IN THE UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
EL PASO DIVISION

LEAGUE OF UNITED LATIN AMERICAN CITIZENS, et al., Plaintiffs,	**3:21-CV-00259-DCG-JES-JVB**
v.	**2:17 p.m. to 6:02 p.m.**
GREG ABBOTT, IN HIS OFFICIAL CAPACITY AS GOVERNOR OF THE STATE OF TEXAS, et al., Defendants.	**OCTOBER 4, 2025**

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

APPEARANCES:

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

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

APPEARANCES: (Continued)

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

FOR PLAINTIFF TEXAS NAACP:
Ms. Lindsey Cohan
Dechert LLP
515 Congress Avenue, Suite 1400
Austin, Texas 78701-3516
(512) 394-3027
lindsey.cohan@dechert.com
and
Mr. Robert Weiner
Mr. Jeremy Lewis
Mr. David Rollins-Boyd
Ms. Jennifer Nwachukwu
The Lawyers Committee for Civil Rights Under Law
1500 K Street NW, Suite 900
Washington, D.C. 20005
(617) 893-1322
rweiner@lawyerscommittee.org
drollins-boyd@lawyerscommittee.org
jlewis@lawyerscommittee.org
jnwachukwu@lawyerscommittee.org
and
Mr. Carroll Rhodes
Law Offices of Carroll Rhodes
P.O. Box 588
Hazlehurst, Michigan 39083
(601) 894-4323

FOR THE BROOKS PLAINTIFFS:
Mr. Chad W. Dunn
Brazil & Dunn
1900 Pearl Street
Austin, Texas 78705-5408
(512) 717-9822
chad@brazilanddunn.com

APPEARANCES: (Continued)

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

FOR THE CONGRESSIONAL INTERVENORS:

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

APPEARANCES: (Continued)

FOR THE STATE DEFENDANTS:

Mr. Ryan Kercher
Mr. William Francis Cole
Mr. William D. Wassdorf
Mr. Steven Loomis
Ms. Ali Thorburn
Mr. Zachary Berg
Mr. M. David Bryant
Office of Texas Attorney General
P.O. Box 12548
MC 009
Austin, Texas 78711
(512) 463-4139
ryan.kercher@oag.texas.gov
william.cole@oag.texas.gov
will.wassdorf@oag.texas.gov
steven.loomis@oag.texas.gov
ali.thorburn@oag.texas.gov
zachary.berg@oag.texas.gov
david.bryant@oag.texas.gov
and
Mr. William Thomas Thompson
Lehotsky Keller Cohn LLP
Special Litigation Unit
408 West 11th Street, Fifth Floor
Austin, Texas 78701
(210) 286-0806
will@lkefirm.com

Also Present:
Mr. Richard Rienstra

Court Reporter:
Leticia Perez, RMR, CRR
525 Magoffin Avenue, Third Floor
El Paso, Texas 79901

Proceedings reported by court reporter. Transcript produced via computer-aided transcription.

PROCEEDINGS

JUDGE GUADERRAMA: Dr. Barreto on the witness stand.

Mr. Kercher?

MATT A. BARRETO, Ph.D.

having been duly sworn by the Court, was examined and testified as follows:

CONTINUED CROSS-EXAMINATION

BY MR. KERCHER:

Q. Dr. Barreto, let's start off this afternoon by talking sort of generally about the project of producing map simulations. Okay?

A. Okay.

Q. You used your software package, your computer, your robot, to establish a baseline estimate -- or estimated district structure for both partisan performance and race. Is that right?

A. I think those were the first two statewide maps we did in the August report.

Q. And we walked through this a little bit with Dr. Duchin in trial, and believe it or not, I don't actually want to belabor the point. But the idea is you want the robot to draw maps that are similar to the Enacted Maps, to evaluate the probability that the Enacted Maps will turn out as racial, if you will -- the probability that the Enacted Map will turn out as racial as they did. Is that about right?

14:18 A. When you're using the constraints, yes. In the step you just asked me about before, the first two maps to be produced were blind to race and blind to partisanship, and they were just randomized draws.
Q. And you talked a little bit on direct examination about -- in some sense, when you're undertaking this project, the randomness that the robot allows you to use is the point. Is that right?
A. The randomness in the algorithm of the computer, yes.
Q. Okay. Mr. Dunn asked you a little bit on direct about this idea of setting a seed, right?
A. Yes, he did.
Q. Now, when you set a seed and when you're using -- when you're undertaking a project like this, setting the seed does not limit the universe of maps that the robot draws, right?
A. You mean on the first iteration?
Q. Well, let's just -- well, let's see if you can answer the question as I asked it.
A. It does limit.
Q. How so?
A. Every iteration that follows the first iteration will produce the same identical set of simulation maps or ensembles. It's no longer random. So if you somehow stumbled upon a seed that was an outlier or accomplished what you wanted, you could then set it, save it, and it would always do that again forever

14:20 1 if someone else used the seed.
2 When you don't set a seed, every single iteration is
3 just a random draw from perfect scratch.
4 Q. And when you say "iteration," can you explain to the Court
5 where in the process you mean? And before you answer, let me
6 see if I can drill down a little bit.
7 So I understand that the software is not drawing all
8 the maps simultaneously, but it's going on a walk and drawing
9 them sort of individually.
10 Do I have that correct so far?
11 A. Yes.
12 Q. And when you say "iteration," you're not saying as the map
13 draws a new CD2 to a new CD3. That's not the iteration you're
14 talking about, right?
15 A. No.
16 Q. Can you tell the Court where in the process you're talking
17 about iterations?
18 A. If another map drawer came along -- if another data
19 scientist came along and said, I would like to draw maps in the
20 State of Texas using these constraints, if they used a seed
21 that had been set, it would automatically produce the same
22 results. It would no longer be random. It wouldn't come up
23 with a scientifically random process. So -- I mean, on new
24 attempts.
25 Q. That's helpful. Because a moment ago -- and I'm not trying

to nitpick your language, we're just -- we're just two guys chatting here. But a moment ago, when I asked you about whether or not setting a seed limits the maps you can draw, you said, Well, it does limit the maps that you can draw.

And what I understand your clarification to be is that, if you set a seed and then, for example, Dr. Trende runs what you've done using that seed, that seed will create the same set of maps in both of those iterations. Yours, using the seed, and Dr. Trende's using the seed, right?

A. It will create the same set of maps if he follows our code. If we had put a set seed, it will create the identical same set; it will not be a new random drawing.

Q. Okay. So let me ask you -- and with that clarification, let me see if I can ask you a better question.

If you, Dr. Barreto, set a seed, and then you run your code, the seed does not limit the randomness with which your robot walks through and draws that first iteration of maps, right?

A. Correct.

Q. Okay. Now, when we talk about using randomness in this map-drawing process, it's not really a new idea, randomness and research, right?

A. No.

Q. I'm gonna attempt this, Dr. Barreto. And I'll tell you my mother taught statistics for over 30 years, and she may be in

the gallery today, so take it easy on me, will you?
A. Okay.
Q. We know that when researchers are trying to learn something about, for example, a group of people, they will want to get a random sample of those people within certain parameters, right?
A. Depends on the research question, but that sounds reasonable.
Q. So, for example, if we want to study rates of skin cancer in women, we will want to get a more or less random sample of women, for starters, right?
A. Yes. And you might want to limit it to just adults or people in certain states. Whatever your constraints are, you would want a random sample of that population.
Q. Right. And so when you're -- you're ahead of me as usual, Dr. Barreto. So you might set more constraints, you might want to study not just skin cancer in women, but skin cancer in women over 60, right?
A. You might.
Q. And you can set further parameters, you know, for example, with a history of smoking, right?
A. You could do that.
Q. But even as we're adding these limiting parameters, we're still looking for randomness within those parameters, right?
A. Correct.
Q. Okay. We're doing something similar with the simulation

14:24 map drawing project. Aren't we?
A. We're doing random draws of millions of possible maps.
Q. All right. So we're going to set some opening parameters. We want -- for example, the robot's got to know the general shape in which it's going to be drawing maps, which in this case is going to be -- oh, Texas, right?
A. Sort of.
Q. Bear with me. Look, I will tell you I actually practiced for this, and as it's going, we -- I'll see you in Colorado.
A. Colorado is easy.
Q. So the map drawing robot's gonna need to know that it's going to be drawing maps within the confines of the geography of Texas, right?
A. Yes.
Q. You're also going to want the map to -- the robot to know that it needs to draw 38 districts, which you emphasized if you're going to do a statewide map, right?
A. Yes.
Q. You're going to need the map drawing robot to know something. Like, the population has got to be more or less equal if you're drawing congressional districts, right?
A. Yes.
Q. Now, there is some limitations on the software. It's going to be really difficult to get precise population equality, but you want to start with giving your robot randomness within

these parameters, right? You're not done with your parameters, but this is a starting point. Fair?
A. I think we used something like that for the baseline maps.
Q. But because you're trying to study, not just all the maps that one could draw -- all the 38 equal population maps that one could draw in Texas, you're trying to draw them, in some sense, in the way that the Texas Legislature drew them.
You're gonna add some more parameters to the way -- to the randomness, right?
A. We're gonna add constraints. There will still be randomness, but yes.
Q. Well -- but, again, there will be randomness within the bounds you have provided the robot, right?
A. Yes.
Q. So, for example, we've heard this term a lot. Another parameter you're gonna give the robot will be something like compactness, right?
A. Yes.
Q. And you could -- you could give it more parameters. You could -- you could want to give it some partisan parameters, right?
A. Yes.
Q. Okay. The more parameters you add, if you're doing it correctly, the closer you will get to the way the map was drawn by the Legislature, right?

14:27 A. That's what you're attempting to do.
Q. I mean, theoretically, the software won't allow this -- and this is not the project, but, theoretically, you could add parameters until you have defined the randomness so precisely that there is but one map left, the Enacted Map, right?
A. I think there's probably still many ways to get there, so I don't think there would only be one map left.
Q. But my point is, you can whittle down to a smaller and smaller group of still-random maps that will more and more closely resemble the Enacted Map, right?
A. Yes.
Q. But it's important, of course, and we talked about this with Dr. Duchin, that you are giving your robot correct information as you're drawing -- as you are putting together the parameters in order for your project to be successful, right?
A. Our objective is to give it as close as we can within the parameters of the software to try to get as close to what the State of Texas did.
Q. That's a little better?
A. Getting better.
Q. So, again, we're gonna start with the shape of Texas, 38 districts, roughly equal population, right?
A. Okay.
Q. And so we're gonna get some -- we're gonna get randomness

within those parameters, right?
A. Yes.
Q. But then, if I tell the robot that I only want for it to draw maps with a very high degree of compactness, that is going to limit how many maps the robot can draw, right?
A. Not exactly.
Q. It is going to make it more likely that the robot is drawing more compact maps than, for example, the Enacted Map, right?
A. That's closer. The -- the software encourages, based on these constraints, but you will still get maps that fall outside of the constraints, even after you implement them, but it -- it nudges or encourages the map drawing in that direction.
Q. It weights the choices of randomness that the robot makes, right?
A. More or less.
Q. So if you overweight one of your parameters, you may make it less likely that the robot will draw maps like the enacted. True?
A. You would have to be dramatically different than a set standard that the State published. To do that -- these are encouragements that the score -- excuse me, the parameters are given. So you still can end up with lots of random maps. For example, I think I explained to Mr. Dunn that we told it to

draw us 30 districts with 55, and it still drew us some districts that weren't 55. So it's an encouragement to try to get it into -- into that direction.

Q. You could not get your software to draw districts as Republican as the Enacted Map. True?

A. I think, on balance, they're the same. But when we put in the hard 55 percent or higher, we couldn't get 30. And that's as I explained before, we had to relax it to 53 in order to achieve some of those 54.5s. But I think on balance, because some might have been slightly more and some might have been slightly less, it was the same.

Q. So you're saying that you feel like you got pretty close to what the Enacted Map was, but you had to tweak some of your parameters. Is that right?

A. We input parameters to match what our understanding of the State was doing.

Q. And so when you could not meet this partisan goal, what you did was change the partisan goal so it looked a little bit different. And then you were able to get maps that you felt, like, were close to what the State was doing, right?

A. We dropped it down to 53. We were able to achieve maps that were in the 54-plus range, very similar to the -- the State, as I showed in one of the figures with Mr. Dunn.

But yes, when we put a hard 55 in, it did not find that you could draw 30 districts. It said you could only

return 29 in a random draw.

MR. KERCHER: Richard, could you please pull up Brooks Exhibit 283 and go to page 4. And go to paragraph 15, please, sir.

Q. (BY MR. KERCHER) Dr. Barreto, this is your September supplemental report. Do you recognize it?

A. Yes, I do.

Q. And you say here (Reading) In our model of 1,951,984 district possibilities, there was no such outcome in which 20 -- excuse me, in which 30 Trump districts at 55 percent or higher emerged using traditional redistricting principles.

Do you see that?

A. Yes.

Q. Now, Dr. Trende was able to demonstrate that you weren't actually drawing 1.9 million distinct districts, right?

A. There were some that were very similar. They were all outputted as district possibilities, but yes, he pointed out that some had low diversity and appeared to be duplicates.

Q. Are you aware of whether or not, according to the guidance provided by various academic sources on the redist source code that low plan diversity is a methodological problem?

A. I have read that -- yes, I'm familiar with that, and I know with -- what it refers to.

Q. Now, your report attributes the robot's failure to draw districts as partisan as the Enacted Map to redist using

traditional redistricting principles of compactness, contiguity, and county/city splits.

Do you remember writing that?

A. That sounds right.

MR. KERCHER: Richard, if we could go to page 2 of this same exhibit -- footnote 2.

Q. (BY MR. KERCHER) You write here --

MR. KERCHER: If you can pull up footnote two. Sorry, I'm ahead of you, Richard.

Q. (BY MR. KERCHER) (Reading) The State map, Plan C2333, created seven districts in this regional cluster that were 59 percent or higher for Trump. When using traditional redistricting principles of compactness, contiguity, and county/city splits, the redist simulation package was only able to draw six districts in this geography in which Trump received 59 percent or higher.

Did I read that correctly?

A. Yes.

Q. And you concluded that Plan C2333, which is the 2025 Enacted Map, sacrificed compactness in a way that redist did not, right?

A. Well, it sacrificed something because we weren't able to achieve the same objectives. And as I -- as the footnote continues on the next page, it explains that we had to lower the standard in Harris County for the Seventh District to

emerge to, I believe, 56 percent.
Q. Well -- but as the robot's master, you can control, you can tweak, how much compactness is weighted when you're drawing the simulated maps, right?
A. Yes. And as we explained in the report, we put a fairly small number in there. I think it might have been 2 or 1.5, depending on the simulations.
MR. KERCHER: Richard, could we please go to Defendants' Exhibit 1522?
Q. (BY MR. KERCHER) Dr. Barreto, we're taking it back to your code as you just referenced.
A. Okay.
MR. KERCHER: Thank you, Richard. And if you could please Control-F for the word "nudge."
Q. (BY MR. KERCHER) All right. Dr. Barreto, we are looking at a portion of your code within a line that says, "Compactness equals 2." And then there's another pound sign, which indicates an annotation, right?
A. Correct.
Q. And the annotation says, "Light nudge toward compactness," right?
A. Yes.
Q. And I think you just testified that you put a relatively light constraint on compactness. You said it was a 2 or a 1.5. And sure enough, here it is a 2, right?

14:36 1 A. Yes.
2 Q. 2 out of how many?
3 A. This item is essentially infinite. It's a weight or a --
4 an encouragement to the program. And so -- I believe the
5 lowest it can be is zero. But it can go up to higher numbers.
6 It depends on how much you're trying to force it to constrain
7 on any of these individual items.
8 Q. And so as we move, for example, from zero to 1 or from 1 to
9 2, how big of a jump is that?
10 A. The compactness score indicator, from my experience, you
11 have to get up to very large numbers before you start seeing
12 the map produce shapes that are like only circles or squares.
13 It will still have a lot of freedom to explore on the
14 chains, on the ensembles, different shapes. So these are just
15 sort of weighted encouragements. And so I'm describing, too,
16 with zero being the starting point as a fairly low nudge on
17 compactness.
18 But you could put in a much higher number if you
19 wanted to force it to only draw circles and squares in those
20 sorts of districts or try to force it. You can't force it. It
21 will still draw something on it.
22 Q. And so you talked about having to get very high numbers
23 before the map is -- the robot is drawing maps that are circles
24 or squares, right?
25 A. Right.

14:38 1 Q. But to be clear, and I know that you're speaking generally,
2 circles and squares are not the outer limit of an acceptable --
3 of an overly compact map in order for this project to be
4 successful, right?
5 A. Probably not. I was just using it as an example of
6 something that might appear more compact than something with
7 appendages.
8 Q. Sure. And I'm not trying to pick on you, but I do want to
9 make sure that we're clear.
10 So you may recall from our past conversations that
11 sometimes when I'm thinking about maps, I tend to think about
12 Europe, and a relatively compact European country, as I think
13 about it is -- and I'm going to draw this as precisely as I
14 drew Texas is Bulgaria, which looks roughly like that.
15 That's -- assume with me that's what Bulgaria looks like.
16 A. Okay.
17 Q. That would be a relatively compact map, right?
18 A. Probably. We would have to give the compactness score.
19 And as map drawers and testifiers know, there's like seven
20 different compactness scores, and they all say something
21 different. But, yes, I will agree that it looks to be
22 generally compact.
23 Q. And staying with our friends in the Balkans, another
24 country that comes to my mind for me is our friend Croatia,
25 which looks roughly like a crab claw around Bosnia Herzegovina.

Croatia -- assume with me, this is what Croatia looks like. Croatia is less compact than Bulgaria?

A. It would depend on the compactness score, again, that you're using, but, visually, it might look less compact.

Q. And so you said that you had to use really high numbers before you started getting something like circles or squares, understanding that's not precisely what you mean, but when you say "really high numbers," how high?

A. You can set the compactness much higher than this. I don't recall off the top of my head, but I know that we usually do something in the sort of 1-to-2 range when we're trying to just encourage it to use some compactness, but not get carried away with forcing it to draw compactness. Whereas zero means that you haven't given it any rules about compactness at all.

So just a little bit away from zero, but, you know, you're not putting in four, five, six, seven, eight, nine, ten, whatever. You can put additional numbers here that might -- and give it different encouragement per weight as you said earlier.

Q. Mm-hmm. And so when we're -- and apologies if this sounds repetitive, you may have explained this, but as we're going up from 1 to -- from zero to 1 and 1 to 2, we're just sort of going up in a linear progression. Is that right? We're going up the same amount each time?

A. Not necessarily. That's not necessarily the way the

constraint on compactness works in terms of my understanding. And I discussed this with Dr. McCartan because it was something I wanted to understand, and he's the one that programmed the compactness score.

It encourages the algorithm to try to draw more compact scores, and this is essentially a -- a penalty you're giving it for violating that. But the algorithm is still going to draw compact and uncompact districts every single time, no matter what you set that number to. It will have some perfectly compact and some totally uncompact --

Q. Yeah --

A. -- so this isn't just --

Q. -- let me go back to my question, Dr. Barreto, because I get it. Just because you said a compactness score doesn't mean you'll have no uncompact maps. Got that part.

But I'm trying to get clear for the Court. When you go from 0 to 1 and 1 to 2, are you going up by something like 10 percent? Are you going up the same amount as the difference between 0 and 1 and 1 and 2, the same?

A. No. It's, unfortunately, not linear. It's a direction to the system to try to take it to -- more into account. But the algorithm itself that draws the ensemble is so strong that you're just trying to give it some constraints.

But my understanding of it is that it's not just perfectly linear, and that different numbers, even by a tenth

of a point, could produce slightly different or slightly similar maps.

Q. Okay. And when we talk about a linear progression, we're talking about -- the last time I learned anything in math, which is basic Algebra, which is where you will have something like a diagonal line going from southwest to northeast on a graph, right?

A. That's one example.

Q. And that's the way I think about it. Forgive me if it's simple to your ears, but it's -- the slope is rise over run, you're going up and over by the same amount over and over again, right?

A. It doesn't always have to be one-to-one, but it just assumes that the -- the change is constant.

Q. And so, for example, if we're going up in a -- in a linear progression that, for example, just doubles the value each time you go, and your -- then your starting value is 25 and the next value will be 50, and then -- right?

A. 75, 100.

Q. Yeah, right. So you just like counting by 25s, right?

A. That would be a linear progression if you had four quarters.

Q. Well, that would -- and that would look like this straight line, right?

A. Yes.

14:43 Q. I got into a little bit of trouble with Dr. Duchin because I suggested that when something got bigger, it got bigger exponentially, and she literally laughed at me on the record. I think the court reporter might have written down, "Ha, ha, ha."

But when you have an exponential progression, the graph looks different, right?

A. Yes.

Q. And that's -- when we graph an exponential progression, it's asymptotic, isn't it?

A. It depends on the degree of the change, but it's not going to be linear. It might slope up much more rapidly.

Q. It will curve in point of fact, right?

A. Oftentimes, it curves. Sometimes, the curve is so minimal you can't see it, but somewhere in there is a curve.

Q. And so -- whereas before our example was, if you're starting value is 25, and you are at 1, and then you go to two -- that's number two.

MR. KERCHER: I'm sorry, everyone.

Q. (BY MR. KERCHER) When you go to 2, then your next value will be 50, right?

A. In your first example, that was right.

Q. Thank you for clarifying, for the record. It's like you've done this stuff before.

If we are on an exponential progression, which squares

every time we change, and we start again at 25, then 2 won't put us at 50. It will put us at 625, right?
A. If that was the progression then yes, and it would follow in some pattern.
Q. Is the compactness scale that you used in redist linear or exponential?
A. My understanding is that it is not linear, that it is not a simple one-to-one. I don't believe it's exponential. If it is, I don't know exactly what the degree is. In my discussions -- and I had discussions directly with the guy who wrote the compactness score, he didn't describe it in either of those ways. He described it as a encouragement or a penalty that gets stronger and depending on the types of requirements by the -- the redistricting body, it might need to grow or it might need to shrink.

But it wasn't necessarily something that has a simple formula for how the maps would look.
Q. And I appreciate that you are humble enough to tell us that you sought input from some other experts about how to do this, but you were asking those questions about how this -- about how this compactness variable works because you really don't have that much experience using redist to draw simulation maps. Is that fair?
A. No.
Q. It's not fair?

14:46 1 A. No.
2 Q. Okay. When we go back to your code, and we see this
3 annotation that says, "Light nudge toward compactness." Whose
4 words are those? Did you call it a light nudge? Did Mr. Rios?
5 Did ChatGPT? Who wrote that?
6 A. Dr. -- Mr. Rios wrote it. I suggested to him that based on
7 our understanding of Texas, we should only have a light nudge
8 towards compactness.
9 Q. How much did you fiddle around with that number? Did you
10 take it down to 1.5 or .75, or did you try moving it around by
11 hundreds to see what you got?
12 A. I think in the replication of the rebuttal, we lowered it
13 to 1.5, possibly. I don't remember the exact number based on
14 Dr. Trende's point where he said that perhaps we had too much
15 compactness. And so we tried lowering it and in our
16 replication, the maps looked identical.
17 Q. We've talked about the way that you have handled some of
18 the parameters that you gave to the robot in terms of setting,
19 you know, what the universe of randomness would be. Let's talk
20 about some of the things that had to get left out.
21 And to be fair, the software, the robot has
22 limitations, you can't put infinite parameters. Otherwise, the
23 robot -- the code won't run, right?
24 A. It will crash, and it will no longer be allowed to find any
25 paths, essentially, if you give it too many parameters.

Q. I remember -- I wonder if we're close enough in age to have this in common. I remember playing Super Mario Brothers, and you would have so many mushrooms and turtles moving on the screen that the screen would slow down.

You remember that?

A. Yes.

Q. And sometimes that would happen right when you were in the middle of a jump, and poor Luigi would -- I was the younger brother, so poor Luigi would plummet down to his death.

When you talk about the computer crashing because you've got too much going on, is it kind of like that where the Nintendo screen has -- is processing too much movement and so it just stops working?

A. That will be part of the reason that almost nobody saves the object simulations, because these take a ginormous amount of computing memory. And it will cause it to slow down, if not crash. But there are a lot of things that you can add to it.

If you're doing a small city council district somewhere, you can probably get away with a lot more. When you're doing the State of Texas, the second-largest state, with 38 districts, and these constraints, it is extremely computing intensive.

Q. So some of the parameters you did not feed your robot, for example, would be -- would include following major roads or landmarks like rivers. Is that right?

14:49 A. I think the only geographic complaints -- constraints we put in were county splits and how many times. We did not follow -- or we did not program anything else.
Q. What about weighting the maps that your robot drew against pairing Republican incumbents? Was that the information you gave your robot?
A. We did not do anything on incumbent pairing based on our knowledge that six districts or so had incumbents paired. So no, we did not take Democratic or Republican incumbents into account.
Q. Of those six districts with incumbents paired, how many of them compared Republicans?
A. I think they were all Democrats.
Q. You talked -- I think -- I think you said this in your final conclusion with Mr. Dunn, that you believed that, although he may have used, in your view, partisan -- or racial data in order to achieve a partisan end, that the 2025 map is, in fact, more Republican. Is that true?
A. Certainly.
Q. And so assume with me that the Texas Legislature intended to make the 2025 map more Republican. It would stand to reason that they would weight against pairing Republican incumbents, right?
A. I have not heard any -- I don't know. It seems reasonable, but I don't know what they did. I -- I don't believe we had

any specific instructions on that.
Q. You also did not tell your robot to be mindful of core retention. Isn't that true?
A. That's true.
Q. You agree with me, don't you, that the 2025 map has something like two-thirds or 66.8 percent core retention. Are you aware of that?
A. It might as a whole. I think it varies by region.
Q. Did you know -- and forgive me, you probably do. Did you know, though, that part of the reason that the *Supreme Court in Alexander* rejected map stimulations is because the robot in that case was not told to be mindful of core retention?
A. I am not aware.
Q. Let's talk about the partisan interests and how that folded into your map drawing project. Redist is not built to rely on partisan data out of the box. Is it?
A. It's not built to or not. It's a constraint you can add.
MR. KERCHER: Richard, let's please go to Brooks Exhibit 283.
Q. (BY MR. KERCHER) And, Dr. Barreto, here we are again on your September supplement. We're on page 1. And here you discuss how in a prior report you focused on San Antonio, Bexar County, and on Houston and Harris County.
Do you remember that?
A. Yes.

14:52 Q. And you talked about sort of supplementing that analysis in this report, right?
A. Correct.
Q. You wanted to focus on district boundaries in the 2025 Enacted Map to determine how likely it was to create majority Hispanic and majority Black CVAP districts, while also following compactness, contiguity, and county split guidelines, right?
A. Yes.
Q. Now, in fairness, that's not how the Legislature drew the map, by just taking one or two districts at a time. They had to draw 38 at a time, right?
A. Yes. And in this case, we also drew three or seven or whatever was in the region at the same time.
Q. And so when the Legislature is making -- we talked about this earlier when you discussed the changes to District 9. When the Legislature is making changes to districts, they have to deal with the fallout of those changes, not just in the districts they're looking at, but in the adjacent districts, and then the adjacent districts and however far those ripple effects may go, right?
A. Correct.
Q. In Harris County, for example, you focused on Districts 7, 18 and 29. True?
A. Yes. In the analysis of the Black CVAP district, those

14:53 1 were the three.
2 Q. And you claim that none of your robot simulations had more
3 than 42.55 percent Black CVAP. Is that right?
4 A. I think so. Paragraph 6? Yeah, I see that.
5 Q. And part of the reason you felt that was notable is
6 because, in the Enacted Map, CD18, is itself 50.5 percent Black
7 CVAP, right?
8 A. Correct.
9 Q. The lawyers in this case, when we were arguing about the
10 motion to strike, told the Court that, according to your
11 analysis, it was impossible to draw districts with the racial
12 characteristics of the Enacted Map.
13 Do you share that view?
14 A. Say that again.
15 Q. Sure. I stumbled over the keyword there.
16 When we were briefing the motion to strike, the
17 lawyers, in the case, told the Court that, according to your
18 analysis, it was impossible to draw the districts with racial
19 characteristics of the Enacted Maps.
20 Is that what your analysis showed?
21 A. I believe that's what Figure S1 or S2 shows.
22 Q. Are you aware that Plaintiffs in this very case have
23 proposed districts with higher Black CVAPs?
24 A. I haven't seen any proposed maps.
25 Q. Have you ever met George Korbel? That's K-O-R-B-E-L.

14:54 A. I have, many, many years ago.
Q. Did you know he was a retained expert for -- by a former party in this litigation?
A. I did not.
MR. KERCHER: Richard, could we please go to District Viewer? Richard is getting the ride of his life today.
And let's click on Congress, please, and then go to all, and then scroll down, if you would, to Plan C2224. And if you could make that a little bit bigger, so we can all see it, please.
Q. (BY MR. KERCHER) Dr. Barreto, you can see that Plan C2224 in the District Viewer for Texas says it is a George Korbel statewide congressional proposal five, right?
A. Yes.
MR. KERCHER: Richard, let's go to Defense Exhibit 1527, please, at page 15. And let's look at the Black CVAP for District 18.
Q. (BY MR. KERCHER) And, Dr. Barreto, you can see that the Black alone CVAP for District 18 in Dr. Korbel's proposed district was, in fact, above 42.5 percent. True?
A. Yes.
MR. KERCHER: All right. Brian [sic], let's next go to Defense Exhibit 1528, also at page 5.
Q. (BY MR. KERCHER) Dr. Barreto, did you know that the late Sheila Jackson Lee, formerly a Plaintiff in this case, as well

as Representative Al Green, also drew a map with multiple districts above 32.5 percent of Black CVAP?
A. I have not seen any of those.
Q. Okay. We're looking at Defendants' Exhibit 1528. It's another red report just like 1527.
MR. KERCHER: Richard, could we please look at the Black CVAP for District 9?
Q. (BY MR. KERCHER) Dr. Barreto, you can see the Black CVAP in this proposed district is also above 42.5 percent, right?
A. Yes.
MR. KERCHER: Richard, what about District 18?
Q. (BY MR. KERCHER) And you could see the Black CVAP for District 18 in this plan is also just above 42.5 percent, right?
A. Yes.
MR. KERCHER: And, finally, Richard, District 30.
Q (BY MR. KERCHER) And here again, Dr. Barreto, we see that under this plan -- this proposed plan, the Black CVAP in District 30 is also above 42.5 percent, right?
A. It is. I think this one's in Dallas, and the point around 42 is just in Houston. But it is above 42. I presume this is in Dallas, that's my understanding where 30 is.
Q. If we go back to Brooks 283, which is again your September supplement, we go to page 2, you reference paragraph 6 a moment ago. In your analysis of the Harris County region, you tried

14:58 to control for purported partisan goals of the Legislature and the neighboring Republican districts by limiting the analysis to the territory comprising the three Democratic districts in map C2333, right?

A. Yes.

Q. So you're analyzing only lines separating Democratic-leaning districts, right?

A. We're analyzing the combined geography, 7, 18, 29, that is left out of our other analysis that we've also already discussed that had, like, CD2, 5, 8, all the way up to 38. That was our seven Trump districts. This is the remainder of what's left, I believe, in -- in Harris County.

Q. And -- but you're analyzing those separately, the seven Trump districts and the three Democratic-leaning districts, right?

A. Yes, separate -- separate draws.

Q. Even though, in order to create more Trump districts and more Democratic districts, you're going to have to move people in between those Trump districts and those Democratic districts, right?

A. You might, yes. We're just looking at the final C2333 map boundaries.

Q. And a moment ago, we talked about how your map drawing robot does not wait for -- or against pairing incumbents. That includes, right -- it does not favor pairing Democratic

14:59 1 incumbents like a Republican map drawer might do?
2 A. It's neutral on incumbents. It has no weight.
3 Q. As an example, if Republicans wanted to put an older
4 Democrat like Representative Green against a younger Democratic
5 candidate like the rising star, Mr. Menefee, your redist
6 analysis would not account for a Republican desire to draw a
7 map that way?
8 A. We do not weigh on incumbent.
9 MR. KERCHER: Richard, could we please go to Defense
10 Exhibit 1517 on page 1?
11 Q (BY MR. KERCHER) Dr. Barreto, you can see this is an
12 article from the *Texas Tribune*, right?
13 A. I see that.
14 Q. The date is July 31, 2025, right in the middle of Texas
15 redistricting this summer. True?
16 A. I see that.
17 MR. KERCHER: Richard, could you pull out the
18 paragraph "In their newly proposed"?
19 Q. (BY MR. KERCHER) (Reading) In their newly proposed
20 congressional map, Tribune writes, Texas Republicans are
21 looking to forge red districts in Central Texas, Dallas, and
22 Houston that would push a handful of Democratic incumbents into
23 nearby districts already occupied by another Democrat.
24 Did I read that correctly?
25 A. Yes.

15:00 1 MR. KERCHER: Richard, could you pull out the new
2 configuration?
3 Q. The Tribune goes on. (Reading) The new configuration
4 would leave Democratic members in those regions with the
5 uncomfortable prospect of battling each other for the dwindling
6 seats in next year's primaries; retiring; or taking their
7 chances in nearby GOP-leaning districts where they would face
8 uphill battles for political survival.
9 Did I read that correctly?
10 A. Sounds like it.
11 MR. KERCHER: And, finally, Richard, the "but if the
12 new lines."
13 Q. (BY MR. KERCHER) The Tribune goes on to say (Reading) But
14 if the new lines go through for 2026, they could pit
15 long-serving older members of the Texas delegation against
16 younger newcomers, drudging up existing tensions in the
17 Democratic Party over age and seniority.
18 Did I read that correctly?
19 A. Yes.
20 MR. KERCHER: Richard, could we please go to Brooks
21 Exhibit 284?
22 Q. (BY MR. KERCHER) Dr. Barreto, I'll represent to you that
23 this is your rebuttal report.
24 A. Okay.
25 MR. KERCHER: Richard, please go to page 20,

Figure 14, and if you could blow up Figure 14 for us, please.

Q. (BY MR. KERCHER) Dr. Barreto, you remember looking at this with Mr. Dunn, right?

A. Yes.

Q. And you explained it beautifully on direct -- forgive me if I go back over some of the things that you said. But the smaller lines that are in red and blue, the thinner lines, I should say.

If VTD is outlined in red, that means that Trump won that VTD, right?

A. Yes.

Q. In 2024, right?

A. Yes.

Q. And that is a bare win. That's Trump 50 plus 1, right?

A. Trump got more votes than Harris, and the blues are vice versa.

Q. Okay. It doesn't tell us by how much more President Trump won the given VTD, right?

A. We have that in another map. This is just showing who won to try to keep it a little more simple.

Q. And so the gradation that we see in green and pink is not partisan gradation; it is racial gradation. True?

A. Correct. Percent Black in this case.

Q. You talked about the -- and just to round things up, the yellow boundary in this map is the Enacted Map, and the gray

15:03 1 boundary is the 2021 map, right?
2 A. Yes.
3 Q. And we can see the 2021 map is pretty bumpy as it winds its
4 way through the Metroplex. Isn't it?
5 A. It has more edges. I would say, yes.
6 Q. And if we look just up and to the right or center of
7 Figure 14, we see this sort of hand making a circle, if you
8 will, that reaches up above -- that is created by the 2193, the
9 2021 map, above the yellow line of the Enacted Map for 2025.
10 Do you see that?
11 A. Yes. That's the part that's no longer included in 2333.
12 Q. It cuts that part off, right?
13 A. That's correct.
14 Q. Did you know that the portion of the yellow line, that
15 enacted boundary from 2025, follows I-30 and I-35 through
16 Dallas?
17 A. I did not.
18 Q. That's not something you looked at in evaluating why that
19 line might have been drawn that way. Fair?
20 A. I was evaluating whether it was race or partisanship,
21 not -- and as I said before, we only took into account county
22 splits.
23 Q. And I guess that's kind of my point, right, because there
24 is this legal question -- again, not trying to make you into a
25 lawyer, but is the map racial or is it partisan? But, as the

15:04 1 Supreme Court has said for a long time, redistricting is always
2 a multi-factor and very complex exercise, right?
3 A. It is.
4 Q. It's not a zero-sum game between partisanship and race.
5 There would also be things like compactness and population
6 equality, right?
7 A. Yes.
8 Q. And so if you're looking at a map and the only question
9 that you're asking is, is this race or is it partisanship? You
10 can't find a partisanship reason for a particular way that a
11 line is drawn that does not automatically mean that the line
12 was drawn for racial purposes.
13 You agree with me so far?
14 A. Mostly, but not entirely. But mostly.
15 Q. All right.
16 MR. KERCHER: Richard, if we could go to Defense
17 Exhibit 1523.
18 Q. (BY MR. KERCHER) Dr. Barreto, in your report, you cited to
19 a redist website to provide additional information about the
20 software. And that website talks about the importance of
21 checking diagnostics.
22 We've got Defense Exhibit 1523 on the screen. Do you
23 recognize that?
24 A. Yes.
25 Q. This is, in fact, one of the redist websites that you cite

15:06 in your report to help folks understand how redist works, right?
A. Correct.
MR. KERCHER: Richard, can we please go to page 9? And if we could pull out the paragraph that begins "Once summary."
Q. (BY MR. KERCHER) This website you cite says (Reading) Once summary statistics of interest have been calculated, it's very important to check the algorithm's diagnostics. As with any complex sampling algorithm, things can go wrong. Diagnostics, while not flawless, can help catch problems and stop you from making conclusions that are actually the fault of a broken sampling process. The summary, open and close parentheses, function is redist's one-stop shop for algorithm diagnostics.
Did I read that correctly?
A. Yes.
Q. Were you familiar with that fact?
A. Yes.
MR. KERCHER: Richard, let's please go to page 10 and pull out the paragraph. There's a lot of diagnostic.
Q. (BY MR. KERCHER) The website you cite goes on. (Reading) There's a lot of diagnostic output there, which you should read more about with summary.redist, underscore, plans. If anything is obviously wrong, the function will alert you and provide instructions on how to try to fix it. But these warnings

aren't flawless, and it's important to check the numbers yourself.

Do you agree with that?

A. Yeah.

MR. KERCHER: And Richard, the next paragraph, "if you've used two." Thank you.

Q. (BY MR. KERCHER) The website goes on, (Reading) if you've used two or more runs, as we have, summary open and close parentheses, we'll calculate R-hat values. These should be as close to 1 as possible, and generally less than 1.05. If they are bigger than that, it means that multiple independent runs of the algorithm gave different results. More samples, higher NSIMS, N-S-I-M-S, are usually called for.

The other number to keep an eye on is the plan diversity, top of the output, whose 80 percent range should generally cover the range from .5 to .8.

Did I read that correctly?

A. Yeah.

Q. Did you run diagnostics?

A. Yes, it's something we checked.

Q. Did you produce those?

A. No. In keeping with this, it says to check them and use them to update your functions if needed. But they're not something that needs to be reported for purposes of simulation results. But we did check them.

15:08 Q. Okay. Well, I've been giving you a hard time about whether I agree with how you did your map-making project, but now I'm gonna do something kind of like Dr. Alford, and I'm gonna say, let's assume your simulations were right. Okay?

MR. KERCHER: Let's go, Richard, to Brooks Exhibit 269.

Q. (BY MR. KERCHER) This is the first report you supplied for this hearing. You see that, Dr. Barreto?

A. I do.

MR. KERCHER: Richard, let's please go to page 16, Figure 1. And if you could pull out Figure 1 for us.

Q. (BY MR. KERCHER) Now, this is your dot plot showing what you say are racial outliers. Do I have that right?

A. This is the no constraint first base map of 38 districts in Texas, and what they would look like if you didn't put in any race or partisan constraints.

Q. And then the black dots are where the actual enacted districts land on the same scale. Is that right?

A. Let me just look and see. That might be the case.

Q. You don't know?

A. I don't recall, looking at it now, as there's a lot of material I produced. Like we can -- if you want me to read the report and try to refresh --

Q. I don't think anybody wants for you to read your own report on the stand.

15:10 1 A. I think it might be right --
2 Q. Did you make this -- did you make Figure 1 in your own
3 report, or is this again the work of Mr. Rios?
4 A. Well, we worked on the report together. I remember making
5 this. This was the first statewide simulation we ran with no
6 constraints. And it has no constraints on race or
7 partisanship, but we said, draw 38 districts across.
8 Q. You don't know or you can't tell the Court what the black
9 dots are on your own figure?
10 A. The black dots are typically the average simulation. You
11 can also set them to be the actual simulation in the map. And
12 so I believe that our norm is to produce the average simulation
13 result. These are the baseline draws with no constraints at
14 all.
15 MR. KERCHER: Richard, let's please go to page 14 of
16 Brooks Exhibit 269, paragraph 43.
17 Q. (BY MR. KERCHER) Here you write (Reading) Map drawers
18 decide to split VTDs more than 440 times, and instead draw
19 boundaries on census blocks, for which only racial data exists.
20 Census blocks do not contain election results for such small
21 pieces of neighborhoods, and no map drawer can be certain of
22 partisan performance within a census block.
23 Did I read that correctly?
24 A. Yes.
25 Q. That feels a little disingenuous. It's not quite true to

say that you cannot get partisan data at the block level. True?
A. You could try to impute it, but our point is that it doesn't exist. Partisan data only exists in a VTD. And within that VTD, when you break it up into pieces, you don't know where any of those votes are concentrated.
Q. Well -- but when you say you can try to impute it, what I hear you saying is there are ways of calculating partisan data from the VTD level down to a more granular geographic -- demographic geography. True?
A. There are ways to do that, but --
Q. So when you say that there is no partisan data at the block level -- you said a moment ago, it does not exist. Well, you can make it, right?
A. You could make estimates. What I mean, just to be clear, is that there is no election data that you could get from a county or the TLC in which you have actual votes cast in a block. You only have them in the VTD, which has anywhere between ten and 100 blocks.
After that, there is a lot of guesswork, saying, maybe these votes came from over here. Maybe they came from over here. You could put numbers in them, but it's not election data.
Q. So there are other places in redistricting data where we use estimates. True?

15:13 A. Probably. I don't know what example you're thinking of.
Q. I'm thinking of the ACS data, right? That's not a survey. True?
A. Well, it is a survey.
Q. The ACS data -- well, the census is a survey, right?
A. They're both surveys. One is of the population, one is of the sample. They're both surveys.
Q. But in order for the ACS data to be useful, you have to take a sample, and then infer that the sample -- infer from the sample to the whole. True?
A. Yes, but --
Q. That's why there's a margin of error for the ACS, right?
A. Correct.
Q. And, in fact, the margin of error for the ACS one year is higher than the margin of the ACS for five years. True?
A. Correct.
Q. And you talked about, vigorously, if I may say, on direct, in BISG, right, where you are combining two kinds of data using a voter file. True?
A. A voter file, census data, and a surname list.
Q. Right. And you're not telling the Court that by doing that, you can, house by house, tell them which Spanish surname person or voter lives in which house, right?
You're looking at that on a neighborhood level. True?
A. We aggregate it to VTDs, or neighborhoods, absolutely.

15:14 Q. And I think that you said, when you were talking about whether or not you can -- Mr. Dunn's word was "interpolate." Whether or not you can derive block-level partisan data is unusual in academia, but it is there. True?
A. People can attempt it. I'm not denying that. My only point is that no data exists, so you're doing a lot of guesswork. Because it's a very different enterprise than what the ACS does to try to take an entire VTD, and then try to extract where the Democratic votes are and where the Republican votes are, when the only thing you now know is just neighborhood blocks.
Q. It's fair to say, though, that it's quite possible that a partisan Republican map drawer would be less concerned with whether academia would deem it reliable to derive partisan data down to the block level, and still derive partisan data down to the block level, right?
A. They might have attempted that.
Q. When we talk about split VTDs, I want to get a sense of the -- of the scale that we're talking about. I keep asking about Supreme Court cases. This is the last one, I'm pretty sure.
Are you familiar with *Gomillion v Lightfoot*?
A. I don't think I could recite it for you, but I have heard it.
Q. I can't recite, either. It's about the City of Tuscaloosa.

15:16 1 It's a 1960 Supreme Court opinion. And I'll represent to you
2 that in that case, the City of Tuscaloosa had long been, for
3 voting purposes, a square. Ring a bell?
4 A. I know there are some where cities change their boundaries
5 before and after elections.
6 Q. That's right. And then the Alabama Legislature redrew the
7 city of Tuscaloosa, because in this square, there had been over
8 400 African American voters. And the Alabama Legislature
9 redrew that square into -- and this is an approximation, a
10 28-sided district.
11 Do you remember this?
12 A. Sounds familiar.
13 Q. And in this 28-sided district, there were only four or five
14 African American voters. When we're looking at redistricting,
15 if that's what you can call this at this scale -- and I'll
16 represent to you that even today, the City of Tuscaloosa is not
17 yet 10,000 people. It's easy enough to look at this 28-sided
18 figure and say, Well, there's a Black voter they left out.
19 There's a Black neighborhood they left out.
20 At this scale, those things are easy to see. I bet we
21 agree so far. True?
22 A. Sure.
23 Q. Texas Congressional Districts are on a different scale.
24 True?
25 A. Well, I mean, as you were drawing that picture, I was

15:17 1 thinking exactly of -- parts of some CD9 that look exactly like
2 that, where Black districts were explicitly drawn out, so...
3 Q. Let's talk about scale, though.
4 A. Okay.
5 Q. Because a moment ago, in *Gomillion*, we were talking about
6 400 African American voters out of a few thousand voters,
7 probably. But when we're talking about Texas, in 2025, we're
8 talking about over 750,000 voters per district, right?
9 A. Correct.
10 Q. And so the districts are geographically, as well as
11 demographically, much, much bigger, right?
12 A. Yes.
13 Q. And what you're talking about when you're talking about
14 splitting VDTs as evidence of racial discrimination is you're
15 saying that looks like racial discrimination or that looks like
16 racial discrimination, right?
17 A. I was just referring to the 19 that Dr. Trende had put in
18 his report and noticed that almost all of the ones that he
19 highlighted there -- there are 440, but he hand-picked 19 of
20 them, for whatever reason. When they were split, more Black
21 people were put inside District 18, and more Black people were
22 excluded on the outside.
23 So it seemed to be a pattern. I agree that there's
24 only 440 out of thousands of VDTs, but perhaps they were doing
25 that on the edges. I don't know what their purpose was.

15:19 1 Q. Well, I'm glad that you went back to your testimony on
2 direct, because I was about to ask you about it. You were
3 talking about -- first, you said that Dr. Trende sort of
4 cherry-picked his districts. He chose one of the -- he chose
5 the VDTs from one of the district sets at issue in this case,
6 right? 18 --
7 A. I don't know that I was saying it in a pejorative of
8 "cherry-picked." I say he "hand-picked" them, maybe because
9 District 18 was convenient for him. But they weren't -- they
10 didn't appear to be, as per our earlier discussion, a random
11 sample of the 440 splits.
12 Q. First of all, what would be an appropriate number of VDT
13 splits?
14 A. I don't know the answer.
15 Q. After how many VDT splits do you become suspicious that the
16 map drawer may have been making racial decisions?
17 A. I don't think it's necessarily the number. I think it's
18 the content of the data that's in the split VDTs.
19 Q. If that's true, then why give the Court the number? Why
20 say it's 440? It feels like you are trying to make us
21 suspicious of the mere fact that VDTs have been split.
22 A. 440 feels like a lot to me. Maybe it's nothing, in which
23 case the Court can go through the data and decide if it -- if
24 it is or isn't. If there are VDTs being split on the
25 boundaries, which is typically where they're being split to hit

15:20 1 the exact one-person one-vote requirement, then we should
2 wonder, are they putting the minority population in one and the
3 White population in the other, systemically?
4 Because you're allowed to see that at the neighborhood
5 block level. Or maybe they're not. Maybe every single one,
6 one time they put more minorities in this district, the next
7 time they put more over there. That would be evidence against
8 it.
9 I was just commenting that the only data that you can
10 see from the census is race data. That was number one.
11 And two, that in Dr. Trende's examples, they
12 oftentimes were putting more Black folks in the District 18 and
13 not outside of District 18. So it was suspicious to me.
14 Q. And do Black voters in the newly constituted District 18
15 vote cohesively for Democratic candidates?
16 A. They do.
17 Q. So how do we tell the difference? Dr. Barreto --
18 A. There's no --
19 Q. -- between moving those voters as Democrats or moving those
20 voters as African Americans?
21 A. Because there's no partisan data in the neighborhood block.
22 Q. But we just described that you can get partisan data at the
23 block level?
24 A. But you wouldn't be able to get that for every VDT, because
25 in the example of Dallas, which we had earlier, there are a lot

of VDTs that have a very low percentage of African Americans, yet they still might vote Democratic. And you wouldn't be able to make the same assertion that you just made, that 90 percent of them are cohesive.

If you see a high White population area, it could be White Democrats; it could not be White Democrats. You would have no idea to know if you only had census block data.

Q. Well -- but it sounds like you're saying you would have to make a decision about whether to move a group of African Americans based on whether they were Democrat or Republican, and maybe you could just make the decision, based on whether the VDT was more Democrat or Republican, right?

A. If you move the entire VDT. But in this case, these are split VDTs, and now they're subtracting part of it, and they're deciding to put part of the VDT that has a higher block population in District 18, presumably to make it majority Black. And they're taking the other half of the VDT that has a lower Black population, and systemically always putting it in the adjacent precinct.

Q. But in order to say that, you would have to be pretty sure that the map drawer had not derived partisan data down to the block level, right?

A. My point is just that it doesn't exist.

Q. Right?

A. You're right that he might have done some special formula.

15:23 1 My point in the report is just that that data is not reported.
2 The census --
3 Q. You keep -- let me stop you there. Because you keep saying
4 that data do not exist. The data are derivable, so they can
5 exist if you want to get them. It's not as if they -- there's
6 no way to find them; there's no way to use them. It's not
7 correct to say that they don't exist. They just don't come off
8 the shelf that way, right?
9 A. High-quality, good data doesn't exist.
10 Q. According to your academic standards, correct?
11 A. Academia. Correct. Correct.
12 Q. I think you said it's common for VDTs to get split most
13 often because you have to equalize population in congressional
14 districts down to such a fine margin, right?
15 A. Yes.
16 Q. And there are other reasons to split VDTs, like for
17 compactness, right?
18 A. Could be.
19 Q. Or to follow natural boundaries, a VDT may go across I-35,
20 for example, and you want to follow 35, so that might be
21 another reason to split a VDT. True?
22 A. Could be.
23 Q. Can you tell the Court how many people -- how many voters,
24 were moved in and out of a district because of split VDTs?
25 A. I didn't calculate a total number. Dr. Trende has some

numbers in the District 18 example. Some of his precincts have thousands of people; some of them have hundreds of people; some of them have less than a hundred people. They're all different sizes.

Q. And so --

A. Some are quite large, but not all are.

Q. And so is it right to say that your split VDT analysis does not tell us how many people were moved in and out of districts due to their race versus other considerations like partisanship, compactness, or population equality?

A. It does not -- it is only telling you that, in my opinion, the only reliable data that a map drawer could use is race. As we just discussed, in my opinion, there's not reliable partisan data, and I did not look at those other items.

MR. KERCHER: Pass the witness.

JUDGE GUADERRAMA: Mr. Dunn?

REDIRECT EXAMINATION

BY MR. DUNN:

Q. Good afternoon, sir.

A. Good afternoon.

Q. I want to go back to the code business, and the code that you produced in this case, and ask you a little bit of background.

How long have you been doing this?

A. Voting rights analysis, or --

15:25 1 Q. Yes. Voting rights analysis and testifying as an expert.
2 A. I've been doing voting rights analysis since I was a Ph.D.
3 student with Dr. Grofman, so the early 2000s. And then, as I
4 became a professor at the University of Washington, I think
5 within a few years, I worked on my first case in probably '06
6 or '07.
7 Q. And has it been recent that there started to be these
8 debates between lawyers and experts about code and R and
9 redistricting?
10 A. Yes. It was non-existent at the beginning. You just
11 assumed that you were using the voter file or the election
12 data. The other side also had it. It was almost always a
13 public dataset. I don't recall, until within the last six or
14 seven years of people ever even asking for things like code or
15 underlying data.
16 They just wanted to know what precinct data did you
17 use. Did you use CVAP? And the other political scientist
18 would just recreate it.
19 Q. Let's talk about Dr. Alford for a minute, who's been the
20 state's expert upwards of 20 years. You're familiar with him?
21 A. Yes. I've been against him dozens of times.
22 Q. And you win some, you lose some. Is that fair to say?
23 A. That's right.
24 Q. Dr. Alford, does he do any of his analysis on RPV, the data
25 work?

15:27 A. My understanding from his prior testimony is that he has an assistant, Dr. Stevenson, who does all the analysis.
Q. And, in fact, that was the case in the many times that Dr. Alford offered reports and testimony in this case. Is that right?
A. Yes.
Q. And did Dr. Stevenson ever come and testify and explain his conduct?
A. Not to my knowledge.
Q. Did Dr. Alford ever turn over Dr. Stevenson's code or even identify the precise steps that Dr. Stevenson followed?
A. In all the cases I've been against him, never.
Q. Why didn't that -- why wasn't, you know, that a giant issue?
A. That's never a problem from where I'm sitting because it's not hard to replicate what Dr. Alford and Dr. Stevenson are doing, because they're doing the same thing as us. They're taking election data. They're overlaying some race data, and they're running ecological inference analysis. As we said, Dr. Alford and I rarely disagree over the point estimates.
We usually arrive at fairly similar results. In the same way, he rarely questions my RPV data.
Q. Well, if your RPV data, for example -- we'll stick with that for a moment. If your RPV data were wrong, or your code was not working right, and you had a qualified expert, not a

15:28 lawyer, on the other side who was trying to do the analysis, what would happen?
A. They would immediately be able to detect it, and most likely they would be screaming about it in their expert report.
Q. We would expect to see an expert report identifying these problems. And how would it do so?
A. Well, Dr. Trende, in many ways, because he did replicate my analysis quite easily. He's already doing some of this because he says, Hey, I don't like your map diversity. I don't like your core retention. Those are the sort of things the other experts should do. But you don't see him saying that the maps are wrong, that the simulation is wrong, that there are, in fact, majority Black districts. He doesn't say any of that. He's picking on the plan diversity and other stuff.
That's what we expect. That's what we should see. If we had completely bunk data, the other side would say -- that would be the headline of their -- the other side's report.
Q. Now, going back to R for a moment, is it, you know -- one way, it's like a television, a button to turn it on and off, or is there multiple ways to operate R in this redist?
A. Yeah. There's a lot of different ways, and there's a package called RStudio graphical interface that a lot of people use. You heard Mr. Kercher referring to tidyverse, which is a popular environment to run R in.
So there's a lot of different ways. A lot of

academics have customized ways to use R.
Q. Does Dr. Trende's codes look like yours?
A. A lot of it does, but he also uses it different -- he uses different commands in different parts. If I go back to some of his 2022 code or even some of his code where he replicated ours. Each user in R has the flexibility to make those decisions.
Q. So when it looked different than you, why didn't you come waiving your hands at the Court, "Dr. Trende's got tricky code"?
A. It wasn't tricky. There's just -- it's a complex software, and if you're familiar with it, it doesn't bother you. You just run the code, you understand it. You understand that there's two different ways to possibly program something. There's nothing wrong with choosing different ways. We're mostly interested in -- in looking at the code to see what the other side did and what underlying data they have.

We've never had a problem, I don't think ever, being able to replicate or recreate something an opposing expert has done.
Q. And at the end of the day, Dr. Trende didn't have a problem replicating what you did?
A. He doesn't report it in his report at all. In fact, he has a sentence that says, I replicated Barreto and Rios' analysis, and then he goes through to point out some critiques, which to

me suggest he -- you know, he was able to replicate our analysis fairly easily using, basically, the same process he did already himself in 2022.

So I was never worried about that. What we turned over was extremely detailed for anyone with his level of expertise.

Q. When you ran Dr. Trende's code, what happened?

A. Well, his code doesn't just run out of the box, like, you can't just take his code, put it into the R console, and click run. It will crash. It doesn't have the correct file association as Mr. Kercher was talking about. You have to go and download different datasets. You're not going to ever get a code from something that you just pop into your computer, and it just automatically runs. You're going to have to pull a lot of other parts.

But this is all part of that data process -- of the same data process that -- we just need to see the instructions, and because we're experienced in this, we can then, very easily, recreate or replicate.

Q. All right. We've had some discussion about, you know -- you must have been asked 17 different ways; did you produce the shapefile -- the missing shapefile? I want to make a wanted poster for the shapefile.

Does this thing exist?

A. There is no interim shapefile that was saved to be able to

produce. We produced all of the underlying files consistent with what Dr. McCartan and Dr. Imai, the authors of the package, instruct people to do. We turned all those over. The merge command is extremely straightforward. Dr. Trende does it every single time he runs redist.

And so in this case, he was able to do it. So there's nothing that was not turned over. He has the full instructions. And, in fact, from my reading of his report, he was able to fully replicate our analysis.

Q. Now, the merge code that you talked about in this discussion, I mean, is that -- would you liken that to sort of knowing the formula of the circumference of a circle?

A. It's even less than that. It's whether or not you even, like, know how to open up Microsoft Excel or not. So it's for anyone who's an expert in R or redist, they will regularly -- the first thing we would have to do is to overlay a shape-file onto a VDT file. It's going to be their first step.

We told them which ones we used. They were essentially the exact same ones he used in the 2022 report. The only difference was we used the 2024 election data now.

Q. Well, let's say that you were -- we're not living in the land of lawyers, and you were living in the land of social science academics. And you had produced this interim shape-file.

Would it make any difference whatsoever as to whether

15:33 1 or not your project was accepted for publication in a
2 peer-reviewed journal?
3 A. No, not at all.
4 Q. And, in fact, what is your opinion as to whether or not
5 people who are published in a peer-reviewed journal produce
6 such a thing?
7 A. They don't. We have documentation from that, and if you
8 look on the journal websites, what they usually provide -- ask
9 for is your underlying data and your code. And that's it.
10 Q. Is there anything about this interim shape-file that is
11 necessary for somebody to replicate your work?
12 A. Nothing. We told them which three files we were using:
13 Senses, CVAP data, 2024 election data, and this map C2333
14 shape-file. We provided those to them. We gave them those
15 pieces of information. We knew Dr. Trende already knew how to
16 merge them together because he did it himself.
17 Q. All right. I'm gonna transition and talk about a different
18 subject now.
19 This "interpolation" issue, which I think has taken
20 you ten years to get me to use that word, so I was very nervous
21 about...
22 A. You got it.
23 Q. This ACS interpolation issue. Explain just exactly what
24 that is?
25 A. Well, there's a difference in what the ACS does and what --

we were just speaking about in trying to interpolate partisan data. The ACS is doing a sample survey of 2 percent of all households. When you roll it up to five years, you now have 10 percent of all households. That's not bad because there's 100 million households in the U.S., so you have 10 percent of that.

From that, you're looking at the data and you're extracting it to the entire county, let's say, or entire ZIP code. In the same way that if we were doing an election survey for the State of Texas, we would not interview -- if we interviewed 10 percent of households, that would be remarkable. We would interview probably .5, 0.5 percent of households. We would interview 1200 people. And then we would interpolate that and try to get how people were going to vote in the State of Texas.

The ACS is doing something similar. They're doing extremely large sample survey. 10 percent of all households are sampled within a five-year ACS. And then they have that data, and they're allowed to extract it to things like census block groups, census tracks, and other things that we can use reliably.

Q. And have courts found that reliable?

A. Regularly.

Q. Now, what is your -- you heard the discussion about this possible existence of some bespoke partisan data at the block

level. You recall those generally?
A. Yes.
Q. All right. So how would you go about that if you wanted to have such data?
A. This is an entirely different process of what we might call interpolation, which is, the VDT is sitting up here, and it tells us, for all of the, let's say, 2,000 voters in that VDT, they voted 60/40, Trump/Harris. But within there, there were certainly some neighborhoods that voted 80 percent for Trump, and some that maybe only voted 30 percent for Trump.

Not every single neighborhood within that VDT was 60/40. We don't know. We don't know any partisan characteristics about the neighborhood. We don't know that more Democrats live over here and more Independents live here, and all the Republicans live over there. The only thing we know from the census is whether they're Black, White, Hispanic, or Asian. That's it.

So whatever interpolation comes is not going to be very precise.
Q. Now, let me say -- let me ask you this. Are you familiar with the available redistricting applications software platforms?
A. More -- more or less.
Q. Do any of them have that data?
A. I'm not sure if DRA has it down to the block level. They

15:37 1 have tried some interpolations. I don't think most political
2 scientists rely on that for the reason I just described. We
3 would want to -- just as Dr. Lewis said, we would want to
4 interpolate partisan data with other partisan data. We don't
5 have that on the census. All we know is the house number and
6 the race and ethnicity of people who live in that block. We
7 might know whether or not they had kids or things like that.
8 But we don't know any partisan data, and so the
9 interpolation that comes from the VDT of a 60/40 precinct is
10 very hard to break down into the different neighborhoods.
11 Q. Now, transitioning, you were asked some questions about
12 Mr. Kincaid's testimony in this case. You mentioned having a
13 transcript. Do you recall that?
14 A. Yes.
15 Q. You were here when Mr. Kincaid's deposition was played in
16 the last trial, in May or June?
17 A. Yes.
18 Q. And is it that -- is it that transcript that you had that
19 .txt file from that testimony you witnessed here in Court?
20 A. I remember he was up on TV somewhere, and I was sitting in
21 the gallery. And he was -- lots of parts of his testimony were
22 played. And I think at some point, I might have seen some of
23 the sentences that were in that. I don't know if it was on the
24 screen or somewhere else, but I remember that 10 percent figure
25 sticking out.

15:38 1 Q. I want to go back to the simulations one more -- one more
2 question I forgot to ask. So you use R with this redist
3 package, right?
4 A. Yes.
5 Q. Are you familiar if there's another method where you use a
6 product called Python?
7 A. Yes. I think there might be at least two other methods
8 that are out there. Some people have written their own
9 packages in Python, which is a different programming language
10 than ours, and I think there's a third set of scholars that are
11 also using R but have a slightly different package.
12 Q. So even though the Python and redist might output, you
13 know, roughly the same thing on the simulation, are they
14 operated differently as far as you know -- if you know?
15 A. They're operated differently.
16 Q. You ever heard a lawyer phrase, "when you don't have the
17 facts, pound the table"?
18 A. Yeah.
19 MR. DUNN: Pass the witness.
20 JUDGE GUADERRAMA: Mr. Kercher?
21 **RECROSS-EXAMINATION**
22 **BY MR. KERCHER:**
23 Q. Did you draw simulations that have partisan data? Do I
24 have that right?
25 A. We put partisan constraints in.

15:39 1 Q. And those would have to be down to the block level, right?
2 A. The partisan constraints are for the district. They're not
3 constraining the blocks. We're constraining what the district
4 will look like.
5 Q. Well -- but in order for the district to have boundaries,
6 the boundaries are not gonna neatly follow the VDTs, right?
7 A. In this case, they are mostly drawing on VDTs in redist.
8 Q. Exclusively or no?
9 A. I think, mostly. There could be some splits, but because
10 we allow for 1 percent, we don't require population exact
11 equality because of the software program. I think you
12 mentioned this earlier. The partisan constraints were
13 constraining to say, "Set the entire 767,000 percent district
14 to be 55 percent." We're not constraining or telling it to
15 look for blocks; we're telling it to look for VDTs.
16 Q. And I think you said this. It is or is -- it does or does
17 not require an expert to merge data that you then run through
18 your robot? That requires expertise?
19 A. It requires knowledge of redist and of using R.
20 MR. KERCHER: Pass the witness.
21 MR. DUNN: Nothing further.
22 JUDGE SMITH: Let me just ask a couple of questions
23 just --
24 THE WITNESS: Yes, Your Honor.
25 JUDGE SMITH: Getting back to kind of what we will

15:40 1 ultimately decide, I wrote down a couple of quotes. I take
2 pretty good notes. Even though I'm left-handed, I can still
3 take decent notes. Let me just -- and the reason I'm giving
4 you a chance to explain this, because it sounds a little bit
5 contradictory, but I assume you didn't mean it to be
6 contradictory, so let me just get three quotes.
7 You said, quote, race was being focused on and not
8 partisanship. That was kind of in the middle of your
9 testimony. And then at the very end, you made these two
10 statements. Quote, there were racial objectives, and then,
11 separate quote. But right after that, quote, they achieved the
12 partisanship objectives by focusing on race.
13 So in one way, you say they were racial objectives,
14 and then in the other, you say, Achieve the partisanship
15 objectives. Again, I'm not quarreling with you; I'm just
16 reading those back so that you can reconcile them or not.
17 THE WITNESS: Sure. Thank you. I think they're quite
18 consistent. I think there were partisan objectives, as
19 Mr. Kercher explained, the president and others have stated.
20 And I do think that they -- while drawing these partisan
21 objectives from the record I reviewed, the Governor and the
22 leaders of the Legislature stated racial objectives by being
23 proud of the fact that they had drawn these four majority
24 Hispanic districts.
25 They didn't call them Republican districts. They

called them majority Hispanic districts. And the only reason you would know that is if you drew them to hit 50 percent, so that was my understanding. And from reviewing the data, I saw that while drawing to draw partisan districts, they were drawing on the boundaries to continue to increase in the case of the Hispanic population, and then I think the same thing for the districts CD18 and CD30.

It seemed that they had an objective to get the Black population up over 50 percent based on the advice that they were given from the DOJ that they needed to have single-race districts.

So I think they had partisan objectives, but I also think they had racial objectives.

MR. KERCHER: If I could ask a follow-up question, based on that testimony?

JUDGE GUADERRAMA: Yes, sir.

RECROSS-EXAMINATION

BY MR. KERCHER:

Q. You just told Judge Smith, Dr. Barreto, that the only reason someone would know about the racial makeup of a district is if they drew it with the intent to give it that racial makeup. But the reality is that on TLC, every time a map is even introduced, there are a variety of racial data available by -- from the State. True?

A. Yes. It's --

15:43 Q. So every time a map gets drawn and submitted to District Viewer, anybody can go and look at the racial makeup of that map after it's drawn, right?
A. They can.
Q. It's not fair for you to imply that just because the Governor knew the racial makeup of a map after it got drawn, that that must be his intent behind drawing it. That's not true. Is it?
A. That's my testimony based especially on CD9 and the changes that were made, but I'm sure you have a different opinion.
MR. KERCHER: Pass the witness.
MR. DUNN: Nothing more.
JUDGE GUADERRAMA: May Dr. Barreto be permanently excused?
MR. DUNN: Yes.
MR. KERCHER: Yes, Your Honor.
JUDGE GUADERRAMA: Doctor, thanks so much for coming in. You're excused and free to go.
THE WITNESS: Thank you. See you next time.
(Laughter.)
(Witness excused.)
JUDGE GUADERRAMA: Who's your next witness?
MR. SILVA: At this time, LULAC Plaintiffs would like to call Mr. Daniel Uribe to the stand.
JUDGE GUADERRAMA: Daniel who?

MR. SILVA: Uribe, U-R-I-B-E.

(Witness present.)

JUDGE GUADERRAMA: Good afternoon, Mr. Uribe.

THE WITNESS: Good afternoon.

JUDGE GUADERRAMA: Raise your right hand, sir, to receive the oath.

(Witness sworn.)

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

Okay. Mr. Silva, whenever you're ready.

DANIEL ALEXANDER URIBE,

duly sworn by the Court, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SILVA:

Q. Good afternoon, Mr. Uribe. Thank you so much for joining us today.

A. Thank you for having me, sir.

Q. Would you please state your full name for the Court?

A. Yes, sir, Daniel Alexander Uribe. Daniel Alexander Uribe.

Q. Mr.~Uribe, in what city do you currently live?

A. Houston, Texas, in Harris County.

Q. And can you please tell me a bit about your educational background? Starting with high school?

A. Yes, sir. So I attended a charter school in Houston, it's called YES College Prep. I'm in the first graduating class of

that school. And it was in Second Ward, a neighborhood in Houston, Texas.

Q. And did you attend college after high school?

A. Yes, sir. Actually, I did. I went to Cornell University, where I got a bachelor's and a minor's in Latin American history, and then I got a master's from the University of St. Thomas in Houston, Texas, in 2011.

Q. And can you please tell us a bit about what you do for a living?

A. I am the Director of Workforce Planning and Veterans Services for Commissioner Adrian Garcia, Harris County Precinct 2.

Q. And, Mr. Uribe, you're here in your capacity as a Harris County voter. Is that correct?

A. Yes, sir, that is correct.

Q. Can you please tell us what neighborhood you currently live in?

A. Meadow Creek Village.

Q. And what Congressional District do you live in?

A. Congressional District 29.

Q. And who is your Congressional Representative?

A. Congresswoman Sylvia Garcia.

Q. Can you please tell us how long you've lived in Meadow Creek Village?

A. Yes, sir. My family has had a home in Meadow Creek Village

for 35 years.
Q. And you mentioned that your family has had a home there for 35 years. How long have you lived in Meadow Creek Village?
A. 31 years, sir.
Q. Got it. And do you have any other family -- any family members in the area?
A. Yes, sir. Actually, I bought my house about a minute and a half from my parents' home. My sister lives about a minute and a half from my current home. My cousin lives ten houses from my sister. And my aunt lives in the same street, but in the adjacent neighborhood to ours, Forest Oaks.
Q. And can you please describe Meadow Creek Village and some of the issues and needs based on your lived experience there?
A. Yes, sir. So one of the things that, as a new homeowner, I found out is that the city infrastructure is not all the way there. When it rains heavily, our Main Street sewer line gets locked and -- which means that our house sewer lines get locked. So there needs to be some capital improvements.

Also, our sidewalks need some work. Recently here in the last two to five years, we've had a lot of issues in the neighborhood where people are dumping dogs, so we have a lot of strays now in the neighborhood.

And, finally, one of the major issues is that there's trains that block the exits from the neighborhoods. And they'll be just at a standstill for hours.