IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF LOUISIANA

PRESS ROBINSON, et al., Plaintiffs, v. KYLE ARDOIN, in his official capacity as Secretary of State for Louisiana, Defendant. *consolidated with* EDWARD GALMON, SR., et al., Plaintiffs, v. KYLE ARDOIN, in his official capacity as Secretary of State for Louisiana, Defendant.	CIVIL ACTION NO. 3:22-CV-00211-SDD-SDJ *consolidated with* NO. 3:22-CV-00214-SDD-SDJ

Expert Report of Tumulesh K.S. Solanky, Ph.D

Robinson v. Ardoin
3:22-cv-211;
3:22-cv-214
SOS_04

I. Introduction

1. I was requested to statistically study the voting patterns and the composition of the congressional districts in Louisiana. My credentials are set forth in my *curriculum vitae* (CV), which includes a recitation of prior legal assignments in both federal and state courts. My CV is attached as Appendix 1 to this Expert Report/Declaration.

2. I am over 18 years of age and am competent to make this declaration. I have personal knowledge of the statements contained in this declaration. I am a professor and chair of the mathematics department at the University of New Orleans (UNO). I have a Ph.D. in statistics from the University of Connecticut. I have been teaching statistics and mathematics at UNO since August 1990. I have taught a number of graduate classes on statistics, such as Sampling Theory, Applied Statistics, Regression Analysis, Linear Models, Design of Experiments, Biostatistics, Statistical Consulting, Nonparametric Statistics, Data Analytics, Multivariate Analysis, and Time Series Analysis. At present, I serve as an associate editor of four scholarly journals, including *Sequential Analysis: Design Methods and Applications*, the flagship journal in my research area. My research focuses primarily on data collection/sampling strategies, especially the development of new sampling designs to collect and analyze data. I have authored/co-authored a research level book, two book chapters, and over 25 research articles in scholarly peer-reviewed journals, all in the field of statistics. I have also served as the guest editor of a special issue of the *American Journal of Mathematical and Management Sciences* in my research area. I have presented my research at over 50 national and international conferences/meetings of peers. I have provided my statistical expertise to the National Aeronautics and Space Administration (NASA), the United States Department of Agriculture (USDA), banks, hospitals, school boards, polling firms, Attorneys General Offices, District Attorney's Offices, and others, designing surveys and authoring over 150 internal/expert reports. Details of above-mentioned items and others are available in my CV.

3. List the documents reviewed:

i. Individual voter level data for all registered voters identifying the registered voters parish, precinct, Congressional District, party affiliation, gender, and whether or not the individual voted or not for statewide elections[1]. I requested this data from the Secretary of State's office.

ii. Galmon Cooper Report

iii. Galmon Lichtman Report

iv. Galmon Palmer Report

v. Robinson Backup

- i. LA CD Illustrative Plan 1
- ii. LA CD Illustrative Plan 1.dbd
- iii. LA CD Illustrative Plan 1.key
- iv. LA CD Illustrative Plan
- v. LA CD Illustrative Plan 1.dbf
- vi. LA CD Illustrative Plan 1.prj

[1] The election dates included in the data are 2012-11-06, 2014-12-06, 2015-10-24, 2015-11-21, 2016-11-08, 2016-12-10, 2017-11-18, 2018-12-08, 2019-10-12, 2019-11-16, 2020-11-03.

vii. LA CD Illustrative Plan 1.shp
viii. LA CD Illustrative Plan 1.shx
vi. Galmon Backup
a. Illustrative_1__Districts 2022-04-11
i. Illustrative_1__Districts 2022-04-11.dbf
ii. Illustrative_1__Districts 2022-04-11.prj
iii. Illustrative_1__Districts 2022-04-11.shp
iv. Illustrative_1__Districts 2022-04-11.shx
b. Illustrative_1-2-3_equiv
i. Illustrative_1_equiv.dbf
ii. Illustrative_2_equiv.dbf
iii. Illustrative_3_equiv.dbf
c. Illustrative_2_Districts 2022-04-11
i. Illustrative_2_Districts 2022-04-11.dbf
ii. Illustrative_2_Districts 2022-04-11.prj
iii. Illustrative_2_Districts 2022-04-11.shp
iv. Illustrative_2_Districts 2022-04-11.shx
d. Illustrative_3_Districts 2022-04-11
i. Illustrative_3_Districts 2022-04-11.dbf
ii. Illustrative_3_Districts 2022-04-11.prj
iii. Illustrative_3_Districts 2022-04-11.shp
iv. Illustrative_3_Districts 2022-04-11.shx
e. Illustrative_1__Districts 2022-04-11
i. Illustrative_1_Districts 2022-04-11.dbf
ii. Illustrative_1_Districts 2022-04-11.prj
iii. Illustrative_1_Districts 2022-04-11.shp
iv. Illustrative_1_Districts 2022-04-11.shx
f. Illustrative_1-2-3_equiv
i. Illustrative_1_equiv.dbf
i. Illustrative_2_equiv.dbf
i. Illustrative_3_equiv.dbf
g. Illustrative_2_Districts 2022-04-11
i. Illustrative_2_Districts 2022-04-11.dbf
ii. Illustrative_2_Districts 2022-04-11.prj
iii. Illustrative_2_Districts 2022-04-11.shp
iv. Illustrative_2_Districts 2022-04-11.shx
h. Illustrative_3_Districts 2022-04-11
i. Illustrative_3_Districts 2022-04-11.dbf
ii. Illustrative_3_Districts 2022-04-11.prj
iii. Illustrative_3_Districts 2022-04-11.shp
iv. Illustrative_3_Districts 2022-04-11.shx
vii. Exhibits Set 1 to Robinson PI
viii. Exhibits Set 12 to Robinson PI
ix. Galmon CooperExhibits 3
x. Galmon CooperExhibits 2
xi. Galmon CooperExhibits

xii. block_demo_2015
xiii. block_demo_2016
xiv. block_demo_2017
xv. block_demo_2018
xvi. block_demo_2019
xvii. block_demo_2020
xviii. Galmon v. Ardoin - Palmer Data
  a. ei (R code file)
  b. illustrative_map_results
  c. la_candidates
  d. la_candidates.rds
  e. la_ei_data
  f. la_ei_data.rds

4. The statistical analysis reported below is based on my preliminary review of the documents listed above and other publically available data sets described below in the report. Due to the time constraints, I did not had adequate time to review the files/datasets/programs listed above.

Statistical Analysis

5. The Louisiana's Secretary of State website summarizes statewide registration statistics by race and party affiliation at several time points. For example, the report created on 11/1/2020, lists 3,091,340 registered voters[2]. Of these, 1,951,331 are White, 964,985 Black, and 175,114 were Other. That is, the percentage of registered White voters in Louisiana was 63.1% and for Black it was 31.2% just prior to the November 3, 2020 general elections.

6. The individual voter level data for the November 3, 2020 general elections had 3,093,004 registered voters. The Party affiliation for the individuals and whether or not they voted in the elections is summarized below in Table 1. Note that 69.24% of the registered democrats and 80.65% of the registered republicans voted in the elections.

Table 1: Party Affiliation Summary for November 2020 General Elections

Party	Voted in Elections		
	NO	YES	Total
DEM	388,434 30.76%	874,163 69.24%	1,262,597
OTH	339,006 41.50%	477,820 58.50%	816,826
REP	196,150 19.35%	817,431 80.65%	1,013,581
Total	923,590	2,169,414	3,093,004

[2] https://electionstatistics.sos.la.gov/Data/Registration_Statistics/Statewide/2020_1101_sta_comb.pdf

7. The race of the 3,093,004 registered voters for the November 3, 2020 general elections and whether or not they voted in the elections is summarized in the Table 2. Note that 74.47% of the registered White and 63.10% of Black registered individuals voted in Louisiana in the November 3, 2020 general elections.

Table 2: Race Summary for November 2020 General Elections

Race	Voted in Elections		
	NO	YES	Total
BLACK	356231 36.90%	609134 63.10%	965365
OTHER	68799 39.30%	106256 60.70%	175055
WHITE	498560 25.53%	1454024 74.47%	1952584
Total	923590	2169414	3093004

8. In Table 3, the voting percentage by the congressional districts is reported.

Table 3: Voting Summary by Congressional District for November 2020 General Elections

CONGRESSIONAL DISTRICT	Voted in Elections		
	NO	YES	Total
1	145005 26.80%	396123 73.20%	541128
2	180867 34.17%	348461 65.83%	529328
3	159388 30.71%	359545 69.29%	518933
4	151064 31.27%	332043 68.73%	483107
5	152607 31.15%	337374 68.85%	489981
6	134659 25.38%	395868 74.62%	530527
Total	923590	2169414	3093004

9. Next, the summary by race in each congressional district is reported in Table 4. For example, there were 67,765 black registered voters in the congressional district 1 and 63.44% of them voted in the November 2020 General Elections.

Table 4: Voting Summary and Race by Congressional District for November 2020 General Elections

CONGRESSIONAL DISTRICT	Race	Voted in Elections =YES		Total Registered Voters
		Count	Percent of Total Registered Voters	
1	BLACK	42993	63.44	67765
	OTHER	30566	65.14	46924
	WHITE	322564	75.64	426439
2	BLACK	206416	63.97	322664
	OTHER	24436	58.79	41564
	WHITE	117609	71.24	165100
3	BLACK	75774	60.62	124996
	OTHER	12433	56.18	22131
	WHITE	271338	72.98	371806
4	BLACK	99509	61.39	162092
	OTHER	12588	58.03	21692
	WHITE	219946	73.48	299323
5	BLACK	97595	59.75	163340
	OTHER	8101	56.06	14451
	WHITE	231678	74.21	312190
6	BLACK	86847	69.75	124508
	OTHER	18132	64.09	28293
	WHITE	290889	77.01	377726
All		2169414	70.14	3093004

10. Next, I have reported the summary by race and parish for the November 2020 general elections in Table 5. The table summarizes this data for the parishes, which have been proposed to become the Congressional District 5 in the various Illustrations presented by plaintiffs experts.

Table 5: Summary by Parishes and Race for November 2020 General Elections

Parish	Race	Voted in Elections			
		Vote=NO		Vote=YES	
		Count	Percent	Count	Percent
05 - AVOYELLES	BLACK	2498	37.05	4244	62.95
	OTHER	247	38.35	397	61.65
	WHITE	4376	25.24	12960	74.76
07 - BIENVILLE	BLACK	1077	26.22	3030	73.78
	OTHER	42	47.19	47	52.81
	WHITE	971	19.11	4110	80.89

Parish	Race	Voted in Elections			
		Vote=NO		Vote=YES	
		Count	Percent	Count	Percent
13 - CATAHOULA	BLACK	651	35.11	1203	64.89
	OTHER	29	46.77	33	53.23
	WHITE	1168	24.07	3685	75.93
14 - CLAIBORNE	BLACK	1482	36.33	2597	63.67
	OTHER	62	39.24	96	60.76
	WHITE	1012	20.35	3961	79.65
15 - CONCORDIA	BLACK	1919	38.46	3070	61.54
	OTHER	102	45.54	122	54.46
	WHITE	2182	27.45	5768	72.55
17 - EAST BATON ROUGE	BLACK	46407	35.14	85672	64.86
	OTHER	6842	38.44	10959	61.56
	WHITE	36156	24.14	113622	75.86
18 - EAST CARROLL	BLACK	1615	44.70	1998	55.30
	OTHER	22	45.83	26	54.17
	WHITE	339	23.31	1115	76.69
19 - EAST FELICIANA	BLACK	1717	31.21	3784	68.79
	OTHER	179	34.76	336	65.24
	WHITE	1797	21.63	6509	78.37
20 - EVANGELINE	BLACK	2344	37.90	3841	62.10
	OTHER	133	36.54	231	63.46
	WHITE	3947	25.44	11566	74.56
21 - FRANKLIN	BLACK	1819	42.21	2490	57.79
	OTHER	62	50.82	60	49.18
	WHITE	2293	24.05	7242	75.95
24 - IBERVILLE	BLACK	2704	25.62	7851	74.38
	OTHER	167	35.68	301	64.32
	WHITE	1986	18.43	8787	81.57
28 - LAFAYETTE	BLACK	14347	37.37	24044	62.63
	OTHER	3351	38.25	5409	61.75
	WHITE	28169	24.63	86197	75.37
31 - LINCOLN	BLACK	4191	42.10	5764	57.90
	OTHER	503	46.23	585	53.77
	WHITE	3815	22.57	13089	77.43
33 - MADISON	BLACK	2119	43.74	2726	56.26
	OTHER	69	61.06	44	38.94
	WHITE	706	26.41	1967	73.59
34 - MOREHOUSE	BLACK	3917	44.61	4863	55.39
	OTHER	162	51.76	151	48.24
	WHITE	2595	27.94	6693	72.06
37 - OUACHITA	BLACK	16611	43.90	21229	56.10
	OTHER	1829	47.19	2047	52.81
	WHITE	18459	28.42	46494	71.58
39 - POINTE COUPEE	BLACK	1643	28.62	4097	71.38
	OTHER	79	31.98	168	68.02
	WHITE	1805	17.94	8254	82.06

Parish	Race	Voted in Elections			
		Vote=NO		Vote=YES	
		Count	Percent	Count	Percent
40 - RAPIDES	BLACK	10197	40.01	15287	59.99
	OTHER	1639	42.22	2243	57.78
	WHITE	14205	25.26	42032	74.74
42 - RICHLAND	BLACK	2122	41.08	3043	58.92
	OTHER	98	40.66	143	59.34
	WHITE	2126	23.67	6854	76.33
46 - ST. HELENA	BLACK	1400	29.59	3331	70.41
	OTHER	64	50.00	64	50.00
	WHITE	935	24.55	2874	75.45
49 - ST. LANDRY	BLACK	9550	36.85	16364	63.15
	OTHER	660	42.53	892	57.47
	WHITE	8448	25.68	24453	74.32
50 - ST. MARTIN	BLACK	4144	36.48	7217	63.52
	OTHER	428	47.35	476	52.65
	WHITE	5873	23.01	19649	76.99
	WHITE	35259	23.08	117524	76.92
53 - TANGIPAHOA	BLACK	9225	39.74	13991	60.26
	OTHER	1217	39.68	1850	60.32
	WHITE	14999	26.12	42429	73.88
54 - TENSAS	BLACK	587	29.93	1374	70.07
	OTHER	13	38.24	21	61.76
	WHITE	325	20.98	1224	79.02
56 - UNION	BLACK	1581	40.68	2305	59.32
	OTHER	219	46.70	250	53.30
	WHITE	2792	24.14	8773	75.86
61 - WEST BATON ROUGE	BLACK	1618	22.84	5466	77.16
	OTHER	133	37.89	218	62.11
	WHITE	1876	17.99	8552	82.01
62 - WEST CARROLL	BLACK	502	46.83	570	53.17
	OTHER	41	47.67	45	52.33
	WHITE	1674	27.12	4498	72.88
63 - WEST FELICIANA	BLACK	593	25.05	1774	74.95
	OTHER	47	31.97	100	68.03
	WHITE	1034	18.81	4463	81.19

11. The Table 5 provides the count of Black, White, and Other individuals in the parish who voted or not voted in the November 2020 general elections. For example, in Avoyelles parish there were a total of 6,742 black registered voters (2,498 plus 4,244) and 4,244 or 62.95% of the total voted in the November 2020 general elections.

12. The precinct level votes for each candidate in the November 2020 general elections is available on the *Redistricting Data Hub* website[3]. This data was used to obtain the candidate votes by precincts and parishes for the November 2020 presidential elections.

13. It is important to note that all the registered voters who voted in the November 2020 general elections may not have voted for the presidential elections. In the November 2020 general elections, 2,169,414 persons voted. Whereas, 2,148,062 voted for the presidential elections. That is about 0.98% individuals who voted in the general elections decided to not vote for the presidential election.

14. Assuming the proportions who elected to not vote for the presidential election is uniform across the voters race, one can estimate the total number of votes casted by race for the presidential election in November 2020 elections in the parish.

15. This leads to the racial breakdown of the total 2,148,062 votes casted in the November 2020 presidential elections was

Black: 602,636
White: 1,440,202
Other: 105,224
Total: 2,148,062

16. And, the breakdown by candidates of the total 2,148,062 votes casted in the November 2020 presidential elections was;

Trump: 1,255,776
Biden: 856,034
Other Candidates: 36,252
Total: 2,148,062.

17. The total votes casted for each candidates in the November 2020 presidential elections and estimated votes casted by race for the presidential election in November 2020 elections is summarized in the Table 6 for parishes that have been associated with Congressional District 5 various Illustration Plans presented in the plaintiffs' expert reports.

Table 6: Total votes in 2020 Presidential Election by Parish

	Candidate			Race			
Parish	**Trump**	**Biden**	**Other Candidates**	**Black**	**White**	**Other**	**Total Voted**
AVOYELLES	12028	4979	285	4169	12732	391	17292
BIENVILLE	3891	3067	92	2972	4032	46	7050
CATAHOULA	3541	1269	48	1188	3638	32	4858

[3] The website is https://redistrictingdatahub.org/download/?datasetid=35186&document=%2Fweb_ready_stage%2Flegislative%2F2021_adopted_plans%2Fla_cong_adopted_2022.zip

CLAIBORNE	3770	2731	79	2568	3917	95	6580
CONCORDIA	5550	3177	101	3025	5683	120	8828
EAST BATON ROUGE	88420	115577	4185	84828	112503	10851	208182
EAST CARROLL	1080	1900	56	1932	1078	26	3036
EAST FELICIANA	6064	4280	165	3741	6436	332	10509
EVANGELINE	11053	4158	201	3785	11399	228	15412
FRANKLIN	6970	2658	92	2472	7189	59	9720
IBERVILLE	7893	8514	312	7749	8673	297	16719
LAFAYETTE	72519	39685	2317	23809	85356	5356	114521
LINCOLN	11311	7559	405	5716	12979	580	19275
MADISON	1930	2654	86	2687	1939	44	4670
MOREHOUSE	6510	4946	118	4808	6617	149	11574
OUACHITA	42255	25913	998	21045	46092	2029	69166
POINTE COUPEE	7503	4683	185	4049	8156	166	12371
RAPIDES	38347	19475	1043	15108	41540	2217	58865
RICHLAND	6607	3225	108	3013	6786	141	9940
ST HELENA	2714	3346	98	3272	2823	63	6158
ST LANDRY	23171	17372	611	16146	24128	880	41154
ST MARTIN	18203	8439	396	7137	19431	470	27038
TANGIPAHOA	37806	18887	968	13845	41986	1830	57661
TENSAS	1197	1329	28	1340	1194	20	2554
UNION	8407	2654	140	2279	8675	247	11201
WEST BATON ROUGE	7684	6200	213	5413	8468	216	14097
WEST CARROLL	4317	710	25	563	4444	45	5052
WEST FELICIANA	3863	2298	107	1755	4414	99	6268

18. Next, I have reviewed the November 2020 presidential election votes for the 19 parishes that are being considered to become the Congressional District 5 in the Illustration Plan 1 presented in Dr. Cooper's report.

19. The Table 7 summarizes the registered voters and the November 2020 presidential election votes in those 19 parishes.

Table 7: Summary of 19 Parishes and November 2020 presidential election Outcomes

	Parish Registered Voters			November 2020 presidential election Outcome			
Parish	Total	Black Percent	White Percent	Trump Votes Pct.	Biden Votes Pct.	Trump's lead number of Votes	Election Outcome by Parish
AVOYELLES	24722	27.3	70.1	69.6	28.8	7049	Trump Won by 40.8%
CATAHOULA	6769	27.4	71.7	72.9	26.1	2272	Trump Won by 46.8
CONCORDIA	13163	37.9	60.4	62.9	36.0	2373	Trump Won by 26.9%
EAST BATON ROUGE	299658	44.1	50.0	42.5	55.5	-27157	Biden Won by 13.0%
EAST CARROLL	5115	70.6	28.4	35.6	62.6	-820	Biden Won by 27.0%
EAST FELICIANA	14322	38.4	58.0	57.7	40.7	1784	Trump Won by 17.0%
FRANKLIN	13966	30.9	68.3	71.7	27.3	4312	Trump Won by 44.4%
LAFAYETTE	161517	23.8	70.8	63.3	34.7	32834	Trump Won by 28.7%
MADISON	7631	63.5	35.0	41.3	56.8	-724	Biden Won by 15.5%
MOREHOUSE	18381	47.8	50.5	56.2	42.7	1564	Trump Won by 13.5%
OUACHITA	106669	35.5	60.9	61.1	37.5	16342	Trump Won by 23.6%
POINTE COUPEE	16046	35.8	62.7	60.6	37.9	2820	Trump Won by 22.8%
RAPIDES	85603	29.8	65.7	65.1	33.1	18872	Trump Won by 32.1%
RICHLAND	14386	35.9	62.4	66.5	32.4	3382	Trump Won by 34.0%
ST HELENA	8668	54.6	43.9	44.1	54.3	-632	Biden Won by 10.3%
ST LANDRY	60367	42.9	54.5	56.3	42.2	5799	Trump Won by 14.1%
TENSAS	3544	55.3	43.7	46.9	52.0	-132	Biden Won by 5.2%
WEST CARROLL	7330	14.6	84.2	85.5	14.1	3607	Trump Won by 71.4%
WEST FELICIANA	8011	29.5	68.6	61.6	36.7	1565	Trump Won by 25.0%
TOTAL	**875,868**	**36.7**	**58.8**	**55.3**	**42.9**	**75,110**	**Trump Won by 12.4%**

20. In the 19 parishes listed above, note that Biden won in five parishes, namely East Baton Rouge, East Carroll, Madison, St. Helena, and Tensas. And, among these five parishes, Black voters constitute a majority of registered voters in four of the parishes. The only exception is the East Baton Rouge Parish.

21. In the East Baton Rouge Parish, Black voters constitute 44.1% of registered voters and White voters constitute 50.0% of the registered voters.

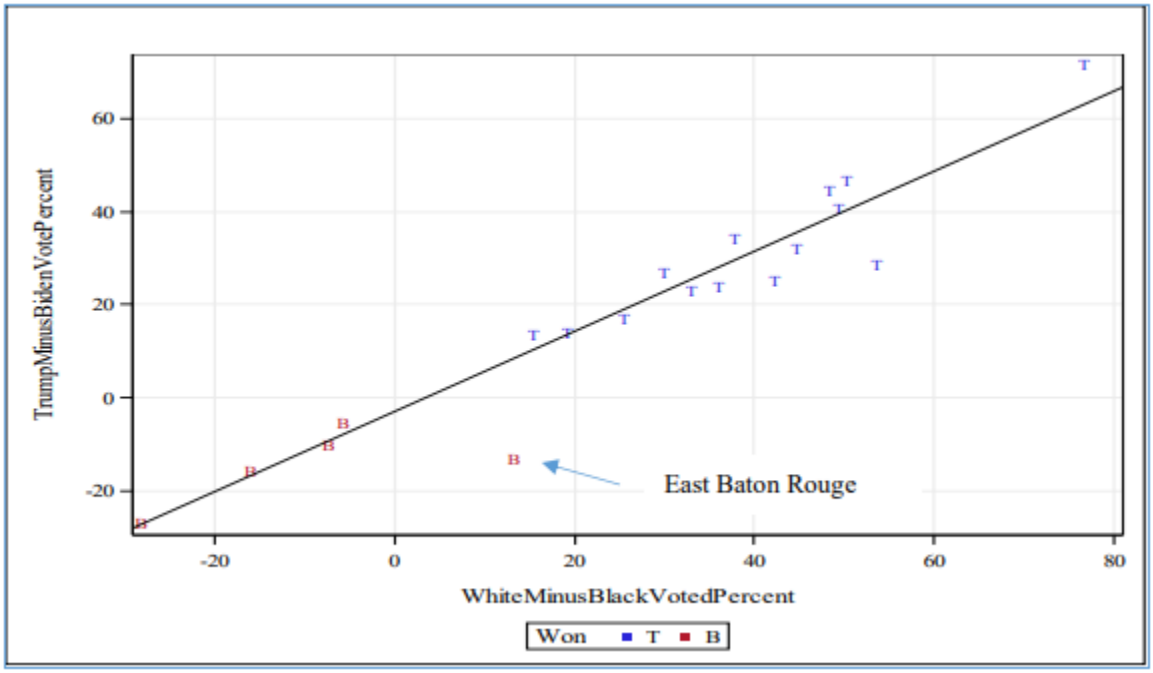
22. Also, an estimated 54.0% of the individuals who voted in the 2020 November presidential elections are White and 40.7%% Black.

Summary of November 2020 Presidential Elections in East Baton Rouge Parish:

Total Votes: 208,182
Estimated Black Votes= 84,828 (=40.7% of total votes)
Estimated White Votes= 112,503 (=54.0% of total votes)

23. That is, there were 13.3% more White voters who participated in the elections in East Baton Rouge parish, yet the minority preferred candidate (Biden) won by 13.0%. In other words, based on the voting pattern in East Baton Rouge, it is apparent that under the 2020 presidential election, White voters did not vote as a bloc to defeat the black (minority) preferred candidate.

Figure 1: Racial Voting Disparity v. Candidate Votes Percentage Disparity



24. The disparity in voting patterns between East Baton Rouge and remaining 18 parishes is displayed in the Figure 1. The Figure 1 displays on the horizontal axis the difference between the percentages of votes casted by White and Black voters (WhiteMinusBlackVotedPercent) and

on the vertical axis the difference between the percentages of votes for Trump and Biden (TrumpMinusBidenVotePercent) for the 19 parishes. For example, in East Baton Rouge parish the difference between the percentages of votes casted by White and Black voters was 13.3% and difference between the percentages of votes for Trump and Biden was 13.0%.

25. In order to study the voting pattern difference between the East Baton Rouge Parish and the remaining 18 parishes, the Figure 1 also displays a fitted linear regression line[4] based on the 18 parishes after excluding the East Baton Rouge. The value of the R-squared (R^2) for the regression line is 0.9471. The R-squared is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model. The R-Square is a measure that indicates the model fit. The R-Square ranges from 0 to 1. And, closer the values of R-Square is to 1, the better is the model fit. The value of R-squared as 0.9471 means the fitted regression model is able to explain 94.71 percent of the variation in the data and indicates a good fit.

26. The Figure 1 also visually depicts the disparity in voting pattern between East Baton Rouge Parish and the other 18 parishes. Extrapolating using the regression line based on the 18 non East Baton Rouge parishes, for WhiteMinusBlackVotedPercent as 13.3%, the TrumpMinusBidenVotePercent should be approximately 8.5%. Whereas, the observed value in the November 2020 election was -13.0%. That is, a change of 21.5% (from -13.0% to 8.5%) votes away from Trump and in favor of Biden. Again, indicating that White voters are not voting as a bloc to defeat the black (minority) preferred candidate in the East Baton Rouge parish.

27. It is important to note that East Baton Rouge is a relatively heavily populated parish compared to other parishes listed among the 19 parishes that make up Plaintiffs' Congressional District 5 under the Illustrative Plan 1. In fact, in terms of registered voters:

Total Registered voters in the 19 parishes: 875,868
Registered Voters in East Baton Rouge Parish: 299,658.

That is, East Baton Rouge Parish comprises 34.2% of the total registered voters in 19 parishes listed above.

28. The percentage of individuals who voted in the general elections in the East Baton Rouge parish and decided to not vote for the presidential election is 2,071 or 0.98% of the individuals who voted. This matches the similar percentage of 0.98% observed for entire Louisiana.

29. As remarked earlier, due to the time constraints, I did not had adequate time to review Plaintiffs' files/datasets/programs. With more time, I would have completed the review and would have included statistical analysis for more statewide elections in Louisiana.

[4] The equation of the fitted regression line is Y= -2.91 + 0.86 * X.

Conclusions

30. After reviewing the voting data for the Louisiana, in my opinion, the following conclusions can be drawn:

i. Based on the voting pattern in East Baton Rouge, for the 2020 presidential election it does not appear that White voters are voting as a bloc to defeat the black (minority) preferred candidate.

ii. East Baton Rouge is a heavily populated parish and constitutes 34.2% of the total registered voters from the 19 parishes which are being considered for proposed new congressional district.

31. Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed on this 29th day of April 2022, in Metairie, Louisiana.

Tumulesh Solanky

Tumulesh K. S. Solanky, PhD

APPENDIX 1: CURRICULUM VITAE
TUMULESH K. S. SOLANKY

ADDRESS:
Department of Mathematics
University Of New Orleans,
New Orleans, LA 70148
Email: tsolanky@uno.com
Citizenship: USA

EDUCATION:

Ph.D. in Statistics	University of Connecticut, 1990
M.Sc. in Mathematics	Indian Institute Of Technology, New Delhi, India, 1987
B.Sc. in Mathematics (Honors)	University of Delhi, India, 1985

EMPLOYMENT AND POSITIONS:

August 2008-present	Professor and Chair of the Mathematics Department
2021- present	The University of Louisiana System Foundation and Michael and Judith Russell Professor in Data/Computational Sciences
2001- 2008	Professor of Mathematics, University of New Orleans
1995-2001	Associate Professor of Mathematics, University of New Orleans
1996-1997	Visiting Associate Professor, University of Toronto (On Sabbatical Leave)
1990-1995	Assistant Professor of Mathematics, University of New Orleans
1989-1990	Lecturer of Statistics, University of Connecticut

MAJOR AWARDS

(i**). Seraphia D. Leyda University Teaching Fellow**, Awarded in year 2009.
(ii). **Cooper R. Macklin Medallion**, Awarded in year 2018. *Cooper R. Macklin Medallion is awarded to a faculty or staff member who has made outstanding contributions in support of the University's mission. The recipient is an individual who has demonstrated excellent, sustained, and selfless service to the university.*

MAJOR STATISTICAL CONSULTING EXPERIENCE:

40. Louisiana Organ Procurement Agency (LOPA) and Mid-America Transplant Services (MOMA), St Louis, MO; Assisted LOPA and MOMA with statistical analysis related to organ procurement data in Louisiana and Missouri.
Duration: August 2021— present.
Extent of Involvement: Submitted several internal reports.

39. Robert Mark Turner v. Go Auto Insurance Company, Suit Number: 678,933; Division: "25"; Assisted Go Auto Insurance Company with statistical analysis of claims data.
Duration: May 2021— present.
Extent of Involvement: Submitted expert report; Deposed.

38. UNITED STATES OF AMERICA v. LOUIS AGE, JR., et al., NO. 2:16-CR-00032; Assisted the Clerk of Court for the Eastern District of Louisiana (EDLA) by reviewing and analyzing the jury selection process from the 13 parishes in EDLA.
Duration: April 2020—June 2021.
Extent of Involvement: Submitted expert report.

37. Jackson Women's Health Organization v. Dobbs, No. 3:18-cv-00171 (S.D. Mississippi);
Duration: April 2020--.
Extent of Involvement: Submitted expert report; Deposed.

36. Planned Parenthood Arizona Incorporated, et al., v. Mark Brnovich, et al., Case No. CV-19-00207-TUC-JGZ (U.S. District Court for the District of Arizona);
Duration: May 2020- August 2020.

Extent of Involvement: Submitted expert report.

35. STATE OF LOUISIANA v. MELVIN CARTEZ MAXIE (NUMBER: 13-CR-072522), llTH JUDICIAL DISTRICT COURT, SABINE PARISH, LOUISIANA;
Duration: June 2019- November 2019.
Extent of Involvement: Statistical Work; Submitted Trial Exhibits.

34. LITTLE ROCK FAMILY PLANNING SERVICES, et al., v. LESLIE RUTLEDGE, et al.;
Duration: June 2019- August 2019.
Extent of Involvement: Submitted two expert reports; Testified in Court.

33. 19th Judicial District Court, Parish of East Baton Rouge, State of Louisiana; City of Walker, et al. versus State of Louisiana through the Department of Transportation and Development, et al.;
Duration: March 2018- March 2019.
Extent of Involvement: Submitted one expert report; Testified in Court.

32. PLANNED PARENTHOOD OF ARKANSAS & EASTERN OKLAHOMA, d/b/a PLANNED PARENTHOOD GREAT PLAINS and STEPHANIE HO, M.D., on behalf of themselves and their patients, v LARRY JEGLEY, Prosecuting Attorney for Pulaski County, in his official capacity, his agents and successors; MATT DURRETT, Prosecuting Attorney for Washington County, in his official capacity, his agents and successors;
Duration: June 2018- December 2018.
Extent of Involvement: Submitted one expert report; Testified in Court.

31. UNITED STATES DISTRICT COURT, WESTERN DISTRICT OF MISSOURI, CENTRAL DIVISION, COMPREHENSIVE HEALTH OF PLANNED PARENTHOOD GREAT PLAINS, et al. v. RANDALL W. WILLIAMS, MD, in his official capacity as Director of the Missouri Department of Health and Senior Services, et al.;
Duration: January 2018- November 2019.
Extent of Involvement: Submitted two expert reports; Deposed.

30. UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF TEXAS, HOUSTON DIVISION, REBA CARTER, et. al., v. HOUSTON INDEPENDENT SCHOOL DISTRICT
Duration: June 2017- April 2018.
Extent of Involvement: Submitted expert report.

29. CIVIL DISTRICT COURT FOR THE PARISH OF ORLEANS, STATE OF LOUISIANA, HG NEW ORLEANS RETAILERS JOINT VENTURE vs. THE CITY OF NEW ORLEANS by and through THE NEW ORLEANS AVIATION BOARD;
Duration: July 2017- August 2017.
Extent of Involvement: Submitted expert report.

28. UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA, UNITED STATES of AMERICA v. HENRY EVANS, M.D., MICHAEL JONES, M.D., SHELTON BARNES, M.D., GREGORY MOLDEN, M.D., PAULA JONES, JONATHON NORA;
Duration: September 2016- May 2017.
Extent of Involvement: Testified in Court.

27. UNITED STATES DISTRICT COURT, WESTERN DISTRICT OF MISSOURI, CENTRAL DIVISION, COMPREHENSIVE HEALTH OF PLANNED PARENTHOOD GREAT PLAINS, et al. v. PETER LYSKOWSKI, in his official capacity as Director of the Missouri Department of Health and Senior Services, et al.;
Duration: January 2017- August 2017.
Extent of Involvement: Submitted two expert reports.

26. UNITED STATES of AMERICA v. RODNEY HESSON, ET AL, DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA;
Duration: August 2016- January 2017.
Extent of Involvement: Submitted reports/Trial Exhibits.

25. UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF ARKANSAS WESTERN DIVISION PLANNED PARENTHOOD ARKANSAS & EASTERN OKLAHOMA, d/b/a PLANNED PARENTHOOD OF THE HEARTLAND; and STEPHANIE HO, M.D. v. LARRY JEGLEY, Prosecuting Attorney for Pulaski County, in his official capacity and MATT DURRETT, Prosecuting Attorney for Washington County;
Duration: December 2015- February 2016.
Extent of Involvement: Submitted expert report.

24. UNITED STATES DISTRICT COURT, MIDDLE DISTRICT OF LOUISIANA, JUNE MEDICAL SERVICES, LLC, ET AL., KATHY KLIEBERT, ET AL;
Duration: October 2014- August 2016.
Extent of Involvement: Submitted expert report; Deposed; Testified in Court.

23. United States District Court, Middle District of Louisiana, Albert Woodfox v. BURL CAIN, *Warden of the Louisiana State Penitentiary*, ET AL., Civil Action; Assisted the Office of the Attorney General of Louisiana related to a jury selection matter.
Duration: September 2011- August 2013.
Extent of Involvement: Submitted two expert reports; Deposed; Testified in Court.

22. United States District Court EDLA, U.S. v. Khlgatian, et al, Criminal Docket Number 11-105 "I"; Assisted a federal agency and the Office of the AUSA; sampling of the patient charts; statistical comparisons with peers.
Duration: February 2012- December 2012.
Extent of Involvement: Submitted two expert reports.

21. United States District Court, Eastern District of Louisiana, Diamond Young, et al. v. United States of America, C.A. No. 11-2438, Section "H" (5); Civil Action;
Duration: April 2012- December 2012.
Extent of Involvement: Submitted an expert report.

20. Statistical Consultant: Textron Marine & Land Systems; Provided statistical expertise related to product reliability/testing/sampling and quality control;
Duration: September 2010- January 2011.
Extent of Involvement: Submitted an expert report.

19. United States District Court, St. Tammany Parish Hospital. vs. Ace American Ins. Co. and Trinity Marine Products, Inc. (and several other related cases); Civil Action;
Duration: March 2010- March 2012.
Extent of Involvement: Submitted over ten expert reports; Deposed.

18. United States District Court, Eastern District of Louisiana, Malcolm Louis LeBlanc, et al. vs. Chevron USA Inc., et al.; Civil Action;
Duration: October 2008- July 2010.
Extent of Involvement: Submitted an expert report; Deposed.

17. United States District Court, 27th Judicial District, Opelousas, Charles C. Foti, Jr., et al. vs. Janssen Pharmaceutica, et al.; Civil Action; Served as the *court appointed Statistical Expert* to assist the court in a complex litigation matter.
Duration: August 2008- July 2010.

16. GCR, New Orleans and Barrios, Kingsdorf & Casteix, L.L.P.; *Statistical Consultant*; Provided statistical expertise to GCR in statistical analysis of CDW related matter;
Duration: January 2010- March 2010.
Extent of Involvement: Submitted expert report.

15. United States District Court, 24th Judicial District, Parish of Jefferson, Warren Lester, et al. vs. Exxon Mobil Corporation, et al.; Civil Action;
Duration: March 2008- May 2010;

Extent of Involvement: Assisted the attorneys and other experts; Submitted expert reports; Deposed twice.

14. Medicare Matter.
Duration: October 2009- December 2009.
Extent of Involvement: Submitted an expert report; Testified in Court (via Video Conference).

13. United States District Court, St. Bernard Parish, Mumphrey v. Chalmette Medical Center; Civil Action;
Duration: October 2008- November 2008.
Extent of Involvement: Submitted an expert report; Deposed; Testified in Court.

12. GCR, New Orleans; *Statistical Consultant*; Provided statistical expertise to GCR in designing polls & analyzing the poll results for the state elections in 2007;
Duration: May 2007- October 2007.

11. United States District Court, 19th Judicial District, Parish of East Baton Rouge, Patrick J. Cunningham, et al. vs. IBM Corp.; Civil Action;
Duration: December 2006- August 2007;
Extent of Involvement: Assisted the attorneys and other experts; wrote over 25 internal reports related to statistical computations and interpretation of results.

10. UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA; Provided statistical expertise in a jury selection matter; Wrote an expert report/Affidavit;
Duration: May 2006- August 2006;

9. United States District Court, Eastern District of Texas, June Pryor Avance, et al. vs. Kerr-McGee Chemical LLC; Civil Action; *Statistical Expert*; Wrote three expert reports/Affidavits on statistical projections;
Duration: January 2005- July 2007;
Extent of Involvement: Deposed.

8. United States District Court, Down South Entertainment versus SMG; Civil Action; *Statistical estimation of crowd for Easter Jam*; Wrote three expert reports on statistical projections and the reliability of projections;
Duration: December 2003- May 2005;
Extent of Involvement: Deposed twice and testified in court.

7. Naval Oceanographic Center (US Navy), Mississippi; *statistical guidance to update their methods of data collection and data storage, statistical algorithms to discard the noise and save only the relevant data*. Duration: May 1998- March 2002.

6. United States District Court, Bank of Louisiana versus Kenwin Shops Inc.; Civil Action; *Wrote two expert reports on statistical analysis related to Bankruptcy of a BOL's client*;
Duration: May 1999- December 1999; Extent of Involvement: Deposed.

5. Jefferson Parish Public Schools; *As the statistician for the court appointed expert witness:* designed a survey of schools under Jefferson Parish Public Schools, assisted in statistical projections reported to the court.
Duration: August 1998- January 1999.

4. Lifemark Hospitals of Louisiana (Kenner Regional Medical Center); *Statistical sampling of patient charts*; Wrote three expert reports on statistical analysis/ sampling of the patient charts;
Duration: August 1996 – August 1997; Extent of Involvement: Deposed.

3. KPMG New Orleans; *Sample size determination, Designed and Analyzed samples of patient charts/drug usage to estimate total drug cost for the Tenet group of Hospitals/Lifemark Hospitals*; Wrote two expert reports on statistical analysis;
Duration: August 1994 – December 1995.

2. USDA, Department of Forestry, Louisiana: *Statistical assistance to USDA in data collection, designing and modeli*ng, Models used: Time-Series Models (for forecasting; Both Time Domain--ARIMA MODELS-- and Frequency Domain models).
Duration: August 1991- December 1994.

1. NASA Stennis Space Center, Mississippi: *Statistical Design and Analysis of the Rocket Seal Configuration Tester*, assisted NASA with the statistical issues related to the design of experiments and performance evaluation of the rocket seals.
Duration: August 1994-December 1995.

CURRENT EDITORIAL SERVICE:

- Associate Editor: AJMMS **(**American Journal of Mathematical and Management Sciences), 2012-present.
- Associate Editor: Sequential Analysis, 2003-present.
- Associate Editor: Journal of Combinatorics, Information and System Sciences, 2003-present.
- Associate Editor: Journal of the Indian Society of Agricultural Statistics, 2009-present.

SCHOLARLY/PROFESSIONAL ACTIVITIES:

- President, Louisiana Chapter of American Statistical Association: 1994-1995.
- Vice-President, Louisiana Chapter of American Statistical Association: 1993-1994.
- Secretary, Louisiana Chapter of American Statistical Association: 1995-1996.
- Reviewer: Journal of Statistical Planning and Inference, Sequential Analysis, Metrika, Communications in statistics, Statistics and Decisions, and others.
- Member: American Statistical Association (ASA), Life member of the Forum for Interdisciplinary Mathematics.
- Selection Committee Chair: Abraham Wald Prize in Sequential Analysis for Best Paper: Sequential Analysis Journal. The first prize was awarded at JSM, 2005. Chaired the international selection committee from 2006-2021.
- Guest Editor: Special Volume of *AJMMS* (American Journal of Mathematical and Management Sciences). Co- edited a special volume of *AJMMS* related to my research area of Selection and Ranking/MCP.
- Symposium Organizer: Co-organized "Symposium on **Ranking and Selection Methodologies – Multiple Comparison Procedures"**. The symposium was held during the ***Pre-ICM International Convention on Mathematical Sciences,*** University of Delhi, December, 2008.
- Symposium Organizer: Co-organized a symposium at the Auburn University (December 2005) in my research area of Selection and Ranking/MCP. I also chaired the symposium. The symposium was held during the SCMA 2005/FIM XII Conference.
- Editor (Statistical Science): AJMMS **(**American Journal of Mathematical and Management Sciences), 2009-2012.
- Associate Editor: Statistical Methodology, 2010-2015.

RESEARCH PUBLICATIONS

Scholarly books:

(i.) *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., ISBN No.: 0-8247-9078-2, (with N. Mukhopadhyay), 1994.

Refereed Scholarly book chapters:

(i.) On an improved accelerated sequential methodology with applications in selection and ranking, *Frontiers in Probability and Statistics*, Editors: S.P. Mukherjee, et al., 250-259, 1998, (with N. Mukhopadhyay).

(ii). Applications of Sequential Tests to Target Tracking by Multiple Models, *Applied Sequential Methodologies*, Marcel Dekker, edited by N. Mukhopadhyay, et al., 219-247, 2004, (with X. Rong Li).

As Guest Editor of a Journal's Special Issue:

Co-edited a Special Volume of *AJMMS* (American Journal of Mathematical and Management Sciences) in my research area: RANKING AND SELECTION AND MULTIPLE COMPARISON PROCEDURES. American Journal of Mathematical and Management Sciences, Volume 29 (2009), Nos. 1 & 2, 294 pages.

As Associate Editor of Conference Proceedings:

SOME RECENT ADVANCES IN MATHEMATICS AND STATISTICS, Proceedings of Statistics 2011 Canada/IMST 2011-FIM XX, Editor: Yogendra P Chaubey, World Scientific Publishing Co. Pte. Ltd., 2013.

REFEREED JOURNAL PUBLICATIONS

26. Second Order Asymptotics of a Fine-Tuned Purely Sequential Procedure for the Generalized Partition Procedure, *Statistics and Applications*, Volume 19, No. 1, 401-415, 2021.

25. A Generalization of the Partition Problem, *Sequential Analysis*, **34**(04), pp. 483 – 503, 2015 (with Jie Jhou).

24. Discussion on "Sequential Estimation for Time Series Models" by T. N. Sriram and Ross Iaci, *Sequential Analysis*, **33**(02), pp. 186 – 189, 2014.

23. On Two-stage comparisons with a control under heteroscedastic normal distributions, *Methodology and Computing in Applied Probability*, Volume 14, Number 3, Pages 501-522, 2012 (with N. Mukhopadhyay).

22. Second-Order Asymptotics of a Fine-Tuned Unbalanced Purely Sequential Procedure For The Partition Problem, *Journal of Combinatorics, Information and System Sciences, vol. 36, 233-248, 2011.*

21. Discussion on "Two-Stage Procedures for High-Dimensional Data" by Makoto Aoshima and Kazuyoshi Yata, *Sequential Analysis*, **30**(04), pp. 429 – 431, 2011.

20. On Approximate Optimality of the Sample Size for the Partition Problem, Communications in Statistics - Theory and Methods, 38:16, 3148 — 3157, 2009 (with Y. Wu).

19. *Discussion on "A Hybrid Selection and Testing Procedure with Curtailment" by Elena M. Buzaianu and Pinyuen Chen*, Sequential Analysis, 28:1, 38-40, 2009.

18. *A two-stage procedure with elimination for partitioning a set of normal populations with respect to a control*, Sequential Analysis, 25, 297-310, 2006.

17. On unbalanced multistage methodologies for the partition problem, *Proceedings of the International Sri Lankan Statistical Conference: Visions of Futuristic Methodologies*, 447-466, 2004 (with Y. Wu).

16. *Predicting multivariate response in linear regression model*, Commun. in Statistics, Simulation & Computation, Vol. 32, No. 2, 389-409, 2003 (with M. Srivastava).

15. *Multistage methodologies for comparing several treatments with a control*, Journal of Statistical Planning and Inference, 100, No. 2, 209-220, (with N. Mukhopadhyay), 2002.

14. *A sequential procedure with elimination for partitioning a set of normal populations having a common unknown variance*, Sequential Analysis, Vol. 20 (4), 279-292, 2001.

13. *Estimation of coating time in the magnetically assisted impaction coating process*, Journal of Powder Technology I, 121, 159-167, 2001(P. Singh, T.K.S. Solanky, R. Mudryy, R. Pfeffer, and R. Dave).

12. *Power comparison of some tests for detecting a change in the multivariate mean*, Commun. in Statistics, Simulation & Computation, Volume 30, Issue 1, 19--36 (2001) (with M. Srivastava and A.K. Sen).

11. *Convection and local acceleration dominated regimes in Lennard-Jones liquids*, Physics Letters A, 266, 11-18 (2000) (with P. Singh).

10. *A Robust Methodology for selecting the smaller variance*, Journal of Nonparametric Statistics, Vol. 11, 361-376 (1999) (with N. Mukhopadhyay and A. Padmanabhan).

9. *Multistage methodologies for fixed-width simultaneous confidence intervals for all pairwise comparisons*, Journal of Statistical planning and Inference, 73, 163-176 (1998) (with N. Mukhopadhyay).

8. *On estimating the reliability after sequentially estimating the mean: the exponential case*, Metrika, 45(3), 235-252 (1997) (with N. Mukhopadhyay and A. Padmanabhan).

7. *Accuracy of formula-derived Creatinine clearance in paraplegics subjects*, Clin. Nephrol., 47(4), 237-242 (1997) (with V. Thaakur, E. Reisin, M. Solomonow, R. Baratta, E. Anguilar, R. Best, R. D'Ambrosia).

6. *Estimation After Sequential Selection and Ranking*, Metrika, 45(2), 95-106 (1997) (with N. Mukhopadhyay).

5. *A nonparametric accelerated sequential procedure for selecting the largest center of symmetry*, Journal of Nonparametric Statistics, 3, 155-166 (1993) (with N. Mukhopadhyay).

4. *Accelerated sequential procedure for selecting the best exponential population*, Journal of Statistical planning and Inference, 32, (1992), 347-361 (with N. Mukhopadhyay).

3. *Accelerated sequential procedure for selecting the largest mean*, Sequential Analysis, vol. 11, (1992), 137-148 (with N. Mukhopadhyay).

2. *Improved sequential and accelerated sequential procedures for estimating the scale parameter in a uniform distribution*, Sequential Analysis, vol. 10, (1991), 235-245 (with L. Kuo and N. Mukhopadhyay).

1. *Second order properties of accelerated stopping times with applications in sequential estimation*, Sequential Analysis, vol. 10, (1991), 99-123 (with N. Mukhopadhyay).

OTHER PUBLICATIONS

(i.) Proceedings of The second International Workshop in Sequential Methodologies (IWSM 2009): Multistage Methodologies for Partitioning a Set of Exponential Populations, 4 pages, 2009.

(ii.) Proceedings of The 56th Session of the International Statistical Institute (ISI 2007): On Optimality of the Sample Size for the Partition Problem (jointly with Yuefeng Wu), pages 2033-2037, 2007.

(iii). *Selecting the Best Component in a Multivariate Normal Population*, (with N. Mukhopadhyay).

- Presented at the Joint Statistical Meetings, San Francisco, August 1993.
- Abstract in IMS Bulletin, Vol. 22, No. 3, page 333, 1993.
- Article appears in Chapter 6, *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., 1994, page 266-280.

(iv.) *On Asymptotic Second-Order Properties of Selecting the t-best Exponential Populations*, (with N. Mukhopadhyay).

- Presented at the Joint Statistical Meetings, Boston, August 1992.
- Abstract in IMS Bulletin, Vol. 23, No. 3, page 339, 1992.

- Article appears as a separate section in *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., 1994, Section 4.9, page 198-208.

(v.) *On Asymptotic Second-Order Properties of Selecting the t-best Normal Populations*, (with N. Mukhopadhyay).

- Presented at the Joint Statistical Meetings, Atlanta, August 1991.
- Abstract in IMS Bulletin, Vol. 20, No. 3, page 335, 1991.
- Article appears as a separate section in *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., 1994, Section 3.9, page 117-141.

GRANTS AND CONTRACTS FUNDED AS PI/Co-PI

{21.} L.E.Q.S.F. Enhancement Grant, $54,112.00, 2017-2018, *Redesigning Freshman Mathematics Instruction at UNO Using Technology Based Interactive Teaching Format* [The proposal was ranked first among all the proposals in the category. With Lisa Crespo and Lori Hodges].
{20.} Howard Hughes Medical Institute (HHMI), $1,500,000.00, 2014-2019, *Increasing recruitment and retention of STEM students at UNO, an urban university* [as Co-PI, Dr. Wendy Schluchter is the PI].
{19.} L.E.Q.S.F. Enhancement Grant, $15,000.00, 2011-2013, *Continuation of Statistical Consulting Education at UNO* [Linxiong Li].
{18.} UNO SCoRE award, $15,000, 2011.
{17.} L.E.Q.S.F. Enhancement Grant, $20,000.00, 2008-2010, *Enhancement of Industry Oriented Statistical Education at UNO: Post Katrina Years* [Linxiong Li].
{16.} L.E.Q.S.F. Enhancement Grant, $27,500.00, 2005-2007, Continuation of: *Enhancement of Industry Oriented Statistical Education at UNO* [with Terry Watkins and Linxiong Li].
{15.} L.E.Q.S.F. Enhancement Grant, $35,874.00, 2002-2004, *Enhancement of Industry Oriented Statistical Education at UNO*. [The proposal was ranked first among all the proposals in the category. With Terry Watkins, Linxiong Li, and Zhide Fang].
{14.} AFCEA Silicon Bayou Chapter Award, $300, 2002-2003, for purchasing classroom supplies for the mathematics department.
{13.} National Science Foundation (NSF), $219,900, 2000-2002, *UNOMACSS: A Scholarship Program in the Mathematical and Computer Sciences* [with A. DePano of Computer Science Department]. It provided scholarship to 20 mathematics and 20 computer science students for two years.
{12.} L.E.Q.S.F. Enhancement Grant, $172,512, 1996-1998, *Statistics and Applied Mathematics Laboratory* [with Lew Lefton and Adam Harrison].
{11.} {L.E.Q.S.F. Research Grant}, $75,325, 1995-1998, *Robustness and Implementability of Various Multistage Selection and Ranking Procedures.*
{10.} NASA, Graduate Student Research Program, $64,000, 1994-1996, *Statistical Analysis of Rocket Seal Tester*.
{9.} U.S.D.A. Research Grant, $20,000, 1994-1998, Statistical Assistance to USDA in EPA Projects (with Terry A. Watkins).
{8.} Institute of Mathematical Statistics, $400, 1994, *Travel Award to present a paper at the annual meeting in Chapel Hill, North Carolina*.
{7.} UNO Research Support Award, $2,000, 1994-1995.
{6.} U.S.D.A. Research Grant, $10,000, 1993-1994 , Statistical Assistance to USDA (with Terry A. Watkins).
{5.} L.E.Q.S.F. Research Grant, $14,583, 1992-1993, Permutationally Invariant Change point Estimation, (with Terry A. Watkins).
{4.} Institute of Mathematical Statistics, $800, 1990, Travel Award to present a paper at the annual meeting in Uppsala, Sweden.
{3.} UNO faculty summer scholar award, $3667, summer 1991.
{2.} UNO Research Council Grant}, $1330, 7/91--6/92.
{1.} UNO Faculty Development Award, $1,600, June-December 1993.

Professional Service as Referee:

I have refereed several hundred papers as a referee for scholarly journals and over 20 books in the field of statistics/Data Science. The books reviewed in the academic year 2020-21 are:

1. Foundations of Statistics for Data Scientists: With R and Python, Alan Agresti, Maria Kateri; ISBN 9780367748456, October 2021, Chapman and Hall/CRC.
2. Gini Inequality Index Methods and Applications, Nitis Mukhopadhyay, Partha Pratim Sengupta, ISBN 9781003143642, April 2021, Chapman and Hall/CRC.

PROFESSIONAL PRESENTATIONS

{57.} Some issues related to implementation of the partition problem formulations for normal population, **invited talk**, 34th NESS (New England Statistics Symposium), University of Rhode Island, September 30- October 2, 2021.

{56.} A generalization of the statistical Partition Problem for Normal Populations, **contributed talk**, International Conference on Mathematical Modelling, Applied Analysis and Computation (ICMMAAC-2019), JECRC University, Jaipur, India, August 8-10, 2019.

{55.} A Generalized Two-stage Procedure for the Partition Problem, **invited talk**, 7th IWSM 2019, Binghamton University, June 17-21, 2019 (With Jie Jhou).

{54.} Enhancing Student Engagement by Using Technology Based Interactive Teaching, contributed talk, Joint Mathematics Meetings (JMM 2018), San Diego, January, 2018.

{53.} Designing Experiments for Multiple Comparisons, **plenary talk**, The Sixth International Workshop in Sequential Methodologies (IWSM 2017), University of Rouen Normandy, France, June, 2017.

{52.} A Two-Stage Procedure for the Generalized Partition Problem, **invited talk**, 8th INTERNATIONAL WORKSHOP ON APPLIED PROBABILITY (IWAP2016) June 20-23, 2016, Toronto, Canada.

{51.} Statistical Partition Problem: Past, Present and Future, **invited talk**, IWSM 2015, Columbia University, New York, June, 2015.

{50.} A Generalization of the Partition Problem, Poster Session, FRONTIERS OF HIERARCHICAL MODELING IN OBSERVATIONAL STUDIES, COMPLEX SURVEYS AND BIG DATA, University of Maryland, July, 2014 (With Jie Jhou).

{49.} A Note on Partitioning Exponential Populations, **invited talk**, IWSM 2013, University Of Georgia, Athens, Georgia, July, 2013.

{48.} Nonparametric sequential procedure for partitioning a set of populations with respect to a standard or control **invited talk**, International Conference On Statistics and Informatics in Agricultural Research, New Delhi, India, December, 2012.

{47.} On a generalization of the Partition Problem, **invited talk**, IMSCT 2012 -- FIM XXI, Punjab University, India, December, 2012.

{46.} Robustness of the fine-tuned Purely Sequential procedure for the unbalanced partition problem, **invited talk**, STATISTICS 2011 CANADA and IMST 2011-FIM XX, Monteal, July, 2011.

{45.} On a generalization of the Partition Problem, **invited talk**, International Workshop on Sequential Methods, Stanford University, June, 2011 (with Jie Zhou).

{44.} Use and Misuse of the ANOVA methodology, *Mathematical Association of America*, Florida Chapter Meeting, University of West Florida, Pensacola, Florida, November, 2010.

{43.} Some Issues Related to the Partition Problem, **invited talk**, *50+ Years of Research: Mini-Conference in Honor of Professor Zacks*, Binghamton, New York, December, 2009.

{42.} Multistage Methodologies for Partitioning a Set of Exponential Populations, **invited talk**, IWSM 2009, Troyes, France, June, 2009.

{41.} SQA Editor's Round Table, **Plenary Session**, IWSM 2009, Troyes, France, June, 2009(with Marie Hušková, N. Mukhopadhyay, Alexander Tartakovsky, and S. Zacks).

{40.} Multistage Methodologies for Partitioning a Set of Several Populations With Respect to a Standard or a Control, **SQA Editors Special Invited Talk**, Joint Statistical Meeting, Denver, Colorado, August, 2008.

{39.} A Nonparametric Purely Sequential Procedure For the Partition Problem, **invited talk**, **Dudewicz Honor Conference**, Syracuse, New York, July, 2008.

{38.} On Approximate Optimality of the Unbalanced Sequential Procedure for the Partition Problem, **invited talk**, IISA Conference, Connecticut, May, 2008 (with Y. Wu).

{37.} The role of Statistics in Clinical Trials, Invited talk for the students in the *Honors Program, University of New Orleans*, **invited talk**, April, 2008.

{36.} On Optimality of the Sample Size for the Partition Problem, ISI 2007 Conference, Lisbon, Portugal, August, 2007 (with Y. Wu).

{35.} A Nonparametric Methodology for the Partition Problem, **invited talk**, IWSM 2007, Auburn, Alabama, July, 2007.

{34.} SQA Editor's Round Table, **invited participant**, IWSM 2007, Auburn, Alabama, July, 2007(with M. Aoshima, M. Carpenter, N. Mukhopadhyay, and S. Zacks).

{33.} Multiple Comparison Procedures in Statistics: A Distribution Free Approach, Department of Electrical Engineering, University of New Orleans, April, 2007.
{32.} The problem of selection and Ranking: An introduction and some current research, **invited talk**, Department of mathematics, IIT Delhi, January, 2007.
{31.} An Efficient Design For Partitioning a set of Populations With Respect to a Control, *International Conference on Statistics and Informatics*, **invited talk**, Delhi, India, December, 2006.
{30.} Efficient Designs for the Partition Problem, Department of Mathematics, Department of Mathematics, *University of Louisiana, Lafayette*, **invited talk**, September, 2005.
{29.} A note on the Efficiency of Some Designs for the Partition Problem, *International conference on recent advances in statistics*, **invited talk**, IIT Kanpur, India, January, 2005.
{28.} On an improved accelerated sequential methodology with applications in selection and ranking, *International Sri Lankan Statistical Conference: Visions of Futuristic Methodologies*, **invited talk**, Kandy, Sri Lanka, December, 2004.
{27.} Implementation and other issues related to the partition problem, *Punjab University, Chandigarh*, **invited talk**, India, December, 2004.
{26.} Robustness of methodologies for the partition problem, *University of Connecticut, Storrs*, Connecticut, **invited talk**, October, 2004.
{25.} A two stage procedure for the partition problem, *IISA 2004 Conference*, **invited talk**, Athens, Georgia, May, 2004.
{24.} A two stage procedure with elimination, *Department of Electrical Engineering, UNO*, September, 2003.
{23.} On combining subset selection and indifference zone approaches, *International conference on Bayesian Statistics*, LaManga, Spain, May, 2003.
{22.} Robustness of multistage procedures, **invited talk**, *Ninth International conference on Statistics, Combinatorics and related areas*, Allahabad, India, December, 2002.
{21.} A sequential procedure with elimination, *International conference on statistical inference and reliability*, **invited talk**, Chandigarh, India, December, 2001.
{20.} On generalizing the partition problem for the normal population, **invited talk**, *Joint Statistical Meeting of IISA, etc.*, New Delhi, India, December, 2000.
{19.}On Robustness of the partition problem for the normal population, *Sixth Conference of the Forum for Interdisciplinary Mathematics: International Conference on Combinatorics, Information Theory and Statistics*, University of South Alabama, Mobile, December, 1999. Maryland, August, 1999.
{18.} On partitioning a set of normal populations with respect to a control, **Invited Talk**, *Fifth Conference of the Forum for Interdisciplinary Mathematics: International Conference on Combinatorics, Information Theory and Statistics*, University of Mysore, India, December, 1998.
{17.} Three-Stage and accelerated sequential methodologies for comparing several treatments with a control, **Invited Talk**, *Third Conference of the Forum for Interdisciplinary Mathematics: International Conference on Combinatorics, Information Theory and Statistics*, University of Southern Maine, Portland, Maine, July, 1997 (with N. Mukhopadhyay).
{16.} Research in Statistics, Invited talk for the students in the *Honors Program, University of New Orleans*, **invited talk**, March, 1997.
{15.} Few generalizations to the selection and Ranking Problem, *Department of Statistics, University of Toronto*, November, 1996 (with N. Mukhopadhyay).
{14.} Multistage methodologies for fixed-width simultaneous confidence intervals for all pairwise comparisons, *Indian Science Congress Meeting*, Patiala, India, January, 1996 (with N. Mukhopadhyay).
{13.} On estimating the reliability after sequentially estimating the mean: the exponential case, *Annual Joint Statistical Meetings of ASA, IMS etc*., Orlando, August, 1995 (with N. Mukhopadhyay and A. Padmanabhan).
{12.} Multistage methodologies for fixed-width simultaneous confidence intervals for all pairwise comparisons, *Bose Memorial Conference, Colorado State University*, Colorado, June, 1995 (with N. Mukhopadhyay).
{11.} On an Improved Accelerated Sequential Methodology With Applications in Selection and Ranking, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Toronto, August, 1994 (with N. Mukhopadhyay).
{10.} Accelerated Sequential Estimation of the Largest Location Parameter in the Normal and Negative Exponential Cases, *Annual Meeting of Institute of Mathematical Statistics*, North Carolina, June, 1994 (with N. Mukhopadhyay).
{9.} Selecting the Best Component in a Multivariate Normal Population, Annual Joint Statistical Meetings of ASA, IMS etc., San Francisco, August, 1993 (with N. Mukhopadhyay).
{8.} A Note on Sequential Selection and Ranking, *Department of Mathematics, I.I.T. Delhi*, India, June, 1993.
{7.} On Asymptotic Second-Order Properties of Selecting the t-best Exponential Populations, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Boston, August, 1992 (with N. Mukhopadhyay).
{6.} On Asymptotic Second-Order Properties of Selecting the t-best Normal Populations, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Atlanta, August, 1991 (with N. Mukhopadhyay).

{5.} Accelerated Sequential Procedure for Selecting the Largest Mean, *Department of Statistics, University of Southwestern Louisiana*, April, 1991 (with N. Mukhopadhyay).
{4.} Nonparametric Accelerated Sequential Procedure for Selecting the Best Population, *2nd World Congress of The Bernoulli Society for Mathematical Statistics and Probability and Annual meeting of IMS, Uppsala, Sweden*, August, 1990 (with N. Mukhopadhyay).
{3.} A Computational Based Approach to Selection and Ranking Problem, *22nd Symposium on the Interface: Computing Science and Statistics*, Michigan State University, May, 1990 (with N. Mukhopadhyay).
{2.} A note on Sequential Selection and Ranking Procedures, *Department of Statistics, University of Connecticut*, April, 1990 (with N. Mukhopadhyay).
{1.} Computationally Intensive Accelerated Sequential Procedure for Selecting the Best Exponential Population, *Fourth Annual New England Statistics Symposium*, Lowell University, March, 1990 (with N. Mukhopadhyay).

UNIVERSITY SERVICE (University of New Orleans)
Selected University Service:
President's Executive Committee: Member, 2008-09.
Policy Committee: Chair, 2008-09.
Strategic Planning Committee (The Strategic Plan 2009-2012): Committee Member.
Policy Committee: Represented the College of Sciences, 2006-2009.
University Senate: 2006-2009.
Provost Search Committee: Member, 2008-2009.
Dean Search Committee: Member, 2009-2010.
First Year Initiatives (FYI): Committee member, 2009-2013.
University Committee: Committee on University Admissions, member 2003-2006, Committee Chair 2005-2006, member 2006-2009.
Strategic Planning Committee (2013-2014): Committee Member.
Provost Search Committee: Member, 2014-2015.
Faculty Governance Committee: Member, 2013-2016.
Strategic Enrollment Management Committee (SEMC): Faculty Co-Chair, 2015-present.
Retention Steering Committee, Chair, 2015- Fall 2019.
Provost Search Committee: Member, 2016.
Strategic Plan 2015 – 2020: Member, 2016- 2017.
Charges Committee: Fall 2020—present.
College Service:
Chair, College of Sciences Retention Committee, 2013-14.
College of Sciences, Dean Search Committee, 2009-10.
Member, College of Sciences Teaching Award Committee, 2002-2008.
Department Service:
Department Chair: Fall 2008—present.
Member of Several Departmental Committees such as Computer Committee; Graduate Advisory; Courses and Curricula, etc: 1990-present.
Mathematical Service:
Math Bootcamp for 9th and 10th Graders [Funded by *College Track*], Summer 2013.
Math Bootcamp for 11th and 12th Graders [Funded by *College Track*], Summer 2013.
ACING THE ACT: Organized ACT preparation workshop [Funded by *College Track*], Summer & Fall 2013
Dual Enrollment ACT Preparation: Tutoring program for about 25 Lake Area High School students to improve their ACT Math score to make them eligible for DE class at UNO
[Funded by *Urban League*]

DOCTORAL THESIS SUPERVISION AS MAJOR PROFESSOR
i. Jie Zhou, A Generalization of The Partition Problem in Statistics; 2013.
ii. Jin Gu, Statistical Partition Problem for Exponential Populations and Statistical Surveillance of Cancers in Louisiana; 2014.
iii. Rui Wang, Generalizing Multistage Partition Procedures for Two-parameter Exponential Populations; 2018.

Other Activities Related to Teaching and MS/PhD Committee Memberships
(i). Master's thesis supervision for 2 students.

(ii). Major Professor for over 40 Masters Students with non-thesis Master's Degree program.
(iii). PhD Thesis committee member for 30 plus students.

Major Areas of Research Interest
Statistical Consulting, Statistical Sampling, Statistical Modeling, Sequential Analysis, Selection and Ranking, Change point Problem, Statistical Computing, Biostatistics, and Biomedical applications.