Pct	Precinct	Registered	G. Fritz Mail	G. Fritz Early	G. Fritz EDV	L. Ferry Mail	L. Ferry Early	L. Ferry EDV	S	T	U	V	SHU	Total	G	H	Alpha Manifold	Integer Alpha	Alpha Actual	pct yield
235	PLAINFIELD PCT 032	1378	10	26	209	58	68	231	209	231	36	126	245	602	0.623880597	0.334831461	0.38314	0.38372093	0.400676741	2.33%
236	PLAINFIELD PCT 033	1445	26	49	267	80	68	227	267	227	75	148	342	717	0.648373494	0.248344371	0.47359	0.474198047	0.476987448	0.28%
237	PLAINFIELD PCT 034	1520	19	29	249	58	45	159	249	233	42	103	291	627	0.707386364	0.352727273	0.45306	0.459330144	0.464114833	0.48%
238	PLAINFIELD PCT 035	1419	7	18	225	65	47	270	225	270	20	112	245	627	0.667855786	0.068965517	0.35173	0.352472089	0.390774601	3.83%
239	REED PCT 001	1514	15	52	383	32	52	176	383	176	67	84	450	710	0.82012848	0.279720165	0.63504	0.633802817	0.633802817	0.00%
240	REED PCT 002	1637	38	85	417	60	49	180	417	180	123	109	540	829	0.792775665	0.405940594	0.65586	0.655006031	0.651387214	0.36%
241	REED PCT 003	1551	11	58	433	65	30	185	433	185	69	95	502	782	0.820075758	0.271653543	0.6382	0.6342711	0.641543734	0.72%
242	TROY PCT 001	2730	20	88	856	99	110	414	356	414	58	203	414	1031	0.636851521	0.222881356	0.38159	0.382158249	0.401551891	1.94%
243	TROY PCT 002	1819	21	42	199	62	96	221	199	221	63	158	262	641	0.557422969	0.221830986	0.40455	0.405616225	0.408736349	0.31%
244	TROY PCT 003	1260	30	46	310	62	39	199	310	199	76	101	386	686	0.754257908	0.276863636	0.57321	0.572836297	0.582862216	1.02%
245	TROY PCT 004	1307	24	61	244	65	58	218	244	218	85	123	329	670	0.664850136	0.280528053	0.50544	0.504477612	0.491044776	1.34%
246	TROY PCT 005	1189	35	58	208	92	96	172	208	172	93	188	301	661	0.525252525	0.350943396	0.45165	0.452344932	0.455370651	0.30%
247	TROY PCT 006	954	9	31	122	61	46	172	122	172	40	107	162	441	0.532751092	0.388679245	0.3696	0.367346939	0.367346939	0.00%
248	TROY PCT 007	2079	89	97	330	128	125	306	330	306	136	253	466	1025	0.566067736	0.307692308	0.45554	0.454634146	0.454634146	0.00%
249	TROY PCT 008	2109	58	95	339	111	151	324	339	324	153	262	492	1078	0.5640599	0.320754717	0.4605	0.460112317	0.456400742	0.37%
250	TROY PCT 009	1336	28	59	233	85	79	229	233	229	87	164	320	713	0.586901763	0.279316456	0.45196	0.451612903	0.448807854	0.28%
251	TROY PCT 010	1797	33	67	348	96	103	221	348	221	100	199	448	868	0.636197441	0.31152648	0.50091	0.501152074	0.516129032	1.50%
252	TROY PCT 011	1583	50	138	271	100	153	218	271	218	188	253	459	930	0.517175573	0.468054187	0.49457	0.493548387	0.493548387	0.00%
253	TROY PCT 012	930	11	30	156	47	57	188	156	183	41	104	197	484	0.6	0.189055714	0.40464	0.404958678	0.407024793	0.21%
254	TROY PCT 013	1853	77	155	328	209	207	262	328	262	232	416	560	1238	0.440860215	0.469635628	0.45332	0.453150242	0.452542488	0.06%
255	TROY PCT 014	1967	37	116	403	94	128	324	403	324	153	217	556	1097	0.65	0.320754717	0.51452	0.514129444	0.506836826	0.73%
256	TROY PCT 015	1368	20	70	249	75	85	220	249	220	90	160	339	719	0.608801956	0.290322581	0.4781	0.478178998	0.471488178	0.67%
257	TROY PCT 016	1953	44	86	244	149	167	315	244	315	130	316	374	1005	0.435714286	0.192134831	0.37536	0.375134376	0.372139303	0.30%
258	TROY PCT 017	1641	31	126	335	65	125	225	335	225	157	210	492	927	0.614678899	0.410994764	0.52967	0.530744337	0.530744337	0.00%
259	TROY PCT 018	1530	23	44	211	71	82	227	211	227	67	158	278	658	0.57967033	0.227891156	0.42123	0.422492401	0.422492401	0.00%
260	TROY PCT 019	1811	6	47	151	41	110	335	151	335	53	151	204	690	0.5	0.186597938	0.31465	0.314497754	0.295653374	1.88%
261	TROY PCT 020	1696	36	95	334	93	120	240	334	240	133	213	465	916	0.610603291	0.35309973	0.50311	0.503267974	0.506535948	0.33%
262	TROY PCT 021	1629	33	124	370	46	100	256	370	256	157	148	527	931	0.714285714	0.380195278	0.58426	0.583243824	0.566056002	1.72%
263	TROY PCT 022	731	18	41	214	30	39	106	214	106	59	69	273	448	0.756183746	0.357575758	0.60861	0.609375	0.609375	0.00%
264	WASHINGTON PCT 001	1398	50	75	368	42	66	165	368	185	105	108	468	761	0.770700637	0.362068966	0.52241	0.521550591	0.514950289	0.66%
265	WASHINGTON PCT 002	1720	29	75	478	73	55	204	478	204	104	128	582	914	0.788778878	0.337662338	0.62949	0.630196937	0.635761488	0.56%
266	WASHINGTON PCT 003	1368	22	91	400	86	80	170	400	170	113	66	513	749	0.858369099	0.399298286	0.71545	0.714285714	0.684913218	2.94%
267	WESLEY PCT 001	1530	23	21	518	59	18	175	518	175	44	77	562	814	0.870588235	0.200913242	0.6545	0.654791155	0.69041769	3.56%
268	WHEATLAND PCT 001	1227	17	28	202	81	68	196	202	196	45	149	247	592	0.575498575	0.186721992	0.39243	0.393581081	0.41722973	2.39%
269	WHEATLAND PCT 002	2111	124	193	251	281	259	252	251	252	317	540	568	1360	0.317319848	0.55711775	0.41185	0.4125	0.417647059	0.51%
270	WHEATLAND PCT 003	1846	29	69	271	85	192	246	271	246	98	218	369	883	0.554192229	0.284883721	0.49746	0.49817527	0.442972191	0.48%
271	WHEATLAND PCT 004	2096	21	59	192	114	140	294	192	294	80	254	272	820	0.450498276	0.213903743	0.33233	0.331707317	0.331707317	0.00%
272	WHEATLAND PCT 005	1878	35	88	301	100	109	272	301	272	123	205	424	901	0.59486166	0.311392405	0.47462	0.473917869	0.470586235	0.33%
273	WHEATLAND PCT 006	1354	35	68	254	66	93	265	254	265	103	179	357	801	0.586605061	0.279891304	0.45413	0.453183521	0.445692884	0.75%
274	WHEATLAND PCT 007	1388	20	82	229	70	133	226	229	226	102	203	331	760	0.530092593	0.31097561	0.43633	0.435526316	0.435526316	0.00%
275	WHEATLAND PCT 008	1999	22	62	245	88	154	266	245	266	84	222	329	817	0.524625268	0.24	0.39576	0.397796818	0.402692778	0.49%
276	WHEATLAND PCT 009	1658	25	83	273	116	163	286	273	286	109	279	382	947	0.494565217	0.275949367	0.39949	0.400211193	0.403379092	0.32%
277	WHEATLAND PCT 010	1465	39	93	252	84	110	178	252	178	132	194	384	756	0.565022422	0.429806452	0.50622	0.508618757	0.507936508	0.13%
278	WHEATLAND PCT 011	1686	51	82	178	115	141	201	178	201	133	256	306	763	0.403263403	0.398203593	0.40143	0.401048493	0.401048493	0.00%
279	WHEATLAND PCT 012	1789	25	86	199	72	178	197	199	197	112	250	311	758	0.443207127	0.362459547	0.41022	0.410290237	0.410290237	0.00%
280	WHEATLAND PCT 013	1277	27	106	175	99	125	146	175	146	133	224	308	678	0.436596491	0.476702509	0.45505	0.454277286	0.454277286	0.00%
281	WHEATLAND PCT 014	1630	28	98	254	94	157	212	254	212	126	251	380	843	0.502970297	0.372781065	0.44841	0.449584816	0.450271056	0.12%
282	WHEATLAND PCT 015	1583	36	79	193	88	188	222	193	222	115	226	308	756	0.460630525	0.341246291	0.41108	0.41005291	0.407407407	0.26%
283	WHEATLAND PCT 016	1645	33	105	287	73	96	203	287	203	138	169	425	797	0.629365965	0.404692082	0.53624	0.535759097	0.533248666	0.25%

	P#	Precinct	Registered	G. Fritz Mail	G. Fritz Early	G. Fritz EDV	L. Ferry Mail	L. Ferry Early	L. Ferry EDV	S	T	U	V	S+U	Total	G	H	Alpha Manifold	Integer Alpha	Alpha Actual	Alpha Resid
15	284	WHEATLAND PCT 017	1092	21	46	143	83	79	176	143	176	67	162	210	548	0.4088524599	0.2757201655	0.38541	0.3850364961	0.3832116789	0.18%
16	285	WHEATLAND PCT 018	1594	23	90	256	107	121	262	256	262	113	228	369	859	0.52802582	0.3013838331	0.43108	0.4307334113	0.4295692671	0.12%
17	286	WHEATLAND PCT 019	1250	17	42	156	74	81	232	156	232	59	155	215	602	0.5016077171	0.2012745141	0.3621	0.3604651163	0.3571428571	0.89%
18	287	WHEATLAND PCT 020	1401	20	60	249	75	84	204	249	204	80	159	329	692	0.6107961118	0.2818901241	0.45971	0.4710982656	0.4754433526	0.43%
19	288	WHEATLAND PCT 021	1439	35	64	210	83	185	221	210	221	97	218	307	746	0.5906542206	0.3056331447	0.41147	0.41152815	0.41152815	0.00%
20	289	WHEATLAND PCT 022	1837	31	40	233	99	100	328	233	328	71	199	304	831	0.5393518852	0.1779448862	0.36587	0.3656824308	0.3656824308	0.00%
21	290	WHEATLAND PCT 023	1896	31	60	227	107	90	277	227	277	91	197	318	792	0.5355773358	0.2477282609	0.40583	0.4065656567	0.4015151515	0.51%
22	291	WHEATLAND PCT 024	2029	36	78	352	104	109	322	352	322	114	213	466	1001	0.623008885	0.26146789	0.46728	0.4665334665	0.4655344655	0.10%
23	292	WHEATLAND PCT 025	1715	20	59	363	71	62	267	363	267	79	133	442	842	0.7011854839	0.2288329699	0.5289	0.5285035635	0.5249405116	0.36%
24	293	WHEATLAND PCT 026	2119	58	113	419	124	113	271	419	271	171	237	590	1098	0.6387195512	0.3865977828	0.53497	0.5355191256	0.5317340619	0.38%
25	294	WHEATLAND PCT 027	1195	13	46	153	85	78	210	153	210	59	164	212	586	0.4816699842	0.2193830855	0.36217	0.3617747441	0.3617747441	0.00%
26	295	WHEATLAND PCT 028	1939	45	93	378	89	73	289	378	289	138	162	516	967	0.7	0.323185012	0.55075	0.5501551119	0.5336091	3.65%
27	296	WHEATLAND PCT 029	1827	45	75	369	95	88	305	369	305	120	183	489	977	0.668478261	0.2823527941	0.50891	0.5087001023	0.5005517773	0.82%
28	297	WHEATLAND PCT 030	1771	51	62	353	91	67	230	353	230	113	158	466	854	0.6908023848	0.3294460064	0.54569	0.5456674477	0.5456674477	0.00%
29	298	WHEATLAND PCT 031	1451	18	52	144	95	110	214	144	214	70	205	214	633	0.41260745	0.2464788735	0.34077	0.3396524491	0.3380776705	0.16%
30	299	WHEATLAND PCT 032	1784	22	52	219	90	150	282	219	282	74	240	293	815	0.4771241183	0.2078651691	0.35252	0.3533742331	0.3595092025	0.61%
31	300	WHEATLAND PCT 033	1731	13	43	170	100	90	332	170	332	56	190	226	748	0.3722222222	0.1443298969	0.307	0.3061497333	0.3021399037	0.40%
32	301	WHEATLAND PCT 034	1453	12	44	193	74	80	253	193	253	56	160	249	662	0.54074211	0.2812397773	0.37222	0.3731111782	0.3761329311	0.30%
33	302	WHEATLAND PCT 035	850	13	41	97	36	73	118	97	118	54	109	151	378	0.4708737864	0.3129933488	0.40467	0.4021164021	0.3994708995	0.26%
34	303	WHEATLAND PCT 036	1396	43	69	223	100	89	196	223	196	112	189	335	720	0.5412621359	0.3636363636	0.45833	0.4652777778	0.4652777778	0.00%
35	304	WHEATLAND PCT 037	1416	33	59	190	77	90	168	190	168	92	167	282	612	0.5322128851	0.3607843137	0.4599	0.4607843137	0.4607843137	0.00%
36	305	WHEATLAND PCT 038	1119	23	32	116	97	88	170	116	170	55	185	171	526	0.38536706	0.2444444444	0.32538	0.3250950571	0.3250950571	0.00%
37	306	WILL PCT 001	1192	35	24	454	41	18	116	454	116	59	59	513	688	0.8849902533	0.3571428571	0.72765	0.7281976744	0.7156395349	1.76%
38	307	WILMINGTON PCT 001	1414	21	15	379	63	16	187	379	187	36	79	415	681	0.8275109171	0.1614349781	0.57912	0.5800293685	0.6088979444	2.94%
39	308	WILMINGTON PCT 002	1202	20	18	358	39	13	125	358	125	38	52	396	573	0.8731707317	0.2331248834	0.67451	0.67539267	0.6910994764	1.57%
40	309	WILMINGTON PCT 003	1356	25	20	403	41	11	246	403	246	45	52	448	746	0.8857142857	0.1516339175	0.64473	0.6434316353	0.6005361930	4.29%
41	310	WILTON PCT 001	615	17	8	273	19	8	71	273	71	25	27	298	396	0.91	0.2604106467	0.73259	0.7348484485	0.7525252525	1.77%

Andrea Lynn Chasteen
Will County Circuit Clerk
Twelfth Judicial Circuit Court
Electronically Filed
2022MR000421
Filed Date: 12/29/2022 5:00 PM
Envelope: 20844613
Clerk: GMA

DECLARATION OF EXPERT WALTER C. DAUGHERITY

WALTER C. DAUGHERITY declares, under penalty of perjury, that the following is true and correct.

Qualifications

1. I am a Senior Lecturer Emeritus in the Department of Computer Science and Engineering at Texas A&M University and also a computer consultant to major national and international firms, as well as to government agencies, including classified work.

2. Prior to my retirement in 2019, I taught computer science and engineering at both the undergraduate and graduate levels for 37 years, the last 32 years being at Texas A&M University. Courses I developed and taught include courses in artificial intelligence, expert systems, programming and software design, quantum computing, and cyberethics.

3. I have published 26 research articles related to expert systems, fuzzy logic, noise-based logic, and quantum computing from over $2.8 million in funded research projects, plus conference papers and other publications.

4. As a computer expert I have consulted for major national and international firms, including IBM Federal Systems Division, *New York Times*, *Washington Post*, *Los Angeles Times*, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), and Phonogram B.V. (Amsterdam), and also for government agencies such as Cheyenne and

Arapaho Tribes of Oklahoma, Texas Department of Agriculture, U. S. Customs Service, and classified work.

5. Further details about my qualifications are included in my Curriculum Vitae attached as Exhibit A.

Analysis

6. I have been asked to analyze mathematically the precinct-level results of the November 8, 2022, election contest for County Clerk in Will County, Illinois. To do so, I first downloaded the Official Results from the website https://results.enr.clarityelections.com//IL/Will/116151/314461/reports/detailxls.zip.

7. The candidates were Gretchen Fritz and Lauren Staley, and there were 310 precincts' results reported, by vote and by method of voting.

8. For a preliminary analysis I added the "Vote by mail" and "Early [in-person] voting" totals together to obtain the "prior to Election Day" vote totals, in order to distinguish them from "Election Day" vote totals. There were also very small numbers of "Provisional" and "Postmark VBM" votes (less than 1.6% of the total votes), which were omitted from this preliminary analysis.

9. This resulted in four numbers per precinct, from the two voting periods ("Election Day" and "prior to Election Day") for each of the two candidates. For example, the Frankfort Precinct 2 result totals are depicted in the following table:

CANDIDATE	Fritz	Ferry
VOTING PERIOD		
Election Day	357	147
Vote by Mail + Early Voting	220	230

10. Since each voter choosing a particular candidate can vote either on Election Day or prior to Election Day, the totals should be independent. For example, knowing how many mail-in and early votes candidate Fritz received does not provide enough information to know how many Election Day votes she received. In other words, you could not bet on a particular number of Election Day votes and expect to win the bet, since that number is unpredictable. (Independent variables cannot be predicted from one another; for example, knowing that the time the first person in line at precinct 1 voted was at an even number of minutes past the hour, say 7:04 or 7:06 A.M., does not allow us to predict whether the first person in line at precinct 2 voted at an even number of minutes past the hour or an odd number of minutes past the hour.)

Graphs

11. A standard technique in big data analysis is to examine graphs of the data for patterns that are there, but should not be, and for patterns that are not there, but should be. Visual patterns (or their absence) allow recognition of what underlying numbers to focus on for further analysis. This is analogous to the saying "A picture is worth a thousand words," or in this case, "A graph is worth 1,240 numbers," namely, the four specified numbers for each of the 310 precincts.

12. Humans can readily recognize patterns in two dimensions; for example, if data points lie on or close to a 1-dimensional line, we know the horizontal and vertical numbers are correlated. We can also recognize patterns in three dimensions: if 3-dimensional points lie on or close to a 2-dimensional plane, the points' coordinates are correlated. However, humans cannot readily recognize patterns in four (or more) dimensions, since we live in a 3-dimensional world and, thanks to having two eyes, have 3-dimensional vision (that is, depth perception).

13. In order to visualize data in four dimensions, as in this case, it is useful to compress the data into three dimensions, using nonlinear transformations which do not omit the data in any of the four dimensions, but construct transformed 3-dimensional data whose properties encode all the original 4-dimensional data.

14. Applying this process to the election data, the four numbers as in the table in ¶ 9 were used to calculate three numbers for each precinct in order to graph them. Let

s be Fritz's Election Day vote total,

t be Ferry's Election Day vote total,

u be Fritz's vote by mail plus early voting total, and

v be Ferry's vote by mail plus early voting total.

Then the table looks like this:

	CANDIDATE	Fritz	Ferry
VOTING PERIOD			
Election Day		s	t
Vote by Mail + Early Voting		u	v

From these four numbers calculate the three numbers

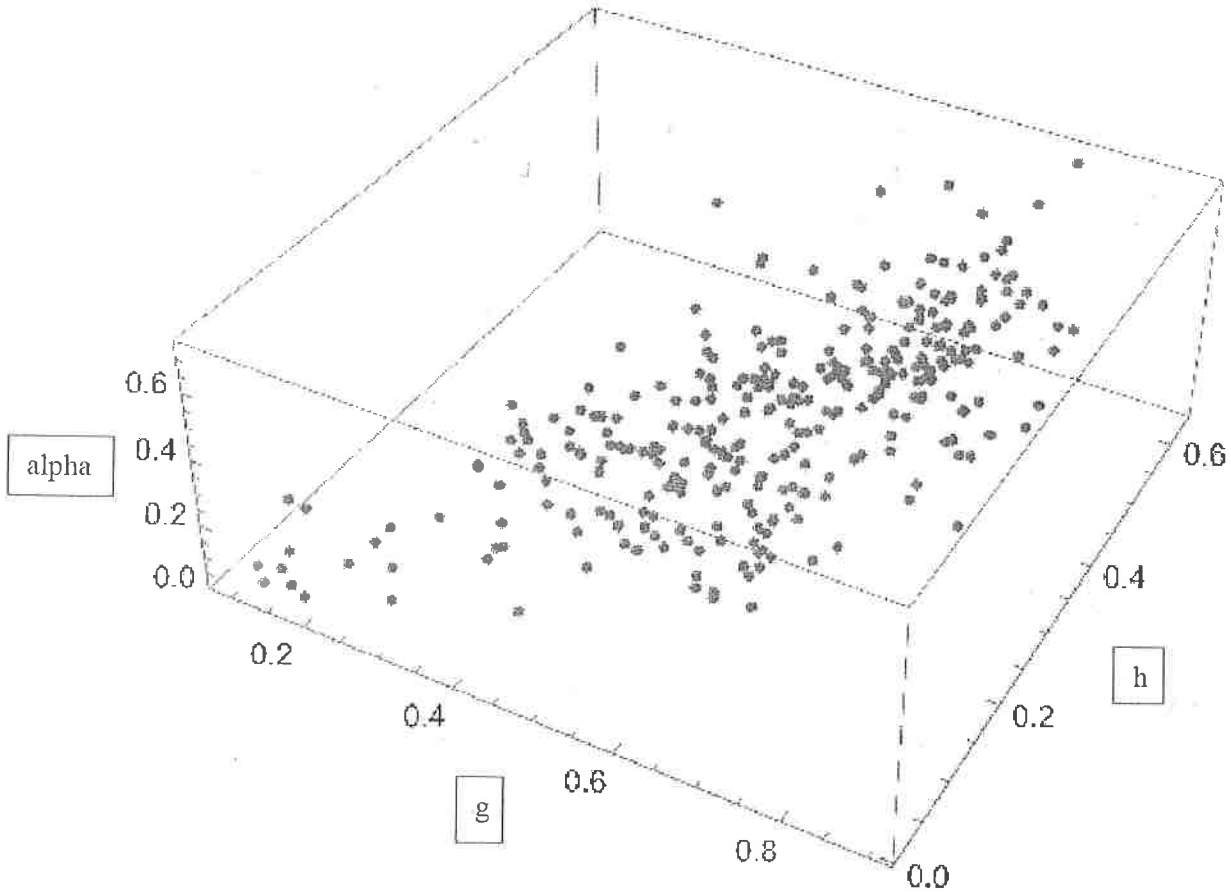
$g = s/(s+v)$,

$h = u/(u+t)$, and

$alpha = (s+u)/(s+u+t+v)$,

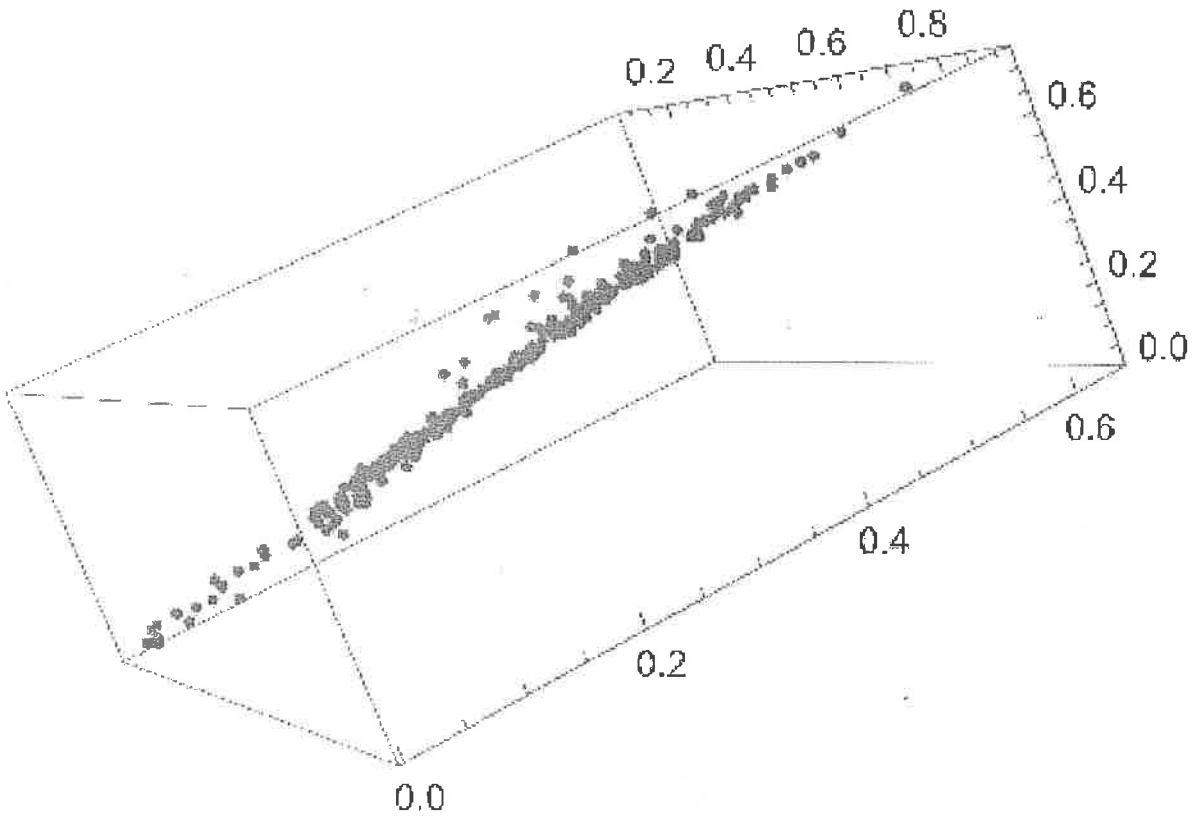
and graph (g, h, $alpha$) as (x, y, z), respectively. Note: This approach was first discovered by Edward Solomon, so I have used the same variable names he used, for ease of understanding. However, my analysis for this declaration is completely independent and solely my own work.

15. This produced the following graph, where each point is one precinct:



16. From the initial vantage point, the graphed data appears to be a cloud whose points are uncorrelated (independent), as it should in a fair election. In other words, knowing x and y does not appear to determine z. However, by rotating this 3-dimensional graph, i.e., looking at it from a different viewpoint, it becomes clear that the points lie very close to a 2-dimensional plane, with a slight "curl" at the edges, indicating a strong correlation (dependence), which should not occur in a fair election.

Here is the same graph rotated to a different point of view, looking at the plane edge-on:



17. Thus, the ratios ***g***, ***h***, and ***alpha***, calculated from the Election Day and the "prior to Election Day" totals, which should be independent, are in fact dependent, which shows that it was not a fair election. Since the ratios ***g***, ***h***, and ***alpha***, were calculated from ***s***, ***t***, ***u***, and ***v***, this means, for example, that knowing ***s***, ***t***, and ***u*** would enable an almost

exact prediction for ν, showing that it was not a fair election, since fair elections are not predictable, and predictable elections are not fair.

18. Having identified a pattern in the graph that should not be there, I then turned to the numbers and calculated, among other things, the coefficient of correlation for this plane. To include the slight "curl" noted around the edges, a 10-parameter regression was performed, resulting in a 99.9419% positive correlation. (A coefficient of correlation value of -1 means 100% negative correlation, a value of 0 means no correlation, and a value of 1 means 100% positive correlation. For this plane the value was 0.999419, meaning 99.9419% positive correlation.)

19. Using 10 parameters for the regression would enable an exact fit if only 10 precincts were being matched, but a 10-parameter regression's almost perfectly matching all 310 precincts is so unlikely as to be mathematically impossible. For comparison, consider flipping a coin 10 times and betting on heads or tails. After 10 flips, suppose the outcomes were HHHTHTTTTH, where H means heads and T means tails. Knowing those ten outcomes, now predict the next 300 flips. The odds that you could win the next 300 bets are infinitesimal and zero for all practical purposes; the odds of a 10-parameter's regression almost perfectly matching all 310 precincts are even smaller than that.

Conclusions

20. Thus, in my expert opinion, the election data analyzed overwhelmingly demonstrates clear and convincing evidence that the official election results were not produced by accurate counting of the votes cast, but were instead artificially contrived according to a predetermined plan or algorithm mathematically equivalent to the regression plane described above.

21. I am continuing to analyze this election data further, and will submit a supplemental report if warranted.

22. I have personal knowledge of the foregoing and am fully competent to testify to it at trial.

I declare under penalty of perjury that the foregoing is true and correct. Executed on December 25, 2022.

/s/ Walter C. Daugherity

Walter C. Daugherity

Andrea Lynn Chasteen
Will County Circuit Clerk
Twelfth Judicial Circuit Court
Electronically Filed
2022MR000421
Filed Date: 12/29/2022 5:22 PM
Envelope: 20844658
Clerk: GMA

Curriculum Vitae of Walter C. Daugherity

Walter C. Daugherity
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College Station, TX 77845
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EDUCATION

Ed.D., Mathematical Education, Harvard University, Cambridge, Massachusetts, 1977. Dissertation: "On the Ordering of Topics in the Teaching of Mathematics." Advisor: Marc Lieberman.

M.A.T., Mathematics, Harvard University, Cambridge, Massachusetts, 1967 (age 20).

B.S., Mathematics, Oklahoma Christian College, Oklahoma City, Oklahoma, 1966 (3 years). Minors: Physics and chemistry, German.

EXPERIENCE

1973 to present	Daugherity Brothers, Inc., (Computer consultants), Bethany, Oklahoma. Co-founder, chairman, and president. Clients include IBM Federal Systems Division, New York Times, Washington Post, Los Angeles Times, Cheyenne and Arapaho Tribes of Oklahoma, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), Texas Department of Agriculture, Phonogram B.V. (Amsterdam), and U. S. Customs Service.
1987 to present	Texas A & M University, College Station, Texas. Visiting Assistant Professor/Senior Lecturer/Senior Lecturer Emeritus, Departments of Computer Science and Engineering and Electrical and Computer Engineering, College of Engineering.
1989-91	Texas A & M University System, College Station, Texas. Director, Knowledge Systems Research Center, Computer Science Division of the Texas Engineering Experiment Station.

1984-87	Blinn College, Brenham, Texas. Computer science instructor. Part-time 1984-86, full-time 1986-87.
1978-80	Rose State College, Midwest City, Oklahoma. Data processing instructor (part-time).
1971-73	ECRM, Bedford, Massachusetts. Systems programmer.
1970-71	Harvard Computing Center, Cambridge, Massachusetts. Telecommunications specialist.
1969-70	Computer-Aided Instruction Laboratory, Harvard University, Cambridge, Massachusetts. Systems programmer.
1968-70	Harvard University, Division of Engineering and Applied Physics, Cambridge, Massachusetts. Teaching fellow (for George Mealy and Thomas Bartee).
1967	Driscoll Junior High School, Brookline, Massachusetts. Mathematics teacher.
1967	University of Oklahoma Medical Center Computing Facility, Oklahoma City, Oklahoma. Programmer.
1966	University of Central Oklahoma Data Processing Center, Edmond, Oklahoma. Programmer.
1965	Oklahoma Christian University of Science and Arts, Oklahoma City, Oklahoma. Statistical programmer.
1963	University of Oklahoma Computer Center, Norman, Oklahoma. Lab instructor.

RESEARCH AND DESIGN

1. Refereed Publications

Daugherity, W. C., and Kish, L. B., "More on the Reference-Grounding-Based Search in Noise-Based Logic," *Fluctuation and Noise Letters*, Vol. 21, No. 3, 2250023, 2022.

Kish, L. B., and Daugherity, W. C., "Entanglement, and Unsorted Database Search in Noise-Based Logic," *Applied Sciences*, Vol. 9, No. 15, 3029, 2019.

Kish, L. B., and Daugherity, W. C., "Noise-Based Logic Gates by Operations on the Reference System," *Fluctuation and Noise Letters*, Vol. 17, No. 4, 1850033, 2018.

Daugherity, W. C., and Coulson, R. N., "Knowledge Engineering for Sustainable Agriculture Management," *Proceedings of ICAST 2001 Conference* (Beijing, China, November 2001), 2:266, 2001.

Coulson, R. N., Saarenmaa, H., Daugherity, W. C., Rykiel, E. J., Saunders, M. C., and Fitzgerald, J. W., "A Knowledge System Environment for Ecosystem Management," book chapter in Klopatek, J. and Gardner, R. (eds.), *Landscape Ecological Analysis: Issues and Applications*, Springer-Verlag, 57-79, 1999.

Coulson, R. N., Daugherity, W. C., Rykiel, E. J., Saarenmaa, H., and Saunders, M. C., "The Pragmatism of Ecosystem Management: Planning, Problem Solving and Decision Making with Knowledge-Based Systems," *Proceedings of Eco-Informa '96 Global Networks for Environmental Information Conference* (Lake Buena Vista, Florida, November 1996), 10:342-50, 1996.

Coulson, R. N., Fitzgerald, J. W.*, Daugherity, W. C., Oliveria, F. L., and Wunneburger, D. F., "Using Spatial Data for Integrated Pest Management in Forest Landscapes," *Proceedings of the 11th Conference on Geographic Information Systems: Integrating Spatial Information Technologies for Tomorrow* (Vancouver, British Columbia, Canada, 1997).

Daugherity, W. C.; Harris, C. E., Jr.; and Rabins, M. J., "Introducing Ethics and Professionalism in REU Programs," *Proceedings of the 1995 World Conference on Engineering Education* (Minneapolis, Minnesota, October 1995).

Coulson, R. N., Daugherity, W. C., Vidlak, M. D.*, Fitzgerald, J. W.*, Teh, S. H.*, Oliveria, F. L., Drummond, D. B., and Nettleton, W. A., "Computer-based Planning, Problem Solving, and Decision Making in Forest Health Management: An Implementation of the Knowledge System Environment for the Southern Pine Beetle, ISPBEX-II," *Proceedings of the IUFRO Symposium on Current Topics in Forest Entomology* (Maui, Hawaii), 1995.

Yen, J., Daugherity, W. C., Wang, H.*, and Rathakrishnan, B.*, "Self-Tuning and Self-Learning Fuzzy Systems," book chapter in Yen, J., Langari, R., and Zadeh, L. (eds.), *Industrial Applications of Fuzzy Logic and Intelligent Systems*, IEEE Press, 1995.

* Graduate Research Assistant I funded

Daugherity, W. C., Video review of *Introduction to Biological and Artificial Neural Networks for Pattern Recognition,* by Steven K. Rogers, in *IEEE Transactions on Neural Networks*, Vol. 5, No. 5, 1994.

Teh, S. H.*, Daugherity, W. C., and Coulson, R. N., "A User-Centric Methodology for Building Usable Expert Systems," *Proceedings of the 7th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems* (Austin, Texas, May-June 1994), 45-48, 1994.

Daugherity, W. C., "A Neural-Fuzzy System for the Protein Folding Problem," *Proceedings of the Third International Workshop on Industrial Fuzzy Control & Intelligent Systems (IFIS `93)* (Houston, Texas, December 1993), 47-49, 1993.

Daugherity, W. C., "A Partially Self-Training System for the Protein Folding Problem," *Proceedings of the World Congress on Neural Networks (WCNN `93)*, (Portland, Oregon, July 1993). Invited paper.

Yen, J., Wang, H.*, and Daugherity, W. C., "Design Issues of Reinforcement-Based Self-Learning Fuzzy Control," *Proceedings of the World Congress on Neural Networks (WCNN `93)*, (Portland, Oregon, July 1993).

Daugherity, W. C., "Characterizations of Fuzzy Operations," *Proceedings of the Second International Workshop on Industrial Fuzzy Control & Intelligent Systems* (College Station, Texas, December 1992), 234, 1992.

Yen, J., Wang, H.*, and Daugherity, W. C., "Design Issues of a Reinforcement-Based Self-Learning Fuzzy Controller for Petrochemical Process Control," *Proceedings of North American Fuzzy Information Processing Society* (Puerto Vallarta, December 1992), 1992.

Yen, J., Wang, H.*, and Daugherity, W. C., "An Adaptive Fuzzy Controller with Application to Petroleum Processing," *Proceedings of IFAC Workshop on Intelligent Manufacturing Systems* (Dearborn, October 1992), 1992.

Yen, J., Daugherity, W. C., and Rathakrishnan, B.*, "Fuzzy Logic and Its Application to Process Control," *Proceedings of CAPA Technology Conference* (Houston, May 1992), 78-86, 1992.

* Graduate Research Assistant I funded

Daugherity, W. C., Rathakrishnan, B.*, and Yen, J., "Performance Evaluation of a Self-Tuning Fuzzy Controller," *Proceedings of the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)* (San Diego, March 1992), 1992.

Daugherity, W. C., "An Application of Geometrical Reasoning to a Combinatorial Problem," *Proceedings of the Seventh Annual Conference on Applied Mathematics* (Edmond, Oklahoma, April 1991), pp. 226-232, 1991.

Daugherity, W. C., Review of *Data Communications Dictionary*, by Charles J. Sippl, in *Computing Reviews*, Vol. 17, No. 9, pp. 335-336, 1976.

Daugherity, W. C., "Circuits for Dial-up and Local Use of a Stand-alone PDP-8," *Proceedings of the Digital Equipment Computer Users Society*, Vol. 2, No. 2 (Los Angeles, December 1975), pp. 413-414, 1976.

Daugherity, W. C., Review of *Effective Use of ANS COBOL Computer Programming Language*, by Laurence S. Cohn, in *Computing Reviews*, Vol. 16, No. 10, p. 441, 1975.

Manwell, T., Daugherity, W., Desch, S., and Stolurow, L., "Tom Swift and His Electric Bilingual Grandmother," *ACM SIGCUE Bulletin*, Vol. 7, No. 1, pp. 5-17, 1973.

Daugherity, W. C., "A Telephone Amplifier," *Transactions of the Oklahoma Junior Academy of Science*, Vol. IV, pp. 130-132, 1961.

* Graduate Research Assistant I funded

2. Other Publications

Daugherity, W. C., "Honors Section," in Rabins, M. J., and Harris, C. E. Jr. (eds.), *Engineering Ethics Teaching Manual*, 1997.

Daugherity, W. C., "Honors Section," in Rabins, M. J., and Harris, C. E. Jr. (eds.), *Engineering Ethics Teaching Manual*, 1996.

Allen, G. D., Nelson, P., Jarvis, R. D., and Daugherity, W. C., "System Impact of Hit Assessment Capability for NPB Discrimination: Analysis of the Case of No-Hit Assessment," *Weapons Lab/TALN Technical Report*, Kirtland Air Force Base, May, 1990.

3. Other Conference Papers and Presentations

Coulson, R. N., and Daugherity, W. C., "A Knowledge Engineering Approach for Ecosystem Management," 11th Annual Landscape Ecology Symposium, International Association for Landscape Ecology - Integration of Cultural and Natural Ecosystems Across Landscapes: Applications of the Science, Galveston, Texas, 1996.

Coulson, R. N., and Daugherity, W. C., "Decision Support Systems for Forest Pests: Where Do All the Knowledge-Based Systems Go?", North American Forest Insect Work Conference, San Antonio, Texas, 1996.

Daugherity, W. C. and Coulson, R. N., SPBEBE (Economic and Environmental Impact Assessment for Southern Pine Beetle Suppression Projects), computer code, developed for the USDA Forest Service, Forest Health Protection, 1996-1997.

Coulson, R. N., and Daugherity, W. C., "Knowledge System Environment for Ecosystem Management," Global Studies Seminar, Battelle Pacific Northwest Laboratories, Richland, Washington, 1995.

Daugherity, W. C. and Coulson, R. N., ISPBEX-II (Integrated Southern Pine Beetle Expert System), computer code, developed for the USDA Forest Service, Forest Health Protection, 1994.

Daugherity, W. C., and Yen, J., "Tutorial on Neuro-Fuzzy Systems," Third International Workshop on Industrial Fuzzy Control & Intelligent Systems Houston, Texas, December 1993.

Daugherity, W. C., "Introduction to LISP with an On-line Demonstration," Houston Geotech '91, Houston, Texas, 1991.

Daugherity, W. C., "The Universal Classification Problem," South Central Regional Conference of the Association for Computing Machinery, Austin, Texas, 1984.

4. Research Projects

"Remote Laboratory Data Entry and Retrieval System," Texas Department of Agriculture, Walter C. Daugherity, 1986, $3,000 (Daugherity 100%).

"Electrochemical Modeling of a Sinter Plate, Sealed Design Nickel-Cadmium (Ni-Cd) Battery Cell," National Aeronautics and Space Administration, Ralph E. White, Walter C. Daugherity, 1 graduate student, 1989, 25% of my salary 1989-90 (Daugherity 100%).

"Application of Reasoning under Uncertainty to Process Control," Texaco, Walter C. Daugherity and John Yen, 1 graduate student; competitive and peer-reviewed, September 1990, $18,000.

"Design of a Computational Classroom," Texas A & M University, Walter C. Daugherity, September 1990-May 1991, $60,000 (Daugherity 100%).

"Design of a Second Computational Classroom," Texas A & M University, Walter C. Daugherity, January 1991-December 1992, $153,000 (Daugherity 100%).

"Development of Honors Courses in Artificial Intelligence and Analysis of Algorithms," Texas A & M University, Walter C. Daugherity, James Abello and Arkady Kanevsky, 2 graduate students, competitive, September 1991-May 1991, $11,000 (Daugherity 50%).

"Integrated Southern Pine Beetle Expert System"; USDA Forest Service; Robert N. Coulson, Walter C. Daugherity, and Jeffrey W. Fitzgerald; 5 graduate students; competitive and peer-reviewed; 1985-1992, $974,120.

"Distributed Data-Base Support for the ISPBEX Expert System"; USDA Forest Service; Robert N. Coulson, Walter C. Daugherity, and Jeffrey W. Fitzgerald; 1 graduate student; competitive and peer-reviewed; 1992-93; $35,000.

"Integrated Southern Pine Beetle Expert System II"; USDA Forest Service; Robert N. Coulson, Walter C. Daugherity, and Jeffrey W. Fitzgerald; competitive and peer-reviewed; March 1993-February 1994; competitive and peer-reviewed; $170,000.

"Ecological Modelling of Regional Responses to Global Changes: A Knowledge System Environment for Planning, Problem-Solving and Decision Making"; Battelle Pacific Northwest Laboratory; Robert N. Coulson and Walter C. Daugherity; competitive and peer-reviewed; June-December 1995; $39,996.

"Fitness of a Genetically Modified *Gliocladium virens* in Soil and Rhizosphere"; USDA Cooperative State Research Service; Charles M. Kenerley and Walter C. Daugherity; 1 senior associate, 2 graduate students, and 1 undergraduate student; competitive and peer-reviewed; September 1996-August 2001; $254,450 (Daugherity 50%).

"Southern Pine Beetle Biological Evaluation and Economic Evaluation Program Conversion"; USDA Forest Service, Forest Health Protection; Robert N. Coulson (PI) and Walter C. Daugherity (Co-PI); competitive and peer-reviewed; 1996-1997; $16,421.

"The Texas Imported Fire Ant Survey: The Fire Ant Spatial Information Management System (FASIMS)"; Texas Agricultural Experiment Station; Robert N. Coulson (PI) and S. Bradleigh Vinson, Maria D. Guzman, Douglas F. Wunneburger, and Walter C. Daugherity (Co-PI's); competitive and peer-reviewed; January 1998-December 1998; $50,000.

"Special Topics in Computer Science Concepts and Programming"; Academy for Advanced Telecommunications and Learning Technologies; Walter C. Daugherity; competitive and peer-reviewed; June 1998-May 1999; $5,000 (Daugherity 100%).

"Object Modeling Techniques Support for National Simulation Center Tactical Directorate"; U. S. Army through prime contractor Cubic Applications, Inc.; Walter C. Daugherity, James A. Wall, and José Salinas; competitive; September 1998-April 1999; $74,498 (Daugherity 20%).

"The Fire Ant Spatial Information Management System (FASIMS)"; Texas Department of Agriculture, Texas Imported Fire Ant Research and Management Plan; Robert N. Coulson (PI) and Douglas F. Wunneburger, S. Bradleigh Vinson, and Walter C. Daugherity (Co-PI's); competitive and peer-reviewed; 1999-2001; $220,000.

"Evaluating the Impact of Southern Pine Beetle on Ecologically Sustainable Forest Management"; USDA Forest Service; Robert N. Coulson and Walter C. Daugherity; 1 graduate student and 1 undergraduate student; competitive and peer-reviewed; 2000-2003, $90,000.

"Honey Bee Initiative"; State of Texas; Robert N. Coulson (PI), Walter C. Daugherity (Consultant); 2 graduate students; competitive; September 2001-August 2002; $40,000.

"Increasing Computer Science Retention by Developing and Deploying Self-Paced Learning Modules"; State of Texas; Jennifer Welch and Frank Shipman (Co-PI's), Lawrence Petersen, Walter C. Daugherity, and Lauren Cifuentes (Key Personnel); 10 undergraduate students; competitive; June 2002-August 2004; $422,692.

"Facilitating the Transition to Java in High School Computer Programming Classes"; Texas A&M University System Academy for Educator Development; Walter C. Daugherity; 1 graduate student; competitive and peer-reviewed; December 2003-September 2004; $2,966 (Daugherity 100%).

"Instructional Technology Enhancements for Computer Teaching Labs," Texas A&M University, Walter C. Daugherity, competitive, January 2004-August 2004, $20,000 (Daugherity 100%).

"Increasing Computer Science Retention with Peer Teachers and Learning Modules"; State of Texas; Valerie Taylor and Jennifer Welch (Co-PI's), Lawrence Petersen, Walter C. Daugherity, and Joseph Hurley (Key Personnel); undergraduate students; competitive; September 2004-August 2005; $173,158.

Cumulative total: $2,845,801

5. Research Proposals
Note: Funded proposals are listed in section 4 above.

"Automated Support for VLSI Standard Cell Optimization," Texas Advanced Technology Program, Walter C. Daugherity, competitive and peer-reviewed, July 1989, not funded, $233,887.

"Integration of Computer Software Models for NiCd Battery Design," National Aeronautics and Space Administration, Ralph E. White and Walter C. Daugherity, competitive and peer-reviewed, 1990, not funded, $125,000.

"Innovative Use of Supercomputers and Parallel Computers in Grades K-8," Department of Energy, Paul Nelson, Walter C. Daugherity and Bahram Nassersharif, competitive and peer-reviewed, December 1990, preproposal submitted, $885,000.

"Integration of Texas Junior Colleges into State and National Computer Networks," Texas Advanced Technology Program, Walter C. Daugherity and Charles H. Beard, competitive and peer-reviewed, July 1991, not funded, $174,219.

"Adaptive Fuzzy Control for Industrial Processes," Texas Advanced Research Program, John Yen and Walter C. Daugherity, competitive and peer-reviewed, July 1991, not funded, $177,064.

"Development of a Fuzzy Logic Tuner for a PID Controller," Texaco, John Yen and Walter C. Daugherity, 1992-93, not funded, $200,000.

"National Center For Ecological Analysis and Synthesis," National Science Foundation; Robert N. Coulson, Walter C. Daugherity *et al.*, competitive and peer-reviewed, July 1994, not funded, $10,000,000.

"Development of a Fungal Growth Model for Risk Assessment," Texas Advanced Research Program, Charles M. Kenerley and Walter C. Daugherity, competitive and peer-reviewed, July 1995, not funded, $203,792.

"Intelligent Vehicle Navigation System," Texas Advanced Technology Program, Walter C. Daugherity and Jeffrey W. Fitzgerald, competitive and peer-reviewed, July 1995, not funded, $195,058.

"Innovative Programs to Increase the Enrollment in Computer Science," Texas Technology Workforce Development Grant Program, Valerie Taylor and Frank Shipman (co-PI's), Lawrence Petersen, Walter C. Daugherity, and Joseph Hurley (Key Personnel), competitive and peer-reviewed, March 2005, pending, $69,760.

6. New Design Methods, Techniques, or Concepts Developed

Null Modem

I independently invented the null modem in 1969 and constructed one for Harvard University (which is still operational!).

Computer Keyboard National Standard

As a member of the Harvard-MIT Terminal Committee, I participated in the development of the national standard for computer keyboards (*e.g.*, putting braces above brackets for the benefit of programming languages). Nearly every computer terminal and keyboard since then (*e.g.*, VT100, PC) uses this layout.

Integrated User Training

I invented the method of training users about additional features of an application program by integrating the information with the operation of the program (see Manwell, Daugherity, *et al.* under Publications, above). This is now widely adopted, *e.g.*, by Microsoft for its Windows operating systems in the "Getting Started" panel.

Object-Oriented Database

I independently invented and implemented an object-oriented database to support arbitrary combinations of data types.

Self-Organizing Fuzzy Controller

In collaboration with Balaji Rathakrishnan (a Graduate Research Assistant I funded) and John Yen, I developed a new systematic methodology for constructing and tuning fuzzy logic controllers. The research project was funded by Texaco (see the preceding section for details) for use in its refineries.

TEACHING

1. New Courses Developed

CPSC 111/211/311 Java and C-based sequence - Member of curriculum subcommittee, taught 111 and 211
CPSC 210 (Honors) - Data Structures
CPSC 320 (Honors) - Artificial Intelligence
CPSC 489 - Object-Oriented Programming, Systems, and Languages
CPSC 635 - Natural Language Processing (taught by Dr. P. Mayer)
CPSC 689 - Symbolic and Algebraic Computation (not taught)
CSCE 489/PHIL 382 (with Glen Miller [PHIL]) - Ethics and Cybertechnology
ENGR/PHIL 482 (Honors) - Ethics and Engineering
PHIL 282 (with Glen Miller [PHIL]) – Ethics in a Digital Age
PHYS/ELEN 674 (with David Church [PHYS]) - Special Topics in Quantum Computing (the first course at Texas A&M in quantum computing, and, to the best of my knowledge, the first course in quantum computing anywhere in Texas), taught Spring, 2005, for the fifth time.
A Distance Learning section of CPSC 601 - Programming in C and Java, taught Spring, 2003.
Two sections of CPSC 111 - Computer Science Concepts and Programming taught with student peer teachers as assistants, Fall, 2002.
Honors section of CPSC 111 - Computer Science Concepts and Programming taught with student peer teachers as assistants, Fall, 2004.
Developed (with Lawrence Petersen) an intensive summer training program in Java and Software Engineering for high-school computer science teachers, taught Summer, 2003.
Developing an intensive summer training program in Data Structures for high-school computer science teachers, taught Summer, 2004; I was also completely responsible for recruiting teachers, getting them admitted, arranging for housing, and so on.

2. Courses Taught

A. Graduate

CPSC 601	Programming in C and Java
CPSC 602	Object-Oriented Programming, Development, and Software Engineering
CPSC 614	Computer Architecture
CPSC 625	Artificial

Intelligence CPSC 632 Expert Systems
CPSC 681 Graduate Seminar
CPSC 685 Problems
CPSC 691 Research
PHYS/ELEN 674 Quantum Computing (co-teacher)

B. Undergraduate

CPSC 111 Computer Science Concepts and Programming
CPSC 111H Computer Science Concepts and Programming (Honors)
CPSC 120 Programming II
CPSC 120H Programming II (Honors)
CPSC 203 Introduction to Computing
CPSC 206 Structured Programming in C
CPSC 210 Data Structures
CPSC 210H Data Structures (Honors)
CPSC 211 Data Structures and Implementations
CPSC 211H Data Structures and Implementations (Honors)
CPSC 285 Special Topics - Data Structures for Teachers
CPSC 289 Special Topics - Java and Software Engineering for Teachers
CPSC 311 Analysis of Algorithms
CPSC 320/420 Artificial Intelligence
CPSC 320H/420H Artificial Intelligence (Honors)
CPSC 321 Computer Architecture
CPSC 464 Integrated Systems Design Automation
CPSC 485 Problems
CPSC/ELEN 485H Problems (Honors theses)
CPSC 489 Object-Oriented Programming, Systems, and Languages
CSCE 113 Intermediate Programming and Design
CSCE 121 Introduction to Program Design and Concepts
CSCE 121H Introduction to Program Design and Concepts (Honors)
CSCE 315 Programming Studio
CSCE 410 Operating Systems
CSCE 489 Cyberethics (co-teacher)
ENGR 112 Foundations of Engineering II
ENGR 112H Foundations of Engineering II (Honors)
ENGR/PHIL 482H Ethics and Engineering (Honors)

PROFESSIONAL OUTREACH

1. Director, Knowledge Systems Research Center

2. Invited Significant Seminars or Lectures

Daugherity, W. C., "Computers and Privacy," Phi Theta Kappa Honor Society State Convention, Blinn College, Brenham, Texas, 1985.

Daugherity, W. C., and DeSoi, J. F., "Objected-Oriented Programming," Second Annual Texaco Artificial Intelligence Symposium, Houston, Texas, 1989.

Daugherity, W. C., "A Self-Tuning Fuzzy Controller," ARRI Conference on Fuzzy Logic, Arlington, Texas, March 1992.

Daugherity, W. C., Yen, J., and Langari, R., "Tutorial on Fuzzy Logic," Second International Workshop on Industrial Fuzzy Control & Intelligent Systems, College Station, Texas, December 1992.

Daugherity, W.C., "A Partially Self-Training System for the Protein Folding Problem," World Congress on Neural Networks, Portland, Oregon, July 1993.

Daugherity, W.C., "Neuro-fuzzy Systems," Third International Workshop on Industrial Fuzzy Control & Intelligent Systems, Houston, Texas, December 1993.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, College Station, Texas, Summer 1994.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, Austin, Texas, Summer 1994.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, College Station, Texas, Summer 1995.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, Austin, Texas, Summer 1995.

Daugherity, W.C., "Public-Key Cryptography Meets Quantum Computing: Why Secret Agencies are Quaking in their Boots." Quantum Computing Seminar, Texas A&M University, April 9, 2001.

Daugherity, W.C., "Quantum Computing 101: How to Crack RSA." DefCon X, Las Vegas, NV, August 4, 2002.

Daugherity, W.C., "Computer Ethics." ENGR 482 Ethics and Engineering, Texas A&M University, April 14-16, 2003.

Daugherity, W.C., "Incorporating Computer Ethics into an Engineering Ethics Course." University of Texas Ethics Conference, Austin, Texas, April 16, 2004.

Daugherity, W.C., "Computer Ethics." ENGR 482 Ethics and Engineering, Texas A&M University, November 8-10, 2004.

Daugherity, W.C., "[My] 53 Years of Computing History," CSCE 681 Open Graduate Seminar, Texas A&M University, November 18, 2015.

3. Consulting -

St. Joseph's Hospital, Bryan, Fall 1990, at no charge.
Other clients include IBM Federal Systems Division, *New York Times*, *Washington Post*, *Los Angeles Times*, Cheyenne and Arapaho Tribes of Oklahoma, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), Texas Department of Agriculture, Phonogram B.V. (Amsterdam), and U. S. Department of the Treasury.

HONORS AND AWARDS

Oklahoma Junior Academy of Science, elected to membership, 1961, Oklahoma State University
National Science Foundation, Institute for High Ability Secondary School Students, 1962, University of Oklahoma
Westinghouse, Science Talent Search national finalist, 1963 National Merit Scholarship test, highest score in Oklahoma, 1963
Frontiers of Science, scholarship, 1963, Oklahoma City, Oklahoma
Engineering Club of Oklahoma City, award, 1963, Oklahoma City, Oklahoma
Oklahoma Christian College, full scholarship (top entering freshman), 1963, Oklahoma City, Oklahoma
National Science Foundation, Undergraduate Research Participation Program, 1965, University of Oklahoma, Norman, Oklahoma
Alpha Delta Tau, National Honor Society, 1966

Who's Who in American Colleges and Universities, 1966

Graduate Record Exam in Mathematics, scored 800, 1966

Harvard University, Prize Fellowship, 1966

National Science Foundation, Academic Year Institute, 1967

Phi Delta Kappa, National Honor Society, 1967

Harvard University, Class Marshal for the Graduate School of Education, 1967

Harvard University, Bowdoin Prize, bronze medal and cash award for outstanding writing, 1973

Association for Computing Machinery, selected as a reviewer for *Computing Reviews*, 1975

Association for Computing Machinery, Outstanding Regional Intercollegiate Programming Contest Director Award, 1993, Indianapolis, Indiana

World Congress on Neural Networks, Neural Systems Session Co-chair, 1993, Portland, Oregon

Graduate Student Council, 1997 Outstanding Graduate Faculty Award citation: "For your time and dedication to graduate students at Texas A&M."

Named by the TAMU System to The Academy for Educator Development, a major component of The Texas A&M University System's Regents' Initiative for Excellence in Education, 2003 (one of only two faculty members selected from the entire College of Engineering).

Winner, $500 cash prize, Texas A&M University Academic Integrity Week Essay Competition (Faculty Category), 2004.

Texas A&M University, Department of Computer Science & Engineering, 2009 Undergraduate Faculty Award citation: "In grateful appreciation of dedicated service, exemplary attitude, and significant contribution."

Qualified for American MENSA, 2015.

Oklahoma Christian University, Department of Mathematics and Computer Science, 2015 Distinguished Alumnus Award citation: "For outstanding vision, dedication, and commitment to excellence."