IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

STATE OF TEXAS, Plaintiff, v. UNITED STATES OF AMERICA, and ERIC H. HOLDER, JR. in his official capacity as Attorney General of the United States, Defendants, WENDY DAVIS, *et al*., Defendant-Intervenors.	)	Case No. 1:11-CV-01303 (RMC-TBG-BAH) [Three-Judge Panel]

PLAINTIFF STATE OF TEXAS' NOTICE OF FILING PRE-FILED DIRECT WRITTEN TESTIMONY

Pursuant to the Court's January 10, 2012 Second Trial Scheduling Order (Doc. 138), Plaintiff files this Notice of Filing Pre-Filed Direct Written Testimony. Attached as Exhibit 1 is the Direct Testimony of Dr. John Alford.

Dated: January 17, 2012.

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PLAINTIFF STATE OF TEXAS' NOTICE OF FILING OF DIRECT WRITTEN TESTIMONY

EXHIBIT 1
Direct Testimony of Dr. John Alford

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DIRECT TESTIMONY OF DR. JOHN ALFORD

Qualifications

I have been retained by the State of Texas as an expert to provide an analysis in this case concerning whether the maps enacted by the State of Texas for the Texas House, Texas Senate, and U.S. Congress retrogress under Section 5 of the Voting Rights Act. I have also been retained by the State of Texas in *Perez v. Perry*, a case arising under Section 2 of the Voting Rights Act.

My rate of compensation as a testifying expert is $400 per hour. I am a tenured associate professor of political science at Rice University. At Rice, I have taught courses on redistricting, elections, political representation, voting behavior and statistical methods at both the undergraduate and graduate level. Over the last twenty-five years, I have worked on redistricting and Voting Rights Act issues involving numerous states and local governments. I have previously provided expert reports and/or testified as an expert witness in voting rights and statistical issues in a variety of court cases, working for the U.S. Attorney in Houston, the Texas Attorney General, a U.S. Congressman and various cities and school districts.

In the 2000 round of Texas redistricting, I was retained to provide advice to the Texas Attorney General in his role as Chair of the Legislative Redistricting Board. I subsequently served as the expert for the State of Texas in the state and federal litigation involving the 2001 redistricting for U.S. Congress, the Texas Senate, the Texas House of Representatives, and the Texas Board of Education. I have also worked as an expert in redistricting and voting rights cases in New Mexico, Mississippi, Wisconsin, Florida and Alabama. The details of my academic background, including all publications in the last ten years, and work as an expert, including all cases in which I have testified by deposition or at trial in the last four years, are covered in the attached vita (Appendix A). In preparing the opinions set forth in the testimony below I have relied on election, registration, and demographic data provided by the state, and the expert reports and supplemental materials provided by the defendants' experts in this case.

Overview

The three maps at issue in this case are the electoral maps adopted by the state of Texas in 2011 for the Texas House (H283), the Texas Senate (S148), and the U.S. Congress (C185). These maps will be referred to as the adopted maps or adopted plan. The question of retrogression requires a comparison of a given minority group's ability to elect its candidates of choice under the adopted plan to the plan that was in place previously. The prior plan is referred to as the benchmark plan. The maps in the benchmark plan were H100 for the Texas House, S100 for the Texas Senate, and C100 for the U.S. Congress.

The primary dispute in this case between the State of Texas and the defendants is whether the enacted plan, especially for the Texas House and U.S. Congress, reduces the ability of Hispanic voters to elect their candidates of choice.[1] Resolving this dispute requires a comparison of the ability of Hispanic voters to elect their candidates of choice in the benchmark and adopted plans.

Under the Court's Summary Judgment Opinion a functional analysis is required to determine whether the ability of Hispanic voters to elect their candidates of choice has been retrogressed in the enacted plan. Any such analysis first requires determining which of the districts in the benchmark and enacted plans should be considered. As the Court explained, "population statistics are significant and an important starting point for a retrogression analysis."

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[1] The Department of Justice has indicated that the State is entitled to declaratory judgment that the Senate map does not violate Section Five of the Voting Rights Act. As to the ability of black voters to elect their candidates of choice, the Department of Justice does not contend that any of the enacted maps retrogress the ability of black voters to elect their candidates of choice.

Court Op. at 29. Once the districts at issue are identified, then a functional analysis may be employed to determine whether the enacted plan retrogresses.

In this case, the Department of Justice's expert, Dr. Lisa Handley, used demographics to identify the districts she considered relevant to the question of whether the ability of Hispanic voters to elect their candidates of choice was retrogressed in the Texas House and U.S. Congress. Dr. Handley considered all districts in the benchmark and enacted plans where Hispanic Voting Age Population (HVAP) was at least 50%.

While Dr. Handley's demographic metric may be overly broad, including as it does districts with Hispanic Citizen Voting Age Populations (HCVAP) as low as 26%, it has the virtue of certainly including all of the districts that a more restrictive metric would include. For this reason and to simply the Court's task in comparing my conclusions to Dr. Handley's, I have adopted her standard in selecting the districts for my analysis.

Using these districts as a starting point, below I set forth my analysis of whether the enacted maps retrogress the ability of Hispanic voters to elect their candidates of choice.

Reconstituted Election Analysis

The Justice Department Guidance provides that the determination of retrogression "requires a functional analysis of the electoral behavior within a particular jurisdiction." As the Court has explained, a functional analysis looks to "whether minority voters will be effective in their exercise of the electoral franchise" and should take into account "data that pertains to actual minority citizen voting strength." Court Op. 31. This data may include voter cohesion, turnout, voter registration, population shifts, and consideration of future election patterns. *Id.* 32. The Justice Department Guidance provides no further instruction on how to choose elections for analysis or how to perform that analysis.

I have adopted a functional approach that incorporates all of the above factors and predicts Hispanic voter success in the benchmark and adopted plans. This approach is referred to in the social science literature as reconstituted election analysis. Dr. Handley also uses reconstituted election analysis in reaching her conclusions, and indeed reconstituted election analysis is widely used both in the social science literature and in the actual redistricting process whenever it is necessary to compare minority voters' electoral success between alternative districts in either a single plan or between different plans. [2]

Reconstituted election analysis involves identifying a set of past elections and using the actual votes cast in those elections to help us in comparing minority voter success in a benchmark and an adopted plan. For example, the 2010 statewide election for Lieutenant Governor was between a Hispanic Democratic candidate, Linda Chavez Thompson, and an Anglo Republican candidate, David Dewhurst. The results from this election provide us with the number of votes cast for these candidates in each voting precinct in the State of Texas. This means that for any precinct in Texas we could answer the question of whether Chavez Thompson—this Hispanic candidate of choice—would have been elected by the voters of that precinct. Importantly, the various factors playing into the potential success of a Hispanic

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[2] Reconstituted election analysis is sometimes referred to as "exogenous" election analysis because while we are concerned with a specific districted office, here for example the Texas House, we base our analysis on other statewide contests. Statewide election contests are used for reconstituted election analysis because only statewide contests provide the data to reconstitute an election both in the benchmark and in the adopted plan. By contrast, district-wide contests cannot be used in a reconstituted election analysis because they provide no voting results outside the boundaries of the existing district. Thus, there is no voting data for precincts that fall in the adopted plan but not in the benchmark plan. Dr. Handley summarizes this point in her report where she says "the exogenous index has been included to provide a relative measure of effectiveness when comparing the benchmark to proposed districts."

candidate of choice are all represented here in their actual impact on turnout and cohesion both for supporters of the Hispanic candidate and supporters of the Anglo candidate.

We can take advantage of this actual measurement of minority voter strength at the polls to produce a measure of the ability of Hispanic voters to elect their candidates of choice for any actual or proposed district within the state. To do this, we simply sum the precinct vote totals for the candidates for all of the precincts contained within a given district. For example, by summing precinct level votes to the level of benchmark House District 36, we can see that while Chavez Thompson lost the actual statewide race for Lieutenant Governor, had the election been decided only by the voters in House District 22—as it existed in H100—Chavez Thompson would have prevailed by a margin of over 30%.

We can use reconstituted election analysis not only to demonstrate what the election results were in a given district, but also what the election results would have been in an adopted district. Because we know which precincts are included in an adopted district (or any proposed district), we can sum the vote totals in those precincts to measure Hispanic voter success. The most important point is that whether we are summing the actual precinct election results to estimate Hispanic voter strength in a proposed district, in an adopted district, in an actual existing district, or in the State of Texas as a whole the result is simply a summation of actual votes cast. Whether the district is an existing district or a proposed district makes no difference since in neither case are we utilizing projected or estimated voting behavior.

Because it is based on actual votes cast, reconstituted election analysis incorporates all of the factors the Court has identified as relevant to determining minority voter effectiveness. For example, if Hispanic voter registration and turnout are high in Hidalgo County then a reconstituted election analysis using precincts from Hidalgo County will reflect these turnout and registration characteristics. Likewise, if Hispanic voters in Bexar County do not uniformly vote for the same candidate, then a reconstituted election analysis based on precincts taken from Bexar County will reflect this lack of Hispanic cohesion in the vote totals cast.

In sum, reconstituted election analysis is the best available social science tool that provides a quantitative measurement of minority voter effectiveness that is based on the factors identified by the Court.

Texas House

To analyze the question of whether the adopted plan for the Texas House retrogresses Hispanic voter success, I have performed a reconstituted election analysis on H100 and H283. I have performed this analysis for the districts identified by Dr. Handley. As I noted earlier, Dr. Handley's use of a 50% VAP threshold of inclusion may be overly broad, including as it does districts with Hispanic Citizen Voting Age Populations (HCVAP) as low as 26%, but it has the virtue of certainly including all of the districts that a more restrictive metric would include. For this reason and to simplify the Court's task in comparing my conclusions to Dr. Handley's, I have adopted her standard in selecting the districts for my analysis. These districts constituted all of the districts in Texas where Hispanic voters may have the ability to elect their candidates of choice. Accordingly, my analysis is a statewide functional analysis of the ability of Hispanic voters to elect their candidates of choice.

After identifying the relevant districts, the next step in a reconstituted election analysis is to identify elections that will be probative. The three most common considerations are the presence of a minority candidate on the ballot, the relative recency of the election contest, and ballot placement of the contest. Dr. Handley's index utilizes all of these factors. She selects one election from each of the five most recent general election cycles. The election she picks from each cycle is the election nearest the top of the ballot that also features a Hispanic candidate who is the candidate of choice of Hispanic voters. Dr. Handley's five elections are identified below in Table 1.

Table 1:
Elections used in Dr. Handley's Five Election Index

Year	Race	Candidates, Ethnicity, and Party Affiliations
2002	Governor	Perry (AR) v. Sanchez (HD)
2004	Court of Criminal Appeals	Keasler (AR) v. Molina (HD)
2006	Lt. Governor	Dewhurst (AR) v. Alvarado (HD)
2008	U.S. Senate	Cornyn (AR) v. Noriega (HD)
2010	Lt. Governor	Dewhurst (AR) v. Chavez-Thompson (HD)

I have performed a reconstituted election analysis for H100 and H283 using Dr. Handley's five elections. In addition, I have performed a reconstituted election analysis based upon 10 elections identified prior to the enactment of the H283 by the Texas Office of the Attorney General ("OAG 10"). Like Dr. Handley's index, the OAG 10 includes the five most recent election cycles and selects contests from the top of the ballot that also feature Hispanic candidates. The OAG 10 index includes Dr. Handley's five elections.[3]

I have also performed a reconstituted election analysis based upon the five most recent elections in the OAG 10. I have done so because recent elections best reflect current conditions that may impact minority voter success, including factors like population shifts. Table 2 lists the OAG 10 elections in chronological order.

[3] The OAG 10 was identified prior to the enactment of the maps at issue in this case and disclosed to the Department of Justice before Dr. Handley issued her report. The index and the results of reconstituted election analysis based on that index were available to the Texas legislature and those working on their behalf during the redistricting process.

Table 2:
10 Elections used in the OAG 10 Election Index

Year	Race	Candidates, Ethnicity, and Party Affiliations
2002	Governor	Perry (AR) v. Sanchez (HD)
2004	Court of Criminal Appeals	Keasler (AR) v. Molina (HD)
	Railroad Commissioner	Carillo (HR) v. Scarborough (AD)
2006	Lt. Governor	Dewhurst (AR) v. Alvarado (HD)
	Court of Criminal Appeals	Keller (AR) v. Molina (HD)
2008	U.S. Senate	Cornyn (AR) v. Noriega (HD)
	Texas Supreme Court	Johnson (AR) v. Yanez (HD)
2010	Lt. Governor	Dewhurst (AR) v. Chavez-Thompson (HD)
	Land Commissioner	Patterson (AR) v. Uribe (HD)
	Texas Supreme Court	Guzman (HR) v. Bailey (AD)

Using the elections identified above, I have performed a reconstituted election analysis for each of the districts at issue (as identified by Dr. Handley) in the benchmark and adopted plans. This analysis shows the number of times the Hispanic candidate of choice prevails in these elections in each benchmark and adopted district. To determine retrogression, I have compared the overall success of Hispanic voters in each plan. The full results of this analysis are set forth in Appendix B of my direct testimony and show that there is no retrogression in the adopted plan for the Texas House.

Although there are 36 districts with an HVAP of 50% or greater between the two plans, the level of Hispanic voter success in reconstituted elections only changes in 10 of those districts. Thus, to test whether Hispanic electoral success has changed on a statewide basis, one can in this case choose only to examine these districts. There may be other districts where Latino voting strength is enhanced or reduced because of changes to Latino voting power in the Democratic primary election. The DOJ has not offered any suggestion that there has been retrogression in this regard, and given the demographic changes in the districts I deem it unlikely – in all Latino majority voting districts the demographic changes were slight. There may be districts in the proposed plan where Latino voters gain control of a solid Democratic district where Latino voters had previously not been able to consistently control the Democrat primary. But since my analysis concludes that the map does not retrogress functionally and coupled with my observation of the demographics, there is no need to address this possibility to conclude that the maps are as a whole not retrogressive.

Table 3a shows the demographics for these 10 districts and Table 3b sets forth the number of electoral wins for the Hispanic candidate of choice for these 10 districts in the benchmark and adopted plans for all three election sets. Because there are 10 districts that change, there are a maximum of 50 elections (5 elections x 10 districts) that could be won by Hispanic candidates of choice in Dr. Handley's five election index as well as the five most recent elections in the OAG's list. There are a maximum of 100 elections (10 elections x 10 districts) that could be won by Hispanic candidates of choice in the OAG 10.

Table 3a:
HVAP and HCVAP under the Benchmark and Adopted Plans, 2002-2010 (House Districts with HVAP > 50% in which there are any differences between the Results of the Reconstituted Elections between the Benchmark and Adopted Plans)

	%HVAP		%HCVAP	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
31	95.2	94	93.6	88.9
34	61.6	67.7	58.2	64.6
35	56.4	54.9	54.6	52.5
41	81.8	76.2	77.5	72.1
43	76.3	76.5	71.7	71.7
74	65.8	76.6	59.7	69.4
80	74.3	86.1	67.2	79.7
117	58.7	62.7	58.8	63.8
118	64.7	64.8	61.9	64.7
137	59.8	55.3	25.6	26.3

Table 3b:
Number of Elections Won by the Hispanic Candidate of Choice in Reconstituted Elections under the Benchmark and Adopted Plans, 2002-2010 (House Districts with HVAP > 50% in which there are any differences between the Results of the Reconstituted Elections between the Benchmark and Adopted Plans)

	Dr. Handley's 5 Elections		OAG's 10 Elections		5 most Recent Elections in OAG's 10	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
33	3	0	6	0	2	0
34	3	4	6	9	2	4
35	2	1	5	4	1	1
41	4	3	7	5	4	2
43	5	5	9	10	4	5
74	1	5	4	10	2	5
80	5	5	9	10	4	5
117	3	1	5	2	2	2
118	5	5	7	10	2	5
137	3	5	8	10	5	5
Total Wins	**34**	**34**	**66**	**70**	**28**	**34**
Difference Between Adopted and Benchmark:		**0**		**+4**		**+6**

As demonstrated in Table 3b, the Hispanic candidate of choice prevails in precisely the same number of reconstituted benchmark and adopted elections using Dr. Handley's five election index. Using the OAG 10, the Hispanic candidate of choice prevails in 66 out of 100 reconstituted benchmark plan elections and 70 out of 100 reconstituted adopted plan elections. In the five most recent OAG elections, the Hispanic candidate of choice prevails in 28 out of 50 reconstituted benchmark plan elections and 34 reconstituted adopted plan elections. Accordingly, all three approaches demonstrate that Hispanic voters are at least as successful, if not more successful, in electing candidates of choice in the adopted plan compared to the benchmark.

Two features of my statewide functional approach bear mentioning. First, it is particularly well suited to measuring Hispanic voter effectiveness as the output of the analysis is a comparison of the number of exogenous elections in which Hispanic voters are successful in electing their candidates of choice.

Second, it permits a statewide analysis of whether Hispanic voter effectiveness has been changed that takes into account the degree of change in each district. For example, the issue of redrawing of district lines in Nueces County and the loss of District 33 are central concerns raised by the Defendants. The results of the statewide functional analysis presented in Table 3b provide a clear empirical explication of those changes. Both Districts 33 and 34 in the benchmark plan were Nueces County districts that provided some but not maximal electoral success for Hispanic candidates of choice. In both districts the benchmark plan index values show that Hispanic candidates of choice succeeded in 6 elections and were defeated in 4 elections, a pattern consistent with the fact that entering the redistricting cycle the incumbents in both District 33 and 34 were Republicans elected in 2010 that were not the candidates of choice of Hispanic voters. The adopted plan combines parts of benchmark District 33 and District 34 to create a single Hispanic district (adopted District 34). Again, Table 3b makes clear that while this combination results in the loss of 6 election successes (using Dr. Handley's five election index) from District 33, in the process it adds 3 election successes to the index value of District 34. This net loss of 3 election successes in Nueces County is more than offset by increases elsewhere in the adopted plan.

Dr. Handley's Approach

Dr. Handley has adopted a different approach to determine whether H283 is retrogressive. Just as I did above, Dr. Handley performed a reconstituted election analysis for the relevant districts based on her five election index. Dr. Handley's sole basis for determining whether a district is effective in the adopted plan is analysis of this reconstituted or "exogenous" election analysis.

Where we differ is that rather than retain the full set of effectiveness information contained in her reconstituted election analysis, Dr. Handley uses a binary approach. She determines whether a district is “effective” in the benchmark and whether it is “effective” in the adopted plan. She then adds up the number of effective districts in each plan and determines that since there are fewer effective districts in the adopted plan than in the proposed plan that H283 is retrogressive. For the adopted plan a district is effective if the Hispanic candidate of choice prevailed in 3, 4, or 5 elections and ineffective if the Hispanic candidate of choice prevailed in 0, 1, or 2 elections. Dr. Handley says in her supplemental report that she also compares the exogenous scores in the benchmark and proposed plans. Handley Supp. Report 2. But there is no reason to compare the exogenous scores to check for performance decreases and ignore performance increases (which Dr. Handley does). And in fact there is no instance in which Dr. Handley’s opinion turns on measuring the difference between benchmark and proposed on exogenous scores as opposed to just the exogenous score in the benchmark being 0, 1, or 2.

While Dr. Handley does not choose to use this same reconstituted election approach to assess district effectiveness in the benchmark plan, a topic I will address below, it is a simple matter to apply her binary approach to the reconstituted analysis for both the benchmark and proposed plans.

As shown in Table 3b above, the number of districts that scored three out of five elections or above decreased by one district. The reason for this change is that Dr. Handley’s exogenous election data show that Districts 33 and 117 drop from three out of five elections or above in the benchmark plan to below three out of five elections in the adopted plan, while District 74 increases from below three out of five elections in the benchmark plan to above three out of five elections in the adopted plan. With two districts moving down and one moving up, there is a net loss of one.

However, Dr. Handley's analysis does not take into account the bright-line rule articulated by the Court in its Summary Judgment Opinion in footnote 22. This bright-line rule establishes that a given minority population will have the ability to elect its candidate of choice when the citizen voting age of that population is equal to or greater than 60%. A more detailed functional analysis is not necessary for those districts because the demographic makeup of those districts "essentially guarantees that, despite changes in voter turnout, registration, and other factors that affect participation at the polls, a cohesive minority group will be able to elect its candidate of choice." Court Op. 29. Applying this rule here, the HCVAP in District 117 increased from 58.8% in the benchmark to 63.8% in the adopted plan. Thus, under the Court's bright-line rule, District 117 should be considered a district in the adopted plan that provides Hispanic voters the ability to elect the candidate of their choice and there is "no need to make further inquiries into minority voters' ability to elect" their candidates of choice in this district. *Id.* 30. Applying the Court's bright line rule to exclude District 117, Dr. Handley's exogenous election analysis shows that the number of Hispanic ability to elect districts did not change from the benchmark to the adopted plan.

Dr. Handley does not reach this conclusion, however, because she uses a different index to assess minority effectiveness in the benchmark plan from the one (outlined above) that she uses to assess minority effectiveness in the adopted plan. For her benchmark effectiveness determination, Dr. Handley alters her reconstituted election analysis by factoring in a second index of endogenous election analysis. This consideration of endogenous election analysis only changes the binary status of 2 benchmark districts—Districts 35 and 74. Both districts are ineffective minority districts based on an application of her binary rule to the reconstituted election analysis. By giving her endogenous election index more weight than her reconstituted election analysis, Dr. Handley counts these as effective benchmark districts.

Thus, using this approach, while still applying the Court's bright-line rule, the number of Hispanic ability districts between the benchmark and enacted plan is reduced by two. The results under this approach are different than an approach that relies on exogenous analysis (described above) because elevating the effectiveness of District 35 in the benchmark leads to District 35 being counted as a loss, while elevating District 74 in the benchmark plan eliminates the credit the state would receive for raising District 74 from ineffective in the benchmark to an effective district in the adopted plan.

Dr. Handley's reliance on endogenous election data in this manner is problematic for several reasons. First, the formula by which the endogenous and reconstituted election results are combined to determine effectiveness in the benchmark plan is arbitrary. It is not based on traditional or accepted methods of analysis in either redistricting litigation or the applicable social science literature. Nor is there any analysis provided in Dr. Handley's report to guide the Court in assessing whether this particular mathematical combination of indices provides an accurate and reliable predictor of future district performance.

Second, the absence of any endogenous election results for the adopted plan creates unavoidable anomalies when Dr. Handley's combined endogenous and reconstituted election analysis measure for the benchmark plan is used as a basis for direct comparison with the solely reconstituted election analysis measure for the adopted plan. Dr. Handley's treatment of Districts 35 and 74 provide a concrete illustration of this problem. In the benchmark plan District 35 scores 40% (two out of five) in Dr. Handley's reconstituted election analysis. In the adopted plan District 35 scores a 20% (one out of five) in Dr. Handley's reconstituted election analysis. While both of these values would suggest a district that is not effective in either the benchmark or the adopted plan, Dr. Handley averages the 40% reconstituted election analysis benchmark value with the 80% endogenous value for District 35 yielding a combined benchmark effectiveness index of 60%. The problem here becomes clear if we consider what the exogenous election score in the adopted District 35 would have to be to avoid retrogression under Dr. Handley's approach. If the district in the adopted plan was *identical* to the district in the benchmark plan, Dr. Handley would nevertheless find retrogression based upon her use of endogenous election analysis. In fact, the State would have had to improve reconstituted election analysis performance in District 35 from the benchmark 40% (two out of five) to 60% (three out of five) in order to avoid retrogression according to Dr. Handley. A measure of retrogression that requires substantially improving minority opportunity in an existing district in order to avoid a finding of retrogression is fundamentally flawed. Dr. Handley's Supplemental Report says that it is in fact the decrease of the exogenous score that leads to her conclusion on House District 34 (at page 2), but considering the relative exogenous scores in the benchmark and proposed only when they go down is a one-sided analysis that makes her approach even worse because it does not address the increase in Latino voting strength in districts like District 74, as I discuss below.

In District 74 Dr. Handley's benchmark reconstituted election analysis score is 20% (one out of five) and the adopted reconstituted election analysis score is 100% (five out of five). Dr. Handley's index does not record this as an improvement in the ability of Hispanic voters to elect their candidate of choice in District 74 and does not give Texas any credit for this improvement in her retrogression analysis. This is so because Dr. Handley's reliance on endogenous data results in her treatment of District 74 as a performing district in the benchmark plan. This is problematic not simply because it understates the improved opportunity of Hispanic voters in District 74. Again, consider what Dr. Handley's approach would have produced had the state left District 74 unchanged. District 74 would move from a performing district in the benchmark plan (with a combined endogenous and reconstituted election analysis benchmark score of 60%) to a non-performing district in the adopted plan (with a reconstituted election analysis adopted score of 20%). Given Dr. Handley's standard, the state would have been required to improve reconstituted election analysis performance in District 74 from 20% to 60% in order to avoid retrogressing in District 74. Under her revised "comparison" approach from her Supplemental Report it is not clear whether Dr. Handley would continue to class District 74 as an ability district if it had not been changed.

Third, the use of endogenous data is problematic because it gives substantial weight to special circumstances in the district's past that may or may not be relevant to the district's performance going forward. Reconstituted election analysis avoids this flaw by relying on characteristics of the existing district that can be measured in precisely the same fashion in both the benchmark and the adopted plan and, importantly, will also be present and play out in a similar manner in the district going forward. Note that the combined endogenous / reconstituted election analysis index used by Dr. Handley has neither of these characteristics.

District 74 illustrates this. District 74 scores a 100% in Dr. Handley's endogenous index because Representative Gallego, first elected to the House in 1990, has been able to win re-election throughout the last decade. This is so despite the fact—as illustrated by Dr. Handley's benchmark exogenous score—that voters in this district have not typically supported other Hispanic candidates of choice. This illustrates that under some circumstances, in this case a highly regarded, long-term incumbent, a district with a seemingly non-performing exogenous index can in fact elect the Hispanic candidate of choice. Presumably this minority success could continue in District 74 assuming Representative Gallego's continued presence on the ballot. There are two problems with this assumption. First, the test for retrogression cannot depend upon whether a given candidate continues to run for office. Here this is not merely hypothetical – Representative Gallego has announced he will not seek re-election to House District 74 but will instead run from Congressional District 23. Second, we have no way of creating an index value for the adopted plan that would mathematically incorporate this circumstance into a numerical index that would allow the adopted district to be fairly compared to the existing district.

For the foregoing reasons, the best approach to comparing a benchmark plan to an adopted plan is to rely on reconstituted election analysis, as it is the best available index of minority ability to elect across the two plans. This is, after all, precisely the purpose for which reconstituted election analysis was developed and has always been utilized by both those involved in redistricting and the Courts.[4] As Dr. Handley states in regard to her assessment of her benchmark districts in her Table 1, "the exogenous index has been included to provide a relative measure of effectiveness when comparing the benchmark to proposed districts." That is exactly what I have done here in reaching my conclusion that Dr. Handley's reconstituted election analysis data, interpreted in light of the Court's bright line rule, do not show retrogression in the Texas House.

[4] To avoid confusion it is important to distinguish the role of endogenous vs. exogenous election analysis in probing voter cohesion. In the context of cohesion, at least as it relates to prongs 2 and 3 of the *Gingles* test in a Section 2 case, both the endogenous and the exogenous elections are available for exactly the same geography and the courts have generally given preference to endogenous election analysis where it is available, with exogenous election analysis being used only when there is an insufficient number of endogenous elections available to provide a sufficient analysis of voter cohesion and polarization.

Combined Minority Districts

Professor Handley identifies four districts in the benchmark plan (the 27th, the 46th, the 120th, and the 149th) that fall short of meeting her population standard for Hispanic or Black districts, but that nonetheless merit consideration in her view because they have high electoral effectiveness index values. According to Professor Handley, District 27 is sufficiently strengthened in the adopted plan (with Black VAP rising from 34.6% in the benchmark to 42.9% in the adopted plan) that it constitutes an additional effective Black district as noted above. Two other districts, the 46th and the 120th, retain 100% effective exogenous election index values, and so are not in dispute. That leaves only District 149 at issue in the combined minority category.

District 149 in the old plan is lost from Harris County in the adopted plan as a consequence of the reduction in the number of districts in Harris County from 25 in the old plan to 24 in the adopted plan. In terms of demographics, District 149 is not a majority or a plurality district for any single minority group, nor does any combination of two minority groups reach 50 percent. The only way to reach a citizen majority in the district is to combine Blacks plus Hispanics plus Asians. In addition it is not a district that performs very well for Democrats, with only a 20 on Dr. Handley's exogenous index over the last decade.

In addition, voters from the three minority groups in District 149 do not usually vote cohesively in Democratic primary elections in the district. Table C1 in Appendix C contains Ecological Inference estimates for Anglo, Black, Hispanic, and 'Other' (mostly Asian) voters in the 13 Democratic primary contests since 2002 in which there has been at least one minority candidate that received 5% or more of the votes cast statewide[5].

Eight of the contests include a Hispanic candidate (or candidates) opposed by an Anglo candidate (or candidates), with no Black candidate on the ballot. In all of these contests a majority of Hispanic voters supported the Hispanic candidate(s). In contrast, a majority of Black voters supported the Hispanic candidates in only three of the eight contests, and in two of those contests the estimates of Black vote for the Hispanic candidate were only 52% and 54%. In only one of the eight contests was their evidence of cohesive Black voter support for the combined Hispanic candidates.

Three of the contests include a Black candidate (or candidates) opposed by an Anglo candidate (or candidates), with no Hispanic candidate on the ballot. In one contest, the 2008 Presidential nomination, an estimated 91% of Blacks voted for Barack Obama, compared to only 37% of Hispanic voters. In the other two contests both Hispanics and Blacks gave a majority of their support to the Anglo candidate(s).

One contest included Black, Hispanic, and Anglo candidates, and in that contest Blacks and Anglos gave a majority of their support to the candidate that shared their race or ethnicity, while Hispanic split their vote. The one remaining contest involved a Black and a Hispanic candidate, with no Anglo candidate. In that contest Blacks supported the Black candidate, while both Anglos and Hispanics split their vote.

The lack of cohesion between Black and Hispanic voters in the Democratic primary is not unique to District 149. The same lack of cohesion is clear in all the other districts in Texas that I

[5] While it would be preferable to include contests with Asian candidates in the cohesion analysis, there are no Asian candidates in the statewide elections utilized for the cohesion analysis, and Rep. Vo has run unopposed in the Democratic primary in the district.

have examined. This also matches what Dr. Engstrom, an expert for the Latino Task Force in the Section 2 case, and the only other expert in that trial to present cohesion analysis for primaries, found in his analysis. He concluded in his report that: "Latinos are consistently supportive of candidates from within their own group, in both the general and primary elections. African Americans share this preference in general elections, at least in contests without major candidates from their group, but not in Democratic primaries" (page 18)[6].

Congress

In her report on the congressional plan, Dr. Handley notes that "the Benchmark Plan includes ten minority districts that offer minority voters the ability to elect minority-preferred candidates" (page 6). This includes seven Hispanic districts and three Black districts. Turning to the adopted plan she concludes that "using the Election-Focused Approach, this brings the number of effective Hispanic districts to seven – the same number of effective Hispanic districts as in the Benchmark Plan" (page 8). For the plurality Black districts she concludes that "there is no gain in the number of effective minority districts when plurality black districts alone are considered" (page 9), and indeed, based on her analysis there are the same three effective Black districts (the 9th, the 18th, and the 30th) in both the benchmark plan and the adopted plan. This seven Hispanic and three Black districts in both the benchmark and adopted plans is the same district count reported to the Court by the Department of Justice in filings with this Court. Thus neither the Department of Justice nor its expert Dr. Handley dispute that the adopted Congressional plan contains at least as many effective minority districts as the benchmark plan.

[6] Appendix C includes tables similar to Table 4 that report an Ecological Regression minority cohesion analysis for each of the other coalition districts mentioned by Intervenors in any of the legislative plans.

Applying the same statewide functional analysis that I report above for the Texas House confirms that the adopted Congressional plan does not retrogress, and in fact improves minority voter opportunity. Again, as detailed above for the Texas House, I have performed a reconstituted election analysis for C100 (the benchmark plan) and C185 (the adopted plan) using Dr. Handley's five elections. In addition, I have performed a reconstituted election analysis based upon 10 elections identified prior to the enactment of the C185 by the Texas Office of the Attorney General ("OAG 10"). I have also performed a reconstituted election analysis based upon the five most recent elections in the OAG 10. Tables 4a and 4b below provide the demographics and reconstituted election analysis respectively for the nine districts that meet Dr. Handley's 50% plus Hispanic VAP standard.

Table 4a:
HVAP and HCVAP under the Benchmark and Adopted Plans, 2002-2010 (Congressional Districts with HVAP > 50%)

	%HVAP		%HCVAP	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
15	78.7	77.2	71.9	71.0
16	79.1	77.6	74.5	72.7
20	68.0	66.0	63.8	62.9
23	62.8	63.8	58.4	58.5
27	69.2	45.1	63.8	41.1
28	75.7	73.6	68.3	65.9
29	72.3	71.7	56.0	56.3
34	--	79.0	--	71.7
35	--	58.3	--	51.9

Table 4b:
Number of Elections Won by the Hispanic Candidate of Choice in Reconstituted Elections under the Benchmark and Adopted Plans, 2002-2010 (Congressional Districts with HVAP > 50%)

	Dr. Handley's 5 Elections		OAG's 10 Elections		5 most Recent Elections in OAG's 10	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
15	5	4	10	9	5	5
16	5	5	10	10	5	5
20	5	5	10	10	5	5
23	2	0	3	1	2	1
27	3	0	6	0	2	0
28	5	5	8	10	3	5
29	5	5	10	10	5	5
34	0	5	0	10	0	5
35	0	5	0	10	0	5
Total Wins	**30**	**34**	**57**	**70**	**27**	**36**
Difference Between Adopted and Benchmark:		**+4**		**+13**		**+9**

Using Dr. Handley's five election index, the reconstituted election analysis shows an improvement of four elections successes for Hispanic candidates of choice in the adopted plan when compared to the benchmark plan. As there are five elections in a full decade for a single district, this represents the gain of almost an entire district in the adopted plan. This improvement is also clear using the OAG ten elections, where the improvement, at 13 elections, is a little more than a full district (10 elections). Using the five most recent elections in the OAG ten yields a gain of nine elections, just one election short of two full districts.

The gains suggested in the statewide functional analysis comport closely to the actual district changes that are reflected in the adopted plan. District 27 in the benchmark plan was performing in about half of the reconstituted elections, and in fact had failed to elect the candidate of choice of Hispanic voters in the district in 2010. The reconfiguration of the 27th into the new 34th District represents a substantial improvement. The new 34th is a district with perfect exogenous election results on all three indexes, and is an open district as well.

The reconstituted elections show that District 23 in the benchmark was a weak district for Hispanic candidates of choice, and the district had also failed to elect the candidate of choice of Hispanic voters to Congress in 2010. While exogenous election success was reduced in the adopted plan, the 23rd remains a majority Hispanic district (at 58.5 percent HCVAP and 54.1 percent SSVR), and still shows some exogenous election wins in the OAG ten election index. This weakening of the 23rd District, and its associated loss of at most two out of five elections, is more than offset by the gain of five elections (on the Handley index) associated with the reconstituted election score for the newly created 35th District.

While, as discussed above, Dr. Handley does not choose to use this same reconstituted election approach to assess changes in districts, it is a simple matter to apply her binary approach to the reconstituted analysis for both the benchmark and proposed plans. In the benchmark plan there are three districts with reconstituted election scores above 50% based on her five election index (the 15th, the 27th, and the 28th). In the adopted plan there are four districts with reconstituted election scores above 50% (the 15th, the 28th, the 34th and the 35th), for a net gain of one district in the adopted plan. Using the same binary approach applied to the OAG ten election index produces exactly the same result of a gain of one district. Applying the binary approach to the most recent five elections in the OAG ten produces a gain of two districts between the benchmark and the adopted plan.

Despite the fact that a discrete binary approach applied to her reconstituted election index produces the net gain of one seat, Dr. Handley, as noted above, concludes that there is no net gain in the adopted plan. This is because she averages her reconstituted election index (what she terms "exogenous minority effectiveness") with her endogenous election index. The only thing this changes here is the treatment of the 23rd District in the benchmark plan. With the endogenous score of 67.7% and the exogenous score of 40% averaged together it has an index value of 53.5%, and based on this narrow margin above 50% is counted as effective. This highlights the impact of factoring in endogenous election on only one side of the comparison (here an exogenous index value of 40% becomes a 'one' based on the endogenous score, but if it remained unchanged in the adopted plan would give the same district a score of zero for the adopted plan). It also illustrates how small differences get magnified by a discrete counting approach. Had there been only one less election win in the five election exogenous index for the 23rd District, the average of 67.7% and 20% would have produced an index value of 43.5% for the benchmark plan, and there would be only six effective districts in the benchmark compared to seven in the adopted plan.

Here the magnification of one election result is particularly acute, as we can see from the actual election results in Dr. Handley's Appendix B to her earlier report in this case. In the reconstituted election for the 2002 Governor's contest in the 23rd District the win for Sanchez is very narrow. Shifting the vote of less than 300 voters out of over 125,000 voters in the election would have resulting in a loss for Sanchez in the district. That would have shifted the exogenous index for the benchmark 23rd from 2 out of 5 (40%) to one out of five (20%), and in turn would have moved the averaged index from 53.5 to 43.5, which would have shifted the entire benchmark plan down one Hispanic district from seven to six.

And again, Dr. Handley cannot graft her revised comparative approach from her Supplemental Report in order to conclude that District 23 must have retrogressed because such a conclusion (that a lowering from 2/5 to 0/5 is retrogression) begs the question of why Dr.

Handley will not consider increases to districts in the proposed maps that are already performing but get even better (like House District 34). Dr. Handley cannot use relative exogenous scores only to make things appear worse for the Texas maps without considering the increases in minority voting strength that occur at the other end of the spectrum.

District 25

District 25 is not included in the list of Congressional districts that provide minority voters an opportunity to elect candidates of choice in either the specifics provided to the court by the Department of Justice nor is it mentioned as such in the report of the Department's expert Dr. Handley. The demographics for the district show why. The district has an Anglo CVAP of over 60%, a Hispanic CVAP of about 25%, and a Black CVAP that is under 10%. The SSVR is only 20.4 %, making the district slightly lower in the percent of Hispanic registered voters than the state as a whole, and the same is probably true for Black registered voters as well. The only thing that distinguishes the 25th district is that it is a majority Democratic district. As such it tends to elect the candidate of choice of both Black and Hispanic voters in the general election as both groups are majority Democrat. To achieve this, minority voters in the district must depend on very substantial Anglo crossover vote. Clearly it cannot be the case that Anglos usually vote as a bloc to defeat the candidate of choice of minority voters in the district.

Moreover, there is substantial evidence that Blacks and Hispanics do not vote cohesively in the Democratic primary. Table C2 in Appendix C contains Ecological Inference estimates for Anglo, Black, Hispanic, and 'Other' (mostly Asian) voters in the 13 Democratic primary contests since 2002 in which there has been at least one minority candidate that received 5% or more of the votes cast statewide.

Eight of the contests include a Hispanic candidate (or candidates) opposed by an Anglo candidate (or candidates), with no Black candidate on the ballot. In all but one of these contests a majority of Hispanic voters supported the Hispanic candidate(s). In contrast, a majority of Black voters supported the Hispanic candidates in only one of the eight contests. In seven of the eight contests over two-thirds of Black voters voted for the Anglo candidate(s), as did a majority of Anglo voters.

Three of the contests include a Black candidate (or candidates) opposed by an Anglo candidate (or candidates), with no Hispanic candidate on the ballot. In one contest, the 2008 Presidential nomination, an estimated 96% of Black voted for Barack Obama, compared to 49% of Hispanic voters. In the other two contests both Hispanics and Blacks gave a majority of their support to the Anglo candidate(s).

One contest included Black, Hispanic, and Anglo candidates, and in that contest each group gave at least a plurality of their support to the candidate that shared their race or ethnicity. The one remaining contest involved a Black and a Hispanic candidate, with no Anglo candidate. In that contest Anglos and Blacks both supported the Black candidate, while Hispanics supported the Hispanic candidate.

In the 25th Congressional District neither the Hispanic nor the Black eligible population proportions come close to reaching any threshold level, either alone or in combination. Nor are Blacks and Hispanics cohesive in the Democratic primary. The key factor at work is partisanship. In partisan general elections across Texas, Democratic voters, regardless of race or ethnicity, join together in support of the Democratic candidate, regardless of the race or ethnicity of that candidate. Currently, the majority of Black and Hispanic voters favor Democratic candidates. If, under these conditions the 25th District is a protected district, then it is hard to see how any other majority Democratic district, assuming it had at least one eligible minority resident, would not also be a protected district.

Senate

Neither the Department of Justice nor its expert Dr. Handley dispute that the adopted Senate plan contains at least as many effective minority districts as the benchmark plan. This can be confirmed by the same functional approach used above.

Applying the same statewide functional analysis that I report above for the Texas House confirms that the adopted Senate plan does not retrogress, and in fact improves minority voter opportunity. Again, as detailed above for the Texas House, I have performed a reconstituted election analysis for S100 and S148 using Dr. Handley's five elections. In addition, I have performed a reconstituted election analysis based upon 10 elections identified prior to the enactment of the S148 by the Texas Office of the Attorney General ("OAG 10"). I have also performed a reconstituted election analysis based upon the five most recent elections in the OAG 10. Tables 5a and 5b below provide the demographics and reconstituted election analysis respectively for Dr. Handley's seven HVAP majority Senate districts.

Table 5a:
HVAP and HCVAP under the Benchmark and Adopted Plans, 2002-2010 (State Senate Districts with HVAP > 50%)

	%HVAP		%HCVAP	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
6	73.7	70.0	57.9	53.0
19	65.6	63.0	60.8	59.1
20	73.4	73.8	67.8	68.2
21	67.3	67.9	61.0	59.8
26	65.9	64.8	62.6	60.9
27	86.2	86.2	79.8	79.8
29	79.0	79.6	74.0	74.5

Table 5b:
Number of Elections Won by the Hispanic Candidate of Choice in Reconstituted Elections under the Benchmark and Adopted Plans, 2002-2010 (State Senate Districts with HVAP > 50%)

	Dr. Handley's 5 Elections		OAG's 10 Elections		5 most Recent Elections in OAG's 10	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
6	5	5	10	10	5	5
19	4	4	8	8	3	3
20	3	5	7	9	3	4
21	4	5	8	10	3	5
26	5	5	10	10	5	5
27	5	5	10	10	5	5
29	5	5	10	10	5	5
Total Wins	**31**	**34**	**63**	**67**	**29**	**32**
Difference Between Adopted and Benchmark:		**+3**		**+4**		**+3**

Using Dr. Handley's five election index, the reconstituted election analysis shows an improvement of three elections successes for Hispanic candidates of choice in the adopted plan when compared to the benchmark plan. As there are five elections in a full decade for a single district, this represents the gain of about a half of a district in the adopted plan. This improvement is also clear using the OAG ten elections, where the improvement is 4 elections. Using the five most recent elections in the OAG ten yields the same gain of 3 elections as Dr. Handley's five election index. Looking at the individual districts the source of the improvement in Hispanic voter opportunity in the proposed plan is clear. District 20, which has a slightly higher Hispanic population in the proposed map, improves by one or two elections in all of the indexes. District 21 also improves, again by one or two elections in all the indexes. In no district in the table is there any indication of any decline in election success.

Senate District 10

Senate District 10 in the benchmark plan is 62.7 percent Anglo CVAP indicating that even if Blacks, Hispanics and Others were all voting cohesively they would still not constitute a majority in the district. In addition the reconstituted election analysis indicates that Senate district 10 has a score of zero under both Dr. Handley's five election index and the OAG 10 index. Even if we applied Dr. Handley's endogenous index calculation the district would have an endogenous score of only 20%, which would exclude it under either Dr. Handley's standard of excluding and district with an endogenous effectiveness index below 50%, or by her standard of excluding districts with an average on the endogenous and exogenous indexes that falls below 50% (here the average would be only 10%).

In addition, there is substantial evidence that Blacks and Hispanics do not vote cohesively in the Democratic primary in District 10. Table C3 in Appendix C contains Ecological Inference estimates for Anglo, Black, Hispanic, and 'Other' (mostly Asian) voters in the 13 Democratic primary contests since 2002 in which there has been at least one minority candidate that received 5% or more of the votes cast statewide.

Eight of the contests include a Hispanic candidate (or candidates) opposed by an Anglo candidate (or candidates), with no Black candidate on the ballot. In all of these contests a majority of Hispanic voters supported the Hispanic candidate(s). In contrast, a majority of Black voters supported the Hispanic candidates in only one of the eight contests. In seven of the eight contests two-thirds or more of Black voters voted for the Anglo candidate(s), a level of support for the Anglo candidate over the Hispanic candidate that was higher than that shown by Anglo voters.

Three of the contests include a Black candidate (or candidates) opposed by an Anglo candidate (or candidates), with no Hispanic candidate on the ballot. In two of these contests Hispanic voters gave a majority of their votes to the Anglo candidate. In the remaining contest both Hispanics and Blacks gave a majority of their support to the Anglo candidate(s).

One contest included Black, Hispanic, and Anglo candidates, and in that contest Anglos and Blacks gave a majority of their votes to the Black candidate while Hispanic voters majority of their votes to the Hispanic candidate. The one remaining contest involved a Black and a Hispanic candidate, with no Anglo candidate. In that contest Anglos and Blacks both supported the Black candidate, while Hispanics supported the Hispanic candidate.

In the 10th Senate District, like the 25th Congressional District, neither the Hispanic nor the Black eligible population proportions come close to reaching any threshold level, either alone or in combination. Nor are Blacks and Hispanics cohesive in the Democratic primary. But unlike the 25th Congressional District, the 10th Senate District is not even a Democratic majority district. Not a single Democrat wins in any of the reconstituted election analysis and the election of an Anglo Democrat to the Senate seat in 2008 stands as the sole indication of Democratic success. If, under these conditions the 10th District is a protected district, then not only would any majority Democratic district be a protected district, but so would any Republican majority district that elected any Democratic candidate, even once.

Senate District 15 is also mentioned by some of the Intervenors as a coalition district that may have been weakened in the adopted plan due to a slight reduction in minority population (the combined Black and Hispanic VAP declined from 67.6% in the benchmark to 61.2% in the adopted plan). However the exogenous election performance of District 15 remains unchanged on Dr. Handley's five election index, and on the OAG 10 election index. Setting aside the issue of whether it is a functioning coalition district, with no decline in election performance there has been no functional reduction in the ability of minority voters in District 15 to elect their candidate of choice.

I declare under penalty of jury that the testimony set forth above is true and correct to the best of my knowledge and belief.

DATED: January 17, 2012

John Alford

Appendix A
CV of Dr. Alford

John R. Alford
Curriculum Vitae

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Employment:

Associate Professor, Rice University, 1985 to present.
Assistant Professor, University of Georgia, 1981-1985.
Instructor, Oakland University, 1980-1981.
Teaching-Research Fellow, University of Iowa, 1977-1980.
Research Associate, Institute for Urban Studies, Houston, Texas, 1976-1977.

Education:

Ph.D., University of Iowa, Political Science, 1981.
M.A., University of Iowa, Political Science, 1980.
M.P.A., University of Houston, Public Administration, 1977.
B.S., University of Houston, Political Science, 1975.

Publications:

"Disgust Sensitivity and the Neurophysiology of Left-Right Political Orientations" with Kevin Smith, John Hibbing, Douglas Oxley, and Matthew Hibbing, *PlosONE*, (2011), 6(10):e25552. doi:10.1371/journal.pone.0025552.

"The Politics of Mate Choice" with Peter Hatemi, John R. Hibbing, Nicholas Martin and Lindon Eaves, *Journal of Politics*, (2011), 73 , pp 362-379 doi:10.1017/S0022381611000016.

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"The Ultimate Source of Political Opinions: Genes and the Environment" with John R. Hibbing in *Understanding Public Opinion, 3rd Edition* eds. Barbara Norrander and Clyde Wilcox, Washington D.C.: CQ Press, (2010).

"Is There a 'Party' in your Genes" with Peter Hatemi, John R. Hibbing, Nicholas Martin and Lindon Eaves, *Political Research Quarterly*, (September, 2009).

Publications (cont.):

"Twin Studies, Molecular Genetics, Politics, and Tolerance: A Response to Beckwith and Morris" with John R. Hibbing and Cary Funk, *Perspectives on Politics*, (December, 2008). This is a solicited response to a critique of our 2005 APSR article "Are Political Orientations Genetically Transmitted?"

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"Accepting Authoritative Decisions: Humans as Wary Cooperators" with John R. Hibbing, *American Journal of Political Science*, (January, 2004).

<u>Publications (cont.)</u>:

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"We're All in this Together: The Decline of Trust in Government, 1958-1996." in *What is it About Government that Americans Dislike?*, eds. John Hibbing and Beth Theiss-Morse, Cambridge: Cambridge University Press, (2001).

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"Economic Conditions and Individual Vote in the Federal Republic of Germany" with Jerome S. Legge. *Journal of Politics* (November, 1984).

"Television Markets and Congressional Elections" with James Campbell and Keith Henry. *Legislative Studies Quarterly* (November, 1984).

"Economic Conditions and the Forgotten Side of Congress: A Foray into U.S. Senate Elections" with John R. Hibbing, *British Journal of Political Science* (October, 1982).

"Increased Incumbency Advantage in the House" with John R. Hibbing, *Journal of Politics* (November, 1981). Reprinted in *The Congress of the United States, 1789-1989*, Carlson Publishing Inc., (1991).

"The Electoral Impact of Economic Conditions: Who is Held Responsible?" with John R. Hibbing, *American Journal of Political Science* (August, 1981).

"Comment on Increased Incumbency Advantage" with John R. Hibbing, Refereed communication: *American Political Science Review* (March, 1981).

"Can Government Regulate Safety? The Coal Mine Example" with Michael Lewis-Beck, *American Political Science Review* (September, 1980).

Awards and Honors:

CQ Press Award - 1988, honoring the outstanding paper in legislative politics presented at the 1987 Annual Meeting of the American Political Science Association. Awarded for "The Demise of the Upper House and the Rise of the Senate: Electoral Responsiveness in the United States Senate" with John Hibbing.

Research Grants:

National Science Foundation, 2007-2009, "Genes and Politics: Providing the Necessary Data". With John Hibbing, Kevin Smith, and Lindon Eaves. This is a collaborative project involving Rice, University of Nebraska, Virginia Commonwealth University, and the University of Minnesota.

Rice University Faculty Initiatives Fund, 2007-2009, "The Biological Substrates of Political Behavior". This is in assistance of a collaborative project involving Rice, Baylor College of Medicine, Queensland Institute of Medical Research, University of Nebraska, Virginia Commonwealth University, and the University of Minnesota.

National Science Foundation, 2007-2009, "Investigating the Genetic Basis of Economic Behavior". With John Hibbing and Kevin Smith. This is a collaborative project involving Rice, University of Nebraska, Virginia Commonwealth University, and the Queensland Institute of Medical Research.

National Science Foundation, 2004-2006, "Decision-Making on Behalf of Others". With John Hibbing. This is a collaborative project involving Rice and the University of Nebraska.

National Science Foundation, 2001-2002, dissertation grant for Kevin Arceneaux, "Doctoral Dissertation Research in Political Science: Voting Behavior in the Context of U.S. Federalism."

National Science Foundation, 2000-2001, dissertation grant for Stacy Ulbig, "Doctoral Dissertation Research in Political Science: Sub-national Contextual Influences on Political Trust."

National Science Foundation, 1999-2000, dissertation grant for Richard Engstrom, "Doctoral Dissertation Research in Political Science: Electoral District Structure and Political Behavior."

Rice University Research Grant, 1985, Recent Trends in British Parliamentary Elections.

Faculty Research Grants Program, University of Georgia, Summer, 1982. Impact of Media Structure on Congressional Elections, with James Campbell.

Papers Presented:

"The Physiological Differences of Liberals and Conservatives" Annual meeting of the Midwest Political Science Association, Chicago, IL (2008), with Kevin Smith, Douglas Oxley, and John Hibbing.

"Looking for Political Genes: The Influence of Serotonin on Political and Social Values" Annual meeting of the Midwest Political Science Association, Chicago, IL (2008), with Peter Hatemi, Sarah Medland, John Hibbing, and Nicholas Martin.

"Not by Twins Alone: Using the Extended Twin Family Design to Investigate the Genetic Basis of Political Beliefs" Annual meeting of the American Political Science Association, Chicago, IL (2007), with Peter Hatemi, John Hibbing, Matthew Keller, Nicholas Martin, Sarah Medland, and Lindon Eaves.

"Factorial Association: A generalization of the Fulker between-within model to the multivariate case" Annual meeting of the Behavioral Genetics Association, Amsterdam, The Netherlands (2007), with Sarah Medland, Peter Hatemi, John Hibbing, William Coventry, Nicholas Martin, and Michael Neale.

Papers Presented (cont.):

"Not by Twins Alone: Using the Extended Twin Family Design to Investigate the Genetic Basis of Political Beliefs" Annual meeting of the Midwest Political Science Association, Chicago, IL (2007), with Peter Hatemi, John Hibbing, Nicholas Martin, and Lindon Eaves.

"Getting from Genes to Politics: The Connecting Role of Emotion-Reading Capability" Annual Meeting of the International Society for Political Psychology, Portland, OR, (2007.), with John Hibbing.

"The Neurological Basis of Representative Democracy." Hendricks Conference on Political Behavior, Lincoln, NE (2006), with John Hibbing.

"The Neural Basis of Representative Democracy" Annual meeting of the American Political Science Association, Philadelphia, PA (2006), with John Hibbing.

"How are Political Orientations Genetically Transmitted? A Research Agenda" Annual meeting of the Midwest Political Science Association, Chicago Illinois (2006), with John Hibbing.

"The Politics of Mate Choice" Annual meeting of the Southern Political Science Association, Atlanta, GA (2006), with John Hibbing.

"The Challenge Evolutionary Biology Poses for Rational Choice" Annual meeting of the American Political Science Association, Washington, DC (2005), with John Hibbing and Kevin Smith.

"Decision Making on Behalf of Others" Annual meeting of the American Political Science Association, Washington, DC (2005), with John Hibbing.

The Source of Political Attitudes and Behavior: Assessing Genetic and Environmental Contributions" Annual meeting of the Midwest Political Science Association, Chicago Illinois (2005), with John Hibbing and Carolyn Funk.

"The Source of Political Attitudes and Behavior: Assessing Genetic and Environmental Contributions" Annual meeting of the American Political Science Association, Chicago Illinois (2004), with John Hibbing and Carolyn Funk.

"Accepting Authoritative Decisions: Humans as Wary Cooperators" Annual Meeting of the Midwest Political Science Association, Chicago, Illinois (2002), with John Hibbing

"Can We Trust the NES Trust Measure?" Annual Meeting of the Midwest Political Science Association, Chicago, Illinios (2001), with Stacy Ulbig.

"The Impact of Organizational Structure on the Production of Social Capital Among Group Members" Annual Meeting of the Southern Political Science Association, Atlanta, Georgia (2000), with Allison Rinden.

"Isolating the Origins of Incumbency Advantage: An Analysis of House Primaries, 1956-1998" Annual Meeting of the Southern Political Science Association, Atlanta, Georgia (2000), with Kevin Arceneaux.

"The Electorally Indistinct Senate," Norman Thomas Conference on Senate Exceptionalism, Vanderbilt University; Nashville, Tennessee; October (1999), with John R. Hibbing.

"Interest Group Participation and Social Capital" Annual Meeting of the Midwest Political Science Association, Chicago, Illinois (1999), with Allison Rinden.

Papers Presented (cont.):

"We're All in this Together: The Decline of Trust in Government, 1958-1996." The Hendricks Symposium, University of Nebraska, Lincoln. October 8-9, 1998

"Constituency Population and Representation in the United States Senate," Electing the Senate; Houston, Texas; December (1989), with John R. Hibbing.

"The Disparate Electoral Security of House and Senate Incumbents," American Political Science Association Annual Meetings; Atlanta, Georgia; September (1989), with John R. Hibbing.

"Partisan and Incumbent Advantage in House Elections," with David W. Brady, 1987 Annual Meeting of the Southern Political Science Association.
"Personal and Party Advantage in U.S. House Elections, 1846-1986" with David W. Brady, 1987 Social Science History Association Meetings.

"The Demise of the Upper House and the Rise of the Senate: Electoral Responsiveness in the United States Senate" with John Hibbing, 1987 Annual Meeting of the American Political Science Association.

"A Comparative Analysis of Economic Voting" with Jerome Legge, 1985 Annual Meeting of the American Political Science Association.

"An Analysis of Economic Conditions and the Individual Vote in Great Britain, 1964-1979" with Jerome Legge, 1985 Annual Meeting of the Western Political Science Association.

"Can Government Regulate Fertility? An Assessment of Pro-natalist Policy in Eastern Europe" with Jerome Legge, 1985 Annual Meeting of the Southwestern Social Science Association.

"Economic Conditions and the Individual Vote in the Federal Republic of Germany" with Jerome S. Legge, 1984 Annual Meeting of the Southern Political Science Association.

"The Conditions Required for Economic Issue Voting" with John R. Hibbing, 1984 Annual Meeting of the Midwest Political Science Association.

"Incumbency Advantage in Senate Elections," 1983 Annual Meeting of the Midwest Political Science Association.

"Television Markets and Congressional Elections: The Impact of Market/District Congruence" with James Campbell and Keith Henry, 1982 Annual Meeting of the Southern Political Science Association.

"Economic Conditions and Senate Elections" with John R. Hibbing, 1982 Annual Meeting of the Midwest Political Science Association. "Pocketbook Voting: Economic Conditions and Individual Level Voting," 1982 Annual Meeting of the American Political Science Association.

"Increased Incumbency Advantage in the House," with John R. Hibbing, 1981 Annual Meeting of the Midwest Political Science Association.

Conference Participation:

Roundtable Participant “Genes, Brains, and Core Political Orientations” 2008 Annual Meeting of the Southwestern Political Science Association, Las Vegas.

Roundtable Participant “Politics in the Laboratory” 2007 Annual Meeting of the Southern Political Science Association, New Orleans.

Short Course Lecturer, "What Neuroscience has to Offer Political Science" 2006 Annual Meeting of the American Political Science Association.

Panel chair and discussant, "Neuro-scientific Advances in the Study of Political Science" 2006 Annual Meeting of the American Political Science Association.

Presentation, “The Twin Study Approach to Assessing Genetic Influences on Political Behavior” Rice Conference on New Methods for Understanding Political Behavior, 2005.

Panel discussant, "The Political Consequences of Redistricting," 2002 Annual Meeting of the American Political Science Association.

Panel discussant, "Race and Redistricting," 1999 Annual Meeting of the Midwest Political Science Association.

Invited participant, “Roundtable on Public Dissatisfaction with American Political Institutions”, 1998 Annual Meeting of the Southwestern Social Science Association.

Presentation, “Redistricting in the ‘90s,” Texas Economic and Demographic Association, 1997.

Panel chair, "Congressional Elections," 1992 Annual Meeting of the Southern Political Science Association.

Panel discussant, "Incumbency and Congressional Elections," 1992 Annual Meeting of the American Political Science Association.

Panel chair, "Issues in Legislative Elections," 1991 Annual Meeting of the Midwest Political Science Association.

Panel chair, "Economic Attitudes and Public Policy in Europe," 1990 Annual Meeting of the Southern Political Science Association

Panel discussant, “Retrospective Voting in U.S. Elections,” 1990 Annual Meeting of the Midwest Political Science Association.

Co-convener, with Bruce Oppenheimer, of *Electing the Senate*, a national conference on the NES 1988 Senate Election Study. Funded by the Rice Institute for Policy Analysis, the University of Houston Center for Public Policy, and the National Science Foundation, Houston, Texas, December, 1989.

Invited participant, *Understanding Congress: A Bicentennial Research Conference*, Washington, D.C., February, 1989.

Invited participant--*Hendricks Symposium on the United States Senate*, University of Nebraska, Lincoln, Nebraska, October, 1988

Conference Participation (cont.):

Invited participant--*Conference on the History of Congress*, Stanford University, Stanford, California, June, 1988.

Invited participant, "Roundtable on Partisan Realignment in the 1980's", 1987 Annual Meeting of the Southern Political Science Association.

Professional Activities:

Other Universities:

Invited Lecturer, Biology and Politics Seminar, Department of Political Science and Biology Department, Vanderbilt University, 2008.

Visiting Fellow, the Hoover Institution, Stanford University, 2007.

Invited Speaker, Joint Political Psychology Graduate Seminar, University of Minnesota, 2007.

Invited Speaker, Department of Political Science, Vanderbilt University, 2006.

Member:

Editorial Board, Journal of Politics, 2007-2008.

Planning Committee for the National Election Studies' Senate Election Study, 1990-92.

Nominations Committee, Social Science History Association, 1988

Reviewer for:

American Journal of Political Science
American Political Science Review
American Politics Research
American Politics Quarterly
American Psychologist
Comparative Politics
Electoral Studies
Evolution and Human Behavior
International Studies Quarterly
Journal of Politics
Legislative Studies Quarterly
National Science Foundation
Policy Studies Review
Political Behavior
Political Psychology
Public Opinion Quarterly
Science
Social Forces
Western Political Quarterly

University Service:

Invited Speaker, Rice Alumni Association, San Francisco and Los Angles, 2008.

Invited Speaker, Rice Alumni Association, Austin, Chicago and Washington, DC, 2006.

Invited Speaker, Rice Alumni Association, Dallas and New York, 2005.

Director: Rice University Behavioral Research Lab and Social Science Computing Lab, 2005-2006.

Internship Director for the Department of Political Science, 2004-2008.

University Official Representative to the Inter-university Consortium for Political and Social Research, 1989-2008.

Director: Rice University Social Science Computing Lab, 1989-2004.

Member, Rice University Information Technology Access and Security Committee, 2001-2002

Rice University Committee on Computers, Member, 1988-1992, 1995-1996; Chair, 1996-1998, Co-chair, 1999.

Acting Chairman, Rice Institute for Policy Analysis, 1991-1992.

Divisional Member of the John W. Gardner Dissertation Award Selection Committee, 1998

Social Science Representative to the Educational Sub-committee of the Computer Planning Committee, 1989-1990.

Director of Graduate Admissions, Department of Political Science, Rice University, 1986-1988.

Co-director, Mellon Workshop: Southern Politics, May, 1988.

Guest Lecturer, Mellon Workshop: The U.S. Congress in Historical Perspective, May, 1987 and 1988.

Faculty Associate, Hanszen College, Rice University, 1987-1990.

Director, Political Data Analysis Center, University of Georgia, 1982-1985.

External Service:

Expert witness, *Rodriguez, et. al. v Harris Co.*, challenge to adopted Harris County Commissioners' Court precincts, 2011.

Expert witness, *Texas v US*, preclearance suit for Texas statewide districts, 2011.*

Expert witness, *Davis v Perry (and consolidated cases),* challenge to adopted Texas Senate districts, 2011.

Expert witness, *Perez, et. al. v State of Texas (and consolidated cases),* challenge to adopted Texas statewide districts, 2011.*

Expert witness, *Fabela, et. al. v City of Farmers Branch*, Farmers Branch city council at large district challenge, 2011.

Expert witness, *Benevides, v Irving ISD*, racially polarized voting analysis, 2008-2009.*

Expert witness, *Benevides, v City of Irving*, racially polarized voting analysis, 2008-2009.*

Expert witness, *Reyes, et. al. v City of Farmers Branch*, Farmers Branch city council at large district challenge, 2007-2008.*

Expert witness, *The York Group v. Horizon Casket Group*, Survey of country of origin effects on buying decisions, 2007.

Appendix B

Table B1:
HVAP and HCVAP under the Benchmark and Adopted Plans, 2002-2010:
All House Districts with HVAP > 50%

	%HVAP		%HCVAP	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
31	95.2	94	93.6	88.9
33	61.9	13.5	60.4	8.5
34	61.6	67.7	58.2	64.6
35	56.4	54.9	54.6	52.5
36	88.9	92.2	83.8	88.7
37	89.3	86.6	85.4	82.3
38	86.3	87.3	79	80.6
39	88.1	88.5	79.1	82.4
40	93.5	93.3	90.2	89
41	81.8	76.2	77.5	72.1
42	94.2	95.1	90.1	91.1
43	76.3	76.5	71.7	71.7
51	58.3	56.2	45.8	44.0
74	65.8	76.6	59.7	69.4
75	87.8	91.8	83.1	89
76	92.4	87.3	89.4	83.5
77	83.2	78.4	78.6	73.4
78	62.8	62.6	56.2	55.2
79	73.6	79.9	70.1	76.7
80	74.3	86.1	67.2	79.7
90	64.9	71	47.9	49.7
103	69.3	67.7	46.5	44.6
104	77.2	69.2	60.8	51.7
116	65.5	59.9	61.6	57.1
117	58.7	62.7	58.8	63.8
118	64.7	64.8	61.9	64.7
119	67.8	62.7	65	58.3
123	70.3	66.5	67.3	62.3
124	66.6	66	64.2	62.4
125	65.3	69.1	60.5	64.3
137	59.8	55.3	25.6	26.3
140	80.7	75.8	66.1	58.5
143	82.3	73.3	64.7	57.0
144	50.3	48.5	34.8	31.2
145	82.8	69.9	68.9	56.2
148	53.7	68.9	42.1	51.4

Table B2:

Number of Elections Won by the Hispanic Candidate of Choice in Reconstituted Elections under the Benchmark and Adopted Plans, 2002-2010: All House Districts with HVAP > 50%

	Dr. Handley's 5 Elections		OAG's 10 Elections		5 most Recent Elections in OAG's 10	
District	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**	**Benchmark**	**Adopted**
31	5	5	10	10	5	5
33	3	0	6	0	2	0
34	3	4	6	9	2	4
35	2	1	5	4	1	1
36	5	5	10	10	5	5
37	5	5	10	10	5	5
38	5	5	10	10	5	5
39	5	5	10	10	5	5
40	5	5	10	10	5	5
41	4	3	7	5	4	2
42	5	5	10	10	5	5
43	5	5	9	10	4	5
51	5	5	10	10	5	5
74	1	5	4	10	2	5
75	5	5	10	10	5	5
76	5	5	10	10	5	5
77	5	5	10	10	5	5
78	1	1	2	2	2	2
79	5	5	10	10	5	5
80	5	5	9	10	4	5
90	5	5	10	10	5	5
103	5	5	10	10	5	5
104	5	5	10	10	5	5
116	5	5	10	10	5	5
117	3	1	5	2	2	2
118	5	5	7	10	2	5
119	5	5	10	10	5	5
123	5	5	10	10	5	5
124	5	5	10	10	5	5
125	5	5	9	9	4	4
137	3	5	8	10	5	5
140	5	5	10	10	5	5
143	5	5	10	10	5	5
144	0	0	0	0	0	0
145	5	5	10	10	5	5
148	5	5	10	10	5	5
	155	155	307	311	149	155
		0		+4		+6

Appendix C

Table C1: Ecological Inference Estimates of Voter Cohesion in Benchmark House District 149

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates by voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.30	0.30	0.87	0.90	HO
	AgCom	RAMSAY_TOM	56	A	0.70	0.70	0.13	0.10	AB
	LandComm	BERNSEN_DAVID	62	A	0.81	0.70	0.25	0.34	AB
	LandComm	MADRIGAL_RAY	38	H	0.19	0.30	0.75	0.66	HO
	Gov	COMBINED_HISP	93	H	0.98	0.96	0.96	0.95	ABHO
	Gov	LYON_BILL	4	A	0.01	0.01	0.01	0.01	
	Gov	WORLDPEACE_JOHN	3	A	0.02	0.03	0.03	0.04	
	Senator	COMBINED_ANGLO	33	A	0.89	0.17	0.51	0.16	AH
	Senator	KIRK_RON	33	B	0.05	0.73	0.08	0.62	BO
	Senator	MORALES_VICTOR	33	H	0.06	0.11	0.41	0.22	
2006	AgCom	GILBERT_HANK	71	A	0.81	0.68	0.504	0.85	ABHO
	AgCom	MELTON_KOECADEE	29	B	0.19	0.32	0.496	0.15	
	LtGov	COMBINED_HISP	64	H	0.43	0.54	0.55	0.79	BHO
	LtGov	GRANT_BENJAMIN	36	A	0.57	0.46	0.45	0.21	A
2008	Pres	COMBINED_ANGLO	53	A	0.43	0.09	0.63	0.61	HO
	Pres	OBAMA_BARACK	47	B	0.57	0.91	0.37	0.39	AB
	RRCom3	COMBINED_ANGLO	76	A	0.70	0.77	0.77	0.82	ABHO
	RRCom3	HALL_ART	24	B	0.30	0.23	0.23	0.18	
	Senator	COMBINED_ANGLO	49	A	0.40	0.64	0.29	0.80	BO
	Senator	NORIEGA_RICHARD	51	H	0.60	0.36	0.71	0.20	AH
	SupCt7	CRUZ_BALTASAR	44	H	0.35	0.43	0.63	0.26	H
	SupCt7	HOUSTON_SAM	56	A	0.65	0.57	0.37	0.74	ABO
	SupCt8	CRISS_SUSAN	49	A	0.57	0.48	0.15	0.32	A
	SupCt8	YANEZ_LINDA	51	H	0.43	0.52	0.85	0.68	BHO
2010	LandComm	BURTON_BILL	48	B	0.47	0.72	0.51	0.84	BHO
	LandComm	URIBE_HECTOR	52	H	0.53	0.28	0.49	0.16	A
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.23	0.495	0.55	0.53	HO
	LtGov	COMBINED_ANGLO	47	A	0.77	0.505	0.45	0.47	AB

Table C2: Ecological Inference Estimates of Voter Cohesion in Benchmark Congressional District 25

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Candidates
2002	AgCom	DE_LEON_ERNESTO	43	H	0.15	0.18	0.91	0.99	HO
	AgCom	RAMSAY_TOM	56	A	0.85	0.82	0.09	0.01	AB
	Gov	LYON_BILL	4	A	0.07	0.04	0.01	0.00	
	Gov	COMBINED_HISP	93	H	0.90	0.89	0.96	0.98	ABHO
	Gov	WORLDPEACE_JOHN	3	A	0.03	0.07	0.03	0.01	
	LandComm	BERNSEN_DAVID	62	A	0.87	0.93	0.25	0.02	AB
	LandComm	MADRIGAL_RAY	38	H	0.13	0.07	0.75	0.98	HO
	Senator	COMBINED_ANGLO	33	A	0.44	0.07	0.05	0.00	
	Senator	KIRK_RON	33	B	0.36	0.91	0.41	0.99	BO
	Senator	MORALES_VICTOR	33	H	0.20	0.02	0.55	0.00	H
2006	AgCom	GILBERT_HANK	71	A	0.76	0.77	0.60	0.05	ABH
	AgCom	MELTON_KOECADEE	29	B	0.24	0.23	0.40	0.95	O
	LtGov	COMBINED_HISP	64	H	0.42	0.28	0.89	0.99	HO
	LtGov	GRANT_BENJAMIN	36	A	0.58	0.72	0.11	0.01	AB
2008	PresVicePres	COMBINED_ANGLO	53	A	0.57	0.03	0.49	0.01	A
	PresVicePres	OBAMA_BARACK	47	B	0.42	0.96	0.49	0.99	BO
	PresVicePres	RICHARDSON_BILL	0.37	H	0.01	0.01	0.01	0.00	
	RailComp3	HALL_ART	24	B	0.19	0.24	0.28	0.97	O
	RailComp3	COMBINED_ANGLO	76	A	0.81	0.76	0.72	0.03	ABH
	Senator	NORIEGA_RICHARD	51	H	0.43	0.13	0.80	0.99	HO
	Senator	COMBINED_ANGLO	49	A	0.57	0.87	0.20	0.01	AB
	SupCtp7	CRUZ_BALTASAR	44	H	0.23	0.10	0.81	0.98	HO
	SupCtp7	HOUSTON_SAM	56	A	0.77	0.90	0.19	0.02	AB
	SupCtp8	CRISS_SUSAN	49	A	0.77	0.68	0.03	0.01	AB
	SupCtp8	YANEZ_LINDA	51	H	0.23	0.32	0.97	0.99	HO
2010	LandComm	BURTON_BILL	48	B	0.65	0.80	0.22	0.01	AB
	LandComm	URIBE_HECTOR	52	H	0.35	0.20	0.78	0.99	HO
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.25	0.19	0.47	0.005	
	LtGov	COMBINED_ANGLO	47	A	0.75	0.81	0.53	0.995	ABHO

Table C3: Ecological Inference Estimates of Voter Cohesion in Benchmark Senate District 10

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.30	0.16	0.72	0.76	HO
	AgCom	RAMSAY_TOM	56	A	0.70	0.84	0.28	0.24	AB
	Gov	LYON_BILL	4	A	0.02	0.01	0.02	0.01	
	Gov	COMBINED_HISP	93	H	0.96	0.97	0.96	0.98	ABHO
	Gov	WORLDPEACE_JOHN	3	A	0.02	0.02	0.02	0.02	
	LandComm	BERNSEN_DAVID	62	A	0.69	0.70	0.43	0.29	AB
	LandComm	MADRIGAL_RAY	38	H	0.31	0.30	0.57	0.71	HO
	Senator	COMBINED_ANGLO	33	A	0.19	0.001	0.09	0.01	
	Senator	KIRK_RON	33	B	0.54	0.998	0.30	0.98	ABO
	Senator	MORALES_VICTOR	33	H	0.27	0.001	0.60	0.01	H
2006	AgCom	GILBERT_HANK	71	A	0.82	0.49	0.73	0.23	AH
	AgCom	MELTON_KOECADEE	29	B	0.18	0.51	0.27	0.77	BO
	LtGov	COMBINED_HISP	64	H	0.60	0.34	0.67	0.91	AHO
	LtGov	GRANT_BENJAMIN	36	A	0.40	0.66	0.33	0.09	B
2008	PresVicePres	COMBINED_ANGLO	53	A	0.54	0.001	0.72	0.08	AH
	PresVicePres	OBAMA_BARACK	47	B	0.45	0.998	0.26	0.90	BO
	PresVicePres	RICHARDSON_BILL	0.37	H	0.01	0.001	0.01	0.02	
	RailComp3	HALL_ART	24	B	0.24	0.29	0.25	0.45	
	RailComp3	COMBINED_ANGLO	76	A	0.76	0.71	0.75	0.55	ABHO
	Senator	NORIEGA_RICHARD	51	H	0.57	0.26	0.68	0.11	AH
	Senator	COMBINED_ANGLO	49	A	0.43	0.74	0.32	0.89	BO
	SupCtp7	CRUZ_BALTASAR	44	H	0.29	0.19	0.70	0.87	HO
	SupCtp7	HOUSTON_SAM	56	A	0.71	0.81	0.30	0.13	AB
	SupCtp8	CRISS_SUSAN	49	A	0.61	0.67	0.21	0.13	AB
	SupCtp8	YANEZ_LINDA	51	H	0.39	0.33	0.79	0.87	
2010	LandComm	BURTON_BILL	48	B	0.61	0.89	0.42	0.43	AB
	LandComm	URIBE_HECTOR	52	H	0.39	0.11	0.58	0.57	HO
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.37	0.30	0.67	0.830	HO
	LtGov	COMBINED_ANGLO	47	A	0.63	0.70	0.33	0.170	AB

Appendix D

Table D1: Ecological Inference Estimates of Voter Cohesion in Old House District 26

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates by voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.33	0.57	0.88	0.62	BHO
	AgCom	RAMSAY_TOM	56	A	0.67	0.43	0.12	0.38	A
	LandComm	BERNSEN_DAVID	62	A	0.67	0.51	0.15	0.73	ABO
	LandComm	MADRIGAL_RAY	38	H	0.33	0.49	0.85	0.27	H
	Gov	COMBINED_HISP	93	H	0.98	0.94	0.93	0.96	ABHO
	Gov	LYON_BILL	4	A	0.01	0.02	0.02	0.01	
	Gov	WORLDPEACE_JOHN	3	A	0.01	0.04	0.04	0.03	
	Senator	COMBINED_ANGLO	33	A	0.73	0.07	0.36	0.39	A
	Senator	KIRK_RON	33	B	0.13	0.75	0.04	0.52	BO
	Senator	MORALES_VICTOR	33	H	0.13	0.19	0.60	0.09	H
2006	AgCom	GILBERT_HANK	71	A	0.73	0.44	0.768	0.53	AHO
	AgCom	MELTON_KOECADEE	29	B	0.27	0.56	0.232	0.47	B
	LtGov	COMBINED_HISP	64	H	0.50	0.62	0.96	0.71	BHO
	LtGov	GRANT_BENJAMIN	36	A	0.50	0.38	0.04	0.29	A
2008	Pres	COMBINED_ANGLO	53	A	0.52	0.02	0.73	0.43	AH
	Pres	OBAMA_BARACK	47	B	0.48	0.98	0.27	0.57	BO
	RRCom3	COMBINED_ANGLO	76	A	0.80	0.64	0.91	0.74	ABHO
	RRCom3	HALL_ART	24	B	0.20	0.36	0.09	0.26	
	Senator	COMBINED_ANGLO	49	A	0.48	0.66	0.29	0.68	BO
	Senator	NORIEGA_RICHARD	51	H	0.52	0.34	0.71	0.32	AH
	SupCt7	CRUZ_BALTASAR	44	H	0.42	0.46	0.82	0.50	H
	SupCt7	HOUSTON_SAM	56	A	0.58	0.54	0.18	0.50	ABO
	SupCt8	CRISS_SUSAN	49	A	0.60	0.26	0.25	0.21	A
	SupCt8	YANEZ_LINDA	51	H	0.40	0.74	0.75	0.79	BHO
2010	LandComm	BURTON_BILL	48	B	0.42	0.77	0.58	0.63	BHO
	LandComm	URIBE_HECTOR	52	H	0.58	0.23	0.42	0.37	A
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.37	0.238	0.91	0.64	HO
	LtGov	COMBINED_ANGLO	47	A	0.63	0.762	0.09	0.36	AB

Table D2: Ecological Inference Estimates of Voter Cohesion in Old House District 101

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.34	0.33	0.30	0.63	O
	AgCom	RAMSAY_TOM	56	A	0.66	0.67	0.70	0.37	ABH
	LandComm	BERNSEN_DAVID	62	A	0.65	0.87	0.48	0.73	ABO
	LandComm	MADRIGAL_RAY	38	H	0.35	0.13	0.52	0.27	H
	Gov	COMBINED_HISP	93	H	0.94	0.93	0.94	0.89	ABHO
	Gov	LYON_BILL	4	A	0.04	0.03	0.03	0.04	
	Gov	WORLDPEACE_JOHN	3	A	0.02	0.04	0.03	0.07	
	Senator	COMBINED_ANGLO	33	A	0.16	0.02	0.09	0.15	
	Senator	KIRK_RON	33	B	0.52	0.95	0.40	0.66	ABO
	Senator	MORALES_VICTOR	33	H	0.31	0.03	0.51	0.19	H
2006	AgCom	GILBERT_HANK	71	A	0.81	0.25	0.876	0.44	AH
	AgCom	MELTON_KOECADEE	29	B	0.19	0.75	0.124	0.56	BO
	LtGov	COMBINED_HISP	64	H	0.53	0.53	0.55	0.72	ABHO
	LtGov	GRANT_BENJAMIN	36	A	0.47	0.47	0.45	0.28	
2008	Pres	COMBINED_ANGLO	53	A	0.68	0.02	0.57	0.06	AH
	Pres	OBAMA_BARACK	47	B	0.32	0.98	0.43	0.94	BO
	RRCom3	COMBINED_ANGLO	76	A	0.83	0.62	0.87	0.59	ABHO
	RRCom3	HALL_ART	24	B	0.17	0.38	0.13	0.41	
	Senator	COMBINED_ANGLO	49	A	0.64	0.54	0.36	0.42	AB
	Senator	NORIEGA_RICHARD	51	H	0.36	0.46	0.64	0.58	HO
	SupCt7	CRUZ_BALTASAR	44	H	0.20	0.57	0.53	0.73	BHO
	SupCt7	HOUSTON_SAM	56	A	0.80	0.43	0.47	0.27	A
	SupCt8	CRISS_SUSAN	49	A	0.71	0.25	0.45	0.22	A
	SupCt8	YANEZ_LINDA	51	H	0.29	0.75	0.55	0.78	BHO
2010	LandComm	BURTON_BILL	48	B	0.70	0.18	0.85	0.29	AH
	LandComm	URIBE_HECTOR	52	H	0.30	0.82	0.15	0.71	BO
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.35	0.857	0.26	0.61	BO
	LtGov	COMBINED_ANGLO	47	A	0.65	0.143	0.74	0.39	AH

Table D3: Ecological Inference Estimates of Voter Cohesion in Old House District 106

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.34	0.54	0.55	0.72	BHO
	AgCom	RAMSAY_TOM	56	A	0.66	0.46	0.45	0.28	A
	LandComm	BERNSEN_DAVID	62	A	0.53	0.31	0.65	0.51	AHO
	LandComm	MADRIGAL_RAY	38	H	0.47	0.69	0.35	0.49	B
	Gov	COMBINED_HISP	93	H	0.95	0.96	0.94	0.89	ABHO
	Gov	LYON_BILL	4	A	0.02	0.01	0.03	0.04	
	Gov	WORLDPEACE_JOHN	3	A	0.03	0.03	0.03	0.07	
	Senator	COMBINED_ANGLO	33	A	0.13	0.01	0.19	0.04	
	Senator	KIRK_RON	33	B	0.61	0.94	0.31	0.85	ABO
	Senator	MORALES_VICTOR	33	H	0.27	0.05	0.50	0.10	H
2006	AgCom	GILBERT_HANK	71	A	0.74	0.53	0.721	0.57	ABHO
	AgCom	MELTON_KOECADEE	29	B	0.26	0.47	0.279	0.43	
	LtGov	COMBINED_HISP	64	H	0.53	0.72	0.56	0.60	ABHO
	LtGov	GRANT_BENJAMIN	36	A	0.47	0.28	0.44	0.40	
2008	Pres	COMBINED_ANGLO	53	A	0.50	0.02	0.74	0.15	AH
	Pres	OBAMA_BARACK	47	B	0.50	0.98	0.26	0.85	BO
	RRCom3	COMBINED_ANGLO	76	A	0.90	0.67	0.71	0.65	ABHO
	RRCom3	HALL_ART	24	B	0.10	0.33	0.29	0.35	
	Senator	COMBINED_ANGLO	49	A	0.47	0.56	0.46	0.56	BO
	Senator	NORIEGA_RICHARD	51	H	0.53	0.44	0.54	0.44	AH
	SupCt7	CRUZ_BALTASAR	44	H	0.39	0.46	0.53	0.51	HO
	SupCt7	HOUSTON_SAM	56	A	0.61	0.54	0.47	0.49	AB
	SupCt8	CRISS_SUSAN	49	A	0.56	0.65	0.41	0.64	ABO
	SupCt8	YANEZ_LINDA	51	H	0.44	0.35	0.59	0.36	H
2010	LandComm	BURTON_BILL	48	B	0.60	0.73	0.45	0.21	AB
	LandComm	URIBE_HECTOR	52	H	0.40	0.27	0.55	0.79	HO
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.40	0.478	0.61	0.70	HO
	LtGov	COMBINED_ANGLO	47	A	0.60	0.522	0.39	0.30	AB

Table D4: Ecological Inference Estimates of Voter Cohesion in Old House District 144

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.34	0.72	0.44	0.88	BO
	AgCom	RAMSAY_TOM	56	A	0.66	0.28	0.56	0.12	AH
	LandComm	BERNSEN_DAVID	62	A	0.66	0.55	0.62	0.26	ABH
	LandComm	MADRIGAL_RAY	38	H	0.34	0.45	0.38	0.74	O
	Gov	COMBINED_HISP	93	H	0.97	0.91	0.94	0.91	ABHO
	Gov	LYON_BILL	4	A	0.01	0.03	0.03	0.03	
	Gov	WORLDPEACE_JOHN	3	A	0.02	0.06	0.03	0.06	
	Senator	COMBINED_ANGLO	33	A	0.91	0.41	0.69	0.06	AH
	Senator	KIRK_RON	33	B	0.03	0.22	0.05	0.74	O
	Senator	MORALES_VICTOR	33	H	0.06	0.37	0.26	0.20	
2006	AgCom	GILBERT_HANK	71	A	0.94	0.30	0.765	0.47	AH
	AgCom	MELTON_KOECADEE	29	B	0.06	0.70	0.235	0.53	BO
	LtGov	COMBINED_HISP	64	H	0.53	0.59	0.41	0.92	ABO
	LtGov	GRANT_BENJAMIN	36	A	0.47	0.41	0.59	0.08	H
2008	Pres	COMBINED_ANGLO	53	A	0.70	0.02	0.80	0.06	AH
	Pres	OBAMA_BARACK	47	B	0.30	0.98	0.20	0.94	BO
	RRCom3	COMBINED_ANGLO	76	A	0.81	0.74	0.75	0.75	ABHO
	RRCom3	HALL_ART	24	B	0.19	0.26	0.25	0.25	
	Senator	COMBINED_ANGLO	49	A	0.58	0.44	0.31	0.14	A
	Senator	NORIEGA_RICHARD	51	H	0.42	0.56	0.69	0.86	BHO
	SupCt7	CRUZ_BALTASAR	44	H	0.27	0.36	0.62	0.77	HO
	SupCt7	HOUSTON_SAM	56	A	0.73	0.64	0.38	0.23	AB
	SupCt8	CRISS_SUSAN	49	A	0.60	0.34	0.28	0.09	A
	SupCt8	YANEZ_LINDA	51	H	0.40	0.66	0.72	0.91	BHO
2010	LandComm	BURTON_BILL	48	B	0.67	0.79	0.53	0.12	ABH
	LandComm	URIBE_HECTOR	52	H	0.33	0.21	0.47	0.88	O
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.38	0.348	0.58	0.75	HO
	LtGov	COMBINED_ANGLO	47	A	0.62	0.652	0.42	0.25	AB

Table D5: Ecological Inference Estimates of Voter Cohesion in Old House District 54

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.18	0.92	0.52	0.74	BHO
	AgCom	RAMSAY_TOM	56	A	0.82	0.08	0.48	0.26	A
	Gov	LYON_BILL	4	A	0.06	0.01	0.02	0.04	
	Gov	COMBINED_HISP	93	H	0.90	0.95	0.92	0.86	ABHO
	Gov	WORLDPEACE_JOHN	3	A	0.04	0.04	0.05	0.10	
	LandComm	BERNSEN_DAVID	62	A	0.85	0.27	0.63	0.17	AH
	LandComm	MADRIGAL_RAY	38	H	0.15	0.73	0.37	0.83	BO
	Senator	COMBINED_ANGLO	33	A	0.40	0.18	0.23	0.72	O
	Senator	KIRK_RON	33	B	0.38	0.67	0.36	0.12	B
	Senator	MORALES_VICTOR	33	H	0.22	0.15	0.41	0.16	
2006	AgCom	GILBERT_HANK	71	A	0.83	0.31	0.58	0.50	AH
	AgCom	MELTON_KOECADEE	29	B	0.17	0.69	0.42	0.50	BO
	LtGov	COMBINED_HISP	64	H	0.45	0.66	0.63	0.77	BHO
	LtGov	GRANT_BENJAMIN	36	A	0.55	0.34	0.37	0.23	A
2008	PresVicePres	COMBINED_ANGLO	53	A	0.60	0.01	0.52	0.03	AH
	PresVicePres	OBAMA_BARACK	47	B	0.39	0.98	0.45	0.95	BO
	PresVicePres	RICHARDSON_BILL	0.37	H	0.01	0.01	0.03	0.02	
	RailComp3	HALL_ART	24	B	0.13	0.30	0.14	0.65	O
	RailComp3	COMBINED_ANGLO	76	A	0.87	0.70	0.86	0.35	ABH
	Senator	NORIEGA_RICHARD	51	H	0.49	0.11	0.43	0.04	
	Senator	COMBINED_ANGLO	49	A	0.51	0.89	0.57	0.96	ABHO
	SupCtp7	CRUZ_BALTASAR	44	H	0.22	0.76	0.46	0.55	BO
	SupCtp7	HOUSTON_SAM	56	A	0.78	0.24	0.54	0.45	AH
	SupCtp8	CRISS_SUSAN	49	A	0.76	0.27	0.49	0.44	A
	SupCtp8	YANEZ_LINDA	51	H	0.24	0.73	0.51	0.56	BHO
2010	LandComm	BURTON_BILL	48	B	0.66	0.48	0.61	0.34	AH
	LandComm	URIBE_HECTOR	52	H	0.34	0.52	0.39	0.66	BO
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.29	0.96	0.52	0.83	BHO
	LtGov	COMBINED_ANGLO	47	A	0.71	0.04	0.48	0.17	A

Table D6: Ecological Inference Estimates of Voter Cohesion in Old Senate District 15

Year	Office	Candidates	statewide vote	Ethnicity of candidate	Estimates Support for candidates from voter groups Anglo	Black	Hispanic	Other	Majority Support
2002	AgCom	DE_LEON_ERNESTO	43	H	0.31	0.44	0.64	0.97	HO
	AgCom	RAMSAY_TOM	56	A	0.69	0.56	0.36	0.03	AB
	LandComm	BERNSEN_DAVID	62	A	0.76	0.73	0.45	0.11	AB
	LandComm	MADRIGAL_RAY	38	H	0.24	0.27	0.55	0.89	HO
	Gov	COMBINED_HISP	93	H	0.95	0.98	0.98	0.84	ABHO
	Gov	LYON_BILL	4	A	0.03	0.01	0.01	0.09	
	Gov	WORLDPEACE_JOHN	3	A	0.02	0.01	0.01	0.07	
	Senator	COMBINED_ANGLO	33	A	0.87	0.31	0.49	0.01	A
	Senator	KIRK_RON	33	B	0.03	0.67	0.10	0.90	BO
	Senator	MORALES_VICTOR	33	H	0.10	0.02	0.41	0.09	
2006	AgCom	GILBERT_HANK	71	A	0.91	0.47	0.748	0.32	AH
	AgCom	MELTON_KOECADEE	29	B	0.09	0.53	0.252	0.68	BO
	LtGov	COMBINED_HISP	64	H	0.52	0.47	0.63	0.81	AHO
	LtGov	GRANT_BENJAMIN	36	A	0.48	0.53	0.37	0.19	B
2008	Pres	COMBINED_ANGLO	53	A	0.64	0.01	0.61	0.05	AH
	Pres	OBAMA_BARACK	47	B	0.36	0.99	0.39	0.95	BO
	RRCom3	COMBINED_ANGLO	76	A	0.73	0.79	0.72	0.77	ABHO
	RRCom3	HALL_ART	24	B	0.27	0.21	0.28	0.23	
	Senator	COMBINED_ANGLO	49	A	0.41	0.56	0.44	0.56	BO
	Senator	NORIEGA_RICHARD	51	H	0.59	0.44	0.56	0.44	AH
	SupCt7	CRUZ_BALTASAR	44	H	0.32	0.20	0.58	0.68	HO
	SupCt7	HOUSTON_SAM	56	A	0.68	0.80	0.42	0.32	AB
	SupCt8	CRISS_SUSAN	49	A	0.58	0.50	0.23	0.18	AB
	SupCt8	YANEZ_LINDA	51	H	0.42	0.50	0.77	0.82	HO
2010	LandComm	BURTON_BILL	48	B	0.47	0.85	0.58	0.62	BHO
	LandComm	URIBE_HECTOR	52	H	0.53	0.15	0.42	0.38	A
	LtGov	CHAVEZ_THOMPSON_LINDA	53	H	0.33	0.446	0.41	0.88	O
	LtGov	COMBINED_ANGLO	47	A	0.67	0.554	0.59	0.12	ABH