** Right. For this report I just filtered on the basis  
7 of a count of double bunks.

8 **Q.** You describe the way that you are using -- the way  
9 that you are analyzing for incumbency is that you are  
10 relying on an address file provided by counsel for this  
11 report, right?

11:36:54

12 **A.** That's what it says, yes.

13 **Q.** In the weeks leading up to this hearing, I asked for  
14 you to produce the data -- to produce data in support of  
15 your reports; and you provided a ton of it, right?

11:37:06

16 **A.** Yes. Quite a lot.

17 **Q.** 300 gigabytes, something like that, right?

18 **A.** I -- that's a lot. I believe you.

19 **Q.** And that data you provided in support of your map  
20 drawing project included the code that you used, right?

11:37:23

21 **A.** Definitely.

22 **Q.** The inputs that you would have then -- the input data  
23 that you would have then run through the code; is that  
24 right?

11:37:34

25 **A.** Yes.

1 Q. And then also the outputs or the literal maps; is that  
2 right?

3 A. Yes.

11:37:43

4 Q. So I can see what your code was supposed to do, what  
5 you ran through the code, and what resulted from you  
6 running through the code. Is that -- or what resulted  
7 from running that data through your code, right?

8 A. That's right.

11:37:57

9 Q. Is it your standard practice to produce all of your  
10 inputs, all of your code, and all of your outputs?

11 A. My standard practice varies a little by context,  
12 depending on whether it's academic publication or court.

13 Q. I'm sorry. In litigation?

14 A. I try to do that, yes.

11:38:19

15 MR. KERCHER: Richard, let's look at Defendants'  
16 Exhibit 1573, please. If we could zoom in a little bit on  
17 that. Even I can't see that. Maybe just give us the top  
18 left quadrant.

19 BY MR. KERCHER:

11:38:40

20 Q. All right. Dr. Duchin, this is the incumbent file you  
21 used for your August and September reports, true?

22 A. That looks possible.

23 Q. And I'll represent to you that I have redacted out the  
24 actual addresses of the members of congress for obvious

11:38:56

25 reasons, right?

1 **A.** Probably wise.

2 **Q.** This address file only contains 36 Texas congressional  
3 members, right?

4 **A.** That's right.

11:39:06 5 **Q.** Because it is from 2020, right?

6 **A.** Possibly 2021, but certainly it contains 36. I agree  
7 with that.

8 **Q.** That means that for the incumbency analysis that your  
9 robot ran in your August and September reports, you were  
10 relying on incumbent addresses that were out of date.

11 Fair?

12 **A.** Well, as you know, I was then provided with updated  
13 addresses.

14 **Q.** I want you to listen carefully to my question because  
11:39:35 15 I am asking you about your August and September reports,  
16 right?

17 **A.** Yes.

18 **Q.** Because those are the only reports that I have data  
19 for that I didn't get last night, right?

11:39:45 20 **A.** That sounds right.

21 **Q.** So for your August and September reports --

22 **A.** Yes.

23 **Q.** -- when you were asking your robot to draw 100,000  
24 maps at a time, it was relying on incumbency information  
11:39:58 25 that was out of date?

1 **A.** That's right. The reports use this information which  
2 contains incumbents from 2020 or 2021.

3 **Q.** And, in fact, ten of the incumbents listed on  
4 Exhibit 1573 are not in congress as of 2024 or 2025, true?

11:40:17 5 **A.** I'm willing to believe that.

6 **Q.** Dr. Duchin, I have not yet had an opportunity to  
7 analyze the additional analysis to which you just referred  
8 concerning an updated congressional address file. So I'm  
9 not going to ask you about those conclusions.

11:40:56 10 **A.** Okay.

11 **Q.** But I am going to ask you why you used an updated  
12 address file for your maps. Was that because you thought  
13 that that would give you a better analysis?

14 **A.** What is the question? Is the question about what was  
11:41:14 15 done in the report or is the question about what was done  
16 since the report?

17 **Q.** My question is about -- it's not about either one. My  
18 question is: Did you change? Did you do initial analysis  
19 because you realized your -- did you change from your  
11:41:31 20 initial analysis because you realized you had not relied  
21 on the correct data for your initial analysis?

22 **A.** Well, I have been aware for some time that these  
23 incumbent addresses are out of date and have been  
24 requesting updated incumbent addresses for months.

11:41:46 25 **Q.** From whom?

1 **A.** From counsel.

2 So just to be sure I answered your question --

3 **Q.** You did.

4 **A.** Okay.

11:42:05

5 MR. KERCHER: All right. Richard, could we  
6 please go back to NAACP Exhibit 208. And we were on  
7 page 23, the winnowing conditions. We can put down the  
8 incumbency.

9 BY MR. KERCHER:

11:42:27

10 **Q.** You are also, Dr. Duchin -- and you are looking at  
11 partisan -- at the partisanship of your maps in a couple  
12 of ways. The winnowing condition is not the only place  
13 where you looked at partisanship.

14 You also did a robustness check, right?

11:42:41

15 **A.** I set parameters for partisanship, and I filtered for  
16 it. That's right.

17 **Q.** Right. So I want to talk to you about the parameters,  
18 and then I'll talk to you about the robustness check.

19 Okay?

11:42:52

20 **A.** Sure.

21 **Q.** Part of the way that you set your partisan parameters  
22 was by looking at historical election results.

23 Do I have that correct so far?

24 **A.** Yes.

11:43:02

25 **Q.** And for each cluster -- and you looked at sort of

1 three different areas in Texas. The maps your robot drew  
2 were supposed to have as many Republican wins as the  
3 enacted map has in the same elections; is that right?

11:43:19

4 **A.** Right now are we talking about the winnow or the  
5 parameters?

6 **Q.** Fair question. You tell me.

7 **A.** Okay. Let's do both.

8 **Q.** Okay.

11:43:28

9 **A.** Well, first, the parameters. What they do is when a  
10 new district is generated, they measure whether its  
11 partisanship by one of these metrics is improved from a  
12 Republican point of view. And if it's improved, it's more  
13 likely that that map will be accepted into the sample.  
14 That's the parameters.

11:43:45

15 What the winnowing or filtering does is then confirm  
16 that I'm only considering in the complete checklist  
17 sub-sample things that do indeed have as many wins as  
18 C2333.

11:44:03

19 **Q.** All right. You also look at President Trump's  
20 performance to help ensure that you are drawing  
21 sufficiently partisan maps; is that right?

22 **A.** Well, I use it as a different kind of partisan -- a  
23 different measurement of partisanship, that's right.

11:44:17

24 **Q.** Okay. And finally, as part of your robustness check,  
25 you look to see what happens if your maps matched the

1 enacted maps' number of districts where President Trump  
2 won 55 -- at least 55 percent of the vote in the 2024  
3 election.

4 Do I have that right?

11:44:29

5 **A.** That's right. In that case, the parameter is set to  
6 drive up the number of Trump 55 districts, correct.

7 **Q.** Let's go through each of those, the parameters, the  
8 winnowing, and the robustness check.

9 **A.** Sure.

11:44:45

10 **Q.** When you instruct the robot to look at how many  
11 elections Republicans have won in a given district, you  
12 are not in that instance looking at the margin of victory  
13 in the election, true?

11:44:57

14 **A.** That's right. For the set of 29, I'm not looking at  
15 margins, correct.

16 **Q.** And so -- and that portion of the parameters that you  
17 are drawing, if a Republican candidate wins a statewide  
18 election at 60 percent but wins a particular district at  
19 51 percent, we would say that that candidate has  
20 underperformed in that 51 percent district, right?

11:45:12

21 **A.** I wouldn't say that.

22 **Q.** Let me ask you this: If a Republican candidate wins  
23 on average in a state at 60 percent but wins a particular  
24 district at 51 percent, then the Republican candidate has  
25 underperformed in the 51 percent district, right?

11:45:28

1 **A.** Well, I still wouldn't say that. I think 51 percent  
2 is a win. And gerrymandering works by driving up wins.  
3 But I may not understand the question.

11:45:44

4 **Q.** Well, if the average vote share for a candidate is  
5 60 percent and there is a district in which that candidate  
6 gets nine points less, nine points fewer than that  
7 60 percent average, then that district has only voted for  
8 that -- has voted for that candidate nine points less than  
9 average, right?

11:46:02

10 **A.** That's right. But I think that's still a win. So my  
11 understanding is the goal isn't to drive up your number of  
12 districts with large wins. It's to drive up your number  
13 of wins.

14 **Q.** Whose goal?

11:46:16

15 **A.** Those seeking office are trying to get the most votes  
16 in a district.

17 **Q.** Regardless of margin? That's your understanding?

11:46:32

18 **A.** Those seeking office, yes, I think would like to get  
19 the most votes in a district. That is my understanding  
20 of, in all seriousness, of what it takes to be elected.

21 **Q.** So you disagree with me when I say -- and apologies if  
22 I'm hammering this. I don't mean to. I just want to make  
23 sure I understand sort of the outlines of our  
24 disagreement.

11:46:45

25 You disagree with me when I say that a 51 percent

1 district, even if it is a win for that Republican  
2 candidate, still leans left compared to that candidate's  
3 statewide vote share?

11:47:00

4 **A.** Right. I think what I'm focusing on is the nature of  
5 gerrymandering is to win by a little, lose by a lot. So  
6 you actually are looking to spread that 60 percent around  
7 efficiently. And a 51 percent win is fairly efficient.

8 **Q.** Your understanding of whose gerrymandering project?

11:47:18

9 **A.** Well, my understanding of the general process of  
10 gerrymandering is to get a number of districts that is  
11 greater than you might otherwise get.

12 **Q.** So it's your understanding that a partisan gerrymander  
13 would never, for example, seek to draw perhaps fewer  
14 Republican districts that are stronger as opposed to  
15 simply maximizing the number of Republican districts; is  
16 that right?

11:47:36

17 **A.** There are many different strategies. And as I have  
18 repeatedly said, I'm really trying to avoid sounding like  
19 I'm engaged in mind reading.

11:47:49

20 **Q.** I'm sorry. I missed that last part.

21 **A.** Trying to avoid like I'm engaged in -- trying to avoid  
22 sounding like I'm engaged in mind reading.

23 Having said that I think that, over the long span, the  
24 goal is to occupy the seats; and so the goal is to win the  
25 districts.

11:48:05

1 Q. According to this report, you were -- the map drawing  
2 project that you undertook for 2025 sought to ensure that  
3 each cluster -- for each cluster it drew the same number  
4 of districts with Trump plurality wins as the enacted map.

11:48:22 5 Do I have that right?

6 A. That is one of the variants, correct.

7 Q. In fairness, Trump did not win Texas by a plurality in  
8 2024, right?

9 A. I believe you.

11:48:31 10 Q. Then in your robustness check, you looked to see  
11 whether your conclusions held true if the robot had to  
12 draw the same number of districts that went for Trump in  
13 2024 at 55 percent, right?

14 A. Correct.

11:48:43 15 Q. So there you are not just looking at pure wins. You  
16 are looking at margin of victory to some degree, right?

17 A. Right.

18 Q. Because that might also matter to the map drawer,  
19 right?

11:48:53 20 A. Right. I can explain if you would like.

21 Q. That was the part I was wondering about.

22 A. Right.

23 Q. So let's talk about the partisan robustness check.

24 A. Sure.

11:49:03 25 Q. The last time we were here we talked about the way

1 that you were drawing maps for the trial and how you  
2 counted a district that Trump won with 50 percent plus one  
3 of the vote as a Trump district.

11:49:18

4 You remember us kind of going back and forth on that,  
5 right?

6 **A.** That sounds right.

11:49:29

7 **Q.** And we talked about the importance of trying to mimic  
8 what the mapmaker is doing. Not by reading a mind, but by  
9 in order to create a sample that is representative of what  
10 the enacted map might look like, right?

11 **A.** I do not try to mimic what the mapmaker is doing. I  
12 try to be careful about not describing it that way.

11:49:46

13 **Q.** And I understand that you are parsing your words  
14 carefully, and I don't want to pick on you for that, but I  
15 do want to make sure that we understand sort of the basic  
16 concept.

11:49:57

17 And I talked about this with Dr. Barreto and so this  
18 will be, unfortunately, repetitive for most of the folks  
19 in the room except you. But if we want to learn about the  
20 rate of skin cancer in women over 60, then we need to have  
21 a sample of women over 60 in order to study them, right?

22 **A.** I would really just want to be careful not to talk  
23 about areas beyond my expertise.

11:50:18

24 **Q.** Right. But as a matter of understanding the  
25 scientific method, if you are hoping to understand -- if

1 you are hoping -- looking at cancer rates in women over  
2 60, you and I can agree that studying women under 60 is  
3 not going to be the sample you are looking for?

11:50:37

4 **A.** It might be more informative. But what I'm more  
5 comfortable talking about is this setting where I describe  
6 the method as one that tries to vary the assumptions and  
7 see if it matters to the findings.

11:50:51

8 **Q.** But if the -- if the baseline districts that you are  
9 not -- that you are drawing are not in some sense similar  
10 to the enacted map, then the baseline is irrelevant,  
11 right?

12 That's why you are looking at things like incumbency,  
13 partisan character, core retention, right?

11:51:03

14 **A.** Well, I'm looking at those because those are  
15 traditional districting principles. But as I think we  
16 discussed last time, there are many other kinds of  
17 personal principles that can creep into the process.

11:51:18

18 I think I brought up the idea that you might want your  
19 grandma's house in the district. I don't think that a map  
20 drawer using the ensemble method has to geolocate your  
21 grandmother in order to decide whether your map behaves as  
22 though it was created by the stated principles of  
23 redistricting.

11:51:32

24 **Q.** So help me understand. Are you trying to draw 100,000  
25 maps that look like they conform to stated principles of

1 redistricting that you have read generally? Or are you  
2 trying to draw 100,000 maps that in some way resemble the  
3 character of the enacted map?

11:51:47

4 **A.** I'm trying to layer in hypotheses that I have heard  
5 for some of the legitimate factors that might have  
6 driven -- some of the legitimate or arguably legitimate  
7 factors that might have driven map creation.

8 **Q.** I'm not sure that answers my question.

11:52:01

9 My question is whether you are trying to draw 100,000  
10 maps that simply look like maps in Texas that would abide  
11 by these general principles or that look like maps -- or  
12 are you trying to draw 100,000 maps that look in some way  
13 like the enacted map?

11:52:18

14 **A.** Well, I'm just not aware of the principles used to  
15 create the enacted map. So I can't simulate those. What  
16 I can do is take principles that I have heard articulated  
17 as reasonable principles that might be in play, and I have  
18 tried to test how those principles interact.

11:52:35

19 **Q.** So it doesn't matter for you if, for example, the  
20 partisan character that you have given to the maps your  
21 robot is drawing are in no way similar to the partisan  
22 characteristics of the enacted map?

11:52:49

23 **A.** Well, it's always possible that the partisanship  
24 measurement used by the mapmaker was something I can't  
25 contemplate. So that's why I have tried so many different

1 styles of measuring partisanship to try to account for  
2 reasonable variation and see if those decisions matter.  
3 And for all the different variants that I tested, the  
4 findings are very similar.

11:53:04

5 **Q.** Well, but you did not draw 100,000 maps that were  
6 Obama 55 percent. You are trying to draw a Republican  
7 leaning map, right?

8 **A.** That's right.

11:53:17

9 **Q.** And you are trying to draw a Republican leaning map  
10 because the Texas map is Republican leaning, right?

11 **A.** Because that's my understanding of the stated intent  
12 of the mapmaker. That's right.

11:53:29

13 **Q.** And so when you are drawing the 100,000 maps, you are  
14 trying to draw 100,000 maps that conform to your  
15 understanding of the intent of the map, right?

16 **A.** I'm trying to test different operationalizations of  
17 what I understand about the stated intent.

18 MR. KERCHER: Objection. Nonresponsive.

11:53:42

19 THE WITNESS: Oh, I'm sorry. Please tell me  
20 again what you would like to know.

21 JUDGE GUADERRAMA: I'll sustain the objection  
22 because I guess he is asking for a shorter answer.

23 THE WITNESS: Sure.

24 BY MR. KERCHER:

11:53:53

25 **Q.** When you are putting the parameters in your robot to

1 draw maps, you are putting those in there because you want  
2 for the maps the robot draws to match your understanding  
3 of the stated intent of the map, right?

4 **A.** I am testing versions of that. That's right.

11:54:12

5 **Q.** And in order to test those versions, it doesn't help  
6 if the maps that your robot is drawing look nothing like  
7 the enacted map, right?

8 **A.** Can you rephrase that question?

11:54:27

9 **Q.** Let's say that instead of looking at clusters you were  
10 doing a statewide version. Okay?

11 **A.** Sure.

12 **Q.** And it would -- if you drew a statewide version of the  
13 Texas 2025 map that had 40 districts instead of 38, that  
14 would not be a useful measure for the Court to discern the  
15 intent behind the enacted map, right?

11:54:43

16 **A.** I agree with that.

17 **Q.** Let's say again you were drawing a Texas statewide  
18 map, and you instructed the robot to draw 38 districts  
19 that -- 30 of which voted for Harris by 55 percent. That  
20 would not draw a baseline that is useful for the Court to  
21 measure the intent of the Texas 2025 enacted map, right?

11:55:02

22 **A.** I think that would be clearly less useful.

23 **Q.** So the similarities between the maps you draw and the  
24 enacted map matter for the precision of your analysis?

11:55:19

25 **A.** The similarities between my parameters and the stated

1 intent are important. I agree with that.

2 **Q.** Some of the partisan criteria that you fed your robot  
3 this time was asking it to draw six of eight districts in  
4 the Dallas area to at least 55 percent Trump; is that  
5 right?

11:55:50

6 **A.** Is there a place where I write that? Because I don't  
7 know about the specific numbers that you are citing.

8 **Q.** And I'm not picking on you. Fair to say you don't  
9 remember, Dr. Duchin?

11:56:06

10 **A.** Can you rephrase the question?

11 **Q.** Sure.

12 One of the partisan -- some of the partisan criteria  
13 that you fed the map drawing robot this time, when you  
14 were looking particularly at the Dallas cluster --

11:56:17

15 **A.** Yes.

16 **Q.** -- was that you wanted for the maps to draw six of  
17 those eight districts to at least 55 percent Donald Trump  
18 vote in 2024?

19 **A.** If six out of eight is what you represent is the  
20 figure in C2333, then yes.

11:56:31

21 **Q.** Where did that 55 percent number come from?

22 **A.** 55 percent is a 10 percent buffer. It's a sort of  
23 nice round number to buffer the number away from  
24 50 percent. You are asking why I do that?

11:56:50

25 **Q.** Let me ask a follow-up to that information.

1 Is the 55 percent number a number that you chose or a  
2 number that you were asked to use by counsel?

3 **A.** Oh, no. Counsel did not specify.

11:57:03

4 **Q.** And did that 55 percent number come from any testimony  
5 that you had reviewed in the trial of this matter earlier  
6 this year?

11:57:15

7 **A.** It's entirely possible that, along the course of the  
8 many years I have been working on this, I have heard that  
9 figure. It's also entirely possible that I would have  
10 come up with that myself as a round number. I truly am  
11 not sure in this case which produced that decision.

12 **Q.** Okay. So I think I understand your answer, but I want  
13 to see if I have got it.

14 **A.** Sure.

11:57:25

15 **Q.** You cannot tell the Court precisely where you came up  
16 with the 55 percent number?

17 **A.** Why 55? Right. It could be from discussions where I  
18 heard that that might have been a goal or it could be a  
19 natural thing to try in that direction.

11:57:43

20 **Q.** Dr. Duchin, are you familiar with the concept of a  
21 Partisan Voting Index or PVI?

22 **A.** Like Cook PVI?

23 **Q.** Again, one step ahead of me, Dr. Duchin, at least one  
24 step ahead of me.

11:57:56

25 Charlie Cook uses it? Dave Wasserman uses it, right?

1 **A.** Correct.

2 **Q.** And on a PVI, when somebody says that there is an R  
3 plus 2 district, it doesn't necessarily mean the  
4 Republican presidential candidate won the district. It  
5 just means that the district was two points to the right  
6 of the national average, right?

11:58:10

7 **A.** Specifically the national average of the last two  
8 presidential contests, I believe.

9 **Q.** And that's a useful metric sometimes because in a year  
10 like 2008, when President Obama won big, an R plus two  
11 district might be one that President Obama won by three  
12 points potentially, right?

11:58:23

13 **A.** The question was why it might be useful. I don't use  
14 it personally, but I'm aware that a lot of others do.

11:58:41

15 **Q.** Do you agree that that's an accurate description of  
16 how an R plus 2 district performs under the PVI?

17 **A.** Yes. I agree an R plus 2 district may still be won by  
18 Obama, for example.

19 **Q.** And part of what that PVI does is help us understand  
20 what will -- what might happen, what to expect when, after  
21 a big year like President Obama in 2008, the vote will  
22 revert towards the mean, right?

11:59:00

23 **A.** I can't speak to that because I don't use it in my  
24 work.

11:59:13

25 **Q.** And I think you said that you were using that

1 55 percent number because it was a nice clean 10-point  
2 margin, right?

3 **A.** That's a possible explanation of the thought process.

4 **Q.** And that -- when you say a 10-point margin, that means  
11:59:39 5 because if Trump -- if President Trump wins at 55 percent,  
6 he wins 55 to 45, the difference is 10, right?

7 **A.** That's right. Because I look at the major party vote  
8 share. So you are right.

9 **Q.** And I'm glad you mentioned major party vote share.  
11:59:56 10 We're sort of filtering out independent candidates,  
11 Libertarians, that sort of thing. We're really just  
12 looking at Republicans and Democrats in this context,  
13 right?

14 **A.** That's right. The fraction that you use to get the  
12:00:07 15 Republican share in this report is the Republican vote  
16 over Republican plus Democrat.

17 **Q.** Let's walk through the map and look at some of the  
18 districts in your envelope. Okay?

19 **A.** Yes.

12:00:16 20 **Q.** Let's start with the Travis and Bexar County envelope.

21 MR. KERCHER: Richard, could we please go to  
22 Defendants' Exhibit 984.

23 BY MR. KERCHER:

24 **Q.** And we'll zoom in on this in just a moment,  
12:00:34 25 Dr. Duchin, but you generally recognize this as one of the

1 red reports produced by the TLC, right?

2 **A.** I believe you, but I did not rely on these.

3 **Q.** You can see that this red report from TLC provides  
4 partisanship data, provides the performance of the  
5 candidates in the 2024 presidential general election.

12:00:52

6 Do you see that?

7 **A.** That's what it says, yes.

8 **Q.** If we look at District 10, which is one of the  
9 districts you analyzed in the Bexar and Travis County  
10 area, right, we can see that President Trump won  
11 60.5 percent to Harris at 37.9, right?

12:01:06

12 **A.** Right. As we just described, I think my values would  
13 be a little different because I would exclude Stein.

14 **Q.** We agree, though, that according to this data this  
15 would be a more than 16-point win for President Trump.  
16 True?

12:01:29

17 **A.** Let me just quickly look at the numbers.

18 Right. It looks like 1.5 percent of the vote was for  
19 other candidates. So it probably doesn't change the major  
20 party percentages by that much.

12:01:45

21 **Q.** It's way more than 10 percent. True?

22 **A.** This is more than 10 percent.

23 **Q.** Let's look at District 11. Again, with the same  
24 caveats, we understand that this is not just looking at  
25 the major parties, but it does show that President Trump

12:01:54

1 won 66.5 percent to Ms. Harris -- to Vice President Harris  
2 at 32.2 percent in District 11, right?

3 **A.** That's right.

4 **Q.** Again, more than 16 points?

12:02:06

5 **A.** Yes. Since I have never seen this before, can you  
6 remind me? This is describing what map? Is this C2333?

7 MR. KERCHER: Richard, will you take us to the  
8 top, please.

9 THE WITNESS: Great. I'll do my best to answer.

12:02:22

10 BY MR. KERCHER:

11 **Q.** Do you see that it says C2333?

12 **A.** I do, yes.

13 **Q.** Going down to District 11, which is another of the  
14 districts in the Travis/Bexar area you looked at, you can  
15 see District 17. Excuse me.

12:02:31

16 You can see here it's President Trump 60 to  
17 38.4 percent. That's, again, more than 16 points, right?

18 **A.** Yes. The percentage will drop a little below 60, but  
19 it's still outside that 10-point margin we talked about  
20 before.

12:02:50

21 **Q.** Let's go to District 21. All right.

22 Again, it's outside that 10-point margin, right?

23 **A.** That's right.

24 **Q.** District 27. Again, outside of that 10-point margin,  
25 right?

12:03:03

1 **A.** Yes.

2 **Q.** District 31. Where it's again more than 16 points and  
3 more than that 10-point margin, right?

4 **A.** Yes. That's right.

12:03:13

5 **Q.** And District 35. This is a little bit different. You  
6 can see in District 35 President Trump won 54.6 percent to  
7 Vice President Harris at 44.2 percent, right?

8 **A.** Correct.

12:03:28

9 **Q.** That's a 10-percent margin like the one you used,  
10 right?

11 **A.** Well, not full strength. So that wouldn't have been  
12 counted as a Trump 55 district.

12:03:41

13 **Q.** And so that's one district of the Travis/Bexar that is  
14 at the 55 percent threshold that you set for your maps,  
15 true?

16 **A.** I believe you that these are the Travis/Bexar  
17 districts, and so that is one of the ones we reviewed.

18 **Q.** And that district does not have a Republican  
19 incumbent, true?

12:03:53

20 **A.** 35, I believe that's true.

21 MR. KERCHER: Richard, let's please go to  
22 Exhibit -- Defendants' Exhibit 978 at page 3.

23 BY MR. KERCHER:

12:04:07

24 **Q.** Okay. Dr. Duchin, so you can see -- and if you can't,  
25 let me know -- but we are looking at Plan C2333; and this

1 is the election analysis under the 2022 presidential  
2 election.

3 Do you see that?

4 **A.** It says 2020, yes.

12:04:19 5 **Q.** 2020. You got me. Thank you. Not much sleep last  
6 night, Dr. Duchin.

7 Let's look again at the districts that you analyzed in  
8 Travis/Bexar County. In District 10 under the older 2020  
9 data, you can see that President Trump won 56.5 to

12:04:38 10 41.7 percent, right?

11 **A.** Right.

12 **Q.** If we go to District 11 --

13 **A.** To answer the same question as before, that one might  
14 slip below 55 after you restrict to the major candidates,  
15 I can't do that in my head. Actually, I guess the margin  
16 will go up. Anyway, I don't want to do arithmetic on the  
17 stand.

12:04:54

18 **Q.** That's fair. Me neither.

19 Dr. Duchin, if I represent to you that the districts  
20 in the Travis/Bexar envelope that you analyzed under this  
21 2020 presidential election data provided by TLC are all in  
22 excess -- or are all more than 16 percent for President  
23 Trump except for District 35, would you believe me?

12:05:12

24 **A.** Oh, I would have every reason to believe you.

12:05:31 25 **Q.** Okay. Dr. Duchin, let's talk about the box plots that

1 you provided.

2 **A.** Sure.

3 MR. KERCHER: Richard, could we please go to  
4 NAACP Exhibit 208, page 14. We are now on page 21 of that  
5 one. Just go back to that.

12:06:13

6 All right. If you could pull out Figure 8, Richard.

7 BY MR. KERCHER:

8 **Q.** Dr. Duchin, this is one of your box plots, right?

9 **A.** Yes.

12:06:36

10 **Q.** And the idea of the box plot is that we can see the  
11 sort of range of the racial character of the maps drawn by  
12 your robot and compare that to the racial character of the  
13 enacted districts.

14 Do I have that right?

12:06:52

15 **A.** Yes. We're looking at the minority CVAP by district  
16 as a share. And, yes, as you say, the box plot shows the  
17 range in the sample.

18 **Q.** You could -- if you wanted to, you could do a box  
19 plot. You could produce a box plot to show us whether the  
20 partisanship constraints that you put on your map drawing  
21 robot, how similar those were to the partisan character of  
22 the enacted districts, right?

12:07:16

23 **A.** In other words, I think you are saying instead of  
24 plotting minority CVAP, I could plot, say, Trump share?

12:07:36

25 Is that the question?

1 Q. Trump performance or something like that, yes.

2 A. Yes. Many different plots are possible, yes.

3 Q. And then in addition to putting a box plot that showed  
4 the partisan character by some metric of the maps your  
5 robot drew, you could compare that to where the enacted  
6 maps fall in that range set by your robot, right?

12:07:48

7 A. In other words, you are asking -- well, actually, I  
8 shouldn't guess. Can you rephrase the question?

9 Q. I'll try.

12:08:04

10 A. Thanks.

11 Q. In the box plots you've provided, you are looking at  
12 the racial character of the maps that you drew compared to  
13 the racial character of the enacted map, right?

14 A. That's correct.

12:08:15

15 Q. It would be possible for you to produce a box plot  
16 that compares the partisan character of the maps you drew  
17 with the partisan character of the enacted map, right?

18 A. Right.

12:08:27

19 Q. That would help us figure out whether your robot is  
20 drawing maps of the same partisan character as those that  
21 were enacted, right?

22 A. That could be done, and I did do checks like that.

23 Q. Okay. And understanding that you may have done  
24 checks, and we have gone back and forth a few times about  
25 what you did behind the scenes that I can't look at, we

12:08:44

1 don't have a box plot from you that demonstrates that the  
2 maps your robot drew -- comparing the partisan character  
3 of the maps your robot drew to the partisan character of  
4 the enacted maps. True?

12:09:01 5 **A.** Whether you have that plot, I'm not sure, and the  
6 backup materials; but you certainly have the means to  
7 create it.

8 **Q.** Somebody else would have to do that, right?

9 **A.** Right. Say an expert for the State.

12:09:15 10 JUDGE SMITH: A question I was going to ask  
11 anyway, so while you are on the box plots. How do we know  
12 which district each of these plots represents? It doesn't  
13 have district numbers that I can see.

14 THE WITNESS: That's right. It doesn't have  
12:09:26 15 district numbers. And the reason for that is that the  
16 districts are ordered from lowest to highest share. If  
17 you could number the blue dots, then I could tell you  
18 which districts those are; but the ones that it's being  
19 compared to aren't necessarily in the same part of the  
12:09:42 20 cluster. They are just ones with a partisan composition  
21 in the same range.

22 So I cannot label the boxes, and that's why I didn't  
23 put district labels on them. It's a holistic look at the  
24 interactions across the cluster.

12:10:11 25 MR. KERCHER: Richard, let's please go to

1 page 15, Figure 10 in Dr. Duchin's September report. This  
2 is NAACP 208 still.

3 MR. RIENSTRA: Did you say 208, page 50?

4 MR. KERCHER: 15. Figure 10.

12:10:33

5 And you may want to pull it out -- I notice that  
6 Dr. Duchin likes to make sure she knows which figure she  
7 is looking at -- so we can see this box plot along with  
8 the title.

9 BY MR. KERCHER:

12:10:42

10 **Q.** All right. Dr. Duchin, we're looking at Figure 10,  
11 cluster 3, right?

12 **A.** Yes. I agree.

13 **Q.** This is the box plot for the Travis and Bexar County  
14 region you analyzed, right?

12:10:52

15 **A.** It is.

16 **Q.** And part of what we talked about with regard to the  
17 box plots that you provided concerning the Dallas and  
18 Harris County areas is that in each of those box plots  
19 there were districts where you had, according to your  
20 analysis, the enacted district falling outside of the  
21 expected range produced by your map drawing robot, right?

12:11:05

22 **A.** Outside of the observed range, right.

23 **Q.** And your conclusion from that is when you have an  
24 enacted district that falls outside of that observed

12:11:22

25 range, that may be evidence that the map drawer was

1 using -- was acting with racial intent or with the intent  
2 to discriminate; is that right?

3 **A.** Right. I think precisely what I say is that race was  
4 used.

12:11:38 5 **Q.** In the cluster that you observed or that you have  
6 analyzed in Travis and Bexar Counties, none of the enacted  
7 districts fall outside of the observed range of the maps  
8 drawn by your robot, right?

9 **A.** By which I think you mean the whiskers, right?

12:11:56 10 **Q.** Yes.

11 **A.** Yes. The whiskers are the 1st to 99th percentile.  
12 And as I testified on direct --

13 **Q.** Well, hold on. We're going to go one question at a  
14 time.

12:12:03 15 **A.** Sure.

16 **Q.** You point out that there are both box and whiskers;  
17 and the whiskers give us a fuller range, 1 to 99 percent,  
18 right?

19 **A.** Yes.

12:12:16 20 **Q.** So what we can see by where the enacted dot is in  
21 comparison either to the box or to the whiskers helps us  
22 understand, in some sense, the likelihood that a -- the  
23 enacted district would be drawn with a particular racial  
24 character if drawn blind to race, right?

12:12:33 25 **A.** I don't describe it as likely here, but I do describe

1 it as an outlier. And in this case, we don't have any  
2 outliers past the 1 percent threshold. I think that's  
3 what you are asking.

12:12:48

4 **Q.** Which means that according to the maps that your robot  
5 drew, there is some chance -- even if you feel that it's  
6 small, there is some chance these districts, as enacted  
7 under map 2333, could be drawn blind to race. Fair?

8 **A.** Yes. I think that's about the 5th percent is what I  
9 say.

12:13:04

10 **Q.** Forgive me. But the way that you talk about Figure 10  
11 compared to the box plots that you provide us for Dallas  
12 and Harris County feels like moving the goalposts.

12:13:21

13 Because I thought that I understood the analysis to be,  
14 aha, I have got enacted districts that are outside of the  
15 observed range. Those are outliers. And so that's  
16 evidence of the use of race.

12:13:37

17 But then when we get to Figure 10 you have no enacted  
18 districts falling outside your observed range, and you are  
19 still saying that there is evidence of the use of race in  
20 drawing the map.

21 **A.** Right. And I think this is actually quantified in the  
22 report on page 24.

23 **Q.** My question is: Aren't you moving the goalpost?

12:13:52

24 **A.** No. I'm measuring the degree of outlierness, if  
25 that's a word, outlyingness, and that the actual numbers

1 are present in the report.

2 **Q.** So what is, according to your analysis, the acceptable  
3 degree of outlierness for an enacted map's racial  
4 characteristics?

12:14:10 5 **A.** I don't take that to be my role as an expert is to  
6 draw the line. I take my role as an expert to be  
7 presenting the evidence.

8 **Q.** The work you do can't give us that answer. Fair?

9 **A.** Absolutely.

12:14:23 10 **Q.** Dr. Duchin, in this case you have been hired by the  
11 NAACP, right?

12 **A.** Right.

13 **Q.** Did you know that the Senate Redistricting Committee  
14 specifically invited the NAACP to come to the Texas  
15 Legislature and provide testimony in the 2025  
16 redistricting process?

12:14:35 17 **A.** I'm sorry. I just want to correct my previous answer  
18 to be technically accurate. NAACP is the client, but I  
19 was hired by counsel.

12:14:48 20 **Q.** Fair.

21 **A.** Just want to be clear.

22 **Q.** Hired by counsel representing NAACP?

23 **A.** Yes. Precisely.

24 **Q.** Okay. So let me go back to my next question then.

12:14:56 25 Did you know that the Senate Redistricting Committee

1 invited the NAACP to provide testimony at the legislature  
2 during the 2025 redistricting process?

3 **A.** I did not specifically know that, but it sounds  
4 reasonable.

12:15:06 5 **Q.** Did you know that the NAACP did not send a  
6 representative to that hearing?

7 **A.** I certainly have no knowledge of that.

8 **Q.** Did you know that they supplied written testimony,  
9 though?

12:15:14 10 **A.** No.

11 **Q.** And so is it fair to say, if you did not know that,  
12 that you were unaware of whether or not any of your  
13 analysis made it into that written testimony?

14 **A.** That's right.

12:15:26 15 **Q.** When were you retained for this October hearing?

16 **A.** I believe the -- I was retained in 2021 or so and that  
17 that's been continuous to now. There wasn't a new  
18 retention, as far as I know.

12:15:45 19 **Q.** When were you first contacted by counsel, without  
20 revealing those discussions, about working on the 2025  
21 map?

22 **A.** It must have been right around the time that the new  
23 maps were being produced. I'm sorry I can't be more  
24 specific. I just simply don't remember.

12:15:58 25 **Q.** I'm not asking you for a date. Let me ask you this:

1 Were you contacted while the maps were being considered in  
2 the legislature or after they passed?

3 **A.** Do you know when they were passed?

4 **Q.** If you don't know, that's fine.

12:16:09 5 **A.** Okay. I don't know.

6 **Q.** As a part of your analysis, though, that you have done  
7 for the 2025 maps, you produced at least 100,000 maps from  
8 your robot, right?

9 **A.** Oh, millions.

12:16:21 10 **Q.** Millions.

11 And part of the reason, Dr. Duchin, that you do the  
12 work that you do and you fly all the way out to El Paso,  
13 not once but twice in a single calendar year, is because  
14 voting rights matter to you, right?

12:16:36 15 **A.** I'm here to provide my expertise.

16 **Q.** Well, I know.

17 But voting rights are important to you, fair?

18 **A.** I think voting rights are important. I do think that.

12:16:48 19 **Q.** And I think, like the rest of us, you hope to be able  
20 to eliminate racial discrimination in voting rights.

21 That's fair?

22 **A.** Are we talking about my personal views or my expert  
23 view?

12:16:57 24 **Q.** Well, let's talk about motivations for doing the work  
25 that you do.

1 **A.** Okay.

2 **Q.** Fair? You want to get rid of racial discrimination in  
3 voting?

12:17:04

4 **A.** I think -- yeah. I think racial discrimination would  
5 be bad.

6 **Q.** Same.

7 Now you know that the Texas Legislature is controlled  
8 in both chambers by the Republicans, right?

9 **A.** Yes. I do.

12:17:14

10 **Q.** So if Texas Republicans want five more Republican  
11 congressional districts, it stands to reason they could  
12 likely get the votes to pass a bill that does that, true?

13 **A.** That seems reasonable.

12:17:32

14 **Q.** Why not then, if the fundamental concern is  
15 eliminating discrimination in voting rights, file a map  
16 with the Texas Legislature that meets their partisan goals  
17 but also resolves your concerns about the use of race in  
18 drawing the map? You could do that?

12:17:51

19 **A.** So you are asking as a private citizen why did I not  
20 file a map?

21 **Q.** Sure. Sure. Why not use your expertise that way?

22 **A.** I have helped draw maps in several other states. That  
23 is something that I think is very important.

12:18:03

24 **Q.** Sure. But in this state, as a private citizen, I  
25 mean, it was all over the news, right? Texas is

1 redistricting and Gavin Newsom was mad at us.

2 You saw that, right?

3 **A.** Yes. I saw a lot of news.

4 **Q.** There was this sort of sense of Texas is going to pass  
12:18:15 5 a five -- Republican plus five map. Why not just submit a  
6 map to DistrictViewer that helps Republicans meet their  
7 partisan goals and resolves the racial concerns?

8 **A.** In other words, why not contribute to the goal of  
9 partisan gerrymandering? I wouldn't call that my  
12:18:34 10 motivating influence.

11 **Q.** Okay. That's a genuinely helpful answer.

12 Do I understand you to be saying that you would not  
13 hazard a partisan outcome to resolve concerns about racial  
14 discrimination?

12:18:51 15 **A.** No. I don't think I'm saying that.

16 Can you rephrase the question?

17 **Q.** That's the question I wanted an answer to.

18 **A.** That doesn't sound like what I was communicating.

19 **Q.** When we spoke in trial I understood your position to  
12:19:08 20 be, at least in part, that if the 2021 map was really a  
21 partisan gerrymander, it left an awful lot of partisanship  
22 on the table?

23 **A.** Right. I think there is even a quote to that effect  
24 in the report, that partisan opportunity was left on the  
12:19:28 25 table. In other words, that it wasn't as extreme of

1 partisan gerrymandering as possible.

2 **Q.** And in your view, that was at least some evidence that  
3 race was used in drawing the 2021 map?

12:19:44

4 **A.** No. I would say that led me to try to draw a set of  
5 comparators that were as partisan as that map. And, in  
6 this analysis, I have refreshed my creation of comparators  
7 to find things that are as partisan as the new map.

8 **Q.** We agree, though, don't we, that the 2025 map leaves  
9 less partisanship on the table?

12:20:01

10 **A.** Absolutely. I think my statement was well borne out.

11 MR. KERCHER: Pass the witness.

12 JUDGE GUADERRAMA: Mr. Weiner.

13 **REDIRECT EXAMINATION**

14 BY MR. WEINER:

12:20:24

15 **Q.** I have just a few questions, Dr. Duchin.

16 Turning to your report, which is Exhibit 208, and  
17 pages 22 and 23.

18 Now, we talked before about the difference between  
19 district generation parameters and winnowing conditions.

12:20:55

20 Could you remind us what the difference is?

21 **A.** Yes. What I'm calling district generation parameters  
22 are the factors taken into account as the random agent  
23 collects a sample of maps.

12:21:10

24 And what I call winnowing conditions are the filters  
25 that are applied to that sample to create a smaller subset

1 that meet more conditions.

2 **Q.** And looking at page 23, is incumbency a district  
3 generation parameter or a winnowing condition?

4 **A.** It's a winnow.

12:21:35

5 MR. WEINER: Now, Chad, could you put on Brooks  
6 Exhibit 309 starting at line -- at 849, line 12.

7 (Video played.)

12:22:19

8 REPRESENTATIVE GERVIN-HAWKINS: You know, one of  
9 the things that I kept hearing from Austin as our  
10 congressional people were testifying, they were saying  
11 they were -- where they lived, they were zoned to have  
12 them out of their districts.

13 CHAIRMAN HUNTER: And I was shocked. How many of  
14 them live in their district?

12:22:36

15 REPRESENTATIVE GERVIN-HAWKINS: They said all of  
16 them --

17 CHAIRMAN HUNTER: Do you know that in Congress  
18 you don't have to live in your district? Did you know you  
19 could run in a district and not even live in the state?

12:22:42

20 That's the first time I have heard a congressman worrying  
21 about where they lived.

22 REPRESENTATIVE GERVIN-HAWKINS: I know --

23 CHAIRMAN HUNTER: In fact, we probably should  
24 take a poll, I agree with you, and find out who really

12:22:50

25 lives in their congressional districts.

1 REPRESENTATIVE GERVIN-HAWKINS: And can we put  
2 them back?

3 CHAIRMAN HUNTER: I don't know.

12:22:57

4 REPRESENTATIVE GERVIN-HAWKINS: We can't put them  
5 back? Let's see.

6 CHAIRMAN HUNTER: I have no idea whether you can  
7 put them back.

8 (Video concluded.)

9 BY MR. WEINER:

12:23:11

10 **Q.** So does this tell you anything about the legislature's  
11 consideration of incumbency?

12 **A.** Well, from what I understand, this is a legislative  
13 hearing perhaps?

14 **Q.** Yes. And that was Chairman Hunter.

12:23:22

15 **A.** Okay. Very good.

16 And so I see that incumbent addresses are being  
17 discussed, as is the question of whether there is a  
18 residency requirement.

19 **Q.** Thank you. Going back to your Exhibit 208, page 23.

12:23:38

20 Sorry to jump around.

21 At the bottom of the page we talk about robustness  
22 checks, right?

23 **A.** Correct.

24 **Q.** And you executed a run seeking to match the number of

12:23:58

25 districts with Trump's 2024 major party vote share over

1 55 percent, right?

2 **A.** Right.

3 **Q.** Does that mean that 55 percent was a minimum?

4 **A.** That's what that is.

12:24:09

5 **Q.** And so the districts that achieved more than  
6 55 percent would be accounted for in that run?

7 **A.** That's right. That would include districts that  
8 achieve 60 percent or more. It's just an inequality.

9 MR. WEINER: I have no further questions.

12:24:29

10 JUDGE GUADERRAMA: Mr. Kercher.

11 MR. KERCHER: Nothing further, Your Honor. The  
12 witness may be excused.

13 JUDGE GUADERRAMA: Mr. Weiner?

14 MR. WEINER: Dr. Duchin may be excused.

12:24:39

15 JUDGE GUADERRAMA: Dr. Duchin, thanks so much for  
16 coming. You are excused and free to go, ma'am.

17 Do you want to play the video?

18 MR. DUNN: Yes, sir. Connecting now, Your Honor.

19 We are resuming Volume III with 59 minutes and

12:25:02

20 24 seconds remaining.

21 (Video played.)

22 **RICHARD MURRAY,**

23 having been previously duly sworn, testified via

24 deposition, as follows:

25

**EXAMINATION**

1 BY MR. BRYANT:

12:25:17

2 **A.** I read a number of times and heard on broadcast that  
3 the president was asking the Texas Legislature and  
4 Governor Abbott to provide five additional congressional  
5 districts to the 25 that are currently held by Republican  
6 members.

7 BY MR. BRYANT:

12:25:34

8 **Q.** And so you understood that what his call was, was to  
9 adopt districts that would provide additional Republican  
10 members of the House of Representatives?

11 **A.** Yes. I think one of his public comments was I deserve  
12 five more seats.

13 **Q.** And do you have any reason to believe that he was not  
14 sincere in expressing that view?

12:25:52

15 **A.** I think he was sincere.

16 **Q.** And you have no reason to believe that he was  
17 misdirecting people and really had some different  
18 motivation?

19 MR. BLEDSOE: Objection. Calls for speculation.

12:26:09

20 THE WITNESS: I have no opinion on that.

21 BY MR. BRYANT:

12:26:33

22 **Q.** Okay. Let's get back briefly to our discussion about  
23 Representative Crockett. I think we agreed that she had  
24 the option moving forward to continue to reside in what is  
25 now the 33rd District and run in the 33rd District.

1           Would you agree that is an option that Representative  
2 Crockett has?

3 **A.** I would.

12:26:46

4 **Q.** And you -- I believe you've testified clearly that you  
5 believe that if she chooses to run for re-election in the  
6 33rd District, that you believe she has roughly between a  
7 50 percent and 70 percent chance of being re-elected in  
8 that district?

12:27:05

9 **A.** That's the kind of top of the head probability I would  
10 give her, yes.

11 **Q.** Okay. And we also discussed the option that she has  
12 of residing where she resides, but running for re-election  
13 in the 30th Congressional District.

14           Do you recall that?

12:27:22

15 **A.** I do.

16 **Q.** And do you have a percentage estimate as to how likely  
17 she would be to be re-elected in the 30th Congressional  
18 District if she proceeds on that alternative?

12:27:45

19 **A.** She's been elected twice, as I recall it now, or once.  
20 Yes. Once. So the -- you know, not pulling a  
21 top-of-the-head number, I would say somewhere north of  
22 80 percent if she ran in the realigned 30th District.

12:28:12

23 **Q.** And if Representative Crockett chooses to move her  
24 residence into the realigned 30th Congressional District,  
25 what percentage chance of re-election would you give her

1 in 2026 if she chooses to run there?

2 **A.** I don't think it would substantially change the odds.  
3 Voters in congressional elections really don't care that  
4 much about someone's residence unless there is something a  
5 little fishy, like you just moved in.

12:28:34

6 But if you're -- if -- if politicians make changes in  
7 the district, voters tend to -- if it's someone that is  
8 already an incumbent -- cut them a good deal of slack,  
9 seeing that they had nothing to do with the realignment.

12:28:54

10 **Q.** So is it fair to say that if Representative Crockett  
11 chooses to run for re-election in 2026, she is likely to  
12 get re-elected?

13 **A.** She would have a good chance, for sure. Likely.

14 Well, you know, again, more competitive would be the 33rd  
15 District that she has been relocated to. But she would  
16 still be a strong favorite if she chooses to file again in  
17 the 30th District.

12:29:19

18 **Q.** As a matter of fact, 80 percent is a very high  
19 percentage chance of getting re-elected, isn't it?

12:29:37

20 **A.** Yes.

21 **Q.** And even if she chooses to run in the 33rd, it would  
22 be more than 50 percent, right?

23 **A.** That's my guess. Best guess, yes.

24 **Q.** Okay. So let's talk about Representative Green. If

12:29:55

25 he chooses to run for re-election in 2026 in the 18th

1 District, do you have any view as to whether or not he  
2 would be likely to get re-elected?

3 MR. BLEDSOE: Object to form. Calls for  
4 speculation.

12:30:13

5 THE WITNESS: He would be a very strong  
6 candidate. There is just a lot of contingencies in the  
7 18th District that to my knowledge do not exist in Dallas.  
8 You've had a vacant seat in the 18th District for seven or  
9 eight months. We have a very late-scheduled special

12:30:30

10 election that hasn't been held. Candidates are running  
11 for that. A whole bunch of them. There is probably a  
12 runoff necessary. So there is just a lot of contingencies  
13 that don't, to my knowledge, exist in Dallas, that apply  
14 in the case of Congressman Green and a decision as to

12:30:51

15 whether to re-file and -- or I would assume that -- and I  
16 have not spoken to the congressman, or opined, but I can't  
17 imagine he would file in the -- in the redrawn 9th  
18 District. It includes none of -- virtually none of his  
19 old district. So it seems to me he either files in the

12:31:15

20 18th or he doesn't run for re-election. Those are his  
21 realistic options.

22 BY MR. BRYANT:

23 Q. All right. So if he does choose to run for  
24 re-election in 2026, you would expect him to be filing in  
25 the 18th Congressional District?

12:31:30

1 **A.** If he files, I would expect he would file in the 18th.  
2 Although, again, I have no input on that decision; and I  
3 don't know what his thinking would be. I've read that he  
4 is considering it.

12:31:49 5 **Q.** And if he does choose to file for re-election and runs  
6 in the 18th Congressional District in 2026, would you  
7 agree that he has more than a 50 percent chance of being  
8 re-elected?

9 **A.** I would say so because of the unusual situation with  
10 the late called special. We don't know who's going to  
11 come out of this scrum that's going on currently. But  
12 it's a runoff required. And, of course, everybody's  
13 running together, including at least one Republican. So  
14 nobody can get 50 percent on November 4th, which forces  
12:32:08 15 the special election into 2026, leaving the district  
16 without an incumbent member who -- and forcing whomever  
17 survives in the runoff, to keep campaigning for this  
18 election, not for the redrawn 18th, which is totally  
19 different.

12:32:39 20 So it puts them at a huge disadvantage, which I would  
21 say is intentional. Normally in Texas we schedule special  
22 elections to replace vacant seats caused by death or  
23 resignation much more quickly. But in the 18th,  
24 the -- this is a deliberate slow walk, in my opinion, with  
12:33:01 25 huge consequences for the next cycle because it's coming

1 up very quickly and we don't know who is going to serve  
2 the last 10 months or 12 months as the incumbent  
3 congressman because it's vacant and will stay vacant until  
4 February or January. So it's a very unusual situation and  
5 not by accident.

12:33:22

6 **Q.** Well, my question was about -- simply about whether or  
7 not it was likely that if Representative Green chooses to  
8 run for re-election in the 18th Congressional District, he  
9 has a better 50 -- than 50 percent chance of getting  
10 elected. And my understanding is that you think that's  
11 true; is that right?

12:33:44

12 **A.** I think the special circumstances of no incumbent has  
13 greatly strengthened Congressman Green's position because  
14 he is an incumbent. He is not --

12:34:01

15 **Q.** And he has a lot of name recognition in Harris County,  
16 doesn't he?

17 **A.** Well, he has run ten times.

18 MR. BLEDSOE: So I think you cut him off. I  
19 think he was continuing to answer.

12:34:12

20 MR. BRYANT: Yeah. Please go ahead and finish  
21 your answer if you would like, as long as it's responsive  
22 to my question.

23 COURT REPORTER: I'm not getting your objections  
24 at all. We cannot hear them, sir.

12:34:22

25 THE WITNESS: It's a very unusual situation. It

1 happens to work to the benefit of Congressman Green, if he  
2 chooses the option of running in the 18th District.

3 BY MR. BRYANT:

12:34:47

4 **Q.** Okay. Do you have any information as to what effect,  
5 if any, the letter from the Department of Justice that is  
6 Exhibit 1 had on the decisions of the members of Texas,  
7 the Texas Legislature, in enacting Plan C2333?

12:35:28

8 **A.** I read accounts in the mainstream press, including the  
9 *Texas Tribune*, that this letter was a trigger in providing  
10 a rationale for the governor, who, you know, has the sole  
11 power to convene a special session to consider such  
12 matters as redistricting, that this was a publicly cited  
13 reason to bring the legislature back and for this express  
14 purpose.

12:35:46

15 **Q.** And so you've described what you've read in the *Texas*  
16 *Tribune* or other places about the supposed effect of  
17 Exhibit 1 on the governor's decision to call the special  
18 sessions; is that right?

19 **A.** That's correct.

12:36:06

20 **Q.** Okay. And my question was whether you have any  
21 information about what effect, if any, the July 7th, 2025,  
22 letter that's Exhibit 1 had on the decisions that the  
23 Texas Legislature then made in enacting Plan C2333.

24 **A.** No specific information.

12:36:32

25 **Q.** You made -- you gave some answers during your direct

1 question about how many voters, in your judgment, know the  
2 number of the congressional district that -- in which they  
3 reside. You also mentioned that, you know, many voters  
4 know the incumbent in their district.

12:37:07

5 Do you have -- what is the basis for your knowledge as  
6 to how many voters know the number of the congressional  
7 district in which they reside?

12:37:26

8 **A.** As a political scientist, there has been some research  
9 over the years, and a lot of it is contextual in, you  
10 know, to take the extreme example, seven states only have  
11 one congress member in the House. So, you know, in Alaska  
12 or Wyoming, you would have a high percentage because there  
13 is only one member of the House.

12:37:45

14 As you move to the big states, a lot depends on what  
15 part. If you are talking about El Paso, which has  
16 historically had just about the population to warrant one  
17 congressional district, you would expect and almost  
18 certainly would find a very high percentage of people in  
19 El Paso who know that their congress member, say, ten  
20 years ago was Beto O'Rourke or Ms. Escobar more recently.

12:38:03

21 Move to the big metro areas that are growing fast and  
22 have a lot of new residents and people who move around a  
23 lot, your percentages are going to start to, in my  
24 judgment as a political scientist, drop dramatically.

12:38:23

25 If you ask people -- I did some research with a

1 colleague, Kent Dean, many years ago. If you provide --  
2 if you ask an open-ended question in big urban areas,  
3 maybe 15 or 20 percent can, from the top of their head,  
4 name their congress member. If you give them a list, they  
5 can frequently -- more frequently, maybe 40 or 50 percent  
6 can pick out from a list of four names the one that is  
7 their representative.

12:38:40

8 But it becomes a much more -- much different in big  
9 metros like Dallas and Houston where you have 10 or 12  
10 members and people move around.

12:38:59

11 So the labeling of districts and the changing of the  
12 boundaries are far more consequential in big metro areas  
13 where people don't have, with good reason, any intimate  
14 knowledge of who represents them in Congress. It's more  
15 superficial and transient.

12:39:21

16 So it's big deal in the metro areas when you shift  
17 numbers and redraw the boundaries. It ain't a big deal in  
18 Texarkana or El Paso or the Panhandle where the districts  
19 are much more stable.

12:39:42

20 **Q.** If I understood your answer, your answer -- you  
21 provided information in your answer that if you ask a  
22 person on the street in a big metro county like Dallas or  
23 Harris County who their congressman is, you would expect  
24 maybe 15 or 20 percent would be able to name someone; is  
25 that right?

12:40:11

1 **A.** Yes. In some well-established, stable neighborhoods,  
2 it would be significantly higher. But countywide, yeah,  
3 15, 20 percent would be a pretty good estimate.

12:40:36

4 **Q.** Okay. And if you asked voters at random in a large  
5 county like Harris or Dallas: What number is your  
6 congressional district? Would you expect that -- what  
7 would you expect their percentage of getting the correct  
8 number would be?

9 **A.** 5 or 10 percent, perhaps.

12:40:57

10 **Q.** Okay. I think you testified on direct that you  
11 thought that the changes that Plan C2333 would make in  
12 Harris County between Congressional Districts 9 and 18,  
13 you thought that would cause some confusion.

12:41:43

14 Could you explain why you thought -- if I understood  
15 your testimony correctly -- that the changes between  
16 Congressional Districts 9 and 18 in Plan C2333 would cause  
17 confusion?

12:42:12

18 **A.** Well, 18 was created in 1965 and went into effect in  
19 1966 or 1971, 1972. So it has a more than 50-year history  
20 and some of its representatives have not been just locally  
21 known but having a high name recognition like Barbara  
22 Jordan and Sheila Jackson Lee.

12:42:34

23 So that would be a district that has a relatively high  
24 sense of identity because it's a historic district that  
25 has been represented by relatively high visibility members

1 of congress.

2 So when you move 70 percent of the people that are  
3 currently in the district somewhere else, that's  
4 confusing, in my view, particularly to African American  
12:42:49 5 voters who have historically had a pretty strong  
6 connection to their incumbent member.

7 They don't have one now. But they for 50 years had,  
8 you know, Mickey Leland or Barbara Jordan or Sheila  
9 Jackson Lee. And now it's a vacant. It's a vacuum.

12:43:09 10 There is no member. And that -- and you move between  
11 two-thirds and three-fourths of the voters to a district  
12 that they historically have had no connection to.

13 So, to me, that's confusing.

14 **Q.** Okay. And it's your testimony that 70 percent or more  
12:43:27 15 of the -- the voters who were in Congressional District 18  
16 under the 2021 maps have been moved out to other  
17 districts?

18 **A.** That's my approximation. It's a minority -- a  
19 minority of the population and voters have remained in the  
12:43:48 20 district. The parts that were not moved out are generally  
21 not growing and -- or losing voters in many instances.

22 The parts of 18 that were moved, particularly the northern  
23 suburban areas, were fast growing. So the -- the rump, as  
24 I might call it, of 18 that continues is not growing in  
12:44:16 25 political influence. It's got a lot of the older

1 neighborhoods that are losing population.

2 Q. Okay. Now we spoke a moment ago about President  
3 Trump's expressed desire, at least reported desire to have  
4 more Republicans from Texas in Congress, which is a --  
5 whatever you think of it, that's a -- you could agree  
6 that's a partisan motivation.

12:44:35

7 MR. BLEDSOE: Object. It mischaracterizes the  
8 testimony.

9 (Technical issues with video.)

12:45:19

10 MR. NOTZON: Robert Notzon for the intervenor.

11 That happened during the deposition. That is not what  
12 is happening with the technology here.

13 Do you agree, Mr. Bryant?

14 MR. BRYANT: I don't remember that.

12:45:33

15 MR. NOTZON: I do.

16 JUDGE GUADERRAMA: Mr. Dunn will figure it out.

17 MR. DUNN: It is going to have to reset.

18 MR. NOTZON: I would also say it resolved. It  
19 didn't last too long.

12:46:47

20 (Technical issues with video.)

21 MR. DUNN: It's something connecting to the court  
22 system.

23 MR. RIENSTRA: I think you are ready.

24 MR. DUNN: Shall I return to the podium?

12:48:12

25 JUDGE GUADERRAMA: I guess so, due to technology.

1 We can get them here at 1:00. We'll see if we can figure  
2 it out.

3 Mr. Dunn, we have decided to recess for lunch now. Be  
4 back at 2:00, and we'll have IT come up. Maybe they can  
5 help you get that going again.

12:48:58

6 MR. DUNN: Okay.

7 JUDGE GUADERRAMA: Recess until 2:00.

8 MS. SCHULTZ: This court now stands in recess.

9 (Morning session adjourned at 12:50 p.m.)

10 Date: October 6, 2025

11 **COURT REPORTER'S CERTIFICATE**

12 I, Laura Wells, certify that the foregoing is a  
13 correct transcript from the record of proceedings in the  
14 above-entitled matter.

15 \_\_\_\_\_/s/ Laura Wells\_\_\_\_\_

16 Laura Wells, CRR, RMR

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