

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47

SUPREME COURT OF WASHINGTON

DAVID T. MCDONALD, ET AL.,

Petitioners,

v.

SECRETARY OF STATE SAM REED, ET  
AL,

Respondents.

NO.

DECLARATION OF DR. KEITH B.  
LEFFLER

I, Keith B. Leffler, declare under penalty of perjury of the laws of the State of Washington that the following is true and correct:

1. I am an Associate Professor of Economics at the University of Washington. I have been in the department since 1978. I have taught economics at the graduate and

DECLARATION OF DR. KEITH B.  
LEFFLER - 1

[/Declar.DOC]

**Perkins Coie LLP**  
1201 Third Avenue, Suite 4800  
Seattle, Washington 98101-3099  
Phone: (206) 359-8000  
Fax: (206) 359-9000

1 undergraduate level for thirty years. In my teaching and research, I frequently use and  
2  
3 require expertise in quantitative economic and statistical analysis.  
4

5 2. I have served as a consultant to many Washington corporations, state and  
6  
7 federal agencies, and law firms. I have been qualified as an economic expert before federal  
8  
9 courts, state courts, the Federal Trade Commission, and other federal and state regulatory  
10  
11 agencies. My expert work typically involves aspects of statistical analysis.  
12  
13

14 3. I have been asked to review data concerning the rejection of provisional and  
15  
16 absentee ballots to determine if the variations in the rejections among counties are  
17  
18 statistically significant. Specifically I reviewed the numbers of provisional and absentee  
19  
20 ballots processed and the numbers rejected for apparent signature mismatch reasons for  
21  
22 King County, for the counties in which candidate Rossi prevailed (hereafter "Rossi  
23  
24 counties"), and for all counties other than King County ("all but King counties").  
25  
26

27 4. As summarized in Table 1, I have been provided data that shows that in the  
28  
29 Rossi counties 94 of 44,989 provisional ballots were rejected for signature mismatches, and  
30  
31 that 905 of 1,188,204 absentee ballots were rejected for that reason. For all but King  
32  
33 counties, 130 of 72,412 provisional ballots and 995 of 1,424,811 absentee ballots were  
34  
35 rejected for signature mismatches. In King County, 415 of 31,904 provisional ballots and  
36  
37 1,561 of 568,333 absentee ballots for rejected for that reason;  
38  
39

40 4. As shown in Table 1, the rate of rejection for signature mismatch is much  
41  
42 higher in King County than in either the Rossi counties or all but King counties for both the  
43  
44 provisional ballots and the absentee ballots. I was asked to determine if the difference  
45  
46  
47

DECLARATION OF DR. KEITH B.  
LEFFLER - 2

[/Declar.DOC]

**Perkins Coie LLP**  
1201 Third Avenue, Suite 4800  
Seattle, Washington 98101-3099  
Phone: (206) 359-8000  
Fax: (206) 359-9000

1 between the rejection rates were statistically different. To determine this I first calculated  
2  
3 the number of rejections that would be expected in King County if the likelihood of rejection  
4  
5 had been the same as in the comparison areas (Rossi counties and all but King counties). I  
6  
7 then determined the standard deviation of the distribution of expected rejections in King  
8  
9 County.<sup>1</sup> Finally, using Chebyshev's theorem, I then calculated the maximum probability  
10  
11 that the actual number of rejections found in King County come from a sampling with the  
12  
13 same probability of rejection as the comparison areas.<sup>2</sup>  
14  
15

16  
17 5. The results of this analysis are summarized in Table 1. For all comparisons, I  
18  
19 find that the probability that 415 rejections of provisional ballots in King County and 1561  
20  
21 rejections of absentee ballots would be expected to occur with less than 1/10<sup>th</sup> of 1 percent  
22  
23 chance if the likelihood of rejection were the same in King County as in the Rossi Counties  
24  
25 or in all but King counties. Therefore, I have reached the opinion that the rejection rate in  
26  
27 King County is statistically different than in the comparison areas.  
28  
29

30  
31 5. The differences in the rejection rates can be explained by the either  
32  
33 differences in the underlying extent of fraudulent signatures (King County voters are more  
34  
35  
36  
37

---

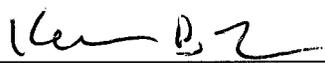
38  
39  
40 <sup>1</sup> The expected rejections from a random sampling of ballots with a given probability of  
41 rejection will follow a binomial distribution. The standard deviation is then given by the square root  
42 of the number of ballots times the probability of rejection times 1- the probability of rejection.  
43

44 <sup>2</sup> Chebyshev's Theorem states that "Given the probability distribution of the random variable  
45 X, with mean  $\mu$  and standard deviation  $\sigma$ , the probability of observing a value of X that differs from  
46  $\mu$  by k of more standard deviations cannot exceed  $1/k^2$ ." Daniel and Terrell, *Business Statistics*, p.  
47 69.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47

likely to be engaged in fraud) or, more likely, that King County applied different standards  
in rejecting ballots than did the other counties.

DATED this 3<sup>d</sup> day of December, 2004 in Seattle, Washington.



KEITH B. LEFFLER

**TABLE 1**  
**Ballot Rejection Due to Signature Mismatch**  
**Was Statistically Far More Likely in King**  
**than in Other Counties**

<b>Provisional Ballots</b>				
	Rossi Counties	King County	Non-King Counties	King County
Ballots Rejected	94	415	130	415
Number of Ballots	44,989	31,904	72,412	31,904
Probability of Rejection	0.00209	0.01301	0.00180	0.01301
Standard Deviation	9.685	20.239	11.392	20.239
Expected Rejections in King County with the same probability		66.66		57.28
Standard Deviation with same distribution		8.156		7.561
Standard Deviations Expected Mean from Observed Mean		42.71		47.31
Max probability the rejection rates are not from different distributions		0.05%		0.04%
<b>Absentee Ballots</b>				
	Rossi Counties	King County	Non-King Counties	King County
Rejected/Predicted	905	1,561	995	1561
Number	1,188,204	568,333	1,424,811	568,333
Probability	0.00076	0.00275	0.00070	0.00275
Standard Deviation	30.072	39.455	31.533	39.455
Expected Rejections in King County w/same probability		432.87		396.89
Standard Deviation with same distribution		20.798		19.915
Standard Deviations Expected Mean from Observed Mean		54.24		58.45
Probability the rejection rates are not from different distributions		0.03%		0.03%