CRAIG A. MUELLER, ESQ.
Nevada Bar No. 4703
MUELLER & ASSOCIATES, INC.
808 S. 7th Street
Las Vegas, NV 89101
Telephone: (702) 382-1200
Facsimile: (702) 637-4817
Email: electronicservice@craigmuellerlaw.com
Attorney for Contestant Joey Gilbert

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FIRST JUDICIAL DISTRICT COURT

CARSON CITY, NEVADA

JOEY GILBERT, an individual, Plaintiffs, vs. STEVE SISOLAK, in his official capacity as Governor of Nevada; BARBARA CEGAVSKE, in her official capacity as Secretary of State; and JOSEPH GLORIA in his official capacity as Clark County Registrar of Voters, JAMES B. GIBSON, in his official capacity as Chairman of the CLARK COUNTY BOARD OF COUNTY COMMISSIONERS, and DEANNA SPIKULA in her official capacity as Washoe County Registrar of Voters and VAUGHN HARTUNG in his official capacity as Chair of the WASHOE BOARD OF COUNTY COMMISSIONERS, and JOSEPH LOMBARDO, putative Republican candidate for Governor of Nevada, and DOES 1-10 and ROES 1-10, Defendants	Case No.: 220C 00085 1B Dept No.: I Complaint **STATEMENT OF CONTEST OF THE JUNE 14, 2020, PRIMARY ELECTION PURSUANT TO NRS §293.407** **HEARING DATE REQUESTED WITHIN FIVE (5) TO FOURTEEN (14) DAYS. NRS §293.413**

COMES NOW, Contestant, Joey Gilbert, by and through his attorney CRAIG MUELLER, ESQ. of MUELLER & ASSOCIATES, INC., and hereby files his written statement of election contest, pursuant to NRS §293.407.

This Statement of Contest is made and based on the following Memorandum of Points and Authorities, and any documents and exhibits which may be attached hereto, and any oral argument this court may allow at time of hearing.

DATED this 15th day of July, 2022.

MUELLER & ASSOCIATES, INC.

CRAIG A. MUELLER, ESQ.,
Nevada Bar No. 4703
808 S. 7th Street
Las Vegas, Nevada 89101
Attorney for Contestant, Joey Gilbert

I.

SUBJECT MATTER JURISDICTION

1. Pursuant to NRS §293.407, Contestant Joey Gilbert hereby contests the election of Defendant Joseph Lombardo to the office of Republican Nominee for the gubernatorial election. The court possesses proper jurisdiction of this dispute over the winner of the primary election for the office of Republican Nominee for Governor of the State of Nevada.

NRS §293.410 Statement of contest must not be dismissed for deficiencies of form; grounds for contest.

1. A statement of contest shall not be dismissed by any court for want of form if the grounds of contest are alleged with sufficient certainty to inform the defendant of the charges the defendant is required to meet.

The instant Contest is presented in the proper form and the grounds of Contest are alleged with sufficient certainty to inform the defendant of the charges the defendant is required to meet.

NRS §293.413 Time for filing statement of contest; precedence of election contest; referral to special master.

1. The statement of contest provided for in NRS 293.407 shall be filed with the clerk of the district court no later than 5 days after a recount is completed, and no later than 14 days after the election if no recount is demanded.

Recount in Storey County was completed on or about July 11, 2022. This Contest is timely filed.

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2. Mr. Gilbert was a candidate in the primary election, held on June 14, 2022, for the Republican Nominee for the General Election for Governor of the State of Nevada to be held November 8, 2022. Defendant Joseph Lombardo was declared the winner of the Primary Election and is now the putative Republican Nominee for the General Election for Governor of Nevada.

3. The unofficial declaration of the result of the Election and the body or board which canvassed the returns thereof in Clark County occurred on July 1, 2022. The returns of Storey County were canvassed, and the unofficial declaration of the result occurred on July 11, 2022.

II.

PARTIES

4. Contestant realleges all preceding paragraphs as if fully set forth herein.

5. Plaintiff, Joey Gilbert is a registered voter who resides in Washoe County, Nevada. He has standing to bring this action pursuant to NRS 293.407(2).

6. The First Judicial District Court has jurisdiction in this matter pursuant to NRS 293.407(2), which states, "[e]xcept where the contest involves the *general election* for the office of governor...a candidate...who wishes to contest an election...must...file with the clerk of the district court a written statement of contest..." The Primary Election for the gubernatorial candidate is a statewide election and it is impractical to bring the same contest in each of the Counties in Nevada.

7. Defendant, Steve Sisolak is the Governor of Nevada and its chief executive officer. He approved Barbara Cegavske's purchase of the vote counting equipment utilized in the 2022 Nevada Primary Election.

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8. Defendant, Barbara Cegavske is the Secretary of State of Nevada who authorized the purchase of the subject vote counting equipment (VCE) utilized in the 2022 Nevada Primary Election and is responsible for overseeing the execution of repairs or software patches and otherwise abiding by federal regulations governing the use of the subject equipment. She caused the "Rules and Regulations for the Conduct of Primary and General Elections Promulgated by the Secretary of State." She also oversees the county election departments and certifies the results of elections.

9. Defendant, Joseph Gloria is the Registrar of Voters in Clark County, Nevada and Deanna Spikula are the Registrars of Voters in Washoe County, responsible, inter alia, for managing the respective County Elections Departments and the execution and management of elections in Clark County and Washoe County as well as implementing the mandates of Barbara Cegavske, Secretary of State of Nevada regarding the VCE.

10. James B. Gibson, Chairman of the Clark County Board of County Commissioners and Vaughn Hartung, Chair of the Washoe Board of County Commissioners are responsible for oversight and management of the Elections Departments in their respective counties.

11. Joseph Lombardo is the putative Republican candidate for Governor in the November 2022 General Election.

III.

OVERVIEW

12. The right to vote includes not just the right to cast a *legal* ballot, but also the right to have it *fairly* counted. Article 2, Sec. 1A, (10), (11) of the Constitution of the State of Nevada as ratified by the voters of the state assures us of this right:

> Sec. 1A. Rights of voters. Each voter who is a qualified elector under this Constitution and is registered to vote in accordance with Section 6 of this Article and the laws enacted by the Legislature pursuant thereto has the right:

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1. To receive and cast a ballot that:

*　　*　　*

(b) Accurately records the voter's preference in the selection of candidates.

*　　*　　*

10. To a uniform, statewide standard for counting and recounting all votes accurately as provided by law.
11. To have complaints about elections and election contests resolved fairly, accurately and efficiently as provided by law.

13. In this pending Contest, the results of the 2022 Primary Election for the Republican candidate for Governor erroneously indicate that Defendant, Joseph Lombardo garnered the most votes amongst the Republican candidates for the office. Based on a geometric, mathematical analysis of the votes *as counted and announced* by the Counties in Nevada, Contestant, Joey Gilbert disputes this alleged result.

14. In the election contest before this Honorable Court, the Contestant for the Republican nomination for Governor of the State of Nevada, Joey Gilbert, (hereinafter variously, "Contestant," "Joey", or "Mr. Gilbert"), an individual duly registered to vote in Washoe County, Nevada alleges not a political question, but rather a mathematical issue.

15. Mr. Gilbert accepts the votes as counted. However, he will prove that the result as announced is a *mathematical impossibility*. When the votes as counted and announced, are statistically corrected, Mr. Gilbert will demonstrate with irrefutable geometric finality that he handily won the primary election for Republican gubernatorial nominee in the June 14, 2022, Primary Election in Nevada.

IV.

CONTESTANT SETS FORTH SUFFICIENT GROUNDS FOR STATEMENT OF CONTEST AS PROVIDED IN NRS 293.410

16. Contestant realleges all preceding paragraphs as if fully set forth herein.

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17. This Contest is based upon NRS §293.410 sub. 2. As presented more fully, *infra*, Contestant alleges that the votes as counted and as announced produce a mathematical and geometrically impossible result. Therefore, on information and belief, that the Election Boards made errors sufficient to change the result of the election as to any person who has been declared elected. NRS §293.410 (2) (d).

18. Contestant alleges, that the ability to generate a geometric and mathematically impossible outcome by reason of the VCE used in the 2022 Nevada Primary Election is sufficient to raise reasonable doubt as to the outcome of the Election. NRS §293.410 (2) (f).

NRS §293.410 Statement of contest must not be dismissed for deficiencies of form; grounds for contest.

1. A statement of contest shall not be dismissed by any court for want of form if the grounds of contest are alleged with sufficient certainty to inform the defendant of the charges the defendant is required to meet.
2. An election may be contested upon any of the following grounds:
   (a) That the election board or any member thereof was guilty of malfeasance.
   (b) That a person who has been declared elected to an office was not at the time of election eligible to that office.
   (c) That:
      (1) Illegal or improper votes were cast and counted;
      (2) Legal and proper votes were not counted; or
      (3) A combination of the circumstances described in subparagraphs (1) and (2) occurred, in an amount that is equal to or greater than the margin between the contestant and the defendant, or otherwise in an amount sufficient to raise reasonable doubt as to the outcome of the election.
   (d) That the election board, in conducting the election or in canvassing the returns, made errors sufficient to change the result of the election as to any person who has been declared elected.
   (e) That the defendant or any person acting, either directly or indirectly, on behalf of the defendant has given, or offered to give, to any person anything of value for the purpose of manipulating or altering the outcome of the election.
   (f) That there was a malfunction of any voting device or electronic tabulator, counting device or computer in a manner sufficient to raise reasonable doubt as to the outcome of the election. (Emphasis added.)

V.

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DEFENDANTS HAVE FAILED IN THEIR DUTY TO CAUSE AN ACCURATE REPORTING OF THE 2022 PRIMARY ELECTION IN NEVADA

19. Contestant realleges all preceding paragraphs as if fully set forth herein.

20. Defendants, and each of them had a legal duty to the Contestant to cause the accurate reporting of the result of the election results in the statewide Nevada 2022 Primary Election. Defendants, and each of them, breached that duty by failing to provide a mathematical and geometrically correct result of the votes *as counted* and as demonstrated herein.

21. Contestant can prove with an irrefutable mathematical certainty that the actual vote result as counted was miscalculated, is a geometric, mathematical impossibility and that Joey Gilbert, in fact, won his party's nomination for Governor.

VI.
THE ANNOUNCED 2022 PRIMARY ELECTION RESULTS ARE MATHEMATICALLY, GEOMETRICALLY IMPOSSIBLE

22. Contestant realleges all preceding paragraphs as if fully set forth herein.

23. The Election results as counted and announced are mathematically incorrect.

24. A mathematical analysis can determine the difference between a fair and an unfair election and where the unfair election is an election for which the results are geometrically infeasible. Contestant, Joey Gilbert will demonstrate that the vote data reporting results need to be corrected and how it needs to be corrected.

25. In the attached Clark County, 2022, Governor Primary Precinct Analysis ("Precinct Analysis"), we see the effect of the defective vote count on all 2022 Nevada Gubernatorial candidates. The corrected results are *glaring*: ***Joey Gilbert prevails dramatically in the Republican race over Joseph Lombardo by more than 50,000 votes.***

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See, Exhibit "A", "CLARK COUNTY, 2022, GOVERNOR PRIMARY PRECINCT ANALYSIS," by Edward Solomon, dated July 13, 2022.

VII.

TO DETERMINE THE CORRECT VOTE RESULTS, CONSIDER FIRST THE AGGREGATE PERCENTAGE --A CONCEPT THAT RELATES TWO THINGS

26. Contestant realleges all preceding paragraphs as if fully set forth herein.

27. Nevada elections provide for three modes of voting: Early Voting, Mail-in Voting and Election Day Voting; in the Governor's Race, Nevada provided a total of three significant candidates, two Republicans and one Democrat. By force of law, Republicans cannot vote in Democrat primaries, nor can Democrats vote in Republican Primaries; in mathematics we would say the set of ballots belonging to Republicans, and the set of ballots belonging to Democrats, are ***Disjoint Sets***, that is, they do not share any ballots in common.

28. Let us consider only the two Republicans. Gilbert and Lombardo. Each candidate has an Early Vote (hereinafter, "EV"), a Mail-in Vote (hereinafter, "MiV"), and an Election Day Vote (hereinafter, "EDV") total in each precinct. In a fair election, we expect a strong linear correlation between Gilbert's Election Day, Mail-in and Early Vote percentages across the precincts. That is, whatever Gilbert's Election Day percentage is at a particular precinct, we expect both Gilbert's Mail-in percentage and Early Vote percentage to be **roughly** the same, not exactly, since that would imply causation…but **roughly**, which implies a strong correlation, which would be consistent with Clark County's Historical Election Results in all years prior to 2020, both in the Primaries and the General Elections.

29. However, this is not the case in Nevada's 2022 Republican Gubernatorial Primary. There is absolutely no correlation between Gilbert's Election Day, Early, and Mail-in

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Percentages across the precincts. Although this observation is not proof of wrongdoing, this *irregularity* was probable cause to investigate the election results further.

30. This investigation revealed a mathematically-illegal geometric formula that governed the proportions between the Early, Mail-in and Election Day ballots across the precincts

31. In a fair election, if we know a candidate's Election Day percentage, x, and a candidate's Mail-in percentage, y, and the percentage of ballots cast that were Election Day ballots, z, then we can solve for that candidate's aggregate percentage share of the combined election day and mail-in vote. The equation that resolves the aggregate percentage is a simple weighted average formula. Let w be the candidate's aggregate percentage, then: $w = zx + (1-z)y = (x+py)/(1+p)$, where p is the proportion of Mail-in to Election Day Ballots cast in the precinct. Either formula remains true whether or not an election is fair or unfair. This law is universal to any four sets of data that share no elements in common, such as the ballot totals of two candidates with two modes of voting.

32. However, if there is an illegal formula that allows us to solve for w, with only

- knowledge of x and y, but without z, that is, any formula that allows us to solve for the candidate's aggregate percentage share of the combined election day and mail-in ballots,
- knowing only the candidate's election day percentage, and
- the candidate's mail-in percentage, and
- without any knowledge of the proportion of Mail-in to Election Day Ballots, and
- this formula fits all precincts in the County without any variation to such formula,

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then, by mathematical definition, this formula allows us to solve the candidate's aggregate percentage share of the ballots in each precinct with no knowledge of the proportion of Mail-in to Election Day Votes, a *geometric impossibility* violating the *Laws Which Govern the Proportions of Elements Between Four Pairwise Disjoint Sets*, all of which are geometrically derived.

VIII.

PAIRWISE DISJOINT SETS

33. Pairwise Disjoint Sets are defined in mathematics as any collection of sets, such that all pairings of any two sets from the collection of sets share no elements (ballots) in common.

34. For instance, Gilbert's Election Day, Lombardo's Election Day, Gilbert's Mail-in and Lombardo's Mail-in ballots are an example of four pairwise disjoint sets, because a registered voter may cast their ballot once, and only once, in accordance with Nevada State Law. Thus, State Law renders each candidate's Early, Mail-in and Election Day ballots ***mathematically disjoint.***

35. All of the laws that govern the proportions between four disjoint sets are as follow.

- Let **A** be a set containing a objects.
- Let **B** be a set containing b objects.
- Let **C** be a set containing c objects;
- Let **D** be a set containing d objects.
- Let $x = a/(a+b)$; let $y = c/(c+d)$; let $w = (1-y) = d/(c+d)$
- Let $\alpha = (a+c)/(a+c+b+d)$; $\xi=(b+d)/(a+c)$
  - $\alpha = 1/(\xi+1)$; $\xi = (1-\alpha)/(\alpha)$
- Let $\lambda = (a+d)/(a+d+c+b)$; $\Gamma=(c+b)/(a+d)$

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- $\lambda = 1/(\Gamma+1)$; $\Gamma = (1-\lambda/(\lambda)$
  - Let $\Omega = (a+b)/(a+b+c+d)$; $\zeta = (c+d)/(a+b)$
    - $\Omega = 1/(\zeta+1)$; $\zeta = (1-\Omega)/(\Omega)$

From which follow the Twenty Laws, which demand that three of the above proportions be known to resolve either two of the remaining proportions:

- Then $x = \alpha+\zeta(\alpha-y) = (\alpha-(1-\Omega)y)/\Omega$
  - $x = \lambda+\zeta(\lambda-w) = (\lambda-(1-\Omega)w)/\Omega$
  - $x = (y(\lambda+\alpha) - \alpha)/(\lambda+2y-\alpha-1)$
  - $x = (1/2)((\zeta+1)(\alpha+\lambda)-\zeta)$
- Then $y = \alpha+(1/\zeta)(\alpha-x) = (\alpha-\Omega x)/(1-\Omega)$
  - $w = \lambda+(1/\zeta)(\lambda-x) = (\lambda-\Omega x)/(1-\Omega)$
  - $y = (x(\lambda-\alpha-1)+\alpha)/(\lambda+\alpha-2x)$
  - $w = (1/2\zeta)((\zeta+1)(\lambda-\alpha)+\zeta)$
- Then $\alpha = (x+\zeta y)/(\zeta+1) = \Omega x+(1-\Omega)y$
  - $\alpha = (2x+\zeta)/(\zeta+1) - \lambda$
  - $\alpha = (\zeta(1-2w)+\lambda(\zeta+1))/(\zeta+1) = \lambda+(\zeta(1-2w))/(\zeta+1)$
  - $\alpha = (\lambda(y-x)-x(2y-1))/(1-y-x)$
- Then $\lambda = (x+\zeta w)/(\zeta+1) = \Omega x+(1-\Omega)w$
  - $\lambda = (2x+\zeta)/(\zeta+1) - \alpha$
  - $\lambda = (\alpha(1-(x+y))+x(2y-1))/(y-x) = (\alpha w+x(2y-\alpha-1))/(y-x)$
  - $\lambda = (\zeta(2w+\alpha-1)+\alpha)/(\zeta+1)$
- Then $\zeta = (x-\alpha)/(\alpha-y) = (1-\Omega)/\Omega$; $\Omega = (y-\alpha)/(y-x) = 1/(\zeta+1)$
  - $\zeta = (2x-(\alpha+\lambda))/(\alpha+\lambda-1)$
  - $\zeta = (x-\lambda)/(\lambda-w) = (1-\Omega)/\Omega$; $\Omega = (w-\lambda)/(w-x) = 1/(\zeta+1)$

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- $\zeta = (\lambda-\alpha)/(2w+\alpha-\lambda-1)$

From which follow the Forty Isometries:

- Let $g = a/(a+d)$; let $h = c/(c+b)$; let $t = (1-h) = b/(c+b)$, then the proportions: $x,y,w,\lambda,\Omega,\zeta$ can be exchanged for $g,h,t,\Omega,\lambda,\Gamma$ respectively, yielding the first score of the Forty Isometries.
- Let $m = a/(a+c)$; let $n = b/(b+d)$; let $q = (1-n) = d/(b+d)$, then the proportions: $x,y,w,\alpha,\Omega,\zeta$ can be exchanged for m,n,q,Ω,α,ξ respectively, yielding the second score of the Forty Isometries.

36. After an illegal geometric formula has been detected to alter the election results (that is, any formula that allows one to resolve any proportion on the left-hand side of the above twenty equations, or any of the Forty Isometries, without any three of the remaining proportions), a remedy is applied to restore the election results in manner that would most reflect what the results would have been without geometric interference.

IX.

RESTORATION

37. Contestant realleges all preceding paragraphs as if fully set forth herein.
38. The remedy imports the **statistical trends** that are expected in a **fair** election, that is, the Early, Mail-in and Election Percentages of a candidate should be linearly correlated and roughly equal, that, is the election day, early and mail-in percentages, when plotted for a candidate, across the precincts, should fall along the diagonal of a cube. That is, when the precincts are plotted in 3D space, the x-axis being the election day *percentage*, the y-axis being the mail-in *percentage*, the z-axis being the early *percentage*, of a particular candidate against any other candidate in the same race, should form an elliptical cloud (a blimp shape), whose length (major axis) runs along the **straight line** $x=y=z$.

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39. In the instance of Clark County's Primary Elections, the Republican Gubernatorial election cannot be restored until the Sheriff's Primary has first been restored. This is because the illegal geometric formula that was invoked to alter the *proportions of ballots cast* between the Sheriff Candidates, also cemented the proportion of Election Day to Mail-in to Early Ballots cast in each precinct, to which all other races, down the entire ballot, had to be conformed.

40. Thus, one cannot restore any election in the 2022 Primaries, unless they first restore the Sheriff's Primary, to obtain the original proportion of Election Day to Mail-in to Early Ballots.

41. Since the illicit geometric formula used to alter the proportions of the Sheriff's Primary, contained Hyt's combined Early and Election Day Vote, as the first and natural input, we know that the true ratio of Early to Election Day Votes is therefore preserved in the ratio of Hyt's Early to Election Day Votes.

42. In a fair election, we expect that the proportion of Early Votes to Mail-in Votes to Election Day Votes, at any particular precinct, will be roughly the same for all candidates, in all races. Since Hyt's Election Day and Early Totals are preserved, we uniformly apply this ratio against the combined sum of election day and early votes in each precinct, to all candidates, in all races.

43. We then use a rotation matrix to restore the relationship of sheriff candidate Robert's Election Day Percentage, Mail-in Percentage, and Early Percentage, against Hyt, to the diagonal of the cube, $x=y=z$, whilst retaining the magnitude of the original vector from the origin to the coordinate of each precinct in this x, y, z space.

44. We also know that Robert's Mail-in Vote, was true and authentic in its proportion to Hyt's Election Day and Early Vote, as Robert's Mail-in Vote was the third and final

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natural input in the illegal geometric equation used to alter the ballot ratios between Hyt, Roberts and McMahill. By compelling Robert's Early and Election Day turnout of registered voters to follow the concave down parabolic trend of his authentic mail-in vote, against the total percentage of all registered voters who cast a ballot in the Sheriff's Primary, we were able to obtain the correct proportion of Mail-in to combined Early and Election Day ballots.

45. Furthermore, that the proportion of Robert's Early to Election Day ballots also then matched Hyt's proportion of Early to Election Day ballots, ensuring us that the restoration of Robert's Early and Election Days totals were undoubtedly accurately conformed to what they would have been without geometric interference. Thereby, we ascertain the correct proportion of Mail-in to the combined Early and Election Day Vote of all candidates, in all races, in each precinct.

46. The ratio of Early to Mail-in to Election Day Ballots was then applied to McMahill in the Sheriff's race and to Gilbert, Sisolak and Lombardo in the Governor's race. From here, the Governor's race can be restored without any more assistance from the Sheriff's race.

47. We make regular the election day, mail-in and early vote percentages, between Gilbert, sisolak and Lombardo, such that each candidate's election day, mail-in and early percentage vote percentage, against any other candidate, or pair of candidates, is roughly equal, across the precincts, via geometric translation and rotation of the abnormally distributed percentages back to the diagonal of a cube, $x=y=z$.

48. It was *originally* reported in the 578 precincts that were analyzed (precincts that had less than 100 total ballots cast were excluded from the analysis) that Gilbert, Sisolak and Lombardo received 28304, 105816 and 55861 ballots respectively. After the restoration, we learn that Gilbert, Sisolak and Lombardo received 83812, 62102 and 44083 ballots

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respectively. In other words, the lion's share of Gilbert's Republican ballots were drawn illegally into Sisolak's ballot totals (primarily his Mail-in Total), upsetting the proportion of Democrat to Republican ballots in all partisan primaries down the entire ballot, which reveals that Republicans cast their ballots in a two to one (2 : 1) proportion with Democrats in the Nevada Primaries, yet the illegal geometrically-altered data transformed the ratio of Republican to Democrat ballots cast into a Four to Five Proportion (4 : 5), effectively diminishing all Republican votes to 4/10 of a vote per voter.

X.

OPINION ON THE SUMMARY REPORT TITLED "CLARK COUNTY, 2022, GOVERNOR PRIMARY PRECINCT ANALYSIS

49. Contestant realleges all preceding paragraphs as if fully set forth herein.

50. Dr. Oliver A. Hemmers clarifies the Precinct Analysis which demonstrates the depth of the incorrect, mathematically impossible results arising from the statewide 2022 Nevada Primary Election. See, Exhibit "B", "Opinion on the Summary report titled "Clark County, 2022 Governor Primary Precinct Analysis, by Dr. Oliver A. Hemmers, dated July 2, 2022.

51. Dr. Hemmers provides an explanation of the algorithm applied to restore the 2020 "Baker v. Hartung" Election in Washoe County as well as most vote count restorations, to the announced voter result in the counties in Nevada. We learn from this explanation how to measure the difference between a fair and an unfair election, where an unfair election is

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an election where the result is predetermined algorithmically--by geometrically impossible, mathematically-illegal formulae which unfairly reported the vote count in Nevada. Based on the irrefutable geometric equations of the vote as reported and successful use of restorative statistical formulae, properly applied in Nevada to the 2022 Primary Election vote count the statewide count can be reported accurately.

Dr. Hemmers, in his explanation of the Precinct Analysis, states in full:

1) The paper under review [1] claims that a mathematical analysis can determine the difference between a fair and an unfair election and where the unfair election is an election for which the results are predetermined algorithmically. It is assumed that causality is a valid assumption during an election where the effect cannot precede the cause, more specific that the ***aggregate percentage of votes for a candidate cannot precede the election day and mail-in percentages***. This might seem to be a trivial assumption, but it lies at the very core of the analysis.

2) In the preface of the Clark County, 2022, Governor Primary Precinct Analysis, two examples are presented for a bivariate analysis [2] related to election results.

3) A bivariate (Two-Variables) is described as follows [2]: The analysis of two specific variables to determine the empirical relationship present between them is referred to as bivariate analysis and it is considered to be one of the simplest forms of quantitative analysis. It is of utmost help when it comes to testing simple hypotheses of association and determining the extent to which it becomes easier to predict the value of one particular variable, given [that] the value of the other variable is already known. There are three main types of bivariate analysis:

a. **Scatter Plots:** It makes use of dots to represent the values for two different numeric variables. In other words, it provides us with a visual idea of what pattern the variables are following.

b. **Regression Analysis:** This involves a wide range of tools that can be utilized to determine just how the data points might be related. It tends to provide us with an equation for the curve/line along with giving us the correlation coefficient.

c. **Correlation Coefficients:** This shows how one particular variable moves about with relation to another.

4) In certain cases of bivariate data, one variable is said to determine or influence the other one. These two types of variables are distinguished as independent and dependent variables. The former refers to a situation wherein neither of the variables is considered to be dependent on each other.[2] A simple example is the

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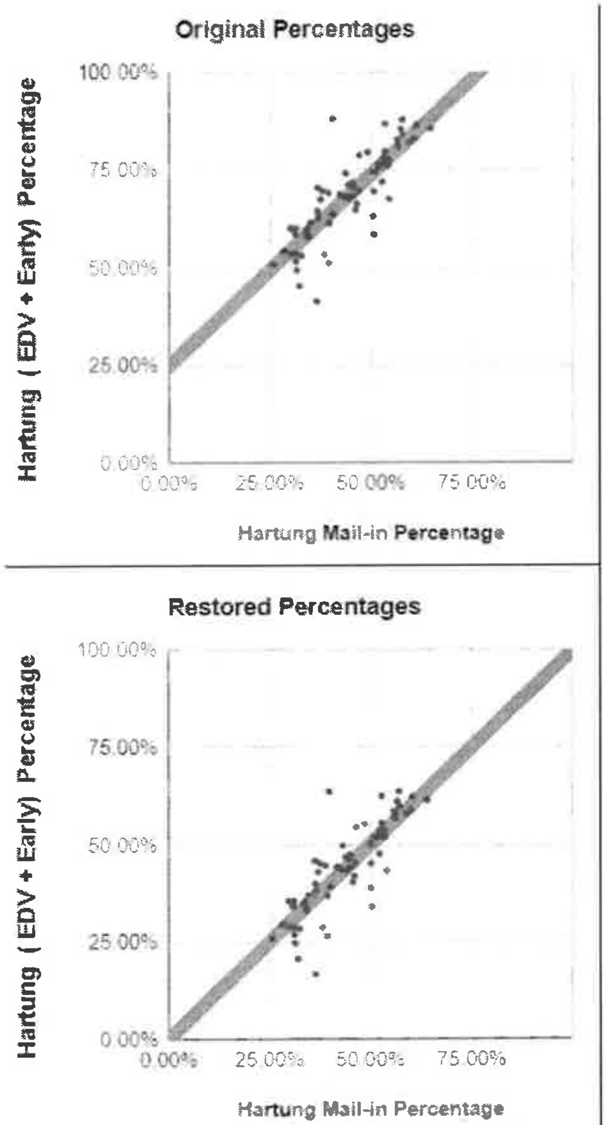
relationship that exists between teenagers reading (independent variable) and their scores in English (dependent variable). **Cause -> Effect**

5) The paper specifically uses the bivariant real number plane formular and the West vs. East paradigm to calculate the results as shown in [3,4].

6) The Preface concludes with a brief explanation how the election results were successfully restored for the 2020 Election of Hartung vs. Baker [4]. The data and calculations are shown in [4]. The data can be shown in form of two graphs, one is the original data (top), and one is the restored data (bottom).



The blue dots represent the results of the individual election precincts, and the red curve is a polynomial (quartic) fit through the blue data cluster. The fact that *in the top graph the red line is not ending at 0%/0% as shown in the bottom graph, means that there is a problem with the election results.* (Emphasis added.) In a

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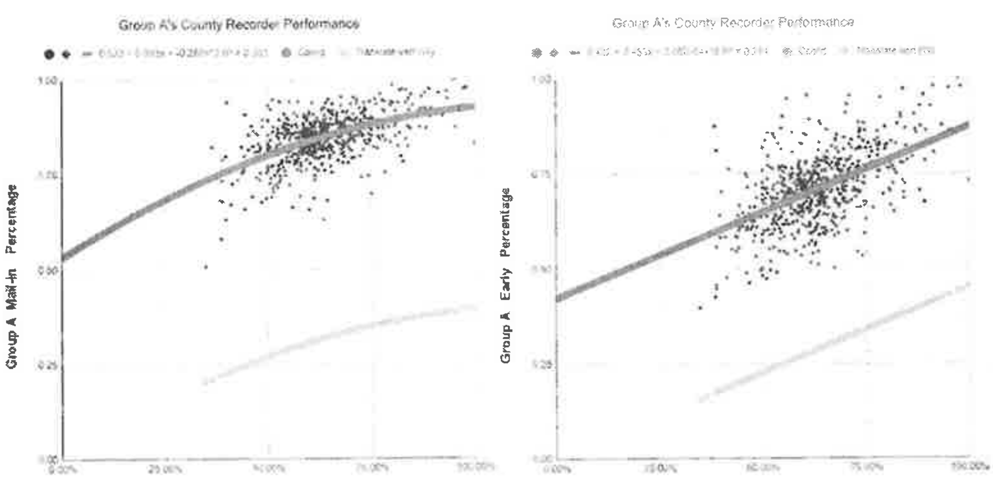
fair election the sum of the Early Day and Election Day votes should produce very similar results to the Mail-in votes, meaning the x-values and the y-values should be similar (when x is 10% then y should be close to 10% as well) and not off by 25% [as demonstrated in the top graph].

a. Even when Hartung received 0% of the Mail-in votes, he would "magically" receive 25% of the combined Election Day and Early Votes. This is impossible. Also, should Hartung receive 100% of the Election Day and Early Votes then Baker would "magically" receive 25% of the Mail-in votes (100% minus his 75% =25%). Again, this is not possible in a fair election.

b. *Even though this discrepancy is not proof of fraud nor an explanation of what type of fraud rigged the election, but it is still possible to correct the numbers and restore the true values*, so as if there was a fair election. (Emphasis added.) The result is shown in the bottom picture and the calculated values can be found in [4].

c. This method of the applied Election Restoration Algorithm has been successfully used over the past two years not only on Hartung vs. Baker but also for Maricopa, Philadelphia, Atlanta, Dallas and Tarrant, Macomb and Oakland, as well as the last federal election.

7) The same methods [5] that have been honed and applied to various elections over the past two years, have been applied to the Group B vs Group A candidates in the 2022 Gubernatorial Primary [6].



a. As an example, the Group A data is shown in the two figures above. The blue dots are from [6], the red curve is a polynomial fit through the blue dots and the pink line is an extrapolation of the polynomial fit using the shown equation in the graph. Both have the Election Day vote percentages on the x-

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axis. As for the y-axis, the left graph has the Mail-in percentages and the right graph the Early vote percentages. It can be seen that the y-intercepts and the polynomial spines between the two graphs are quite different. Reference [1] shows the restored positions of Group A's Election Day percentage which are virtually the same in both graphs [1].

b. In order to be able to restore the original data it is important to identify what part of the data is authentic in order to make the corrections to the illegal data. As written in [1], the illegal equations that govern the percentages of ballots cast between Group B vs Group A, the input percentage is h (as shown on page 3 in [1]), which is equal to Group B's Mail-in vote divided by Group A's combined Early and Election Day votes. From that we know that Group A's Mail-in vote and Group A's Early and Election Day votes are authentic.

c. Therefore, you can restore Group A's and Group B's totals and then multiply the individual vote totals of each candidate in each group by the net proportions of change between collectives of Group A and B in each precinct.

Summary

1) Reference [1] and the included references therein describe how using a restoration algorithm that is based on the well-established mathematical Bivariate Analysis [2] in particular the Bivariate Real Number Plane Formula [5], which has been applied numerous times over the past two years for many US county elections can also be applied to the recent 2022 Gubernatorial Primary in Nevada.

2) For the mathematical restoration of the original data, it is not necessary to claim fraud nor to know any specifics of the fraud.

3) The applied restoration of the official election results shows a significant difference between original and restored election data for all candidates reviewed.

See, Report of Dr. Oliver A. Hemmers, attached hereto and made a part hereof as Exhibit "B". Dr. Hemmers C.V. is also attached hereto and made a part hereof as Exhibit "C".

52. Based on the "Clark County, 2022, Governor Primary Precinct Analysis" and the Analysis of Dr. Oliver A. Hemmers of that analysis, Contestant, Joey Gilbert herein demands enjoinment of certification of the 2022 Primary Election results and requests a mathematical recovery of the true vote cast by the voters in Nevada, and, further, that Defendant make the electronic voting machines utilized statewide available for forensic analysis.

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XI.

THE 2022 PRIMARY ELECTION RESULTS WERE CONTRIVED.

53. Contestant realleges all preceding paragraphs as if fully set forth herein.

54. G Donald Allen states that the Clark County, 2022, Primary Precinct Analysis demonstrates clear and convincing evidence that the election results analyzed therein were not produced by accurate counting of the votes cast, but were instead artificially contrived according to a predetermined plan or algorithm. See, Declaration of Expert G. Donald Allen, attached hereto and made a part hereof as Exhibit "D", and Curriculum Vitae of Expert G. Donald Allen attached hereto and made a part hereof as Exhibit "E", Declaration of Expert Walter C. Daugherity attached hereto and made a part hereof as Exhibit "F", and Curriculum Vitae of Expert Walter C. Daugherity attached hereto and made a part hereof as Exhibit "G".

55. Dr. Allen states that in his expert opinion, the Primary Precinct Analysis demonstrates clear and convincing evidence that the election results analyzed in these reports were not produced by accurate counting of the votes cast, but were instead artificially contrived according to a predetermined plan or algorithm.

56. Dr. Allen summarizes the salient points of the Primary Precinct Analysis report by Mr. Solomon, simplifying his notation, and clarifying how relatively simple it is to manipulate election outcomes using voting algorithms. He finds that the erroneous tabulation of the vote has two parts. The first is to establish the election is incorrect, and the second is to estimate what the vote total should be. He considers the basic configuration for Candidate A and Candidate B where there are only mail-in and election-day votes. Assume the proportion of the mail-in votes for Candidate A is h.

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Therefore, the proportion of mail-in votes for Candidate B is $1-h$. The actual vote totals can be computed by multiplying the total number of mail-in votes. Similarly, the proportion of election day votes for Candidate A is k and the proportion of election-day votes for Candidate B is $1-k$. Again, the total votes for each is obtained by multiplying by the total number of election-day votes.

Now, let M be the number of mail-in ballots and K be the number of votes on election day. Then, the proportion of votes for Candidate A is

$$\frac{hM+kK}{M+K}$$

If voting has been algorithmized by adjusting the proportion of k to a new proportion r the vote total will be the same but the net proportion can be made to whatever, say $r <$ 0.5. it is only required to solve the equation

$$\frac{(1-h)M+(1-k)K}{M+K}=1-r$$

for k. This is done to favor Candidate B. A similar equation is to favor Candidate A. This new value is merely programmed to change votes to obtain the desired proportion.

57. Programming this is remarkably simple. Going into any election, if the mail-in data is known, and a good estimate of K is known, the equation has a unique solution. If accurate poll data is known, and it generally is, then all we need is M and we can use the poll estimates to reflect the proportions and then estimate what value k should be to obtain the desired proportion r to be programmed in.

58. All this is for just one voting station and literally could not be detected. However, if the same or similar proportion obtains over hundreds of precincts, then error is ascertained. That is, plotting the values of h and k of actual election results will reveal that k seems to be constant over all voting stations or precincts.

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59. If there is some control over the total number of mail-in ballots, say by supplementing mail-in ballots after the election-day ballots are counted, then both *h* and *k* can be manipulated, to a value where the equation above is solved for *h* to determine the number of ballots that need to be added. In the absence of both proportions, then poll numbers must be used to fix *h* and then estimate *k* based on the desired proportion *r*.

60. If all mail-in ballots total are known beforehand, and if algorithms are applied as above with differing values of *k*, massive evidence of error can be detected by noting the proportion of votes for Candidate B generally computes to the same total proportion over the spectrum of reporting stations.

61. In each of these cases, the algorithmic is clear and essentially proved. While a mathematical proof is desired, we are working with field data, and therefore must be replaced with statistical proof for example as applied to forensic psychology.

62. Another, more complex example of algorithmic error, is absolutely clear and convincing when the computed proportions between Candidates A and B do not add up to one. These values we never see, as all reported numbers are lumped together for presentation. Even in the case of newly discovered ballots, we often see total vote proportions change as the count is reported, though this is less indicative of error.

63. How to estimate the votes Candidate A would have if the algorithm flaws did not occur? For this, we use a statistical argument and assume the mail-in proportions, which are assumed to be known and correct are the same as the election-day voting proportions. Alternatively, we know an established relationship between the two. From this, we can back-project to what the values of *k* should have been for each precinct. These in turn can be averaged in a weighted scheme (by numbers of voters) to gain the average value of *k*. Using the standard deviation, we estimate the range of all *k* values within two standard

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deviations and compute the expected vote count. In this way, the number of votes lost to Candidate A can be estimated. Alternatively, precinct by precinct poll numbers could be used, thus canceling the effects of mail-in voters that are known to behave in different ways from election day voters. Such are standard methods in statistical analysis. In this particular case, they apply to the Gilbert and Sheriff's election results. Solomon uses a geometrical argument, rotating actual results to assumed slope one expectations.

64. Under all circumstances, the 2022 Primary Election results are mathematically incorrect, and can and should be restored.

XII.

THE SECRETARY OF STATE OF NEVADA AND THE REGISTRARS OF VOTERS MADE ERRORS SUFFICIENT TO CHANGE THE RESULT OF THE 2022 PRIMARY ELECTION

65. Contestant realleges all preceding paragraphs as if fully set forth herein.

66. Contestant, Joey Gilbert alleges that the State of Nevada, by and through its Governor, Steve Sisolak, Secretary of State, Barbara Cegavske, the county Election Boards and Boards of County Commission by their, and each of their failures to cause the vote count to be accurate by reason of the lack of accurate vote count equipment and application of illegal geometric and mathematical formulae, made errors sufficient to change the result of the Election. NRS §293.410(2)(d); that putative Republican gubernatorial candidate, Joseph Lombardo has been incorrectly denominated the winner of the Primary Election in that race and the result set aside in favor of Contestant Joey Gilbert.

67. Contestant alleges that the application of the contrived and illegal geometric formula as set forth herein allowed mathematically illegal and/or improper numbers of votes to be cast and erroneously counted, while legal and proper votes were counted improperly; that the geometric analysis of the error is irrefutable, and that a statistical application of

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standard formula will restore the vote count accurately. NRS §293.410(2)(c). Constitution of the State of Nevada, Article 2, Sec. 1A, (10), (11).

68. Nevada election law is to be liberally construed to the end that all voters have an opportunity to participate in elections and to cast their votes privately. *See* NRS §293.127. Further, the goal of Nevada election law is to ensure that the will of the voters is not defeated by any informality or by failure substantially to comply with its provisions. *Id.*

69. The Republican Primary race must not be certified.

70. If the Court does not determine to vacate the results of the Republican Primary Election for Governor as requested without a hearing, Contestant prays that discovery may be adduced according to statutory provisions to present a full record to the Court, and thereafter a hearing be set in order to assess the claims made herein.

XIII.

CONCLUSION

71. Contestant realleges all preceding paragraphs as if fully set forth herein.

72. The announced results of the 2022 Primary Election are not, and cannot be properly certified until mathematically corrected, the cost of which to the State is *de minimis,* and particularly so when it involves our most sacred Constitutional right to cast our vote and to have our vote accurately counted.

73. The Nevada Revised Statutes 293 *et seq*. and Nevada Constitution, Article 1, Section 1A, *et seq*. provide for an accurate count of the votes to reflect the will of the people of Nevada. Here, the mathematics are pure and incontrovertible. The *report,* at minimum, of the vote as tabulated is incorrect. Contestant does not allege who caused this to happen, when it happened, or how it happened---only that is HAS HAPPENED. That is

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mathematically irrefutable. There is no need to either allege or prove fraud---illicit mathematics were applied to the vote count. As a result, the election results were overwhelmingly skewed against Contestant Joey Gilbert as demonstrated by the geometry set forth herein in support of his contentions.

74. However---and without resorting to allegations of fraud---a manual hand count and/or a correct statistical application of the vote as announced to restore a recovered vote tabulation will prove that Mr. Gilbert actually won the Primary Election by more than 55,000 votes. He must be certified as the proper Republican Primary winner to run for Governor of Nevada in the 2022 General Election.

75. The announced vote count in Clark County, at minimum, is permeated with anomalies so egregious as to render *the results as presented incapable of certification.*

76. Setting aside an election in which the people have selected their candidate is a drastic remedy that should not be undertaken lightly, but should be reserved for cases in which a person challenging the election has clearly established a violation of election procedures and pure mathematics and has demonstrated by clear and convincing evidence that the errors have placed the result of the Primary Election in doubt.

77. Nevada law allows elections to be contested through litigation, both as a check on the integrity of the election process and as a means of ensuring the fundamental right of citizens to vote and to *have their votes counted accurately.*

78. Mr. Gilbert, Contestant herein, fully understands and appreciates the manifold bases for the judiciary to remove itself from electoral politics. But in this instance, this Honorable Court does have the final authority to address this miscarriage of justice regarding the illicit and wrongful application of illegal mathematical formulae and geometric

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equations, and to *cause the recovery of the correct vote count*, and must do so, to restore the confidence Nevadans in their electoral process.

Relief Requested

- In consideration of the foregoing, Contestant Joey Gilbert hereby prays for the following relief pursuant to NRS §293.417:
- That the result of the Republican Primary Election on June 14, 2022 be annulled or set aside; and,
- That certification of the Primary Election results be denied until the tabulation of the announced vote can be mathematically determined; and,
- That the illegal-geometry utilized in the count and recount of the vote be mathematically corrected and the vote mathematically restored to its corrected; or,
- That the Court set this matter for hearing not less than 5 days nor more than 10 days after the filing of the instant Statement of Contest (NRS §293.413); and,
- The Court refer this Contest to a special master with all powers necessary for a proper determination of the Contest. (NRS §293.413); and
- That Contestant be permitted to conduct discovery in the Contest. *See* NRS §293.415, and,
- The Court order a state-wide investigation of the existing voting program pursuant to NRS §293B.135(3); and,
- An inspection of all reports and all test material kept sealed by the clerk pursuant to NRS §293B.155; and,
- An inspection of the logic and accuracy test ballots and the official ballots retained pursuant to NRS §293B.170.; and,

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- That a record, printed on paper, of each ballot voted in the 2022 Primary Election be preserved and inspection by Contestant be provided pursuant to NRS §293B.400; and,
- An examination of the record maintained according to NRS §293.3625, and
- That Joseph Lombardo's ostensible "election" as the Republican candidate for Governor be set aside pending a corrected geometric application and restorative statistical analysis applied to the announced vote.

DATED this 15th day of July, 2022.

MUELLER & ASSOCIATES, INC.

CRAIG A. MUELLER, ESQ.,
Nevada Bar No. 4703
808 S. 7th Street
Las Vegas, Nevada 89101
Attorney for Contestant, Joey Gilbert

MUELLER & ASSOCIATES, INC.
808 S. 7th Street, Las Vegas, Nevada 89101
Telephone: (702) 382-1200 Facsimile: (702) 637-4817

VERIFICATION

I, JOEY GILBERT, declare that I am the Plaintiff in the above-entitled action; that I have read the foregoing **STATEMENT OF CONTEST OF THE JUNE 14, 2020 PRIMARY ELECTION PURSUANT TO N.R.S. 293.407** and know the contents thereof; that the pleading is true of my own knowledge, except for those matters therein contained stated upon information and belief, and that as to those matters, I believe them to be true.

I declare under penalty of perjury under the law of the State of Nevada that the foregoing is true and correct.

DATED this 14th day of July 2022.

JOEY GILBERT, *Plaintiff*

MUELLER & ASSOCIATES, INC.
808 S. 7th Street, Las Vegas, Nevada 89101
Telephone: (702) 382-1200 Facsimile: (702) 637-4817

EXHIBIT A

EXHIBIT A

Clark County, 2022,
Primary Precinct Analysis

Abstract

This paper will demonstrate how to measure the difference between a fair and an unfair election, where an unfair election is an election where the result is predetermined algorithmically.

At the very core of this article lay the assumption of Causality, that the Effect cannot precede the Cause; likewise, the Aggregate Percentage of a Candidate cannot precede the Election Day and the Mail-in Percentages of that candidate. In a fair election, the aggregate cannot be known until after all ballots are cast; in an election that is unfair, where the aggregate was predetermined, the aggregate becomes the cause and the Mail-in Vote (and/or the Election Day Vote) becomes the effect...and the laws of mathematics allow us to readily discern between which was the cause...and which was the effect.

To Paraphrase Immanuel Kant: "*The causation is the thing without which, is a condition of possibility of a thing, and so it is satisfied in the thing*"

The aggregate is not a condition of possibility for the Mail-in vote. The Aggregate is a Concept that relates two things. People vote by mail and people vote at the polls on election day, but no one, to my knowledge, has voted by aggregate.

Table of Contents

Preface

Suppose at Lorraine High School, a precinct among many in a particular election, there were two candidates and two 41 methods of voting. The first method of voting would be at the polls on election day; the second mode would be remotely by mail. An unscrupulous actor has already decided that the first candidate will receive exactly 50% of Lorraine High School's vote, regardless of the first candidate's share of the vote on election day. Using a simple equivalence relationship, the malicious actor can adjust the Mail-in percentage in order to achieve a predetermined aggregate result of 50% for the first candidate.

Let us suppose that 1000 persons voted on election day at Lorraine High School, and the first candidate received 750 votes on election day, then the first candidate had 75% of the election day vote at Lorraine.

An additional 1000 persons voted by mail in the Lorraine region; thus a total of 2000 persons voted at Lorraine overall. Since the malicious actor has pre-determined the aggregate percentage to be 50%, then the first candidate will end this election with 1000 votes out of the 2000 total; thus, since the first candidate already has 750 votes, the first candidate will receive an additional 250 votes in the mail, which is 25% of the mail-in vote; such that the combined aggregate, 75% of the election day vote and 25% of the Mail-in Vote results in a 50% Aggregate for the first candidate.

Now let us suppose instead that 2000 persons voted by mail, then the total number of votes at Lorraine would be 3000, and to achieve a 50% aggregate, the first candidate must receive 1500 of those 3000 votes. The first candidate already has 750 votes, and thus they require an additional 750 votes from the mail to sum to 1500. Since 750 divided by 2000 is equal to 37.5%, the first candidate now receives 37.5% of the Mail-in Vote, such that 75% of the Election Day Vote and 37.5% of the Mail-in Vote combines to an aggregate of 50% of the aggregate vote.

We now define a simple parameter, *zeta*, where $\zeta = \frac{\textit{Total number of Mail in Votes}}{\textit{Total Number of Election Day Votes}}$, which is the proportion of Mail-in Votes to Election Day Votes; we state the following law that governs the relationship between the Election Day Vote, the Mail-in Vote and the combined Aggregate vote, whether or not the election is fair or unfair:

Let $M = \textit{Mail} - \textit{in Percentage of the first candidate}$
Let $E = \textit{Election Day Vote Percentage of the first candidate}$
Let $A = \textit{Aggregate Percentage of the first candidate}$

$$M = A - \frac{E-A}{\zeta}$$

This Hyperbolic relationship between the modes of voting in respect to a particular candidate forms the foundation of this entire article, for it is this relationship that allows us to measure with absolute certainty whether or not an election was or was not engineered to achieve a predetermined outcome.

From an argument on social media I had with a confused citizen (paraphrased for more clarity):

Me: "If you were told that Kathy had 25% of the election day vote and 75% of the mail-in vote in a precinct, can you tell me Kathy's Aggregate Percentage?"

Confused Citizen : After much thought… "No."

Me: "You need the proportion of mail-in to election day votes. If the proportion is 1 to 1, then Kathy gets a 50% aggregate. If the proportion is 3:1 then Biden gets a (25%+3*75%)/4 Aggregate which is 62.5% of the precinct's vote."

Confused Citizen: "Right, so you're saying that there's an illegal formula that can give us the aggregate for all precincts, without the proportion of Mail-in to Election Day Votes?"

Me: "Yes. The fact that Kathy's Mail-in Percentage is a continuous function of her aggregate and election day percentage across all the precincts proves that the election has been altered from its original state... thus they had to backsolve the proportion of mail-in to election day votes."

Manifolds In Action; County Recorder Data
https://docs.google.com/spreadsheets/d/1Rk0QNzNuboit7pyY1UbGlIQyl5JtLxqcnoMmQpK3Xkw/edit?usp=sharing

Preface Equation 0.1.1: The Bivariate Real Number Cubic Manifold, Candidate B vs Candidates A and C; Sheriff

Let Candidate A be Hyt; let Candidate B be McMahill; let Candidate C be Roberts.
Let A_1, A_2, A_3 be Hyt's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let B_1, B_2, B_3 be McMahill's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let C_1, C_2, C_3 be Robert's Early Vote, Mail-in Vote and Election Day Vote respectively.

Let $s_1 = B_1$
Let $t_1 = C_1$
Let $u_1 = B_3$
Let $v_1 = A_1 + A_3 + C_2$. The sum v_1, and its summands, A_1, A_3, C_2 are true and authentic to the original data.

$$g_1 = \frac{s_1}{s_1+v_1}, h_1 = \frac{u_1}{u_1+t_1}, \alpha_1 = \frac{s_1+u_1}{(s_1+u_1)+(t_1+v_1)}, \Omega_1 = \frac{s_1+t_1}{(s_1+t_1)+(u_1+v_1)}, \lambda_1 = \frac{s_1+v_1}{(s_1+v_1)+(u_1+v_1)}$$

$$\Gamma_1 = \frac{u_1+t_1}{s_1+v_1} = \frac{1-\lambda_1}{\lambda_1}, \qquad w_1 = (1 - h_1) = \frac{t_1}{u_1+t_1}$$

In a fair election:

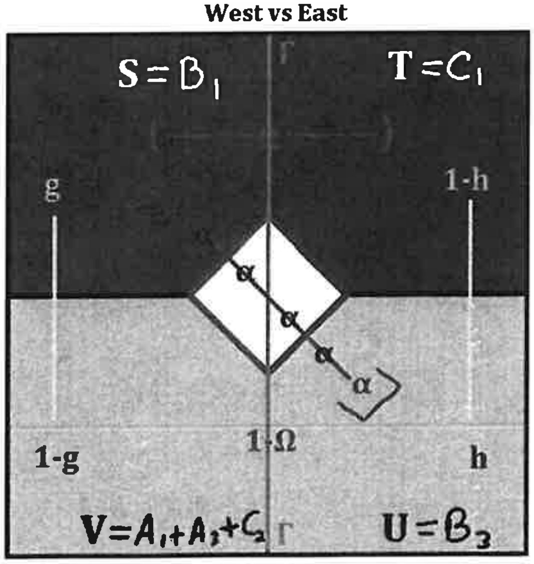
$$g = \alpha + \Gamma(\alpha - h) = \frac{\alpha-(1-\lambda)h}{\lambda} = \Omega + \Gamma(\Omega - w) = \frac{\Omega-(1-\lambda)w}{\lambda} = \frac{(\Gamma+1)(\Omega+\alpha)-\Gamma}{2}$$

In the above sequence of equalities, three of the five proportions must always be known to resolve g_1, however, in Clark County we obtain the illegal cubic manifold equations that yields g_1 with only α_1 and Ω_1 (see next page).

What this means is that the total percentage of Early and Election Day ballots cast for McMahill, amongst the set of Hyt's Early and Election Day ballots, McMahill's Early and Election Day Ballots, and Robert's Early and Mail-in Ballots, was predetermined before the election. This percentage is the Red Diagonal Aggregate, $\alpha = \frac{s+u}{(s+u)+(t+v)}$, in the below image.

It also tells us that the total percentage of Early Ballots cast for McMahill and Robert's, was also predetermined before the election, amongst the same ballot set. This percentage is the North Horizontal Aggregate $\Omega = \frac{s+t}{(s+t)+(u+v)}$.

West vs East



The bivariate cubic equation will have g isolated on the right-hand side. In the diagram on the previous page, g is the West Side Percentage, that is the percentage share of ballots that belong to s amongst s and v, $g = \frac{s}{s+v}$, in other words, this is the share of Early ballots that McMahill shall receive against the number of Early and Election Day ballots for Nyt and Mail-in Ballots for Roberts.

Once g is illegally resolved from the cubic surface of α, Ω, both h and λ are compelled into existence, since in any election, fair or unfair:

$$g = \frac{(\Gamma+1)(\Omega+\alpha)-\Gamma}{2} \Rightarrow \Gamma = \frac{2g-\Omega-\alpha}{(\Omega+\alpha-1)};\ h = \alpha + \Gamma^{-1}(\alpha - g);\ w = 1 - h = \frac{t}{u+t}$$

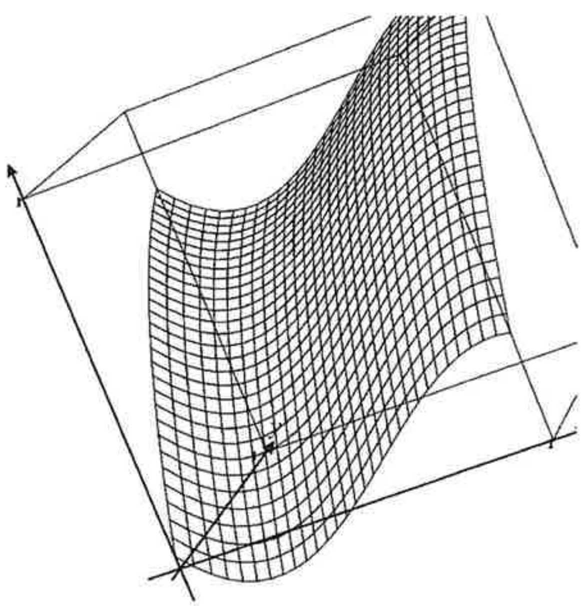
Since the proportions, g_1, α_1, Ω_1 are known, it forces the value of Γ_1, which is proportion of East Side Ballots to West Side Ballots, that is $\Gamma_1 = \frac{u_1+t_1}{s_1+v_1}$, is now forced. Since s_1 and v_1 are both known at this stage, then so the sum of u_1 and v_1.

Since Γ_1, α_1, g_1 are known, it forces the value of h_1, which is the percentage of u_1 ballots amongst u_1 and t_1. Since the sum of u_1 and t_1 is already known, and h_1 tells us proportion of t_1 to u_1 ballots via the identity: $\frac{t_1}{u_1} = \frac{1-h_1}{h}$, then we know the values of u_1 and t_1. Thus, after the execution of this algorithm, McMahill's Early and Election Day totals and Robert's Early Total have been illegally calculated and are now known and used as inputs for the second equation that will follow on the next page.

The illegal bivariate cubic equation is as follows, with an $R^2 = 0.9945927405$ (image below is the 3D surface that the Clark County precincts rest upon when their α, Ω, g values are plotted in x, y, z space respectively. The residual values have a perfect normal distribution, and the residual errors come from, and only from, whether or not they rounded the illegally calculated vote totals up or down to the nearest integer.

$$g = k_0 + k_1\Omega + k_2\alpha + k_3\alpha\Omega + k_4\alpha^2 + k_5\alpha^3$$

k_0	k_1	k_2	k_3	k_4	k_5
0.06651190607	0.9682383708	- 1.329810827	- 0.2934501699	3.856469812	- 2.198539769



After the execution of this formula, the following values are known:
Legitimate Inputs are: A_1, A_3, C_2
Illegal Outputs are: B_1, B_3, C_1

Preface Equation 0.1.2; The Second Bivariate Real Number Cubic Manifold, Candidate B vs Candidates A and C; Sheriff

Let Candidate A be Hyt; let Candidate B be McMahill; let Candidate C be Roberts.
Let A_1, A_2, A_3 be Hyt's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let B_1, B_2, B_3 be McMahill's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let C_1, C_2, C_3 be Robert's Early Vote, Mail-in Vote and Election Day Vote respectively.

Let $s_2 = B_2$
Let $t_2 = A_2$
Let $u_2 = (B_1 + B_3)$
Let $v_2 = (A_1 + A_3) + (C_1 + C_3)$.

$$g_2 = \frac{s_2}{s_2+v_2}, h_2 = \frac{u_2}{u_2+t_2}, \alpha_2 = \frac{s_2+u_2}{(s_2+u_2)+(t_2+v_2)}, \Omega_2 = \frac{s_2+t_2}{(s_2+t_2)+(u_2+v_2)}, \lambda_2 = \frac{s_2+v_2}{(s_2+v_2)+(u_2+v_2)}$$

$$\Gamma_2 = \frac{u_2+t_2}{s_2+v_2} = \frac{1-\lambda_2}{\lambda_2}, \qquad w_2 = (1 - h_2) = \frac{t_2}{u_2+t_2}$$

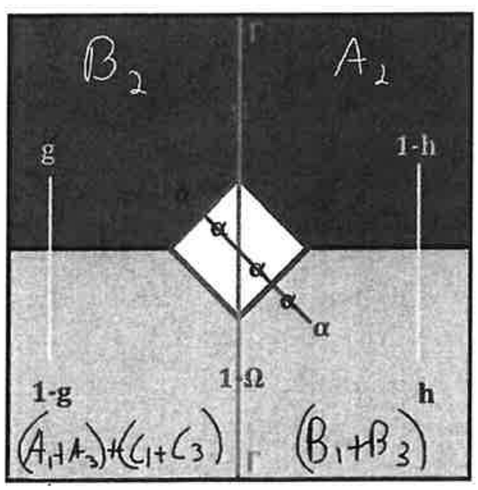
In a fair election:

$$g = \alpha + \Gamma(\alpha - h) = \frac{\alpha-(1-\lambda)h}{\lambda} = \Omega + \Gamma(\Omega - w) = \frac{\Omega-(1-\lambda)w}{\lambda} = \frac{(\Gamma+1)(\Omega+\alpha)-\Gamma}{2}$$

In the above sequence of equalities, three of the five proportions must always be known to resolveg_2, however, in Clark County we obtain the illegal cubic manifold equations that yields g_2 with only α_2 and Ω_2 (see next page).

What this means is that the total percentage of **ALL** ballots cast for McMahill, amongst the set of **ALL** ballots cast for Hyt, McMahill's Early and Election Day Ballots, and Robert's Early and Election Day Ballots, was predetermined before the election. This percentage is the Red Diagonal Aggregate, $\alpha = \frac{s+u}{(s+u)+(t+v)}$, in the below image.

It also tells us that the total percentage of Mail-in Ballots cast for McMahill and Hyt, was also predetermined before the election, amongst the same ballot set. This percentage is the North Horizontal Aggregate $\Omega = \frac{s+t}{(s+t)+(u+v)}$.



The bivariate cubic equation will have g_2 isolated on the right-hand side. In the diagram on the previous page, g_2 is the West Side Percentage, that is the percentage share of ballots that belong to s_2 amongst s_2 and v_2, $g_2 = \frac{s_2}{s_2+v_2}$, in other words, this is the share of Mail-in ballots that McMahill shall receive against the number of Early and Election Day ballots of both Hyt and Roberts.

Once the g_2 proportion is illegally resolved from the cubic surface of α_2 *and* Ω_2, both h_2 and λ_2 are compelled into existence, since in any election, fair or unfair:

$$g = \frac{(\Gamma+1)(\Omega+\alpha)-\Gamma}{2} \Rightarrow \Gamma = \frac{2g-\Omega-\alpha}{(\Omega+\alpha-1)};\ h = \alpha + \Gamma^{-1}(\alpha - g); w = 1 - h = \frac{t}{u+t}$$

Since the proportions, g_1, α_1, Ω_1 are known, it forces the value of Γ_1, which is proportion of East Side Ballots to West Side Ballots, that is $\Gamma_2 = \frac{u_2+t_2}{s_2+v_2}$, is now forced.

Since Γ_2, α_2, g_2 are known, it forces the value of h_2, which is the percentage of u_2 ballots amongst u_2 and t_2 and tells us proportion of t_2 to u_2 ballots via the identity: $\frac{t_2}{u_2} = \frac{1-h_2}{h_2}$. Since the value of u_2 is known, since B_1 and B_3 were illegally calculated in the previous equation, then the value of t_2 is therefore known, which is Hyt's Mail-in Vote.

Hence, now the sum of u_2 and v_2 is known, and the proportion of West Side to East Side Ballots is equal to $\left(\Gamma_2\right)^{-1} = \frac{s_2+v_2}{u_2+t_2}$, thus the of s_2 and v_2 is now known, and the value of g_2 tells us the percentage of s_2 ballots that belong to the sum $s_2 + v_2$, then we multiply that sum by g_2 to yield s_2, and the remainder is v_2. Since $s_2 = B_2$, we have McMahill's Mail-in Vote.

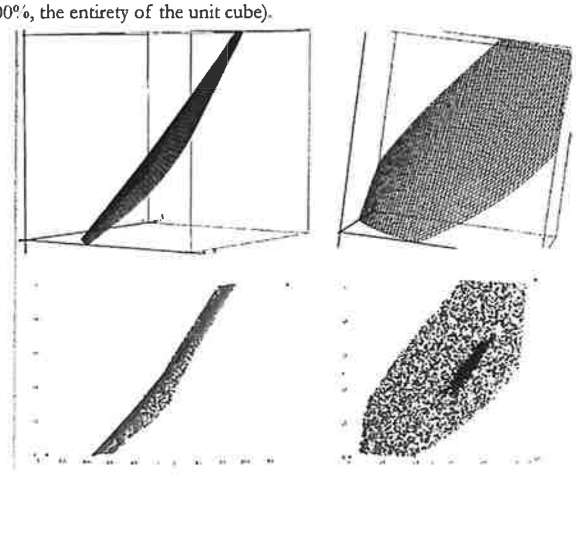
Since v_2 is known, and $v_2 = \left(A_1 + A_3\right) + \left(C_1 + C_3\right)$, and A_1, A_3 are natural and C_1 was illegally calculated in the previous equation, we finally resolve $C_3 = v_2 - \left(A_1 + A_3\right) - C_1$, which is Robert's Election Day Vote, and now all of the precinct totals, for each candidate, in each mode of voting, is known across the entirety of Clark County, Nevada.

The illegal bivariate cubic equation is as follows, with an $R^2 = 0.9945927405$ (image below is the 3D surface that the Clark County precincts rest upon when their α, Ω, g values are plotted in x, y, z space respectively. The residual values have a perfect normal distribution, and the residual errors come from, and only from, whether or not they rounded the illegally calculated vote totals up or down to the nearest integer.

$$g = k_0 + k_1\Omega + k_2\alpha + k_3\Omega^2 + k_4\alpha^2 + k_5\alpha^3$$

k_0	k_1	k_2	k_3	k_4	k_5
+0.03384844658	+1.162423939	- 1.292166199	- 0.418952775	+3.545617525	- 2.003217744

In the image below is the ideal 3D surface (gray wireframe), from two perspectives. The images below them are the ideal surface in red, generated from random α, Ω coordinates, and the actual Clark County precincts in blue. They do not deviate from the red. The α, Ω, g bounds are all from 0 to 1 (that is from 0% to 100%, the entirety of the unit cube).



The next question is how we restore the election results back to their original state before they were altered.

In a fair election, according to both historical records of past elections prior to 2020, and tens of millions of simulations, the way in which people cast their ballot should not influence their choice of candidate; likewise, their choice of candidate should not influence the way in which they prefer to cast their ballot.

This implies, at particular precinct, each candidate's proportion of election day, to early, to mail-in ballots, should be roughly the same, as all other candidates, in all races. Again, this is confirmed by historical records of elections prior to 2020 and countless simulations.

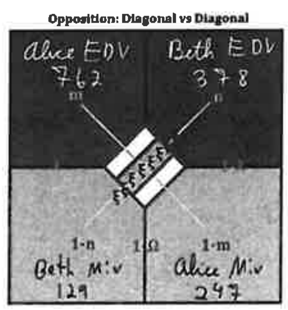
Thus if Alice receives 1000 votes, 750 on Election Day and 250 in the Mail, which is a 3:1 proportion of Election Day to Mail-in Votes, then Beth, regardless of how many votes she receives overall, should have roughly 3 election day votes for each mail-in vote, in that same precinct, and so should all candidates at that precinct, in all races.

This is because it is expected that the electorate of this precinct prefers to cast their ballots by Election Day to Mail-in at a 3:1 ratio, regardless of which candidate they choose. Therefore, if Beth receives 500 votes overall, then we expect her to have 375 Election Day Votes and 125 Mail-in Votes, give or take several votes in each category (that is, highly correlated, but not causated!).

Also, if Alice receives 66% of the Election Day Vote at a particular precinct, then we also expect Alice to receive 66% of the Mail-in Vote at that precinct.

This is because that since the way in which people cast their ballots does not influence their decision, then the percentage of those that cast their ballots on Election Day for Alice, should also be roughly the same for those that cast their ballots in Mail for Alice, again, give or take a point or two (highly correlated, but not causated!).

So we may see something like (and notice that the east and west side percentages, g *and* h, were not mentioned, because in a fair election, even though these percentages exist, and will have pronounced quadratic correlation, the curvature of that correlation depends on the average proportion of Mail-in to Election Day ballots across the county and the difference in the mean performance of any two disjoint sets of candidates).



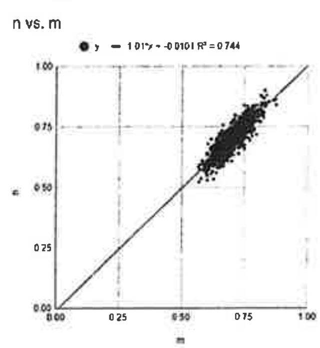
$$m = \frac{762}{762+247} = 75.52\%$$

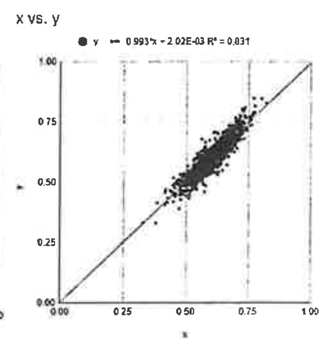
$$n = \frac{378}{378+129} = 74.55\%$$

$$x = \frac{762}{762+378} = 66.84\%$$

$$y = \frac{247}{247+129} = 65.69\%$$

Although the values of m and n are not the same, they are roughly the same. And if the values of m and n are plotted across the precincts for the entire county, they should fall inside of an ellipse, whose center exists on the line $m = n$ and whose major axis also exists on the line $m = n$; likewise the same should be true for the relationship of x and y.





Please visit the following links for more information on Principal Component Analysis before you continue to the next page if you are not familiar with the topic: Ali Ghodsi, Lec 1: Principal Component Analysis

https://www.youtube.com/watch?v=g-Hb26agBFg

https://www.youtube.com/watch?v=L-pQtGm3VS8

https://www.cs.princeton.edu/picasso/mats/PCA-Tutorial-Intuition_jp.pdf

With the above page in mind, we must now assess how the algorithm itself operates in the Sheriff results. We know that A_1, A_3, C_2 are legitimate inputs, that is, the proportion between $A_1: A_3: C_2$ must be true and authentic to the original data.

However, that is only the relative values of A_1, A_3, C_2. There is undoubtedly a scale, z, which is being applied against A_1, A_3, C_2. This means if we wrote A_1, A_3, C_2 as a vector, the orientation of this vector would remain the same in 3D space, but the magnitude itself may and shall vary from the original vector.

Although the algorithm itself is not beyond human understanding, it would be too difficult for any human to interact directly with the algorithm at a precinct level before and during the election.

Thus, we can surmise that the only human interaction with this algorithm is:

1. Selecting the First, Second and Third place candidates across Clark County for Sheriff.
2. That the turnout cannot exceed some constant percentage of the registered voters at any particular precinct.
3. That the total number of ballots generated must be the same as the original number of ballots cast.

The first point determines who wins and who loses...the true goal of the algorithm; the second point ensures that turnout remains below 100% of the registered voters (in a general election), or below some other percentage in a primary (low turnout); the third point ensures that the number of true ballots that are destroyed, or new ballots created, is minimized. Proper execution of the third point should also cover the second point.

The Neural Network is provided the original values of $A_{1,0}, A_{2,0}, A_{3,0}, B_{1,0}, B_{2,0}, B_{3,0}, C_{1,0}, C_{2,0}, C_{3,0}$, in each precinct, and thus knows the total sum of these ballots, Ψ_0, in each precinct. The Neural Network then accesses its database of several billions self-learning trials on how to alter an election with three candidates and three modes, with the true first place winner, Hyt, being repurposed to last place, as the human engineer commanded.

For reasons unknown to us mere humans, the Neural Network chose an algorithm that preserves the relative values of $A_{1,0}, A_{3,0}, C_{2,0}$ and uses their sum as the baseline integer value of v_1 to yield s_1, u_1, t_1, which are the new values of $B_{1,1}, B_{3,1}, C_{1,1}$, (which remain in decimal form) from a cubic manifold equation that allows it to manufacture and adjust the arbitrary aggregate inputs α_1, Ω_1 on a whim, in any precinct, at any time.

It then recycles the general methodology of the first cubic, using $u_2 = B_{1,1} + B_{3,1}$ as the baseline integer input to yield s_2, t_2, v_2, from which come the new values of $B_{2,1}, A_{2,1}, C_{3,1}$, which also remains in decimal form. From this second cubic the algorithm now has two additional aggregate inputs, α_2, Ω_2, which it can alter, in any precinct, at any time.

The total sum of the new ballots $\Psi_1 = A_{1,0}, A_{3,0}, C_{2,0} + \left(B_{1,1}, B_{3,1}, C_{1,1}\right) + \left(B_{2,1}, A_{2,1}, C_{3,1}\right)$ is then determined, from which the scale $z = \frac{\Psi_0}{\Psi_1}$, is now applied across $\left(A_{1,0}, A_{3,0}, C_{2,0}\right), \left(B_{1,1}, B_{3,1}, C_{1,1}\right), \left(B_{2,1}, A_{2,1}, C_{3,1}\right)$, and rounded up or down to the nearest integer, using the standard rules of rounding (as in Excel), since numerous tests have confirmed that no rounding preference (a floor, or ceiling) had ever been applied to any vote total in this election.

The scaling action preserves the relative values of $\left(A_{1,0}, A_{3,0}, C_{2,0}\right)$ amongst themselves, and ensures that the total sum of scaled and rounded ballots does not exceed $\pm$ 9 from the original total ($\pm$ 1 per each vote total, of which there are nine), and, since no preference is given, the average difference between the true sum of the ballots, and the resulting sum of the ballots, is zero, minimizing the number of existing ballots to be destroyed (and new ballots to be created).

The number of Election Day, Early, and Mail-in Ballots, that must be discarded and injected (exchanged), in order to enforce the new proportion of Election Day, to Early to Mail-in Ballots, it then optimized (minimized) by adjusting the values of $\alpha_1, \Omega_1, \alpha_2$ *and* Ω_2 in each precinct based on each precinct's needs to minimize such an exchange of ballot modes, without upsetting the countywide order in which the candidates are to win (that is, so long as the intended winner, McMahill, receives the most votes in the County, with a sufficient county-wide percentage margin to prohibit an automatic recount, and that Roberts receives more votes than Hyt, then the Neural Network has achieved its task of altering the election, without blowing the number of registered voters, or hardset turnout conditions, and minimizing the number of ballots that are created and destroyed and whose modes are exchanged, across the precincts, and therefore across the entire County).

Gradient descent, how neural networks learn | Chapter 2, Deep learning
https://www.youtube.com/watch?v=IHZwWFHWa-w
https://en.wikipedia.org/wiki/AlphaZero
https://www.deepmind.com/blog/alphastar-mastering-the-real-time-strategy-game-starcraft-ii
https://corporatefinanceinstitute.com/resources/knowledge/economics/nash-equilibrium-game-theory/
http://neuralnetworksanddeeplearning.com/chap1.html

The following Four Pages are an excerpt from a prior article on this subject concerning the 2020 election results of Hartung vs Baker and Stavors vs Miller and the 2004 results of Bush vs Kerry.

I will provide the reader with a brief explanation of how Election Results are restored, and examples of fair elections in Clark and Washoe Counties in 2008,2012,2016 and the altered election of 2004 (in Bush's favor). We will start with an easy race to restore (most of them follow this procedure) where the Republican Hartung (the intended winner of the algorithm) was given an unfair advantage to secure their election against Democrat challenger Baker for the County Commissioner 4 seat.

Hartung was put in a stellar position by the algorithm. The first graph (top left) reads that even if Mr. Hartung received 0% of the Mail-in Vote, he would magically receive 25% of the combined Election Day and Early Vote.

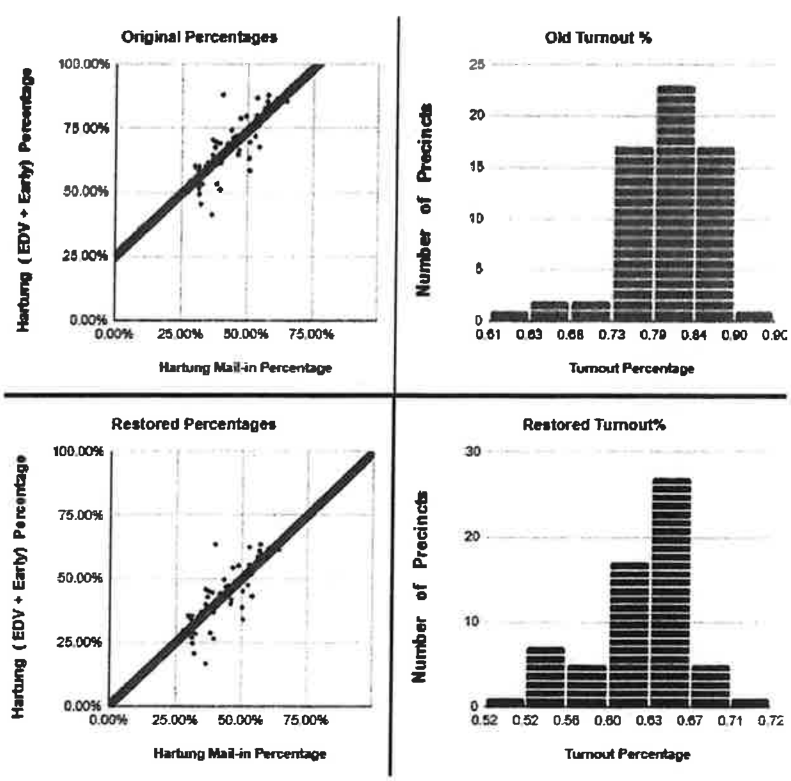
At the same time, in order to keep Ms. Baker ahead of Hartung in the Mail (the maintain the facade that Democrats overperformed in the Mail), they made it that if M.r Hartung got 100% of the Early (+EDV) vote, Ms. Baker would magically receive 25% of the Mail-in Vote (since he gets 75% in the Mail, which is the x*-axis).*

Although this observation is not proof of election fraud, after fraud is proven (via the formula used to rig the election) it is through this observation that we can then proceed to restore the election to its rightful state.

In a fair election, we expect a candidate that received 10% of the Election Day Vote to get roughly 10% of the Mail-in Vote; likewise if they get 90% of the Election Day Vote, we expect them to get 90% of the Mail-in Vote. Even if Democrats prefer to vote by mail, that should reflect in both percentages across the precincts, not just one of them. In other words, if we plot the election day and mail-in percentages against each other across the precincts, they should array themselves across a 45 degree angle of $y = x$.

*To restore this election **(go to CountyCom4; Baker)** page in the spreadsheet link on the following page) we first remove the positive intercept from the **Winner** of the election, plotting the dominantmethod of voting on the*y*-axis.*

We then take the angle of the linear regression, find the difference from 45 degrees, and then execute a rotation matrix to bring the precinct percentages back to the line $y = x$. *The manner in which the election is rigged determines how the candidate vote totals (integers) are rescaled. Since every election that was altered was done via the West vs East paradigm (you will learn more about this paradigm shortly in Chapter I), we know that Hartung's Mail-in Vote and Baker's EDV+Early Vote are true and authentic (they were used as natural inputs to alter Hartung's Early Vote and Baker's Mail-in Vote, which are the outputs).*



2020 Election Restoration Algorithm , Hartung vs Baker

This is the algorithm to restore the Baker-Hartung Election and applies to most restorations, including for counties in other States, such as Maricopa, Philadelphia (PA), Atlanta (GA), Dallas and Tarrant (TX), Macomb and Oakland (MI).

https://docs.google.com/spreadsheets/d/1yqzGhTkMq1GkIbNju-JmKJFFTQN-Q569cc6LwZVaRc/edit?usp=sharing
Restored Washoe Elections

Let **P** be the set of 63 precincts that were analyzed.

Let $a_{i,0}$ be Hartung's recorded Mail-in Vote in each precinct.

Let $b_{i,0}$ be Baker's recorded Mail-in Vote in each precinct.

Let $c_{i,0}$ be Hartung's recorded Election Day + Early Vote e in each precinct.

Let $d_{i,0}$ be Baker's recorded Election Day + Early Vote in each precinct.

Let $x_{i,0}$ be Hartung's recorded Mail-in Percentage in each precinct, $x_{i,0} = \frac{a_{i,0}}{a_{i,0}+b_{i,0}}$.

Let $y_{i,0}$ be Hartung's recorded EDV+Early in each precinct, $y_{i,0} = \frac{c_{i,0}}{c_{i,0}+d_{i,0}}$.

Let m be the slope of the linear regression of x vs y; $m = 0.9779$.
Let b be the intercept of the linear regression of x vs y; $b = + 0.2497$
Let $\theta = arctan(m)$; $\theta = 0.7742322822\ radians$
Let $\phi = \frac{\pi}{4} - \theta$; $\phi = 0.01116588115\ radians$
Let $n_1 = cos\phi$; $n_1 = 0.9999376622$
Let $n_2 = sin\phi$; $n_2 = 0.01116564913$

Let $\tau_i = y_{i,0} - b$ for all precincts.

Let $x_{i,1}$ be Hartungs's Restored Mail-in Percentage in each precinct; $x_{i,1} = n_1 x_{i,0} - n_2 \tau_i$.

Let $y_{i,1}$ be Hartung"s Restored EDV+Early Percentage in each precinct; $y_{i,1} = n_2 x_{i,0} + n_1 \tau_i$.

Let $a_{i,1}$ be Hartung's intercessory Mail-in Vote in each precinct, $a_{i,1} = ROUND\left[\left(x_{i,1}\right)\left(a_{i,0} + b_{i,0}\right)\right]$
Let $b_{i,1}$ be Baker's intercessory Mail-in Vote in each precinct, $b_{i,1} = \left(a_{i,0} + b_{i,0}\right) - a_{i,1}$
Let $c_{i,1}$ be Hartung's intercessory EDV+Early in each precinct, $c_{i,1} = ROUND\left[\left(y_{i,1}\right)\left(c_{i,0} + d_{i,0}\right)\right]$
Let $d_{i,1}$ be Baker's intercessory EDV+Early in each precinct, $d_{i,1} = \left(c_{i,0} + d_{i,0}\right) - c_{i,1}$.

Let $u_{i,1}$ be the Hartung's West Side Scale, $u_{i,1} = \frac{a_{i,0}}{a_{i,1}}$, since $a_{i,0}$ is authentic.

Let $v_{i,1}$ be the Bakers East Side Scale, $v_{i,1} = \frac{d_{i,0}}{d_{i,1}}$, since $d_{i,0}$ is authentic.

Let $b_{i,2}$ be Baker's restored Mail-in vote each precinct, $b_{i,2} = \left(u_{i,1}\right)\left(b_{i,1}\right)$.
Let $c_{i,2}$ be Hartung's restored EDV+Early Vote in each precinct, $c_{i,2} = \left(v_{i,1}\right)\left(c_{i,1}\right)$.

We now recalculate Hartung vs Baker using the integers $a_{i,2}$, $b_{i,0}$, $c_{i,0}$, $d_{i,2}$.

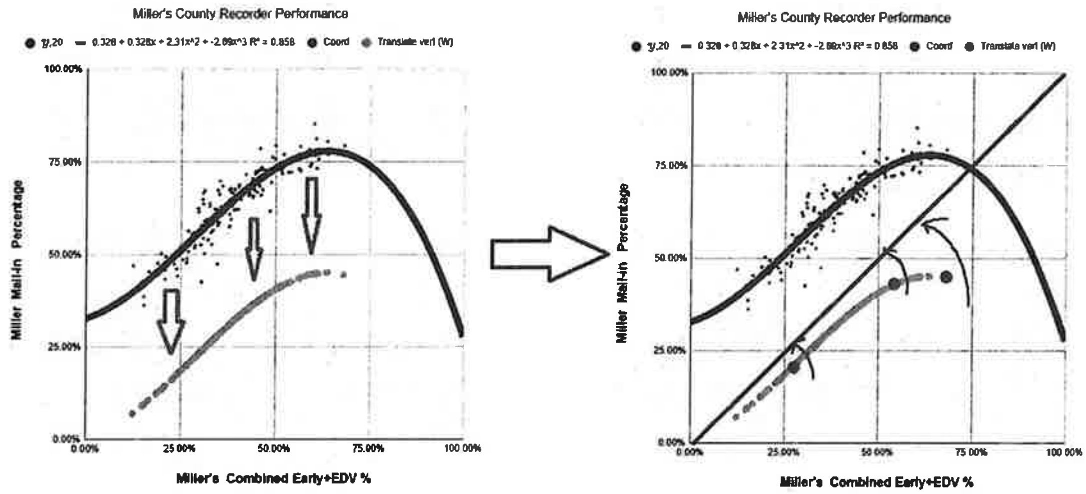
2020 Election Restoration Algorithm , Miller vs Stavros

As for Miller vs Stavros, restoring Nevada's Election is not a simple procedure of translation and rotation, this is because the z complex formula introduced an intense quartic curative to the Early+EDV Percentage vs the Mail-in Percentage. When an election is altered via the East vs West paradigm, it introduces strong quartic curvature into the North vs South paradigms (North vs South would be Early Vote vs Mail-in Vote in 2020, and Election Day Vote vs Early Vote in previous elections, as those were the dominant and natural forms of voting).

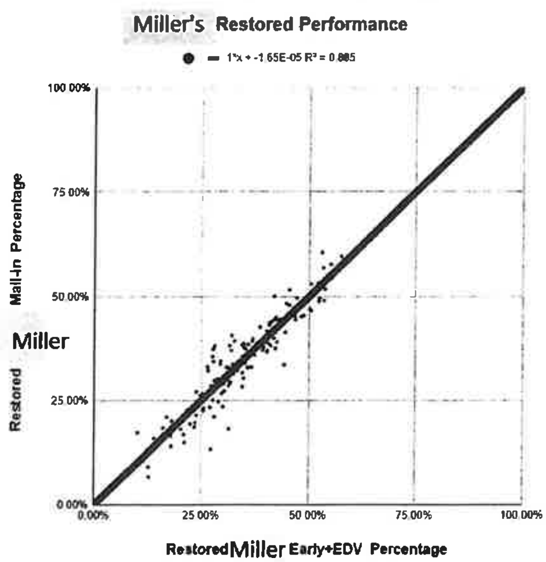
The reason quartic curvature is transferred into the North vs South Arrangement is because quartic curvature naturally occurs in the East vs West Arrangement in a fair election. In a fair election, the North and South percentages form a cloud that can be well approximated by a plane and the East and West percentages form a quartic spiral; however, **when the election is altered via the West vs East paradigm**, the quartic spiral appears in the traditional North vs South Percentages, and the East vs West percentages assume the plane relationship instead.

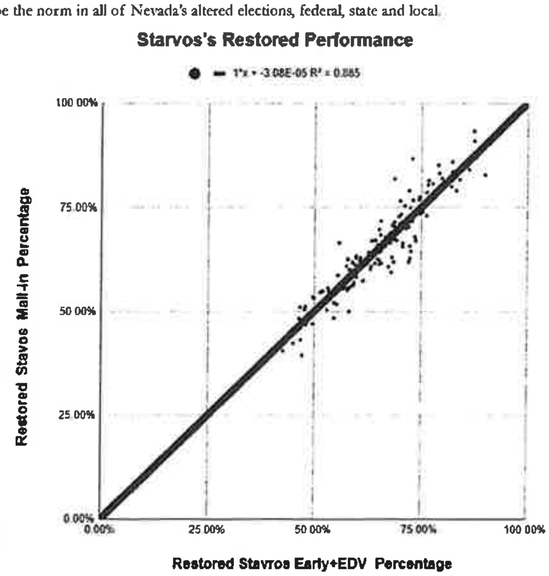
Because of this, we first subtract the y-intercept of the winner (as we did previously), and then record the difference of the Mail-in Percentage from the quartic polynomial spine.

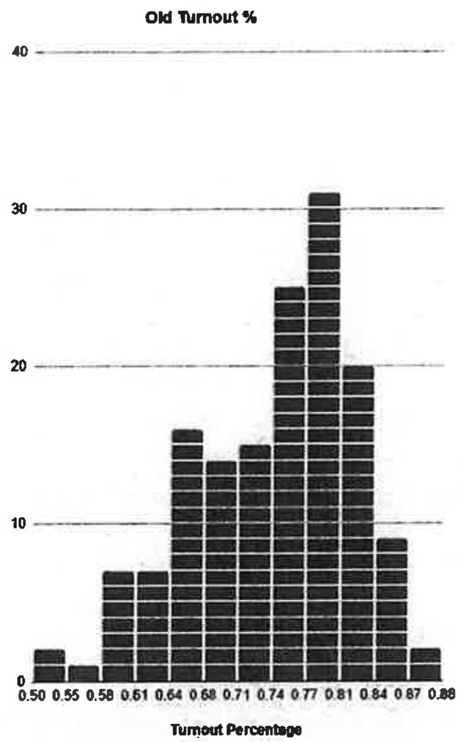
We then do a dynamic rotation of each coordinate along the precinct interpolation of the quartic spine to bring it back to the line $y = x$ and then add back the original residual distances. We then subtract the new values from 100% to see it from Stavros's Perspective.

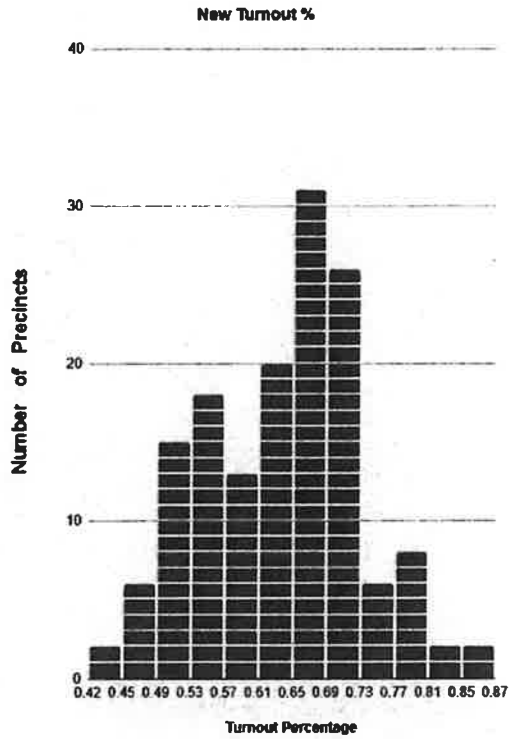


We then apply the algorithm on the above page to restore and rescale the integers, knowing that Stavros's Mail-in Vote and Miller's Early Vote+EDV vote are authentic. Miller replaces Hartung as the Intended Winner and the Mail-in Vote is placed on the y-axis instead, as it was the dominant form of voting in this race. Notice that in both elections, the intended Winners, Miller and Hartung, start with a +25% intercept, which seems to be the norm in all of Nevada's altered elections, federal, state and local.









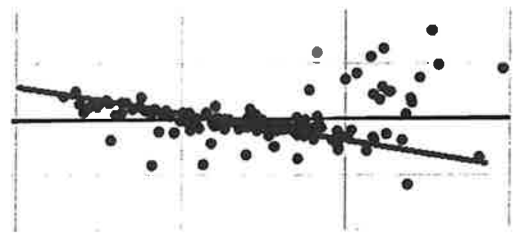
The results show that although Stavros's totals remained close to 75,000 before and after the restoration, Miller's ballot count was inflated from 44715 to 75446.

Original	County Recorder	Restored	Restored	Stavros	Vs.	Margin
Total EDV+Early	82086	Total EDV+Early	91152	Original	75313	-133
Total MiV	68673	Total MiV	37942	Restored	84379	39664
Stavros EDV+Early	50290	Stavros EDV+Early	59356			
Miller EDV+Early	31796	Miller EDV+Early	31796	Miller	Vs.	Margin
Stavros MiV	25023	Stavros MiV	25023	Original	75446	133
Miller MiV	43650	Miller MiV	12919	Restored	44715	-39664
		Cubic Restore	Miller View			
County Agg, 150 Precincts	Vs.	b0	0.32758872	County Omega	Vs.	Phantom
Original	49.95%	b1	0.328462	Original	54.44%	30731
Restored	65.36%	b2	2.31106857	Restored	70.60%	0
		b3	-2.69332122	Phantom %	20.38%	30731
County Lambda	Vs.	No b4	null	Stavros to Miller via	Adjudication	-9066
Original	62.31%	Phi Range	+5.50	Miller MiV Phantom %	70.40%	Miller Phantom Share
Restored	55.98%	In Degrees	+15.28	Stav EDV Phantom %	00.00%	100.00%
Original Turnout	74.08%			Restored Stav Early	Div by Adj	15.57%
Restored Turnout	63.43%			Restored Miler MiV	Div by Adj	70.17%

Equation 5.1.1e; The Cubic Exactitude of Miller vs Stavros. 2020, County Commissioner, Clark County

This particular local election is unique even amongst the other altered elections in Clark and Washoe Counties. I had no knowledge of the tightness of this race (15 votes) nor the prior court ruling and proceedings concerning this election. It caught my eye because it had the highest R^2 value of all election when the regression of $\alpha = k_1 g + k_2 h + k_3$ *was run.*

Without removing a single outlying precinct the R^2 of the above plane regression was 0.998, and even stranger, it the residuals of the expected value of α *and the actual value of* α *were affine (see the image below, where the residuals have a slope). Intrigued by this observation, I decided to actually view the election result and was astounded by the shallow margin of victory for the Democrat Candidate. A google search concerning this race revealed that there were even legal proceedings about it.*
https://www.8newsnow.com/news/local-news/nevada-supreme-court-upholds-millers-election-win-over-stavros-anthony/



It turns out that someone (or something, such a neural network) took direct control of this election and warped the originally rigged flat plane via a cubic, and ignored the election day vote and registered voters entirely from the calculation, acting only the Early and Mail-in Vote.

Let a be Starvors's Early Vote at a particular precinct.
Let b be Miller's Early Vote at a particular precinct.
Let c be Starvor's Mail-in Vote at a particular precinct.
Let d be Miller's Mail-in Vote at a particular precinct.

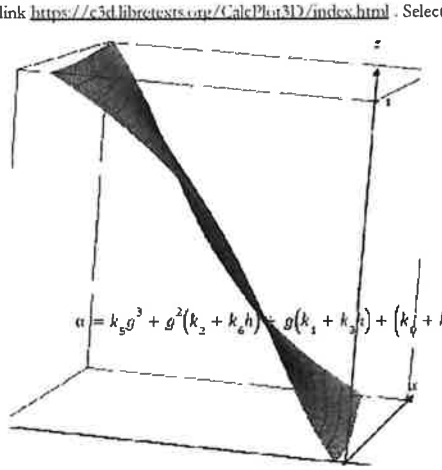
Let $h = \frac{c}{c+b}$; let $\alpha = \frac{a+c}{(a+c)+(b+d)}$; let $g = \frac{a}{a+d}$,

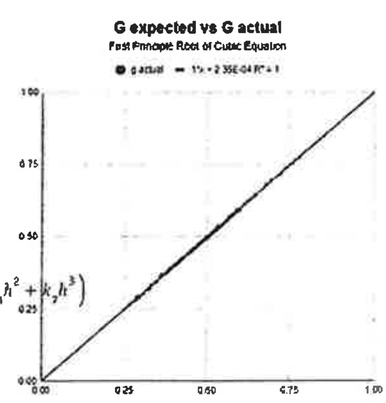
$0 = k_5 g^3 + g^2(k_2 + k_6 h) + g(k_1 + k_3 h) + (k_0 + k_4 h^2 + k_7 h^3 - \alpha)$, which is a general cubic in the form:

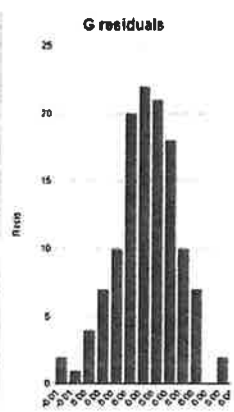
$0 = Ag^3 + Bg^2 + Cg + D$, for this race we take the first principle root of the Cubic Equation.

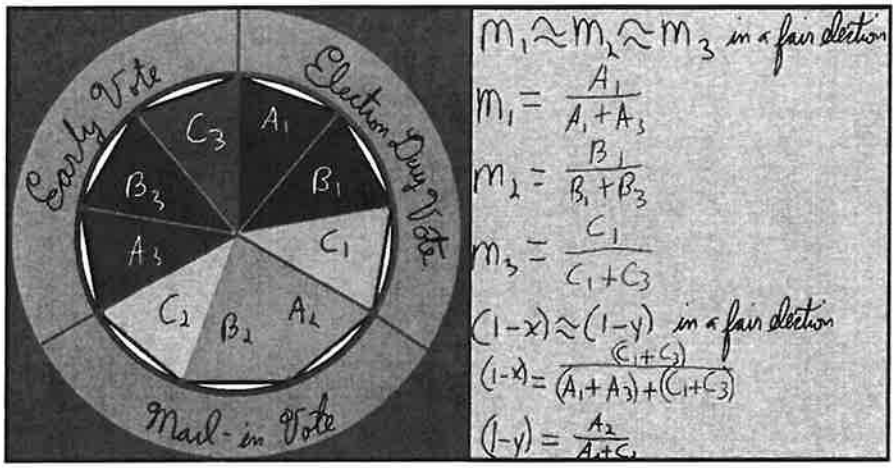
k0	0.03011967441	k4	0.2314017714
k1	0.8193824172	k5	1.006207413
k2	-0.9499398397	k6	-1.094817236
k3	1.064030566	k7	-0.1217901096

We shall use this closed form Cubic Equation Calculator using the Cardano and Vieta Method from the 16th Century:
Cubic Equation Calculator, Complex Miller vs Stavros
https://docs.google.com/spreadsheets/d/1uMvyENAnT4oyBCu4cyBPo7lcjfwzO6M5Clopgh2uPdo/edit?usp=sharing
https://docs.google.com/spreadsheets/d/1jvLhOzaaQUqmpt7XT201DoLsLiXr3vNAw-79_PBCOsw/edit?usp=sharing
Type y=0.03011967441 + 0.8193824172z - 0.9499398397z^2+ 1.064030566zx+ 0.2314017714x^2+ 1.006207413z^3- 1.094817236xz^2- 0.1217901096x^3 into this link https://c3d.libretexts.org/CalcPlot3D/index.html . Select "add to graph" and choose the " y = f(x,z) " function.









Preface Restoration Algorithm 0.1.3; Restoring the Sheriff Election

https://docs.google.com/spreadsheets/d/1GEUp7LV7zp22Jr4v19xFpn3lukG2ZEYIUm28-5gHBB8/edit?usp=sharing
2022, Sheriff Restoration, Clark County, Nevada

Since we know that the relative proportion of $A_1 : A_3$ is true and authentic to the original election results, across the precincts, then we know the expected proportion of Early to Election Day Ballots for all candidates, in all races. Thus, we know the expected proportion of B_1 to B_3, which is McMahill's Early to Election Day ratio, in each precinct, and C_1 to C_3, which is Robert's Early to Election Day ratio, in each precinct.

We shall call $\frac{A_{1,i}}{A_{1,i}+A_{3,i}} = m_{1,1,i}$ where i is the precinct number index.

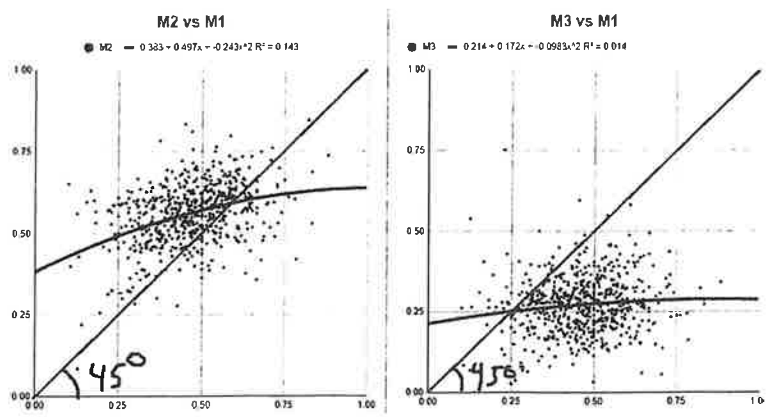
We shall call $\frac{B_{1,i}}{B_{1,i}+B_{3,i}} = m_{2,1,i}$ where i is the precinct number index.

We shall call $\frac{C_{1,i}}{C_{1,i}+C_{3,i}} = m_{3,1,i}$ where i is the precinct number index.

We now obtain the quadratic regression of $m_{2,1,i}$ and $m_{3,1,i}$ in respect to $m_{1,1,i}$.

In fair a election, the regression should be strong and strictly linear in the form of $m_3 = k_0 + k_1 m_1$, with $k_0 \approx 0$ and $k_1 \approx 1$, and a small residual spread; however, the cubic manifold's manipulation of the vote totals turned this into a curved quadratic relationship, with a massive residual spread.

For Clark County $\overline{m_{2,1,i}} = 0.383 + 0.497 m_{1,1,i} - 0.243 \left(m_{1,1,i}\right)^2$; $\overline{m_{3,1,i}} = 0.214 + 0.172 m_{1,1,i} - 0.0983 \left(m_{1,1,i}\right)^2$



We now write the 3D parametric line that passes through the cloud of precincts when m_1, m_2 and m_3 are plotted in 3D space, and record the residual values of m_2 and m_3.

$$u_{0,i} = t; \quad v_{0,i} = 0.383 + 0.497t - 0.243t^2; \quad w_{0,i} = 0.214 + 0.172t - 0.0983t^2$$

We first subtract the intercepts from all $v_{0,i}$ and $w_{0,i}$ with the following vector difference:

$\forall i$: $\left(u_{0,i}, v_{1,i}, w_{1,i}\right) = \left(u_{0,i}, v_{0,i}, w_{0,i}\right) - (0, 0.383, 0.214)$

We now rotate each $u_{0,i}, v_{1,i}, w_{1,i}$ coordinate on this 3D quadratic line to the straight line diagonal of $u = v = w$, while preserving the magnitude of the rotated coordinate.

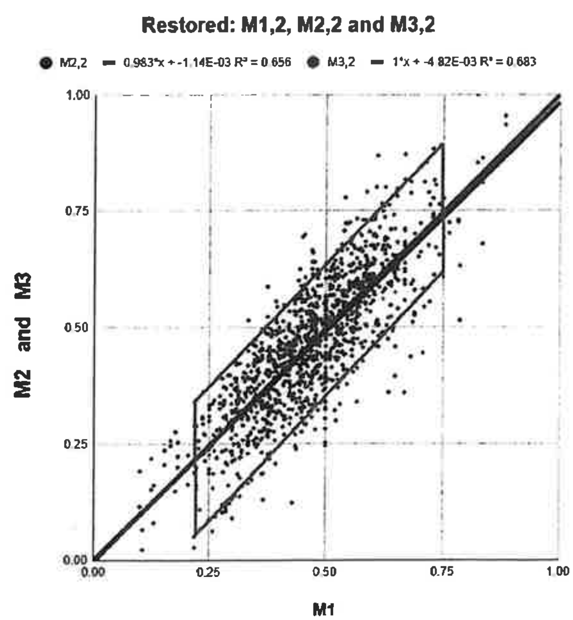
To do this we set $\theta_{1,i} = Arctan\frac{v_{1,i}}{u_{0,i}}$ and then set $\theta_{2,i} = \frac{\pi}{4} - \theta_{1,i}$, and execute a rotation matrix on $u_{0,i}, v_{1,i}, w_{1,i}$ that first rotates $u_{0,i}, v_{1,i}$ by $\theta_{2,i}$, which produces the coordinate $u_{1,i}, v_{2,i}, w_{1,i}$, such that $u = v$.

Now set $\phi_{1,i} = Arctan\frac{w_{1,i}}{u_{1,i}}$ and $\phi_{2,i} = \frac{\pi}{4} - \phi_{1,i}$ and then rotate $u_{1,i}, w_{1,i}$ by $\phi_{2,i}$ to yield $u_{2,i}, w_{2,i}$, and then set $v_{2,i} = u_{2,i}$, such that $u = v = w$; producing the coordinate $u_{2,i}, v_{2,i}, w_{2,i}$.

We now find the residual values of $m_{2,1,i}$ and $m_{3,1,i}$ from their expected values in the earlier quadratic regressions. Let these be $r_{2,1,i}$ and $r_{3,1,i}$ respectively. We now find the standard deviation of these residuals, let this be σ_2 and σ_3.

We now multiply all $r_{2,1,i}$ by $\frac{5\%}{\sigma_2}$, and all $r_{3,1,i}$ by $\frac{5\%}{\sigma_3}$ if either σ_2 and/or σ_3 are greater than 5%. This restores the residual spread to the rarely achieved maximum spread of 5% (standard deviation) found in historical data. Remember, that within two sigma, this is a plus or minus 10% residual spread, a range of 20% overall (hence a 5% standard deviation is actually larger than you think!). Let the rescaled residuals be $r_{2,2,i}$ and $r_{3,2,i}$ respectively.

We now add the vectors $u_{2,i}, v_{2,i}, w_{2,i}$ and $0, r_{2,2,i}, r_{3,2,i}$ to produce the Intercessor Precinct Cloud, this vector shall be the coordinates $u_{3,i}, v_{3,i}, w_{3,i}$. Finally, we locally rescale each vector $u_{3,i}, v_{3,i}, w_{3,i}$ by $\frac{m_{1,1,i}}{u_{3,i}}$, and reset any values in any component below 0% or above 100% to 0% and 100% respectively. Notice that the locally rescaled values fall inside a parallelogram as expected in a fair election.

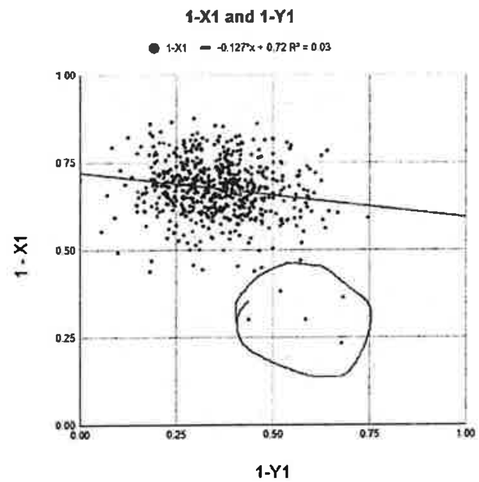


Thankfully, the next two steps are both done in two dimensions.

We now define $\left(1 - x_{1,i}\right) = \frac{\left(C_{1,i}+C_{3,i}\right)}{\left(A_{1,i}+A_{3,i}\right)+\left(C_{1,i}+C_{3,i}\right)}$, this percentage of Early and Election Day ballots cast for both Hyt and Roberts that belong to Roberts.

We also define $\left(1 - y_{1,i}\right) = \frac{C_{2,i}}{A_{2,i}+C_{2,i}}$, this percentage of Mail-in ballots cast for both Hyt and Roberts that belong to Roberts.

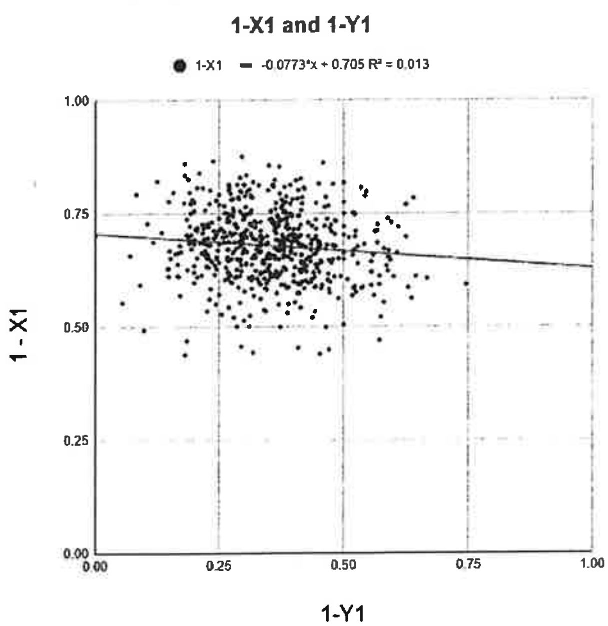
We now plot $\left(1 - y_{1,i}\right)$ horizontally and $\left(1 - x_{1,i}\right)$ vertically. Using our own eyeballs, we can tell that the five precincts in the maroon circled region, having the property $\left(1 - x_{1,i}\right)$ <40% are severe outliers and shall be excluded from the linear regression (as they are currently having a deep and undesirable impact on that linear regression).



When these precincts are removed, the steps on the previous page must also be recalculated. Since you should be doing this in Excel, the update to those previous calculations should be automatic upon their removal, starting with the quadratic regressions:

Update: For Clark County $\overline{m_{2,1,i}} = 0.442 + 0.264m_{1,1,i} - 0.0229\left(m_{1,1,i}\right)^2$; $\overline{m_{3,1,i}} = 0.219 + 0.143m_{1,1,i} - 0.0646\left(m_{1,1,i}\right)^2$.

With these precincts removed, we obtain the linear regression $\overline{1 - x_{1,i}} = 0.705 - 0.0773\left(1 - y_{1,i}\right)$. We now subtract 0.701 from all $(1 - x)$ values, and define $\varpi = ARCTAN(-0.07737) =- 3.017degrees =- 0.077146radians$



Normally, we would subtract the intercept of 0.701 from all of the precincts, and then rotate the precinct data by 48.017 degrees back to the line of $(1 - x_1) = (1 - y_1) \Rightarrow (x = y)$. However, this particular Sheriff's election is so botched and so warped, that there is no correlation between the election day, mail-in and early vote percentages, between any two candidates, or any combination of two candidates against the remaining third candidate.

This is not our fault. We did not alter this election, we did not administer an illicit pair of cubic manifolds to hijack the proportions between the ballots cast across Clark County.

Since there are no longer any naturally existing correlations between the candidate's election day, mail-in, and early vote percentages across the precincts, we cannot restore this election using the conventional method of translation and rotation on percentages of ballots cast. Quite simply, there is no axis, linear or polynomial, that can pass through a circular scatter plot, with any substantial degree of correlation.

This leaves us with only one choice, the **Nuclear Option**: Turnout-Aggregate Restoration.

In a fair election, a candidate's performance is strictly linear with the percentage of registered voters that turnout. If a candidate, Kathy, receives a mean of 40% of the casted ballots across the precincts, then, regardless of the standard deviation of the candidate's performance, the regression of the percentage of registered voters who voted for Kathy, against the percentage of voters that turned out for all candidates, shall be in the form of: $\Psi_k = 0.4\Psi_t$, where $\Psi_k = \frac{Kathy's\ Vote}{Registered}$, $\Psi_T = \frac{Total\ Ballots\ Cast}{Registered.}$.

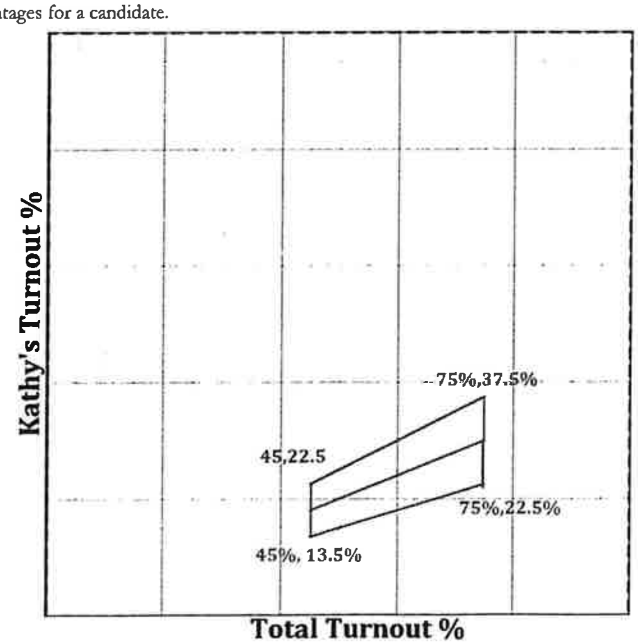
In the below diagram, Kathy receives 40% of all ballots cast, with a standard deviation of 5%, and the overall turnout across the precincts has a mean of 60%, with a standard deviation of 7.5%.

As a result, the precincts shall exist within a strict trapezoidal boundary. The horizontal boundaries are from 45% to 75%, which is two standard deviations from 60%. With Kathy receiving 40% of ballots cast, with a standard deviation of 5%, then Kathy shall always receive between 30% and 50% of all ballots cast.

We now multiply both horizontal boundaries by 30% and 50%, producing the four vertices of the trapezoid that bounds the precinct data, that is, the precinct data exists in the region $0.3x \leq y \leq 0.5x;\ 0.45 \leq x \leq 0.75$, which is the equation of an obtuse trapezoid, with the line $y = 0.4x$ being both the only and the natural regression of this data.

In this scenario, the R^2 value of this regression does not measure the accuracy of the regression, but the standard deviation of Kathy's turnout performance. The lesser the variance, the faster the R^2 value converges to 1; the greater the variance, the faster the R^2 value converges to zero.

This allows us to obtain the linear regression of any such set of data by simply knowing the mean and standard deviations of total turnout and ballots cast percentages for a candidate.



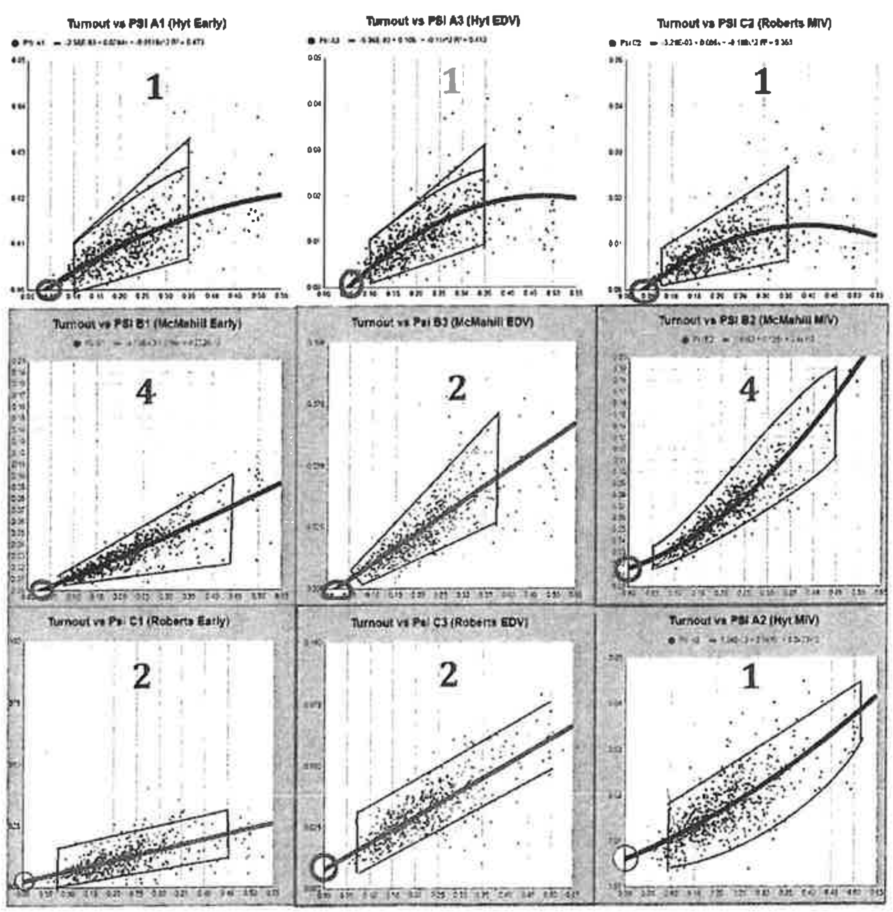
In the graphs below you can see the relationship between total precinct turnout (from 0% to 55% of registered voters) on the horizontal axis against the percentage of registered voters that turned out to vote for each candidate in each mode. The large green numbers, 1,2 and 4, tell you the relative scale of the$y - axis$. The number 1 implies that the y-axis extends from 0% to 5%, the number two implies from 0% to 10%, and the number 4 implies 0% to 20%.

The first three graphs on the top row are the natural inputs A_1, A_3, C_2, that is, Hyt's Early Vote, Hyt's Election Day Vote and Robert's Mail-in Vote, reduced to the percentage of registered voters that turned out to vote in those categories. Notice that is quite easy to draw their bounding trapezoids by hand before the quadratic concavity overtakes them.

In the three graphs highlighted and bordered in yellow, we see the turnouts of B_1, B_3, C_1, which are the illegal outputs of the first cubi manifold. Notice that the quadratic regressions of B_1 and B_3 against the total precinct turnout have a negative intercept, while the intercept of C_1 is positive. Also, observe that all of the intercepts of our natural inputs are negative. This informs us that the Neural Network was increasing the Ω_1 operators across the precincts, which increases C_1 with intensity, drawing from B_3 and the combined sum of A_1, A_3, C_2, while raising the α_1 operators to lessen the draw from B_3.

In the final graphs highlighted and bordered in gray, we see the turnouts of the final three illegal outputs, A_2, B_2, C_2. The first thing we observe is that both A_2 and B_2 are concave up, this informs us that the Neural Network heavily increased the Ω_2 operators across the precincts, since both A_2 and B_2 are on the North Side and Ω is the North Side Horizontal Aggregate Percentage. We also see that the graph of C_3 has non-negligible positive intercept, but also lacks concavity, this tells us that the α_2 operators were decreased across the precincts, causing g to decrease, which means that C_3 will increase, since both B_2 and C_3 are on the west side; however, the increase in the Ω_2 operators must have been substantially greater than the decrease in the α_2 operators, and thus the southwest quarter, which is $u_2 = B_1 + B_3$, is what suffered the greatest relative loss, and hence the negative intercept of B_1 in the yellow graphs, since the draw into C_3 came primarily from $B_1 + B_3$.

Let us now briefly observe the comedy of these graphs, it says that Roberts Mail-in vote is always around one-third his Election Day Vote; however, McMahill gets three times as many Mail-in Votes as he does Election Day Votes, that is a ninefold ratio difference!



Our next step is restore C_1, which is Roberts's Early Vote.

The reason we first restore C_1 is because it the output of the first cubic manifold, and since we know that Roberts received a legitimate Mail-in vote (relative to A_1 and A_3), we know that there are indeed people who support Roberts. Since C_1 is the output of the first cubic manifold, it is also the least distorted of the illegal outputs.

Remember that the vote totals in the second cubic manifold are scaled against the sum of the illegal outputs $u_2 = B_1 + B_3$, and that the proportion of this sum to $t_1 = C_1$ and $v_1 = A_1 + A_3 + C_2$ in the first cubic manifold is the aggregate percentage α_1, where $\frac{(A_1+A_3+C_2)+C_1}{B_1+B_3} = \frac{1-\alpha_1}{\alpha_1}$.

Thus, since the outputs of the second cubic manifold, A_2, B_2, C_3, which are scaled against u_2, and u_2 is scaled against $t_1 + v_1$, means, that by definition, A_2, B_2, C_3 are also scaled against $t_1 + v_1$. Hence, we start with C_1, since this value is only rescaled once in the first cubic manifold, and was also the least important output of the Neural Network (since the Neural Network set g_1 instead of $(1 - h_1)$ as the output of the cubic manifold, where $g_1 = \frac{s_1}{s_1+v_1}$; $(1 - h_1) = \frac{t_1}{u_1+t_1}$).

To begin the restoration of C_1 we use the same intercept and concavity of the quadratic for C_2, whilst retaining the linear constant of C_1

The quadratic regressions of the turnout percentage of Roberts' Mail-in Vote and Early vs the Total Turnout Percentage is:

$$w_1 = \overline{\Psi[C_2]} = k_0 + k_1\Psi[T] + k_2(\Psi[T])^2$$
$$w_2 = \overline{\Psi[C_1]} = z_0 + z_1\Psi[T] + z_2(\Psi[T])^2.$$

For the second equation we simply replace z_0 with k_0 and z_2 with k_2, and retain z_1.

$$w_3 = \overline{\Psi[C_1]} = c_0 + z_1\Psi[T] + c_2(\Psi[T])^2.$$

We then find the residuals of $\Psi[C_1]$ from w_2, and the standard deviation of those residuals. We then find the standard deviation of the residuals of $\Psi[C_2]$ from w_1, and then find the proportion of the standard deviations, and then rescale the $\Psi[C_1]$ residuals to in respect to the proportion of those standard deviations.

Finally, we add those rescaled residuals to w_3 and have, to the best our ability, in lieu of the **Nuclear Option**, restored the turnout percentage of C_1. We now reset the actual integer values of C_1 against the integer values of the Registered Voters multiplied by the restored turnout percentages, and resolve the decimals values of the restored C_1 integers using the standard rules of rounding. Any negative integer returns are simply set to zero.

With C_1 restored, we can immediately restore C_3 from the $(m_{1,2,i}, m_{2,2,i}, m_{3,2,i})$ vectors. Recall that $m_{3,2,i} = \frac{C_{1,i}}{C_{1,i}+C_{3,i}}$, which is the restored proportion of C_1 to C_3 across the precincts, thus:

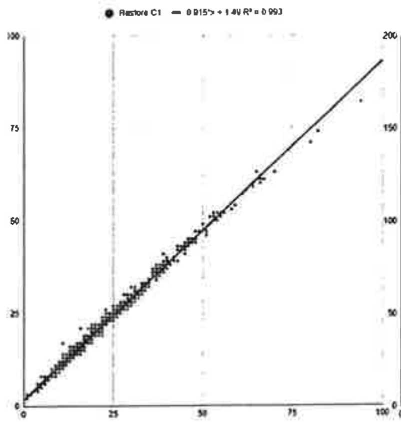
$$\left[\frac{C_3}{C_1} = \frac{1-m_{3,2,i}}{m_{3,2,i}}\right] \Rightarrow \left[m_{3,2,i}C_3 = C_1(1 - m_{3,2,i})\right] \Rightarrow \left[C_3 = \frac{C_1(1-m_{3,2,i})}{m_{3,2,i}}\right]$$

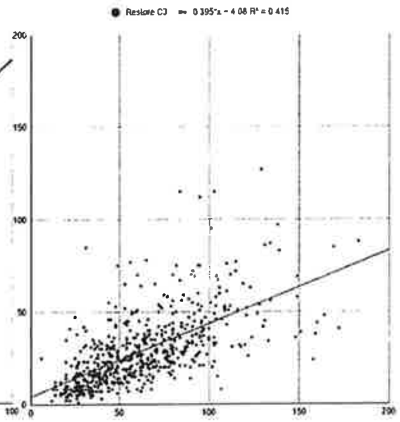
With knowledge of the relative values of A_1, A_3, C_1, C_2, C_3, we can now restore A_2.

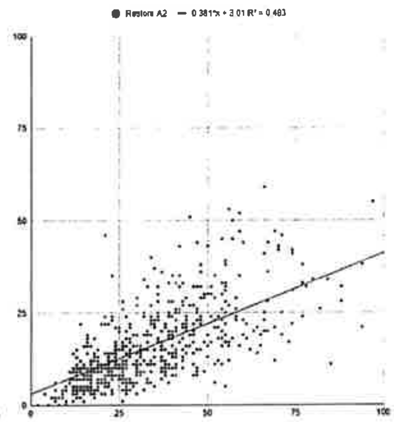
Let $n_{3,0,i} = \frac{C_2}{C_2+(C_1+C_3)}$, then we know the percentage of Mail-in Votes to Early and Election Day Votes for all candidates, in all races, across the precincts. In the same manner that we calculated the restoration vectors $(m_{1,2,i}, m_{2,2,i}, m_{3,2,i})$, we shall then do so for the n vectors, yielding $(n_{1,2,i}, n_{2,2,i}, n_{3,2,i})$. We now apply $n_{1,2,i} = \frac{A_2}{A_2+(A_1+A_3)}$ against A_1, A_3 to yield A_2; $\left[A_2 = \frac{(A_1+A_3)(n_{1,2,i})}{(1-n_{1,2,i})}\right]$

As expected, the C_1 values were the least disturbed. Robert's only received an 11% boost to his Early Vote Performance across the precincts from the first cubic manifold. The below graphs are the county recorder values of C_1, C_3, A_2 (horizontal axes, from left to right) against their restored values.

It shows that Robert's Election Day Votes and Hyt's Mail-in Votes were more than doubled from what they should have been. This is not surprising since both C_3 and A_2 are the outputs of second cubic manifold, which were leveraged against the the first cubic manifold, whose natural inputs were $v_1 = C_2, A_1, A_3$. The county-wide increasing both Ω_1 and Ω_2 in manifolds would convert into a massive spike of A_2 and C_3 ballots.



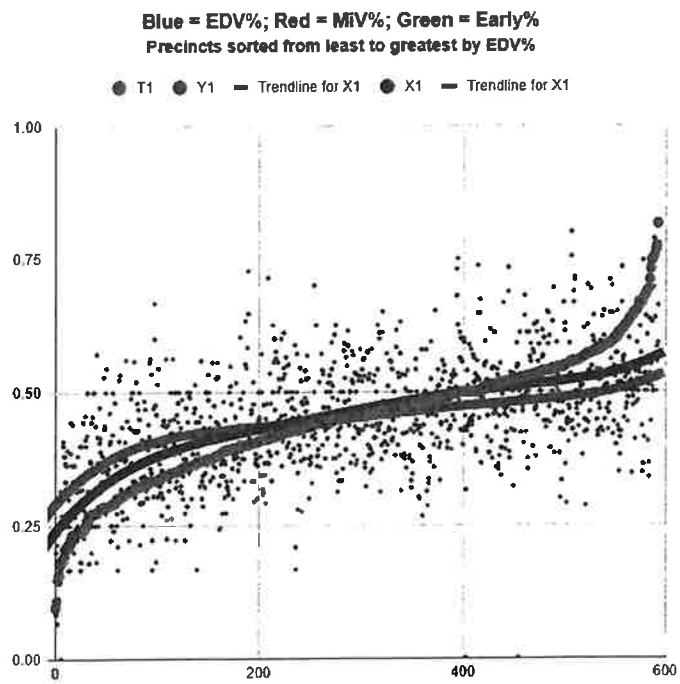




Amongst only Hyt and Roberts, with all of their vote totals restored, we can now project the true winner: Roberts won.

We can also see that the Election Day Percentage, Mail-in Percentage and Early Percentage, between only Hyt and Roberts are now strongly correlated in the below quantile plot, where the precincts were sorted from least to greatest by Hyt's Election Day Percent.

That is, the precincts now obey the expectation that Hyt's mode percentages are to be roughly equal to one another at any particular precinct, and we didn't even have to act on those percentages directly to achieve this. Amazing right!



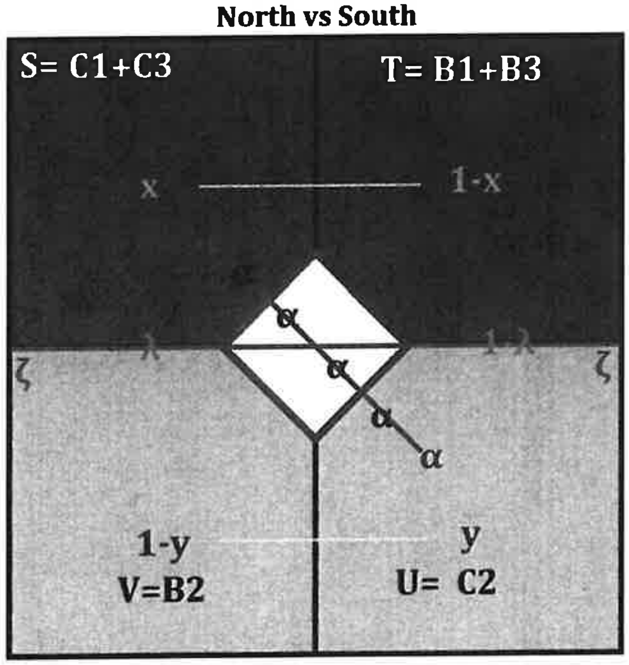
Of course, we still have the problem of restoringB_1, B_2. B_3. We must first recognize that all of McMahill's vote totals were outputs in both of the manifolds.

Thus, it is possible that McMahill did not receive a significant share of the votes in any precinct. If this is the case, then there will still be no correlations between the Election Day, Mail-in and Early Vote percentages of McMahill against the restored values of Hyt and Roberts. Simulations of altered elections, making Jo Jorgenson win the 2020 Election in Peoria (IL), Maricopa, Atlanta and Clark and Washoe Counties, revealed that if a truly insignificant candidate is compelled to victory via Manifolds (the simulations used simple plane functions, instead of cubics), that there will no correlation at all between Jorgenson's Election Day, Early and Mail-in Percentages across the precincts.

However, if McMahill was a significant candidate, then the restored values of Hyt and Roberts should reveal a tangible correlation between the Election Day, Mail-in and Early percentages that we can translate and rotate back to 45 degrees to obtain McMahill's true performance. We shall examine the relationship between McMahill and Roberts.

Let $s_{1,i} = C_{1,i} + C_{3,i}$, where $C_{1,i}$ and $C_{3,i}$ are the restored values.
Let $t_{1,i} = B_{1,i} + B_{3,i}$.
Let $u_{1,i} = C_{2,i}$
Let $v_{1,i} = B_{2,i}$
Let $w_{1,i} = \left(1 - x_{1,i}\right) = \frac{t}{s+t}$, be McMahill's intercessory combined Early and Election Day percentage.
Let $z_{1,i} = \left(1 - y_{1,i}\right) = \frac{v}{u+v}$, be McMahill's intercessory combined Mail-in percentage.

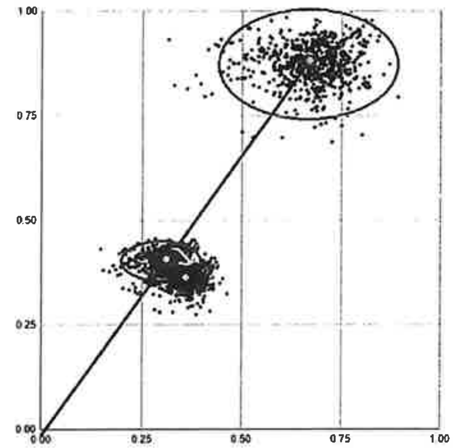
North vs South



We now graph $(1 - x)\ vs\ (1 - y)$ across the precincts. Since the relative value of A_2 was increased by a factor of 2.1429, the relative value of C_3 was increased by a factor of 2.1726, we assume that McMahill's vote relative vote totals were also increased by the same factor, since all of his votes were illegal outputs from the cubic manifolds (that is, not a single one of his vote totals were authentic).

We take the average of those two factors aforementioned, 2.1578, and take the vector from the origin to the midpoint of the precinct cloud in the $(1 - x)\ vs\ (1 - y)$ graph, and divide that vector by 2.1578, and all of the distances of each precinct from that centroid by 2.1578, we do this because each precincts x, y value is acting as a complex number (thus the centroid distances were more than doubled).

We then rotate the centroid to the $x = y$ line, while preserving the precinct offsets (both direction and magnitude) from the rotated center.



To do the above set $\bar{w}$ to average all of w_i and $\bar{z}_i$ to the average of all z_i.

We now set the vector $(w_{2,i}, z_{2,i}) = (w_{1,i}, z_{1,i}) - (\bar{w}, \bar{z})$ for all precincts, the vectors $(w_{2,i}, z_{2,i})$ are the precinct offsets from the center.

Set $\theta = ARCTAN\frac{\bar{z}}{\bar{w}}$, and set $\phi = \frac{\pi}{4} - \theta$.

Now set $(w_{3,i}, z_{3,i}) = \left(\frac{w_{2,i}}{2.1578}, \frac{z_{2,i}}{2.1578}\right) + \left(\frac{\bar{w}cos\phi - \bar{z}sin\phi}{2.1578}, \frac{\bar{w}sin\phi + \bar{z}cos\phi}{2.1578}\right)$. These are the restored percentages.

Set $t_{2,i} = w_{3,i}(s_{1,i} + t_{1,i})$
Set $v_{2,i} = z_{3,i}(u_{1,i} + v_{1,i})$
Set $s_{2,i} = (s_{1,i} + t_{1,i}) - t_{2,i}$
Set $u_{2,i} = (u_{1,i} + v_{1,i}) - v_{2,i}$

Set $\beta_{1,i} = \frac{s_{1,i}}{s_{2,i}}$, this is the North Side S scale; set $\beta_{2,i} = \frac{u_{1,i}}{u_{2,i}}$, this is the South Side U scale.

Set $s_{3,i} = \beta_{1,i}(s_{2,i})$; set $t_{3,i} = \beta_{1,i}(t_{2,i})$, rounding $t_{3,i}$ to the nearest integer, using the standard rules of rounding.
Set $u_{3,i} = \beta_{2,i}(u_{2,i})$; set $v_{3,i} = \beta_{2,i}(v_{2,i})$, rounding $v_{3,i}$ to the nearest integer, using the standard rules of rounding.

The value of $v_{3,i}$ is the restored value of B_2, which is McMahill's Mail-in Vote.

We now split $t_{3,i} = B_1 + B_3$ via (remember that crazy thing at the start of this process, about the ratio of A_1 and A_3 !!!)

$$\left[\frac{B_1}{B_1+B_3} = m_{2,2,i}\right] \Rightarrow \left[B_1 = m_{2,2,i}(t_{3,i})\right] \Rightarrow \left[B_3 = (1 - m_{2,2,i})(t_{3,i})\right]$$

And we're done...almost. Just one more step!

The Neural Network will undoubtedly have learned over the course of its self-training trials to preserve the original number of total ballots cast in each race down the ballot, while ensuring that the new Mail-in, Election Day and Early Vote totals match each other down the ballot as well.

The choice to increase or decrease $\alpha_1, \Omega_1, \alpha_2, or\ \Omega_2$ within either of the Sheriff's Cubic Manifolds is therefore not made in isolation concerning the Sheriff's race, but rather it is an intense balancing act of producing all of the selected winners down the entire ballot, while making the Mail-in, Early and Election Day totals match in each race in each precinct, while also preserving the total number of ballots that were cast to minimize the creation and destruction of ballots.

The most obvious solution to this problem would be to rescale all the relative totals in each precinct until their sum matched the original sum of all ballots cast. It is impossible to believe that the Neural Network would have found any other way to accomplish this.

Also remember that the Neural Network is not obliged (nor would conclude in self-training) that it must preserve the relative values of A_1 to A_3 to C_2 between precincts. It only needs to preserve those proportions within a precinct itself, not between precincts. With all of the above in mind, this why there is almost zero correlation between the candidates Election Day, Mail-in and Early Percentages, because this localized min-maxing of $a_1, \Omega_1, \alpha_2, \Omega_2$ is done within a precinct, not between them (with the only exception being that net sum of votes across the county produces the intended winner, the primary objective of the Neural Network).

Undoubtedly, the Neural Network will place higher emphasis on matching the number of Mail-in, Election Day and Early ballots, since a human would have instructed it to place a higher emphasis on this mission, as it would seem strange if there was ten times as many Mail-in ballots for the Sheriff's race than the Governor's Primary across the precincts.

However, it would also seem just as strange if total voter turnout for the Sheriff's race was also tens higher than the Governor's primary, hence the Neural Network will also strive to preserve the original number of ballots cast in each race.

We now perform the final step of the Sheriff Restoration:

Let $\Upsilon_{1,i}$ the sum of the County Recorder values of $A_1, A_2, A_3, B_1, B_2, B_3, C_1, C_2, C_3$ in each precinct.

Let $\Upsilon_{2,i}$ the sum of the County Recorder values of A_1, A_3, C_2 and the restored values of $A_2, B_1, B_2, B_3, C_1, C_3$ in each precinct.

Let $\Lambda_i = \dfrac{\Upsilon_{1,i}}{\Upsilon_{2,i}}$.

In each precinct, multiply County Recorder values of A_1, A_3, C_2 and the restored values of $A_2, B_1, B_2, B_3, C_1, C_3$ by Λ_i. Then round these values to the nearest integer, using the standard rules of rounding.

We have now restored the Sheriff's 2022 Election in Clark County, Nevada, and Roberts is the rightful winner.

Results	Original Totals	Restored Totals
A1	11627	30715
A2	20748	25064
A3	13275	33776
B1	37509	20701
B2	82460	15887
B3	28967	23933
C1	13901	35478
C2	11290	28463
C3	36953	42733
Candidates	Original	Restored
Hyt	45650	89555
McMahill	148936	60521
Roberts	62144	106674
Mode	Original	Restored
Early	63037	86894
MiV	114498	69414
EDV	79195	100442

Preface Equation 0.2.1; The Trivariate Real Number Cubic Turnout Manifold, US Senate

Let Candidate A be Sam Brown; let Candidate B be Cortez; let Candidate C be Laxalt.
Let A_1, A_2, A_3 be Brown's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let B_1, B_2, B_3 be Cortez's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let C_1, C_2, C_3 be Laxalt's Early Vote, Mail-in Vote and Election Day Vote respectively.

Let $s_1 = A_1$
Let $t_1 = \left(B_1 + B_3\right)$
Let $u_1 = A_3$
Let $v_1 = \left(C_1 + C_3\right)$; this is the input square.
Let R be the number of registered voters at the precinct.

$$m_1 = \frac{s_1}{s_1+u_1}, n_1 = \frac{t_1}{t_1+v_1}, \alpha_1 = \frac{s_1+u_1}{\left(s_1+u_1\right)+\left(t_1+v_1\right)}, \Omega_1 = \frac{s_1+t_1}{\left(s_1+t_1\right)+\left(u_1+v_1\right)}, \lambda_1 = \frac{s_1+v_1}{\left(s_1+v_1\right)+\left(u_1+v_1\right)}$$

$$\xi_1 = \frac{t_1+v_1}{s_1+u_1} = \frac{1-\alpha_1}{\alpha_1}, \qquad w_1 = \left(1 - n_1\right) = \frac{v_1}{t_1+v_1}; \quad \Psi = \frac{s_2+u_2}{R}$$

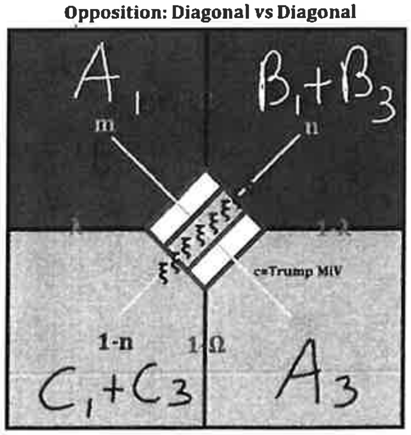
In a fair election:

$$n = \Omega + \xi(\Omega - m) = \frac{\Omega-\alpha m}{1-\alpha} = \frac{(\xi+1)(\Omega-\lambda)+\xi}{2\xi}; \quad w = \lambda + \xi(\lambda - m) = \frac{(\xi+1)(\lambda-\Omega)+\xi}{2\xi}$$

In the above sequence of equalities, three of the five proportions must always be known to resolven_1, however, in Clark County we obtain the illegal cubic manifold equations that yields n_1 with Ω_1 and λ_1 without either α_1 nor m_1.

Even more outrageous is that the R^2 of this function is rather low, until a third parameter, Ψ, is added. Taking an R^2 of bivariate plane and quadratic ofΩ_1 and λ_1 unto n_1 from below 0.99, all the way to 0.998. To ensure there wasn't a trivial correlation with Ψ, artificially increasing the R^2 value, the number of registered voters was randomized across the precincts in tens of millions of simulations, without changing the number of ballots cast, and there was no significant increase in R^2 in any of these trials. Thus, this formula works with, and only with, the precise number of registered voters present in each Clark County precinct.

Opposition: Diagonal vs Diagonal



The trivarite cubic equation will have $w_1 = 1 - n_1$ isolated on the right-hand side. In the diagram on the previous page, w_1 is the Light Blue Diagonal Percentage, that is the percentage share of ballots that belong to v_1 amongst t_1 and v_1, $w_1 = \frac{v_1}{t_1+v_1}$, in other words, this is the share of Early and Election Day ballots that Laxalt shall receive against the number of Early and Election Day ballots of both Laxalt and Cortez.

As to how we discern between whether or not t_1 or v_1 was the input square, is to compare the ratios of $C_1 : C_3$ and $B_1 : B_3$ to Hyt's $A_1 : A_3$ ratio in the Sheriff's race. From this we learn that the histogram and quantile plots of $C_1 : C_3$ have an identical match to Hyt's results in the Sheriff's race, while the histogram and quantile plots Cortez's $B_1 : B_3$ ratios are alien, furthermore that there is zero correlation between Cortez's $B_1 : B_3$ ratios and either Hyt's $A_1 : A_3$ or Laxalts $C_1 : C_3$ ratios (also recall that Hyt's $A_1 : A_3$ ratio was authentic, since Hyt's A_1, A_3 were logically compelled to be the only authentically input source).

As to the presence of the Ψ parameter, it informs us that this Equation determines the voter turnout in each precinct, to which all other races down the ballot shall be attuned to (**whereas the Sheriff's race established the proportion of Early to Mail-in to Election Day ballots cast in each precinct, the Senate Race establishes the proportion of Democrat to Republican Ballots in the partisan primaries and the precinct turnout in all primaries, both partisan and non-partisan**).

Once the w_1 proportion is illegally resolved from the cubic surface of Ω_1, λ_1 *and* Ψ, both m_1 and α_1 are compelled into existence, since in any election, fair or unfair:

$$w = \frac{(\xi+1)(\lambda-\Omega)+\xi}{2\xi} \Rightarrow \xi = \frac{\Omega-\lambda}{(\lambda-\Omega+1-2w)}; \quad m = \lambda + \xi(\lambda - w); \quad w = 1 - n = \frac{v}{t+v}$$

Since the proportions, w_1, Ω_1, λ_1 are known, it compels the value of ξ_1, which is proportion of Blue Diagonal to Red Diagonal Ballots, that is $\xi_1 = \frac{t_1+v_1}{s_1+u_1}$, is now forced, and since $\alpha_1 = \frac{1}{1+\xi_1}$, then Brown's aggregate percentage share of the ballots in this ballot set is also compelled (Brown is the algorithmically intended loser).

Since ξ_1, w_1, λ_1 are known, it forces the value of m_1, which is the percentage of s_1 ballots amongst s_1 and u_1 and tells us proportion of s_1 to u_1 ballots via the identity: $\frac{s_1}{u_1} = \frac{m_2}{1-m_2}$. Since the value of t_1 is known (the input square), the values of s_2, u_2 and v_2 are also known, as the pairwise proportions betwixt them have all been forced.

The illegal trivariate cubic equation is as follows, with an $R^2 = 0.998666$ (video on next is the 4D surface that the Clark County precincts rest upon when their Ω, λ, w values are plotted in x, y, z space respectively, with Ψ acting as the fourth dimension) The residual values have a left-tailed Poisson distribution , and the residual errors come from, and only from, whether or not they rounded the illegally calculated vote totals up or down to the nearest integer.

$$w = \sum_{k=0}^{k=3}\left(\sum_{j=0}^{j=k}\left(\sum_{t=0}^{t=k-j}\left(\left(z_{k,j,((k-j)-t)}\right)\left(\Psi^{(k-j)-t}\right)\left(\Omega^{t}\right)\left(\lambda^{j}\right)\right)\right)\right); \quad z_{k,j,t} \in \mathbb{R}$$

$z_{0,0,0}$	$z_{1,0,0}$	$z_{1,0,1}$	$z_{1,1,0}$
-1.13741914767888	-0.603407714515924	2.33501596981659	7.38865441852249

$z_{2,0,0}$	$z_{2,0,1}$	$z_{2,0,2}$	$z_{2,1,0}$	$z_{2,1,1}$	$z_{2,2,0}$
69.9462999161332	-14.6467141937464	-0.917356759338873	12.0015396345406	-9.16489580692723	-9.01806410681456

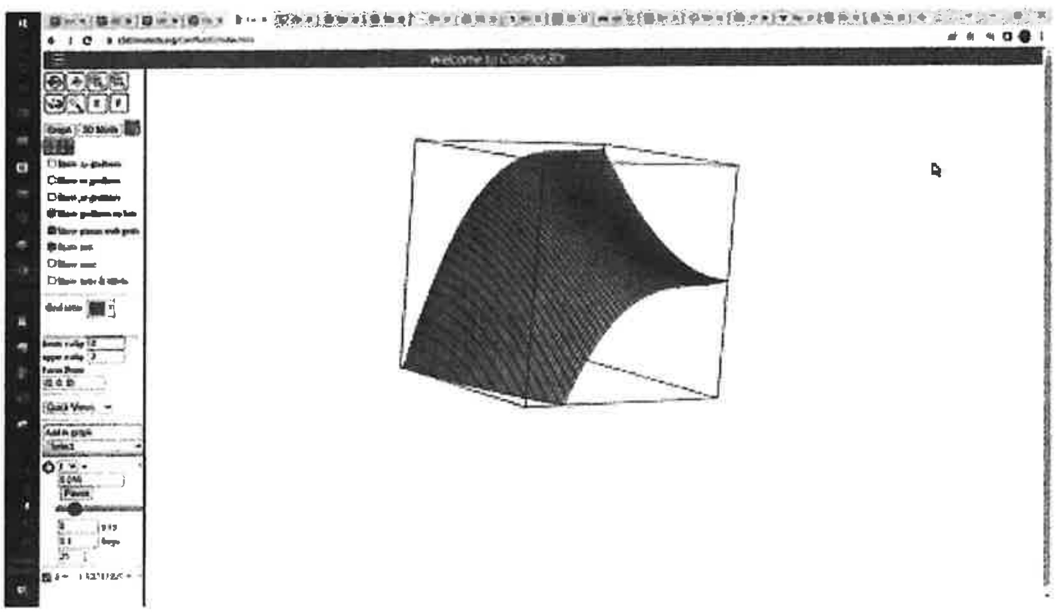
$z_{3,0,0}$	$z_{3,0,1}$	$z_{3,0,2}$	$z_{3,0,3}$
288.161113813985	-24.8740476649254	6.07211023080162	-0.269537406940344

$z_{3,1,0}$	$z_{3,1,1}$	$z_{3,1,2}$	$z_{3,2,0}$	$z_{3,2,1}$	$z_{3,3,0}$
-148.440286412835	8.10273581556975	2.25169584417017	-5.55677292495965	6.71125826193019	3.71284521219786

Since the average reader of this article shall not be aware of the implications of a trivariate cubic manifold input, with a single output, it means that there is a continuous smooth four-dimensional surface upon which the precincts sit.

The fourth dimension of this manifold is the percentage of registered voters that cast their early or election day ballots for Brown. As this percentage increases from 00.00% to 15.00%, the 3D surface of Ω, λ, w (the x,y,z axes) upon which the precincts lay changes smoothly, without any erratic discontinuities or massive accelerations.

As to whether or not a 19 vector regression is justified, bear in mind that 16 of those vectors are products and powers of only three input vectors, and that attempting a lower degree (linear and quadratic with $k = 1 \text{ or } 2$), yielded residuals with a distinct and pronounced cubic curvature, this would be like asking me to fit a straight line to approximate the shape of a hockey stick.

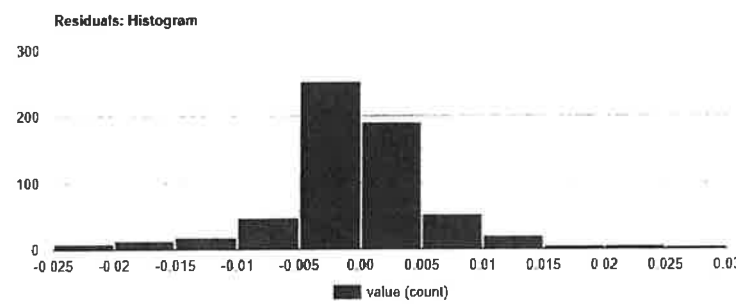


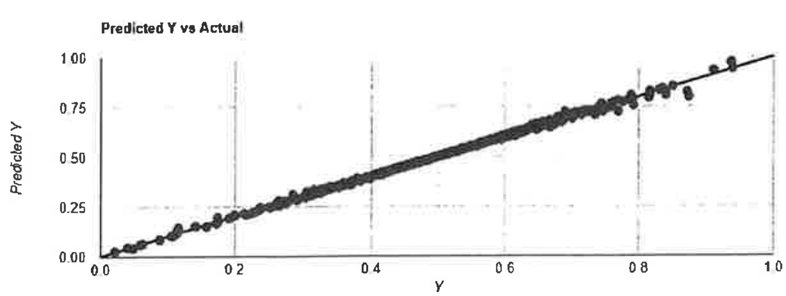
1. Y and X relationship

R square (R^2) equals **0.9973342946.** It means that the predictors (X_i) explain 99.7% of the variance of Y.

Adjusted R square equals **0.9972466676.**

The coefficient of multiple correlation (R) equals **0.9986662579.** It means that there is a very strong correlation between the predicted data (ŷ) and the observed data (y).





Preface Equation 0.2.2; The Bivariate Real Number Quadratic Manifold, US Senate

Let Candidate A be Sam Brown; let Candidate B be Cortez; let Candidate C be Laxalt.
Let A_1, A_2, A_3 be Brown's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let B_1, B_2, B_3 be Cortez's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let C_1, C_2, C_3 be Laxalt's Early Vote, Mail-in Vote and Election Day Vote respectively.

Let $s_1 = B_2$
Let $t_1 = C_2$
Let $u_1 = B_1 + B_3$; this is the input. B_1 and B_3 were illegally determined in the prior equation.
Let $v_1 = (A_1 + A_3 + C_1 + C_3) + A_2$; Direct subtraction from v_1 shall yield A_2 as an output.

$$g_1 = \frac{s_1}{s_1+v_1},\ h_1 = \frac{u_1}{u_1+t_1},\ \alpha_1 = \frac{s_1+u_1}{(s_1+u_1)+(t_1+v_1)},\ \Omega_1 = \frac{s_1+t_1}{(s_1+t_1)+(u_1+v_1)},\ \lambda_1 = \frac{s_1+v_1}{(s_1+v_1)+(u_1+v_1)}$$

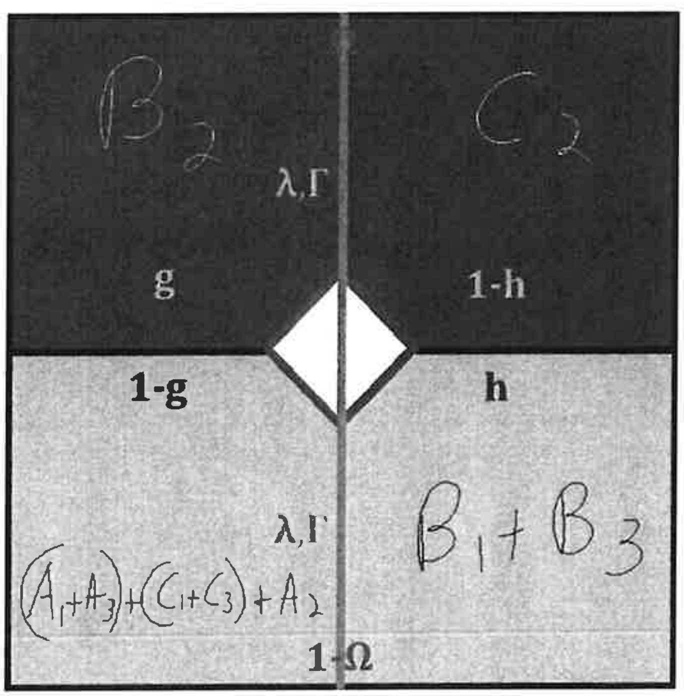
$$\Gamma_1 = \frac{u_1+t_1}{s_1+v_1} = \frac{1-\lambda_1}{\lambda_1},\qquad w_1 = (1 - h_1) = \frac{t_1}{u_1+t_1}$$

In a fair election:

$$g = \alpha + \Gamma(\alpha - h) = \frac{\alpha-(1-\lambda)h}{\lambda} = \Omega + \Gamma(\Omega - w) = \frac{\Omega-(1-\lambda)w}{\lambda} = \frac{(\Gamma+1)(\Omega+\alpha)-\Gamma}{2}$$

In the above sequence of equalities, three of the five proportions must always be known to resolveg_1, however, in Clark County we obtain the illegal quadratic manifold equations that yields g_1 with only α_1 and Ω_1 (see next page).

West vs East



The bivariate quadratic equation will have g isolated on the right-hand side. In the diagram on the previous page, g is the West Side Percentage, that is the percentage share of ballots that belong to s amongst s and v, $g = \frac{s}{s+v}$.

Once g is illegally resolved from the cubic surface of α, Ω, both h and λ are compelled into existence, since in any election, fair or unfair:

$$g = \frac{(\Gamma+1)(\Omega+\alpha)-\Gamma}{2} \Rightarrow \Gamma = \frac{2g-\Omega-\alpha}{(\Omega+\alpha-1)};\ h = \alpha + \Gamma^{-1}(\alpha - g); w = 1 - h = \frac{t}{u+t}$$

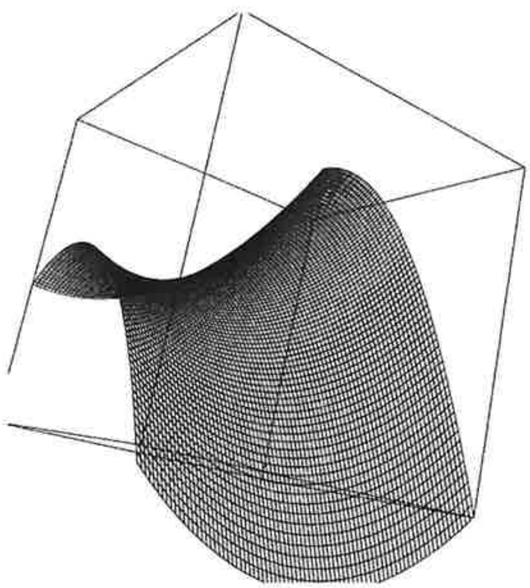
Since the proportions, g_1, α_1, Ω_1 are known, it forces the value of Γ_1, which is proportion of East Side Ballots to West Side Ballots, that is $\Gamma_1 = \frac{u_1+t_1}{s_1+v_1}$, is now forced. Since s_1 and v_1 are both known at this stage, then so the sum of u_1 and v_1.

Since Γ_1, α_1, g_1 are known, it forces the value of h_1, which is the percentage of $u_1$ballots amongst u_1 and t_1. Since the sum of u_1 and t_1 is already known, and h_1 tells us proportion of $t_1$to u_1 ballots via the identity: $\frac{t_1}{u_1} = \frac{1-h_1}{h}$, then we know the values of u_1 and t_1.

The illegal bivariate quadratic equation is as follows, with an $R^2 = 0.9983801128$ (image below is the 3D surface that the Clark County precincts rest upon when their α, Ω, g values are plotted in x, y, z space respectively. The residual values have a perfect normal distribution, and the residual errors come from, and only from, whether or not they rounded the illegally calculated vote totals up or down to the nearest integer.

$$g = k_0 + k_1\Omega + k_2\alpha + k_3\Omega^2 + k_4\alpha\Omega + k_5\alpha^2$$

k_0	k_1	k_2	k_3	k_4	k_5
-0.1590436749	+0.8413736582	+0.4076454491	-0.28055677	+0.1852754507	+0.2240821095

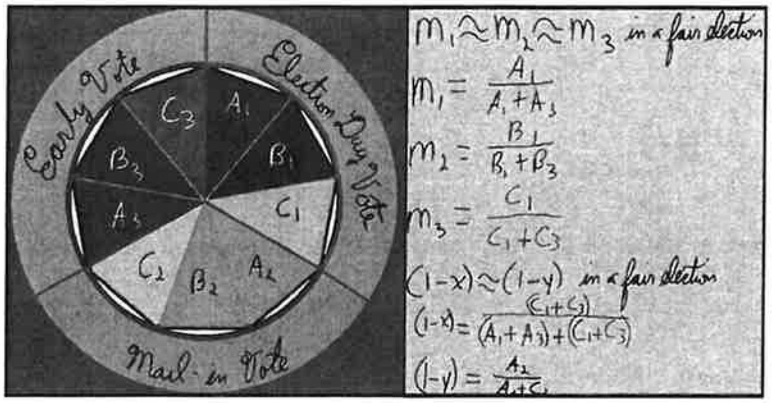


After the execution of this formula, the following values are known:

Illegally Calculated Inputs are: $(A_1 + A_3)$; $(B_1 + B_3)$

Illegal Outputs are: A_2, B_2, C_2

Natural Inputs: C_1, C_3



Preface Restoration Algorithm 0.2.3; Restoring the Senate Election

2022, Senate Restoration, Clark County, Nevada
https://docs.google.com/spreadsheets/d/1cXM7j9T-Pp_6pEWBCABC1fR5EEn8dt92RcqipHofls0/edit?usp=sharing

Since we have the advantage of the restored Sheriff's Race, the restoration of the Senate race is far easier, as we can import the ratio of Early to Mail-in to Election Day ballots in each precinct.

Since the second manifold equations informs us that all mail-in totals, A_2, B_2, C_2, are illegitimate output, we first act to restore the Early and Election Day Totals, and as there is no correlation between Laxalt's and Browns Election Day, Early and Mail-in Percentages, we first restore the relationship between Laxalt and Cortez, since they are correlated, and we know Laxalt's Early and Election Day ratio to not only be preserved, but also identical to Hyt's Early to Election Day ratio in the Sheriff's race.

Is it not surprising that the two candidates, from different races, whose Early to Election Day Ratios were preserved as inputs into their respective manifolds, have nearly identical values?

Let $x_{1,i} = \frac{C_1}{C_1+B_1}$ be Laxalt's Early Vote Percentage amongst Laxalt and Cortez in each precinct.

Let $y_{1,i} = \frac{C_3}{C_3+B_3}$ be Laxalt's Election Day Percentage amongst Laxalt and Cortez in each precinct.

Let $\overline{y_{1,i}} = k_0 + k_1\left(x_{1,i}\right) + k_2\left(x_{1,i}\right)^2 + k_3\left(x_{1,i}\right)^3$ be the cubic regression of $y_{1,i}$.

For Clark County: $k_0 = 0.0298;\ k_1 = 2.24;\ k_2 =- 2.91;\ k_3 = 1.72$

Let $u_{0,i} = x_{1,i};\ v_{0,i} = \overline{y_{1,i}} - k_0$, this removes the intercept advantage for Cortez.

Let $r_{0,i} = y_{1,i} - y_{1,i}$, this restores the residual value.

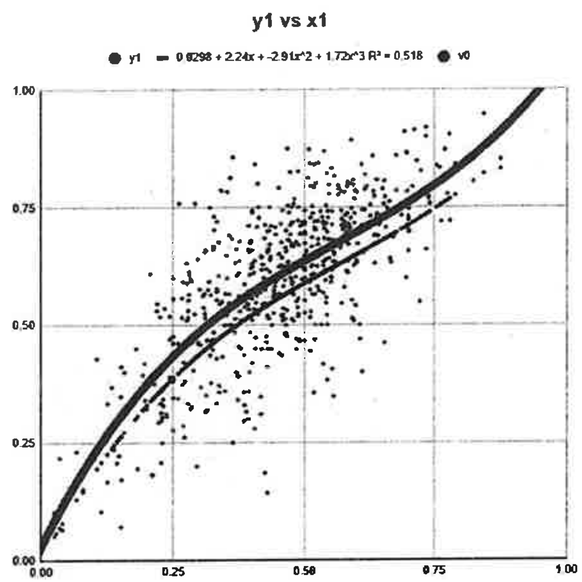
Let σ be the standard deviation of all $r_{0,i}$. If $\theta > 5\%$, then scale all residuals uniformly by $\frac{5\%}{\sigma}$.

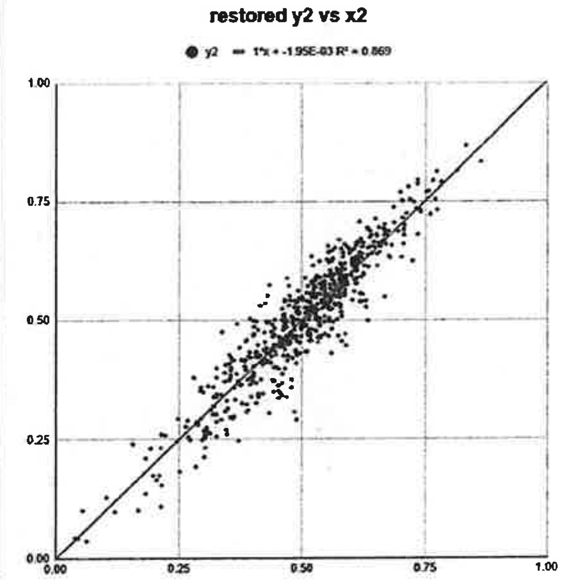
Set $\theta_i = \frac{\pi}{4} - ARCTAN\left(\frac{v_{0,i}}{u_{0,i}}\right)$ for all precincts.

Set $u_{1,i} = u_{0,i}cos\theta_i - v_{0,i}sin\theta_i;\ v_{1,i} = u_{0,i}sin\theta_i + v_{0,i}cos\theta_i$. This smashes the cubic into the $y = x$ line, while preserving the magnitude of the hijacked vector.

We now set $\left(x_{2,i}, y_{2,i}\right) = \left(u_{1,i}, v_{1,i}\right)$. If either coordinate is above or below 0% to 100%, then we reset to 0 to 1 respectively, These are the restored percentages.

Below is the graph of the original Early Vote Percentage (horizontal axis) vs the original Election Day Percentage (vertical axis) on the left side, the restored percentages on the right side after the algorithm on the above page is executed.





Now we set $d_i = C_1 + B_1$, the total number of Early Ballots for Laxalt and Cortez in each precinct.

Now we set $f_i = C_3 + B_3$, the total number of Election Day Ballots for Laxalt and Cortez in each precinct.

Let $s_i = (x_{2,i})(d_i)$ be Laxalt's Intercessory Early Vote in each precinct.

Let $t_i = d_i - s_i$ be Cortez's Intercessory Early Vote in each precinct.

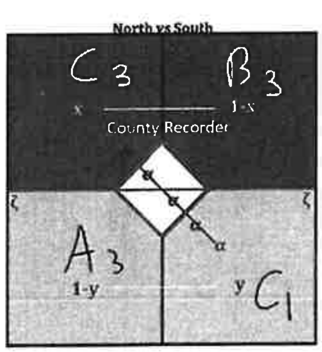
Let $u_i = (y_{2,i})(f_i)$ be Laxalt's Intercessory Election Day Vote in each precinct

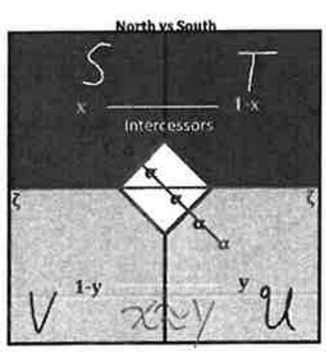
Let $t_i = f_i - u_i$ be Cortez's IntercessoryElection Day Vote in each precinct

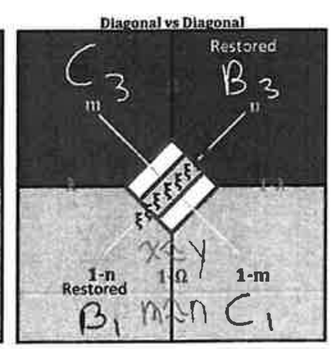
Let $Z_{1,i} = \frac{C_3}{s_i}$ be the North Side Scale in each precinct.

Let $Z_{2,i} = \frac{C_1}{u_i}$ be the South Side Scale in each precinct.

Let $C_{1,2,i} = z_{1,i}(s_i); B_{1,2,i} = z_{1,i}(t_i);\ C_{3,2,i} = z_{2,i}(u_i);\ B_{3,2,i} = z_{2,i}(v_i)$, each rounded to the nearest integer, be the restored Early and Election Day totals of Laxalt and Cortez.







Seeing that Laxalt's $C_1 : C_3$ ratio is nearly identical to Hyt's $A_1 : A_3$ and Robert's $C_1 : C_3$ ratios in the Sheriff's Primary, and that Cortez's $B_1 : B_3$ ratio also matches, we know that is safe to import Robert's $C_2 : (C_1 + C_3)$ ratio from the Sheriff's Primary to yield Laxalt's and Cortez's Mail-in totals in the Senate race.

Recall that $n_{3,2,i} = \frac{C_2}{C_2 + (C_1 + C_3)}$ is Robert's Mail-in to combined Early+EDV total in the Sheriff's race.

Let $C_{2,2,i} = \left(\frac{n_{3,2,i}}{1 - n_{3,2,i}}\right)\left(C_{1,2,i} + C_{3,2,i}\right)$, which is the product of Robert's n percentage with the sum of Laxalt's Early and Election Day Vote, be Laxalt's restored Mail-in Vote.

Let $B_{2,2,i} = \left(\frac{n_{3,2,i}}{1 - n_{3,2,i}}\right)\left(B_{1,2,i} + B_{3,2,i}\right)$, which is the product of Robert's n percentage with the sum of Cortez's Early and Election Day Vote, be Cortez's restored Mail-in Vote.

We now have the restored totals for Laxalt and Cortez, in all modes of voting. We now proceed to restore Brown's totals.

Let $q_{1,i} = \frac{C_{1,2,i}}{C_{1,2,i} + C_{3,2,i}}$; $q_{2,i} = \frac{B_{1,2,i}}{B_{1,2,i} + B_{3,2,i}}$ be Laxalt's and Cortez's Early to EDV ratio in each precinct.

Since $q_{1,i} \approx q_{2,i}$ across the precincts, let $q_{3,i} = \frac{1}{2}\left(q_{1,i} + q_{2,i}\right)$ be Brown's Early to EDV ratio in each precinct.

Let $w_i = A_{1,0,i} + A_{3,0,i}$ be the sum of the County Recorder totals for Brown's Early and EDV ballots.

Let $A_{1,1,i} = \left(q_{3,i}\right)\left(w_i\right)$ be Brown's Intercessory Early Vote, rounded to the nearest integer.

Let $A_{3,1,i} = w_i - A_{1,1,i}$ be Brown's Intercessory Early Vote.

Let $A_{2,1,i} = \left(\frac{n_{3,2,i}}{1 - n_{3,2,i}}\right)\left(w_i\right)$, which is the product of Robert's n percentage with the sum of Brown's Early and Election Day Vote, be Brown's intercessory Mail-in Vote.

Although we've restored the proportions of $A_1 : A_2 : A_3$, we do not yet know the proportion of the sum of all of Laxalt's and Cortez's ballots to Brown's. Thankfully, the solution to this is rather easy.

Let Λ_i be the total sum of ballots cast in each precinct in the county recorder data for Laxalt, Cortez and Brown.

Let ρ_i be the total sum of restored ballots for Laxalt and Cortez.

Let $\Delta_i = \Lambda_i - \rho_i$, be the difference of Laxalt's and Cortez's restored totals from the Total Ballots Cast.

Let ω_i be the total sum of county recorder ballots for Brown.

Let $z_{3,i} = \frac{\Delta_i}{\omega_i}$ be the Great Scale in each precinct.

Let $A_{1,2,i} = z_{3,i}\left(A_{1,1,i}\right)$; $A_{2,2,i} = z_{3,i}\left(A_{2,1,i}\right)$; $A_{3,2,i} = z_{3,i}\left(A_{3,1,i}\right)$ be the restored values of Brown's Early, Mail-in and Election Day Totals in each precinct.

In Columns O:Y on the *Original Data* sheet, the restored values can be found: 2022, Senate Restoration, Clark County, Nevada
https://docs.google.com/spreadsheets/d/1cXM7j9T-Pp_6pEWBCABC1fR5EEn8dt92RcqipHofJs0/edit?usp=sharing

Results	Brown Early	Brown Mail	Brown EDV	Cortez Early	Cortez Mail	Cortez EDV	Laxalt Early	Laxalt Mail	Laxalt EDV
Original	12409	15115	9780	22531	71055	13711	20545	27653	23449
Restored	35361	25665	39015	17845	15134	20337	20343	17270	22815

Results	Brown	Laxalt	Brown's%	Republican	Democrat	Republican %	Early%	MIV%	EDV%
Original Total	37304	71647	34.2392%	108951	107297	50.3824%	25.66%	52.64%	21.71%
Restored Total	100041	60428	62.3429%	160469	53316	75.0609%	34.40%	27.16%	38.43%

Results	Brown	Cortez	Laxalt	Brown's Margin
Original Total	37304	107297	71647	-34343
Restored Total	100041	53316	60428	+39613

Although the action of the manifolds to upset the winner of the election is always a sad sight, what is most striking about this restoration is that percentage of Republican ballots cast increased from 50.38%, which is a 1:1 ratio of Democrats to Republicans, to 75.06%, which is a 3:1 ratio of Republicans to Democrats, and demonstrates that such a massive change was indeed possible in the 2020 General Election.

Candidate	Votes	Pct.
Adam Laxalt	112,504	55.7%
Sam Brown	69,519	34.4
Sharelle Mendenhall	6,149	3.0
Total reported	201,832	

Let us now subtract 11219 ballots from Adam Laxalt's Statewide total, and add 62,737 ballots to Sam Brown's Statewide total.

Of course, assuming that Washoe and the other Counties of Nevada conducted fair elections...

Candidate		Votes	Pct.	
Adam Laxalt	101,285	~~112,504~~	55.7%	43.37%
Sam Brown	132,256	~~69,519~~	34.4	56.63%
Sharelle Mendenhall		6,149	3.0	
Total reported		201,832		

Preface Equation 0.3.1; The Trivariate Real Number Cubic Turnout Manifold, Governor

Let Candidate A be Gilbert; let Candidate B be Sisolak; let Candidate C be Lombardo.
Let A_1, A_2, A_3 be Gilbert's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let B_1, B_2, B_3 be Sisolak's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let C_1, C_2, C_3 be Lombardo's Early Vote, Mail-in Vote and Election Day Vote respectively.

Let $s_1 = A_1$
Let $t_1 = (B_1 + B_3)$
Let $u_1 = A_3$
Let $v_1 = (C_1 + C_3)$; this is the input square.
Let R be the number of registered voters at the precinct.

$$m_1 = \frac{s_1}{s_1+u_1}, n_1 = \frac{t_1}{t_1+v_1}, \alpha_1 = \frac{s_1+u_1}{(s_1+u_1)+(t_1+v_1)}, \Omega_1 = \frac{s_1+t_1}{(s_1+t_1)+(u_1+v_1)}, \lambda_1 = \frac{s_1+v_1}{(s_1+v_1)+(u_1+v_1)}$$

$$\xi_1 = \frac{t_1+v_1}{s_1+u_1} = \frac{1-\alpha_1}{\alpha_1}, \quad w_1 = (1 - n_1) = \frac{v_1}{t_1+v_1}; \quad \Psi = \frac{s_2+u_2}{R}$$

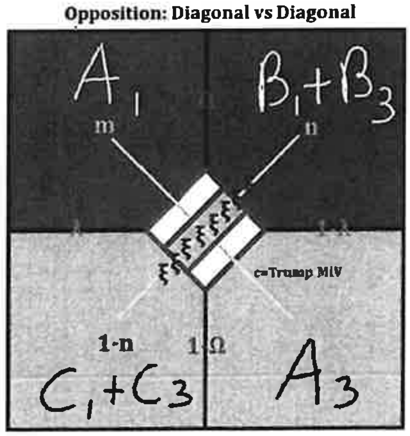
In a fair election:

$$n = \Omega + \xi(\Omega - m) = \frac{\Omega-\alpha m}{1-\alpha} = \frac{(\xi+1)(\Omega-\lambda)+\xi}{2\xi}; \quad w = \lambda + \xi(\lambda - m) = \frac{(\xi+1)(\lambda-\Omega)+\xi}{2\xi}$$

In the above sequence of equalities, three of the five proportions must always be known to resolven_1, however, in Clark County we obtain the illegal cubic manifold equations that yields n_1 with Ω_1 and λ_1 without either α_1 nor m_1.

Even more outrageous is that the R^2 of this function is rather low, until a third parameter, Ψ, is added. Taking an R^2 of bivariate plane and quadratic ofΩ_1 and λ_1 unto n_1 from below 0.99, all the way to 0.998. To ensure there wasn't a trivial correlation with Ψ, artificially increasing the R^2 value, the number of registered voters was randomized across the precincts in tens of millions of simulations, without changing the number of ballots cast, and there was no significant increase in R^2 in any of these trials. Thus, this formula works with, and only with, the precise number of registered voters present in each Clark County precinct.

Opposition: Diagonal vs Diagonal



The trivarite cubic equation will have $w_1 = 1 - n_1$ isolated on the right-hand side. In the diagram on the previous page, w_1 is the Light Blue Diagonal Percentage, that is the percentage share of ballots that belong to v_1 amongst t_1 and v_1, $w_1 = \frac{v_1}{t_1+v_1}$, in other words, this is the share of Early and Election Day ballots that Lombardo shall receive against the number of Early and Election Day ballots of both Lombardo and Sisolak.

As to how we discern between whether or not t_1 or v_1 was the input square, is to compare the ratios of $C_1 : C_3$ and $B_1 : B_3$ to Hyt's $A_1 : A_3$ ratio in the Sheriff's race. From this we learn that the histogram and quantile plots of $C_1 : C_3$ have an identical match to Hyt's results in the Sheriff's race, while the histogram and quantile plots Sisolak's $B_1 : B_3$ ratios are alien, furthermore that there is zero correlation between Sisolaks's $B_1 : B_3$ ratios and either Hyt's $A_1 : A_3$ or Lombardo's $C_1 : C_3$ ratios (also recall that Hyt's $A_1 : A_3$ ratio was authentic, since Hyt's A_1, A_3 were logically compelled to be the only authentically input source).

As to the presence of the Ψ parameter, it informs us that this Equation determines the voter turnout in each precinct, and this the general form of this trivariate cubic is identical to the Senate Race (but with a vastly different set of constants), which also invoked the same Ψ parameter, part of the NeuralNetwork's cost function was to make most similar the Republican and Democrat turnouts of the Senate and the Governor Race, while adhering to the proportion of Early to Mail-in to Election Day ballots made manifest by the Sheriff Race.

Once the w_1 proportion is illegally resolved from the cubic surface of Ω_1, λ_1 *and* Ψ, both m_1 and α_1 are compelled into existence, since in any election, fair or unfair:

$$w = \frac{(\xi+1)(\lambda-\Omega)+\xi}{2\xi} \Rightarrow \xi = \frac{\Omega-\lambda}{(\lambda-\Omega+1-2w)}; \; m = \lambda + \xi(\lambda - w); \quad w = 1 - n = \frac{v}{t+v}$$

Since the proportions, w_1, Ω_1, λ_1 are known, it compels the value of ξ_1, which is proportion of Blue Diagonal to Red Diagonal Ballots, that is $\xi_1 = \frac{t_1+v_1}{s_1+u_1}$, is now forced, and since $\alpha_1 = \frac{1}{1+\xi_1}$, then Gilbert's aggregate percentage share of the ballots in this ballot set is also compelled (Gilbert is the algorithmically intended loser).

Since ξ_1, w_1, λ_1 are known, it forces the value of m_1, which is the percentage of s_1 ballots amongst s_1 and u_1 and tells us proportion of s_1 to u_1 ballots via the identity: $\frac{s_1}{u_1} = \frac{m_2}{1-m_2}$. Since the value of t_1 is known (the input square), the values of s_2, u_2 and v_2 are also known, as the pairwise proportions betwixt them have all been forced.

The illegal trivariate cubic equation is as follows, with an $R^2 = 0.9988018849$ (video on next is the 4D surface that the Clark County precincts rest upon when their Ω, λ, w values are plotted in x, y, z space respectively, with Ψ acting as the fourth dimension) The residual values have a left-tailed Poisson distribution , and the residual errors come from, and only from, whether or not they rounded the illegally calculated vote totals up or down to the nearest integer.

$$w = \sum_{k=0}^{k=3}\left(\sum_{j=0}^{j=k}\left(\sum_{t=0}^{t=k-j}\left(\left(z_{k,j,((k-j)-t)}\right)\left(\Psi^{(k-j)-t}\right)\left(\Omega^{t}\right)\left(\lambda^{j}\right)\right)\right)\right); \quad z_{k,j,t} \in \mathbb{R}$$

$z_{0,0,0}$	$z_{1,0,0}$	$z_{1,0,1}$	$z_{1,1,0}$
1.23432200675597	-12.7924428834813	-4.52074189309496	0.86645936279092

$z_{2,0,0}$	$z_{2,0,1}$	$z_{2,0,2}$	$z_{2,1,0}$	$z_{2,1,1}$	$z_{2,2,0}$
-8.25612835213541	14.8922383673489	5.72812721610535	36.574964039959	2.89158378064167	-2.85296044650022

$z_{3,0,0}$	$z_{3,0,1}$	$z_{3,0,2}$	$z_{3,0,3}$
605.670185368042	37.1523531624116	-8.5639772178256	-2.43329977143731

$z_{3,1,0}$	$z_{3,1,1}$	$z_{3,1,2}$	$z_{3,2,0}$	$z_{3,2,1}$	$z_{3,3,0}$
-100.901214897166	-25.1093777001369	-3.38150119705824	-14.9393149687676	1.30270575103349	1.67597666609799

Preface Equation 0.3.2; The Bivariate Real Number Quadratic Mail-in Manifold, Governor

Let Candidate A be Gilbert; let Candidate B be Sisolak; let Candidate C be Lombardo.
Let A_1, A_2, A_3 be Gilbert's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let B_1, B_2, B_3 be Sisolak's Early Vote, Mail-in Vote and Election Day Vote respectively.
Let C_1, C_2, C_3 be Lombardo's Early Vote, Mail-in Vote and Election Day Vote respectively.

Let $s_2 = B_2$
Let $t_2 = \left(A_1 + C_3\right) + A_2$; A_2 is the output; A_1, C_3 were already illegally calculated.
Let $u_2 = \left(B_1 + B_3\right)$, this is the input square, B_1, B_3 were already illegally calculated.
Let $v_2 = \left(C_1 + A_3\right) + C_2$; C_2 is the output; C_1, A_3 were already illegally calculated.
Let R be the number of registered voters at the precinct.

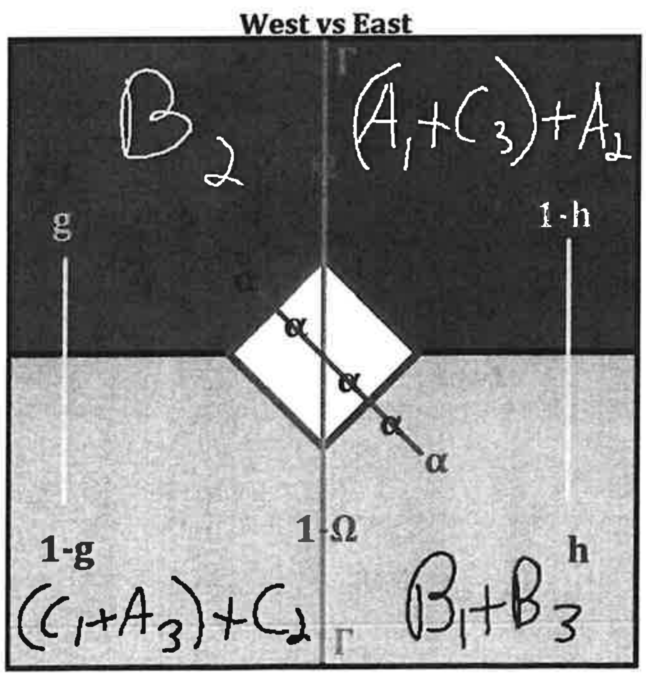
$$g_2 = \frac{s_2}{s_2+v_2}, h_2 = \frac{u_2}{u_2+t_2}, \alpha_2 = \frac{s_2+u_2}{\left(s_2+u_2\right)+\left(t_2+v_2\right)}, \Omega_2 = \frac{s_2+t_2}{\left(s_2+t_2\right)+\left(u_2+v_2\right)}, \lambda_2 = \frac{s_2+v_2}{\left(s_2+v_2\right)+\left(u_2+v_2\right)}$$

$$\Gamma_2 = \frac{u_2+t_2}{s_2+v_2} = \frac{1-\lambda_2}{\lambda_2}, \qquad w_2 = \left(1 - h_2\right) = \frac{t_2}{u_2+t_2};$$

In a fair election:

$$g = \alpha + \Gamma^{-1}(\alpha - h) = \frac{\Omega-\alpha m}{1-\alpha} = \frac{(\xi+1)(\Omega-\lambda)+\xi}{2\xi}; \quad w = \Omega + \Gamma(\Omega - g) = \frac{(\Gamma+1)(\Omega-\alpha)+\Gamma}{2\Gamma}$$

In the above sequence of equalities, three of the five proportions must always be known to resolve g_1, however, in Clark County we obtain the illegal cubic manifold equations that yields g_1 with h_1 and α_1 without either Γ_1 nor Ω_1.



The bivariate quadratic equation will have g isolated on the right-hand side. In the diagram on the previous page, g is the West Side Percentage, that is the percentage share of ballots that belong to s amongst s and v, $g = \frac{s}{s+v}$.

Once g is illegally resolved from the quadratic surface of h, α, both Γ and Ω are compelled into existence, since in any election, fair or unfair:

$$g = \alpha + \Gamma^{-1}(\alpha - h) \Rightarrow \Gamma = \frac{g-\alpha}{\alpha-h}; \quad g = \Omega + \Gamma^{-1}(\Omega - w) \Rightarrow \Omega = \frac{g+\Gamma w}{\Gamma+1} = \frac{g+\Gamma(1-h)}{\Gamma+1}$$

Since h_2 is known, and u_2 is the input square, then $t_2 = \frac{h}{1-h}(u_2)$ and is therefore known. Thus A_2, which is Gilbert's Mail-in Vote, is known known via the subtraction: $A_2 = v_2 - (A_1 + C_3)$.

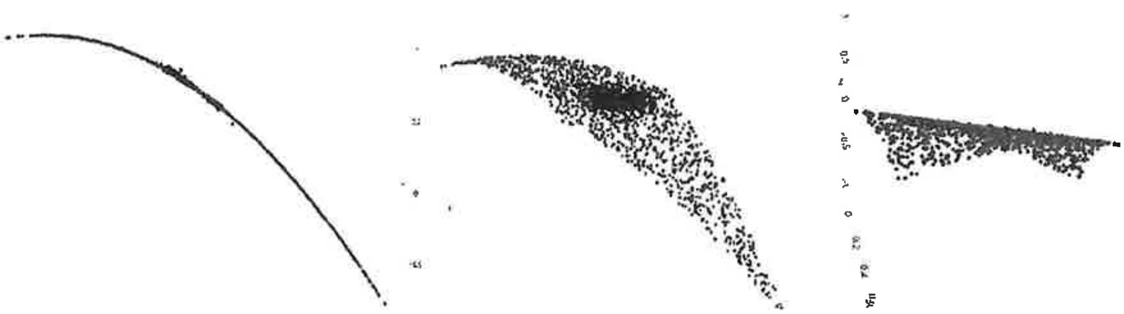
Since the proportions, g_2, h_2, α_2 are known, it forces the value of Γ_2, which is proportion of East Side Ballots to West Side Ballots, that is $\Gamma_2 = \frac{u_2+t_2}{s_2+v_2}$, which means we also know $\Gamma_2^{-1} = \frac{s_2+v_2}{u_2+t_2}$, which is the proportion of West Side to East Side ballots, thus $(B_2) + ((C_1 + A_3) + C_2) = s_2 + v_2 = \Gamma_2^{-1}(u_2 + v_2)$. Knowing the value of g_2 allows us to split this the sum of s_2 andv_2, that is: $B_2 = s_2 = g_2(s_2 + v_2)$, which is Sisolak's Mail-in Vote; ; $t_2 = (1 - g_2)(s_2 + v_2)$; $C_2 = t_2 - (C_1 + A_3)$, which is Lombardo's Mail-in Vote.

The illegal bivariate quadratic equation is as follows, with an $R^2 = 0.9988816647$

$$g_2 = k_0 + k_1\alpha_2 + k_2h_2 + k_3\alpha_2^2 + k_4h_2\alpha_2 + k_5h_2^2$$

k_0	k_1	k_2	k_3	k_4	k_5
0.005070874159	1.535448595	-0.549045972	-0.6614892743	1.303368815	-0.632192474

The below image is the 3D curved manifold (red) upon which the precincts (blue) lay upon.



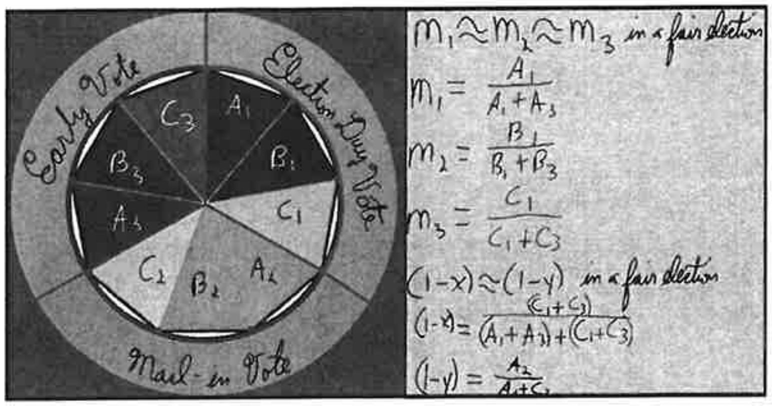
As to why the Neural Network chose to invoke the same Trivariate Turnout Manifold as the Senate race in the first of the equations, yet opted to follow up with quadratic of $g = f(h, \alpha)$ instead of $g = f(\alpha, \Omega)$ shall most likely remain as mysterious as the thought processes which incited the Neural Network, Leela Zero, to execute her Immortal Queen Sacrifice against Stockfish.

https://youtu.be/AXhToUeOPF8

Leela Chess Zero's Immortal Queen Sacrifice

https://tcec-chess.com/articles/Sufi_18_-_Sadler.pdf

TCEC Season 18 Superfinal round 65



Preface Restoration Algorithm 0.2.3; Restoring the Governor's Race

2022, Governor Restoration, Clark County, Nevada
https://docs.google.com/spreadsheets/d/1INL0yJh-Cr9FxQj4d_RYCuBiIJM0h7Ov4F5YGrVBbM4/edit?usp=sharing

Since we have the advantage of the restored Sheriff's Race, the restoration of the Governer's race is far easier, as we can import the ratio of Early to Mail-in to Election Day ballots in each precinct.

Since the second manifold equations informs us that all mail-in totals, A_2, B_2, C_2, are illegitimate outputs, we first act to restore the Early and Election Day Totals, and as there is no correlation betweenLombardo's and Gilbert's Election Day, Early and Mail-in Percentages, we first restore the relationship between Lombardo and Sisolak, since they are correlated, and we know Lombardo's Early and Election Day ratio to not only be preserved, but also identical to Hyt's Early to Election Day ratio in the Sheriff's race.

Is it not surprising that the three candidates, from different races, whose Early to Election Day Ratios were preserved as inputs into their respective manifolds, have nearly identical values (Hyt,Laxalt and Lombardo).

Let $x_{1,i} = \frac{C_1}{C_1+B_1}$ be Lombardo's Early Vote Percentage amongst Lombardo and Sisolak in each precinct.

Let $y_{1,i} = \frac{A_3}{A_3+B_3}$ be Lombardo's Election Day Percentage amongst Lombardo and Sisolak in each precinct.

Let $\overline{y_{1,i}} = k_0 + k_1\left(x_{1,i}\right) + k_2\left(x_{1,i}\right)^2 + k_3\left(x_{1,i}\right)^3$ be the cubic regression of $y_{1,i}$.

For Clark County: $k_0 = 0.115;\ k_1 = 1.1;\ k_2 =- 0.238;\ k_3 =- 0.164$

Let $u_{0,i} = x_{1,i};\ v_{0,i} = \overline{y_{1,i}} - k_0$, this removes the intercept advantage for Sisolak.

Let $r_{0,i} = y_{1,i} - y_{1,i}$, this restores the residual value.

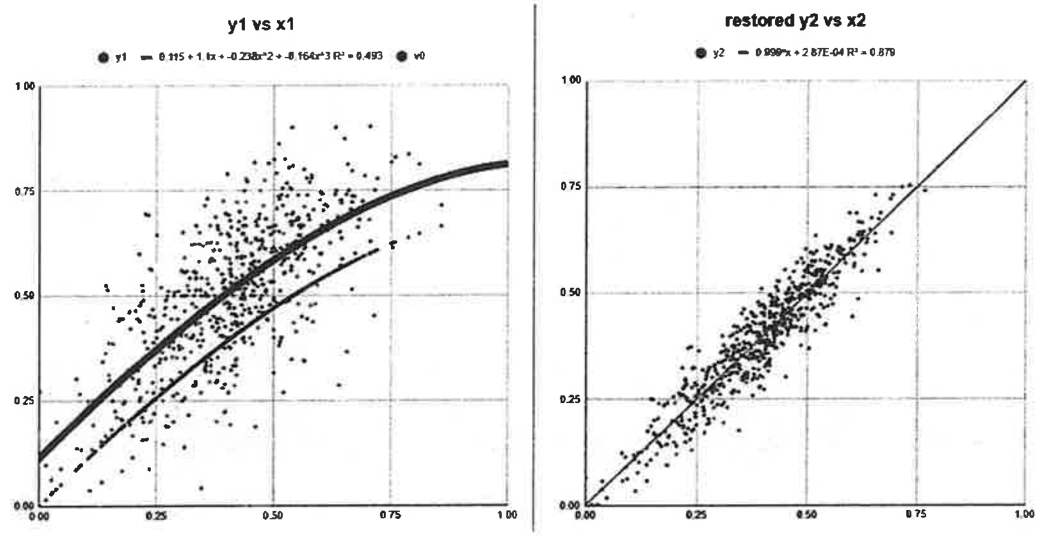
Let σ be the standard deviation of all $r_{0,i}$. If $\theta > 5\%$, then scale all residuals uniformly by $\frac{5\%}{\sigma}$.

Set $\theta_i = \frac{\pi}{4} - ARCTAN\left(\frac{v_{0,i}}{u_{0,i}}\right)$ for all precincts.

Set $u_{1,i} = u_{0,i}cos\theta_i - v_{0,i}sin\theta_i;\ v_{1,i} = u_{0,i}sin\theta_i + v_{0,i}cos\theta_i$. This smashes the cubic into the $y = x$ line, while preserving the magnitude of the hijacked vector.

We now set $\left(x_{2,i}, y_{2,i}\right) = \left(u_{1,i}, v_{1,i}\right)$. If either coordinate is above or below 0% to 100%, then we reset to 0 to 1 respectively, These are the restored percentages.

Below is the graph of the original Early Vote Percentage (horizontal axis) vs the original Election Day Percentage (vertical axis) on the left side, the restored percentages on the right side after the algorithm on the above page is executed.



Now we set $d_i = C_1 + B_1$, the total number of Early Ballots for Lombardo and Sisolak in each precinct.

Now we set $f_i = C_3 + B_3$, the total number of Election Day Ballots for Lombardo and Sisolak in each precinct.

Let $s_i = (x_{2,i})(d_i)$ be Lombardo's Intercessory Early Vote in each precinct.

Let $t_i = d_i - s_i$ be Sisolak's Intercessory Early Vote in each precinct.

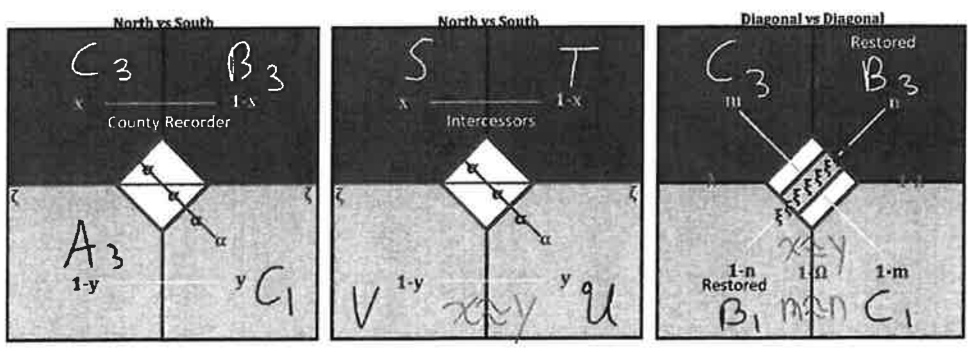
Let $u_i = (y_{2,i})(f_i)$ be Lombardo's Intercessory Election Day Vote in each precinct

Let $t_i = f_i - u_i$ be Sisolak's Intercessory Election Day Vote in each precinct

Let $Z_{1,i} = \frac{C_3}{s_i}$ be the North Side Scale in each precinct.

Let $Z_{2,i} = \frac{C_1}{u_i}$ be the South Side Scale in each precinct.

Let $C_{1,2,i} = z_{1,i}(s_i)$; $B_{1,2,i} = z_{1,i}(t_i)$; $C_{3,2,i} = z_{2,i}(u_i)$; $B_{3,2,i} = z_{2,i}(v_i)$, each rounded to the nearest integer, be the restored Early and Election Day totals of Lombardo and Sisolak.



Seeing that Lombardo's $C_1 : C_3$ ratio is nearly identical to Hyt's $A_1 : A_3$ and Robert's $C_1 : C_3$ ratios in the Sheriff's Primary, and that Sisolak's $B_1 : B_3$ ratio also matches, we know that is safe to import Robert's $C_2 : \left(C_1 + C_3\right)$ ratio from the Sheriff's Primary to yield Lombardo's and Sisolak's Mail-in totals in the Senate race.

Recall that $n_{3,2,i} = \frac{C_2}{C_2 + \left(C_1 + C_3\right)}$ is Robert's Mail-in to combined Early+EDV total in the Sheriff's race.

Let $C_{2,2,i} = \left(\frac{n_{3,2,i}}{1 - n_{3,2,i}}\right)\left(C_{1,2,i} + C_{3,2,i}\right)$, which is the product of Robert's n percentage with the sum of Lombardo's Early and Election Day Vote, be Lombardo's restored Mail-in Vote.

Let $B_{2,2,i} = \left(\frac{n_{3,2,i}}{1 - n_{3,2,i}}\right)\left(B_{1,2,i} + B_{3,2,i}\right)$, which is the product of Robert's n percentage with the sum of Sisolak's Early and Election Day Vote, be Sisolak's restored Mail-in Vote.

We now have the restored totals for Lombardo and Sisolak, in all modes of voting. We now proceed to restore Gilbert's totals.

Let $q_{1,i} = \frac{C_{1,2,i}}{C_{1,2,i} + C_{3,2,i}}$; $q_{2,i} = \frac{B_{1,2,i}}{B_{1,2,i} + B_{3,2,i}}$ be Lombardo's and Sisolak's Early to EDV ratio in each precinct.

Since $q_{1,i} \approx q_{2,i}$ across the precincts, let $q_{3,i} = \frac{1}{2}\left(q_{1,i} + q_{2,i}\right)$ be Gilbert's Early to EDV ratio in each precinct.

Let $w_i = A_{1,0,i} + A_{3,0,i}$ be the sum of the County Recorder totals for Gilbert's Early and EDV ballots.

Let $A_{1,1,i} = \left(q_{3,i}\right)\left(w_i\right)$ be Gilbert's Intercessory Early Vote, rounded to the nearest integer.

Let $A_{3,1,i} = w_i - A_{1,1,i}$ be Gilbert's Intercessory Early Vote.

Let $A_{2,1,i} = \left(\frac{n_{3,2,i}}{1 - n_{3,2,i}}\right)\left(w_i\right)$, which is the product of Robert's n percentage with the sum of Gilberts's Early and Election Day Vote, be Gilbert's intercessory Mail-in Vote.

Although we've restored the proportions of $A_1 : A_2 : A_3$, we do not yet know the proportion of the sum of all of Lombardo's and Sisolak's ballots to Gilbert's. Thankfully, the solution to this is rather easy.

Let Λ_i be the total sum of ballots cast in each precinct in the county recorder data for Lombardo, Sisolak and Gilbert.

Let ρ_i be the total sum of restored ballots for Lombardo and Sisolak.

Let $\Delta_i = \Lambda_i - \rho_i$, be the difference of Lombardo's and Sisolak's restored totals from the Total Ballots Cast.

Let ω_i be the total sum of county recorder ballots for Gilbert.

Let $z_{3,i} = \frac{\Delta_i}{\omega_i}$ be the Great Scale in each precinct.

Let $A_{1,2,i} = z_{3,i}\left(A_{1,1,i}\right)$; $A_{2,2,i} = z_{3,i}\left(A_{2,1,i}\right)$; $A_{3,2,i} = z_{3,i}\left(A_{3,1,i}\right)$ be the restored values of Gilbert's Early, Mail-in and Election Day Totals in each precinct.

In Columns O:Y on the *Original Data* sheet, the restored values can be found: 2022, Senate Restoration, Clark County, Nevada https://docs.google.com/spreadsheets/d/1cXM7j9T-Pp_6pEWBCABC1fR5EEn8dt92RcqipHofJs0/edit?usp=sharing

Results	Gilbert Early	Gilbert Mail	Gilbert EDV	Sisolak Early	Sisolak Mail	Sisolak EDV	Lombardo Early	Lombardo Mail	Lombardo EDV
Original	8802	7652	11850	22048	70327	13441	16420	24238	15203
Restored	32780	21489	29543	22516	17591	21995	16412	12489	15182

Results	Gilbert	Sisolak	Lombardo	Republican	Democrat	Republican %	Early%	MIV%	EDV%
Original Total	28304	105816	55861	84165	105816	44.30%	24.88%	53.80%	21.31%
Restored Total	83812	62102	44083	127895	62102	67.31%	37.74%	27.14%	35.12%

Results	Gilbert	Sisolak	Lombardo	Gilbert Margin
Original Total	28304	105816	55861	-27557
Restored Total	83812	62102	44083	39729

Although the action of the manifolds to upset the winner of the election is always a sad sight, what is most striking about this restoration is that percentage of Republican ballots cast increased from 50.38%, which is a 1:1 ratio of Democrats to Republicans, to 75.06%, which is a 3:1 ratio of Republicans to Democrats, and demonstrates that such a massive change was indeed possible in the 2020 General Election.

	55,206		103,664				
	JOE LOMBARDO GOP 38.4% ~~66,984~~		JOEY GILBERT GOP 27.6% ~~48,156~~		DEAN HELLER GOP 13.5% 23,556		79% EXPECTED VOTE IN
County	Percent	Votes	Percent	Votes	Percent	Votes	% in
Carson City	24.8%	1,458	30.4%	1,789	25.4%	1,494	77.7% in
Churchill	18.4%	692	35.5%	1,333	29.9%	1,122	77.1% in
Clark	45.4%	46,706	23.9%	24,583	8.6%	8,825	91.4% in
Douglas	29.1%	1,878	29.3%	1,889	17.5%	1,131	48.2% in
Elko	22.4%	1,068	42.8%	2,040	20.7%	986	89.4% in

EXHIBIT B

EXHIBIT B

Dr. Oliver A. Hemmers

281 Gingerbread Street
Henderson, NV 89012
Phone: (702) 525-8767 Email: Oliver.Hemmers@gmail.com

July 02, 2022

Craig A. Mueller, Esq.
Mueller and Associates
808 South Seventh Street
Las Vegas, Nevada 89101

Re: Request for an expert opinion on the 'Clark County, 2022, Governor Primary Precinct Analysis' Summary

Dear Mr. Mueller:

I was initially contacted on June 30, 2022 and was requested to provide my expert opinion as a mathematically trained physicist on the Summary of a report on the Clark County, 2022, Governor Primary Precinct Analysis.

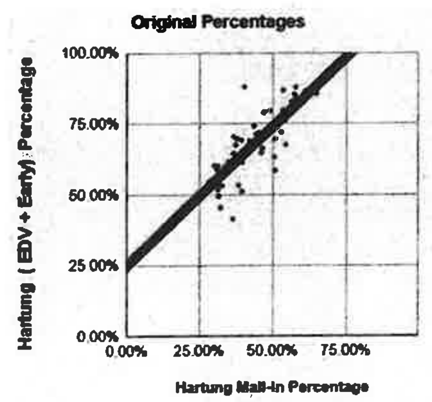
My educational background is in quantum physics, specifically atomic and molecular physics, and I received a PhD in that field from the Institute for Radiation and Nuclear Physics at the Technical University in Berlin, Germany (1993). I worked in my area of research for 27 years and designed/built unique elementary particle analyzers and containment vessels capable of spectroscopically analyzing gaseous, liquid and solid samples for photo absorption, electron and ion emissions including partial-differential cross sections within high-vacuum experimental chambers. The required data analysis involved statistical particle distribution and regression analysis, and mathematical data interpretation techniques to discern real physics-based data from experimental artifacts, fake signals, and electronic interferences.

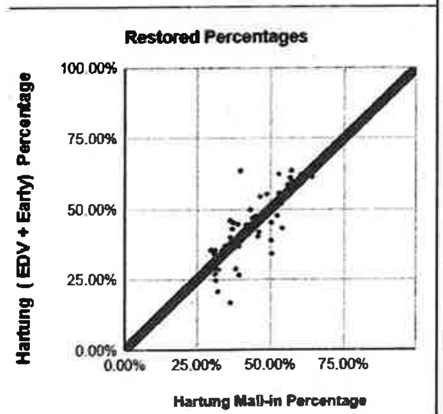
Opinion on the Summary Report titled 'Clark County, 2022, Governor Primary Precinct Analysis'

1) The paper under review [1] claims that a mathematical analysis can determine the difference between a fair and an unfair election, and where the unfair election is an election for which the results are predetermined algorithmically. It is assumed that causality is a valid assumption during an election where the effect cannot precede the cause, more specific that knowing the aggregate percentage of votes for a candidate cannot precede the election day and mail-in percentages. This might seem to be a trivial assumption, but it lies at the very core of the analysis.
2) In the preface, two examples are presented for a bivariate analysis [2] related to election results. A bivariate (Two-Variables) is described as follows [2]: The analysis of two specific variables to determine the empirical relationship present between them is referred to as bivariate analysis and it is considered to be one of the simplest forms of quantitative analysis. It is of utmost help when it comes to testing simple hypotheses of association and determining the extent to which it becomes easier to predict the value of one particular variable, given the value of the other variable is already known. There are three main types of bivariate analysis:
    a. **Scatter Plots:** It makes use of dots to represent the values for two different numeric variables. In other words, it provides us with a visual idea of what pattern the variables are following.

b. **Regression Analysis:** This involves a wide range of tools that can be utilized to determine just how the data points might be related. It tends to provide us with an equation for the curve/line along with giving us the correlation coefficient.
c. **Correlation Coefficients:** This shows how one particular variable moves about with relation to another.

3) In certain cases of bivariate data, one variable is said to determine or influence the other one. These two types of variables are distinguished as independent and dependent variables. The former refers to a situation wherein neither of the variables is considered to be dependent on each other.[2]
A simple example is the relationship that exists between teenagers reading (independent variable) and their scores in English (dependent variable). **Cause -> Effect**
4) The paper specifically uses the bivariant real number plane formular and the West vs. East paradigm to calculate the results as shown in [3,4].
5) The Preface concludes with a brief explanation how the election results were successfully restored for the 2020 Election of Hartung vs. Baker [4]. The data and calculations are shown in [4]. The data can be shown in form of two graphs, one is the original data (top), and one is the restored data (bottom).





The blue dots represent the results of the individual election precincts, and the red curve is a polynomial (quartic) fit through the blue data cluster. The fact that in the top graph the red line does not end at 0%/0% as shown in the bottom graph, means that there is a problem with the election results. In a fair election, the sum of the Early Day and Election Day votes should produce very similar results to the Mail-in votes when the regressions analysis has a high confidence (usually called R^2), meaning the x-values and the y-values should be similar (when x is 10% then y should be close to 10% as well) and not off by 25%.

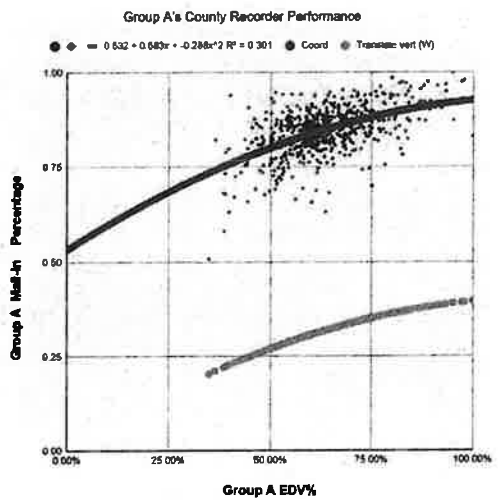
a) Even when Hartung received 0% of the Mail-in votes, he would "magically" receive 25% of the combined Election Day and Early Votes. This is impossible. Also, should Hartung receive 100%

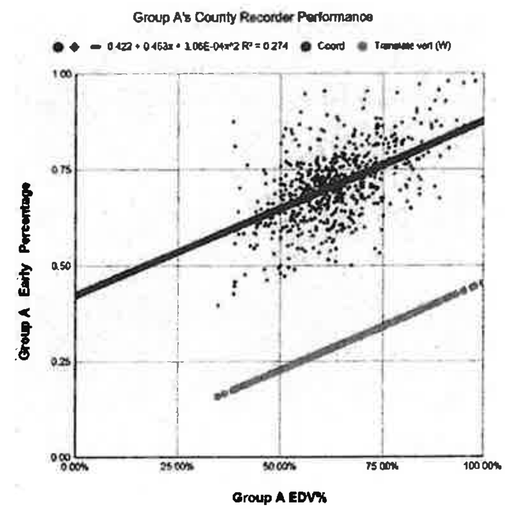
of the Election Day and Early Votes then Baker would "magically" receive 25% of the Mail-in votes (100% minus his 75% =25%). Again, this is not possible in a fair election.

b) Even though this discrepancy is not proof of fraud nor an explanation of what type of fraud rigged the election, it is still possible to correct the numbers and restore the true values, as if there was a fair election. The result is shown in the bottom picture and the calculated values can be found in [4].

c) This method of the applied Election Restoration Algorithm has been successfully used over the past two years not only on Hartung vs. Baker but also for Maricopa, Philadelphia, Atlanta, Dallas and Tarrant, Macomb and Oakland, as well as the last federal election.

6) The same methods [5] that have been honed and applied to various elections over the past two years, have been applied to the Group B vs Group A candidates in the 2022 Gubernatorial Primary [6].





a. As an example, the Group A data is shown in the two figures above. The blue dots are from [6], the red curve is a polynomial fit through the blue dots and the pink line is an extrapolation of the polynomial fit using the shown equation in the graph. Both have the Election Day vote percentages on the x-axis. As for the y-axis, the left graph has the Mail-in percentages and the right graph the Early vote percentages. It can be seen that the y-intercepts and the polynomial spines between the two graphs are quite different. Reference [1] shows the restored positions of Group A's Election Day percentage which are virtually the same in both graphs [1].

b. In order to be able to restore the original data it is important to identify what part of the data is authentic in order to make the corrections to the illegal data. As written in [1], for the illegal equations that govern the percentages of ballots cast between Group B vs Group A, the input percentage is h (as shown on page 3 in [1]), which is equal to Group B's Mail-in vote divided by Group A's combined Early and Election Day votes. From that we know that Group A's Mail-in vote and Group A's Early and Election Day votes are authentic.

c. Therefore, you can restore Group A's and Group B's totals and then multiply the individual vote totals of each candidate in each group by the net proportions of change between collectives of Group A and B in each precinct.

Summary

1) Reference [1] and the included references therein describe how using a restoration algorithm that is based on the well-established mathematical Bivariate Analysis [2] in particular the Bivariate Real Number Plane Formula [5], which has been applied numerous times over the past two years for many US county elections can also be applied to the recent 2022 Gubernatorial Primary in Nevada.

2) For the mathematical restoration of the original data, it is not necessary to claim fraud nor to know any specifics of the fraud.
3) The applied restoration of the official election results shows a significant difference between original and restored election data for all candidates reviewed.

Professional Opinion and Basis of these Opinion

It is my professional opinion that the reviewed paper [1] including the references therein is based on established statistics and statistical analyses and correct in its described methods that have been applied numerous times over the past two years. It is also evident that a restoration of the 2022 Gubernatorial Primary election data is necessary in order to correct for obvious major flaws in the original data. This restoration will affect all candidates' election results significantly.

Information considered in Formulating the Above Opinions

1. "Clark County, 2022, Governor Primary Precinct Analysis; Summary".
2. Bivariate Analysis - Types and Examples (vedantu.com)
3. Restored Nevada 2022 Primary Elections - Google Sheets
4. Restored Washoe Elections - Google Sheets
5. Clark and Washoe Precinct Analysis - Google Docs
6. Clark County, NV (clarkcountynv.gov)

Attachments

Curriculum Vitae of Dr. Oliver Hemmers

Compensation

My fee schedule is $200.00 per hour plus expenses. To review all materials to date and prepare this report, I have spent 11 hours. I have not been compensated, yet.

Should you require clarification of any of the material contained herein, please do not hesitate to contact me.

Thank you for the opportunity to assist you in this matter.

Sincerely,

Dr. Oliver A. Hemmers

2) For the mathematical restoration of the original data, it is not necessary to claim fraud nor to know any specifics of the fraud.
3) The applied restoration of the official election results shows a significant difference between original and restored election data for all candidates reviewed.

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Dr. Oliver A. Hemmers

EXHIBIT C

EXHIBIT C

Curriculum Vitae
Dr. Oliver A. Hemmers

Education, Research, and Leadership Experience

1. Education

Dr. (rerum naturalium) in Physics, "Correlation Effects in small Molecules", Technische Universität Berlin, Germany, 1993, Advisor: Professor Dr. Uwe E. Becker – Magna Cum Laude

Diplom (M. Sci.) in Physics, "Studies of Correlation Effects in Molecules with Synchrotron Radiation", Technische Universität Berlin, Germany, 1988, Advisor: Professor Dr. Uwe E. Becker

2. Non–Academic Positions

2020 – Present	Founder and Owner of Infinity Health Solutions – Consulting and Broker Services
2015 – 2021	Vice President for Operations at Infinity Capital Management – Health Care Finance
2015 – Present	President of Skybot Challenge a 501(c)3 non-Profit for STEM Education
2014 – 2020	Advisor to the Trans Global Business and Conventions Agency
2002 – Present	Co-Founder and Director at GPmicro, a Cloud Backup Company
2001 – 2021	Director, Member of the Board, Infinity Capital Management
2012 – 2016	Chairman of the Board for the Nevada Alliance for Defence, Energy, and Business
2010 – 2013	Advisory Board Member, Longenecker and Associates, Inc.
2009 – 2012	Scientific Advisory Board Member and Reviewer, Nevada Institute for Renewable Energy Commercialization (NIREC)
2009 – 2012	Member of the Green Technology Committee of the Nevada Development Authority
2002 – 2012	Co-founder, Director, and Member of the Board, Gruintine Pueche, Inc.

3. Academic and Administrative Positions

2014 – 2016	PhD Thesis Advisory Committee Member
2013 – 2014	Research Project Director for the Vice President for Research, UNLV
2011 – 2014	Director of the UNLV Initiative for High-Energy X-Ray Applications (HEXA)
2011 – 2014	Associate Director of the Nevada System of Higher Education EPSCoR Program
2011 – 2014	DOE EPSCoR Project Director for the State of Nevada
2008 – 2013	Executive Director, Harry Reid Center for Environmental Studies, UNLV
2009 – 2011	Acting Director, Marjorie Barrick Museum, UNLV
2009 – 2010	Executive Director, Transportation Research Center, UNLV
2006 – 2009	Director, Office of Strategic Energy Programs, UNLV
2009 – 2014	Research Professor, UNLV
2006 – 2009	Associate Research Professor, Department of Chemistry, UNLV
1998 – 2006	Assistant Research Professor, Department of Chemistry, UNLV
1994 – 1998	Postdoctoral Fellow, Department of Chemistry, UNLV
1993 – 1994	Postdoctoral Fellow at the Surface Science Division, Fritz-Haber-Institute of the Max-Planck Society in Berlin, Germany
1988 – 1993	Research Assistant, Department of Physics, Technical University Berlin, Germany

4. Academic Service

2013 – 2014	Accelerator Facility Radiation Safety Committee
2012	Member of the Harry Reid Silver State Award Review Committee
2011 – 2014	Chair of the UNLV Accelerator Project Advisory Committee
2011 – 2013	Member (ex-officio) of the UNLV Research Council
2010 – 2012	Member of the UNLV Sustainability Council

2009 – 2013	Member on the Council on Centers, Institutes, Museums, and Laboratories
2008 – 2013	Member of the UNLV Academic Council
2008 – 2013	Member of the UNLV Deans' Council
2008 – 2013	Chair of the HRC Executive Committee

5. Research Activities & Interests

- Optimization of biodiesel/biofuel production processes
- Hydrogen fuel storage technologies
- Materials for Solar Power Production
- New materials under extreme conditions for energy research
- Physics of Climate Change
- Applications of soft x-ray spectroscopy using synchrotron radiation on gas-phase, solids and surfaces to probe electronic structures, correlations and processes.
- High-Energy X-Ray Applications for UNLV Accelerator Initiative
- Material science such as the synthesis and characterization of surrogate substituted fluorapatite for long-term nuclear waste storage

6. Research Management Experience

- Successfully completed the reconstruction of the UNLV facility that houses the UNLV Program for High-Energy X-Ray Applications (2010 – 2014) and installed and made operational the first Varian M6 Linatron accelerator (August 2014) for the user community. Planned efforts include development of nuclear materials transmutation research as well as radiography applications and radiation resistance studies related to cancer research and future space travel.
- Appointed as the NSHE lead in the State of Nevada effort to respond to the FAA SIR on establishing test sites within the US for to help to determine how to successfully integrate unmanned aerial vehicles/systems into the US air space (2012 to 2013). Appointed by Governor's Office of Economic Development (GOED) in June 2012 to head up FAA test site proposal development and writing effort and to coordinate with 30+ stakeholders the overall proposal structure and content in support of GOED. FAA awarded Nevada as one of 6 new US Test Sites on December 30, 2013.
- UNLV Lead to establish a Cyber security Initiative with Oak Ridge National Laboratory, Nevada National Security Site, University of Tennessee, Knoxville, Louisiana Tech University, and Mississippi State University to work on extreme cyber test beds such as major power grid infrastructure and other relevant cyber security issues (2011 to 2013).
- Managed as Executive Director the Harry Reid Center for Environmental Studies (HRC) at UNLV and developed research themes (Energy & Materials, Environment, Health, and Security) to further focus the HRC mission areas for better campus integration. In 2012, HRC had 68 active projects with a total funding volume of $21M. Total personnel 67 professional/classified staff, 5 postdoctoral scholars, 28 graduate and 24 undergraduate students. In 2012 HRC outperformed the sum of all other research centers at UNLV by more than a factor of two and was only second to the College of Science in total research funding.
- Restructuring (Nov. 2008 to June 2010) the UNLV Harry Reid Center for Environmental Studies to better meet the demands of interdisciplinary research across campus and orchestrating campus-wide environmental and renewable energy related efforts including research, education and outreach
- Leading the restructuring of the Transportation Research Center (in 2010/11) that was moved from the College of Engineering (CoE) to the HRC and then successfully returned as one of the CoE strongest research unit.
- Leading the assessment and restructuring of the Barrick Museum, which lost all research activities due to State funding cuts and the transition of the defunct Museum into the College of Fine Arts to become a successful Museum for Fine Arts.
- UNLV managerial point of contact for the Nevada Renewable Energy Consortium and the state-wide Task Leader for Solar Energy Research projects within the Consortium from 2009 to 2012.

- Project manager and lead-PI on a DOE funded project ($6.9 million) that focuses on the development of biodiesel using ionic transfer membranes involving over 20 researchers from UNLV and one external company.
- Principal Investigator on a DOE funded project on Hollow Glass Microspheres: Glasses and Nano-composites for Hydrogen Storage.
- State of Nevada Director for DOE EPSCoR Programs and Deputy Director for the Nevada EPSCoR Program.
- PI or co-PI on about $12 million in research funding over the last 18 years with most of the funds being allocated to projects at UNLV.
- Supervised and co-mentored over 50 students, post-docs and research professors

7. <u>Student and Postdoctoral Research Advisor</u>

Total Undergraduate Students Advised and co-supervised: 23
Total Graduate Students Advised and co-supervised: 9
Total Postdoctoral Scholars Sponsored and co-supervised: 12

8. <u>Research and Project Grants</u>

Funded Research Grants (including Program Management) as PI or co-PI:

- Secured for UNLV a new Varian K-15 Linatron X-Ray accelerator, including a 5-year service contract with a total value of **$2.8M.**
- UNLV Accelerator Facility renovation funded by UNLV **$1.8M**, Equipment and services donated by Varian to date (June 2013) about **$1M**.
- "Global Security Directorate Initiatives", DOE (ORNL) (funding allocated, total **$100k**), 1 year and 2 months project period, starting date 11/2012.
- "Development of Biofuels using Ionic Transfer Membranes III", DOE (funded, total **$1,875M**), 2-year project period, starting date 1/2011.
- "Efficient thermal management and temperature amplification for lunar based systems", NASA (funded, total **$750k**), 12 months project period, starting date 10/2010.
- "X-Ray Interactions with Molecules", NSF (funded, total **$440k**), 3 year project period, starting date 7/2010.
- "Hollow Glass Microspheres: Glasses and Nano-composites for Hydrogen Storage", DOE (funded, total **$654k**), starting date 1/2010.
- "Development of Biofuels using Ionic Transfer Membranes II", DOE (funded, total **$1,28M**), 18 months project period, starting date 7/2009.
- Applied Research Initiative (ARI) match funds for "Development of Biofuels using Ionic Transfer Membranes" State of Nevada General Fund (funded, total **$221k**), starting date 11/2006.
- "Hydrogen Fuel Cells and Storage Technology – Task 11", DOE (funded, total **$200k**), 2nd year, starting date 9/2006.
- "Development of Biofuels using Ionic Transfer Membranes", DOE (funded, total **$3,7M**), starting date 7/2006.
- "X-Ray Atomic and Molecular Spectroscopy: Probing Fundamental Interactions between X-Rays and Matter", NSF (funded, total **$450k**), 3-year project period, starting date 7/2006.
- "Material and Environmental Science with X-Rays", PNNL (funded, total **$83k**), 11 months, starting date 10/2005.
- "Hydrogen Fuel Cells and Storage Technology – Task 11", DOE (funded, total **$200k**), 1st year, starting date 9/2005.
- "X-Ray Atomic and Molecular Spectroscopy: Probing Fundamental Interactions between X-Rays and Matter", NSF (funded, total **$45k**), 1-year project period, starting date 7/2005.
- "Material and Environmental Science with X-Rays", PNNL and LBNL, (funded, total **$17k**), 4 months, starting date 6/2005.
- "Material and Environmental Science with X-Rays", EUV Technology, Inc., (funded, total **$10k**), 2 months, starting date 11/2004.

- X-Ray Laser Photoelectron Spectroscopy", LLNL, (funded, total **$32.5k**), 2 years, starting date 5/2003.
- "Material and Environmental Science with X-Rays", Univ. Of Alberta, CA, (funded, total **$51k**), 3-year project period, starting date 7/2002.
- "X-Ray Atomic and Molecular Spectroscopy: Probing Fundamental Interactions between X-Rays and Matter", NSF (funded, total **$425k**), 3-year project period, starting date 7/2002.
- "Evaluation of Fluorapatite as a Waste-Form Material", UNLV Transmutation Research Program, Task 16, Advanced Fuel Cycle Initiative, DOE (funded, total **$476k**), 3-year project period, starting date 8/2002.
- Post-doctoral support to work at the Department of Chemistry, UNLV, German Research Society (DFG), funded **$60k** for 18 months, 5/95 – 4/96 and 10/96 – 9/97.

9. Research Accomplishments

- 100 publications most of them peer-reviewed
- 200 presentations at national and international scientific conferences/meetings
- 18 invited talks at national and international scientific conferences/meetings and institutions
- 21 public speaking engagements, one book, two patents

10. Patents

Patent # 7,047,377 "FLEXIBLE REMOTE DATA TRANSFER AND DATA SYNCHRONIZATION", May 16, 2006.

Patent # 8,663,429 "HOLLOW GLASS MICROSPHERE CANDIDATES FOR REVERSIBLE HYDROGEN STORAGE, PARTICULARLY FOR VEHICULAR APPLICATIONS", March 4, 2014.

11. Research Education and Lead

Research Professors

Research Professor Dr. Craig Palmer (2008 – 2013) – supervisor
Research Professor Dr. Denis Beller (2008 – 2013) – supervisor
Research Professor Dr. David Stahl (2010 – 2012) – supervisor
Assoc. Research Professor Dr. K.E. Lipinska (2006 – 2013) – supervisor
Assoc. Research Professor Dr. Jian Ma (2008 – 2013) – supervisor
Assoc. Research Professor Dr. Thomas Hartmann (2008 – 2013) – supervisor
Assoc. Research Professor Dr. Anthony Hechanova (2008 – 2010) – supervisor
Assoc. Research Professor Dr. Wayne Stolte (2008 – 2014) – co-supervisor
Assist. Research Professor Dr. Allen Johnson (2008 – 2012) – supervisor

Post-Doctoral Scholars

Dr. David Gardenghi (6/2012 – 2014) – co-supervisor
Dr. Jason Young (10/2007 – 6/2008) – co-supervisor
Dr. Iraida Demchenko (7/2007- 9/2011) – supervisor
Dr. Anna Wolska (7/2002 – 6/2005) – co-supervisor
Dr. Björn Zimmermann (7/2002 – 6/2004) – co-supervisor
Dr. Renaud Guillemin (12/2000 – 8/2005) – co-supervisor
Dr. Sung-Woo Yu (5/2000 – 3/2004) – co-supervisor
Dr. Ponnusamy Nachimuthu (5/2000 – 9/2006) – co-supervisor
Dr. Gunnar Öhrwall (9/1999 – 7/2001) – co-supervisor
Dr. Marcelo Sant'Anna (4/1999 – 1/2001) – co-supervisor
Dr. Ivan Dominguez-Lopez (1/1999 – 12/1999) – co-supervisor
Dr. David Hansen (6/1998 – 2/1999) – co-supervisor

Graduate Students

Jason Thompson (2013 – 2014) – supervisor
Kyle Bowen (2011 – 2016) – co-supervisor
Patricia Kalita (2010 – 2014) – co-supervisor
Amanda Hudson (1/2002 –9/2007) PhD, M.S. in Chemistry 12/2003 – co-supervisor
Lan Dang (1/1998 – 12/2006) M.S. in Chemistry 7/2001 – co-supervisor
Cong-Ich Tran (1/2001 – 1/2007) M.S. in Chemistry 8/2003 – co-supervisor
G.W. Chinthaka Silva (1/2002 – 8/2005) M.S. in Chemistry – co-supervisor
Chirantha P. Rodrigo (8/2002 – 5/2005) M.S. in Chemistry – co-supervisor
Ina P. Bashta (1/2002 –5/2004) B.S. in Chemistry – co-supervisor

Undergraduate Students

Robert Gray (2013 – 2014) – supervisor
Anna Childs (2011 – 2013) – co-supervisor
Kyle Bowen (2007 – 2011) – co-supervisor
Ranjay Kaushal (2005, 2007) – supervisor
Satpreet Singh (2005) – supervisor
Dyane Hill (2005) – supervisor
Joe Baker (2002 – 03) – co-supervisor
Felice Ferri (2001 – 03) – co-supervisor
Monica Pangilinan (2001) – co-supervisor
Sierra Laidman (2001) – co-supervisor
Inna Bashta (2000-02) – co-supervisor
Jennifer Overberg (2000 – 01) – co-supervisor
Maraya Lotrakul (1999 – 02) – co-supervisor
Melanie Blackburn (1999) – co-supervisor
Tara Goddard (1999) – co-supervisor
Colin Cunliff (1999) – co-supervisor
Jason Fong (1996 – 2000) – co-supervisor
Scott Oblad (1996) – co-supervisor
Brett Vanderford (1996) – co-supervisor
Ryan Martin (1996) – co-supervisor
Jeanette Daniels (1995) – co-supervisor
Greg Fisher (1994 – 95) – co-supervisor
Tammy Nguyen (1994) – co-supervisor

12. Research Collaborations

Amusia, M. Ya.	Hebrew University of Jerusalem, Jerusalem, Israel
Arce, J.C.	Departamento de Quimica, Universidad del Valle, A. A. 25360 Cali, Colombia
Berrah, N.	Western Michigan University, Kalamazoo, Michigan
Chakraborty, H.S.	Department of Physics, Indian Institute of Technology—Madras, Madras, India
Cheng, K.T.	Lawrence Livermore National Laboratory
Ceolin, D.	CEA/DRECAM/SPAM, CEN Saclay, 91191 Gif /Yvette Cedex, France
Chernysheva, L.V.	Physical-Technical Institute, St. Petersburg, Russia
Derevianko, A.	University of Nevada, Reno
Deshmukh, P.C.	Department of Physics, Indian Institute of Technology—Madras, Madras, India
Fadley, C.S.	University of California at Davis
Guillemin, R.	Laboratoire de Chimie-Physique Matiere et Rayonnement
Heske, C.	University of Nevada, Las Vegas
Johnson, W.R.	University of Notre Dame
Kanter, E.P.	Argonne National Laboratory
Krässig, B.	Argonne National Laboratory
Langer, B.	Max-Born-Institut, Berlin, Germany

Langhoff, P.W.	San Diego Supercomputer Center, University of California–San Diego
Leclercq, N.	CEA/DRECAM/SPAM, CEN Saclay, 91191 Gif /Yvette Cedex, France
LeGuen, K.	CEA/DRECAM/SPAM, CEN Saclay, 91191 Gif /Yvette Cedex, France
Lubell, M.S.	Department of Physics, City College of New York, New York, New York 10031
Manson, S.T.	Georgia State University
Martin, N.L.S.	University of Kentucky, Lexington, Kentucky 40506
McKoy, V.	California Institute of Technology, Pasadena, California
Miron, C.	CEA/DRECAM/SPAM, CEN Saclay, 91191 Gif /Yvette Cedex, France
Morin, P.	CEA/DRECAM/SPAM, CEN Saclay, 91191 Gif /Yvette Cedex, France
Piancastelli, M.N.	University „Tor Vergata", Rome, Italy
Rolles, D.	University of Western Michigan
Sheehy, J.A.	Air Force Research Laboratory, AFRL/PRSP, Edwards AFB, CA
Simon, M.	Laboratoire de Chimie-Physique Matiere et Rayonnement
Southworth, S.H.	Argonne National Laboratory
Wehlitz, R.	Synchrotron Radiation Center, University of Wisconsin
Whitfield, S.	University of Wisconsin-Eau Claire, Eau Claire, Wisconsin
Yu, S.-W.	Lawrence Livermore National Laboratory
Zhou, H.L.	Georgia State University
Zimmermann, B.	Max-Planck-Institute for the Physics of Complex Systems, Dresden, Germany

13. Professional Services

- Member of the Nevada Institute of Renewable Energy Commercialization's (NIREC) Technology Commercialization Advisory Board (TCAB) (2010 – 2012)
- Member of the Institutional Management team of the NSHE Nevada Renewable Energy Consortium (NVREC) and the Management Advisory Committee (2009 – 2012)
- Member of the NDA Green Technology Committee (2009 – 2012)
- Reviewer for the American Institute of Physics (Physical Review Letters and Physical Review A)
- Reviewer for the Institute of Physics (Journal of Physics B and the New Journal of Physics)
- Reviewer for the National Science Foundation
- Reviewer for Fonds zur Förderung der wissenschaftlichen Forschung (Austrian Science Fund)
- Physical Review Letters; Physical. Review. B; NSF Sustainable Energy Pathways Review Panel, on sustainability of photovoltaic systems, Proposal reviewer for the Austrian Science Fund

14. Professional Events Organization

- Co-Chair of the Workshop on X-Ray Atomic and Molecular Spectroscopy using Synchrotron Radiation from the Advanced Light Source, UNLV, May 23-24, 1994
- Co-Chair of the Workshop on X-Ray Atomic and Molecular Spectroscopy using Synchrotron Radiation, UNLV, December 6-7, 2001
- Chair of the 2007 Inaugural Energy Symposium, UNLV, August 15-16, 2007
- Member of organizing committee for the first National Clean Energy Summit, UNLV, August 18-19, 2008
- Chair of the UNLV Renewable Energy Symposium, UNLV, August 20, 2008
- Session Chair (Biofuels) of the 42nd Western Regional Meeting of the American Chemical Society, September 23 -27, 2008, Las Vegas, Nevada.
- Chair of the 3rd Annual UNLV Renewable Energy Symposium, UNLV, August 11-12, 2009
- Chair of the Second Annual Nevada Renewable Energy Consortium Meeting, UNLV, August 20, 2010
- Co-Chair and Moderator (Panel 3) of the 2010 UNLV Clean Energy Forum: A Game Changing Agenda for a Sustainable Energy Future, UNLV, September 8, 2010
- Co-Chair (IWP Int. Advisory Com., RIXS Int. Advisory Com., Local Organizing Committee) of the joint workshops the 2011 International Workshop on Photoionization (IWP) and the 2011 International Workshop on Resonant Inelastic X-ray Scattering (RIXS), Las Vegas, Nevada, May 22-27, 2011.
- Organizer and Panelist on public Forum "Fukushima Daiichi Nuclear Power Plant Accident: What happened, could it happen here, and what are the implications to U.S. policy?" at the Barrick Museum Auditorium, Las Vegas, March 21, 2011

- Organizer and Panelist on public forum commemorating the 25th anniversary of the Chernobyl nuclear plant disaster and a round-table discussion on "America's Portfolio: What is Nuclear Energy's Role?" at the Barrick Museum Auditorium, Las Vegas, April 26, 2011
- Co-hosted and organized meetings with NSTec and NASA officials to explore research collaborations with UNLV.
- Hosted the Fourth Integrated Symposium on Collaborative Research Initiatives between National Security Technologies, LLC and the University of Nevada, Las Vegas on February 28, 2012.
- Biofuels kick-off meeting phase III at UNLV on September 7, 2012.
- Hosted the first Cyber Security Collaborations Symposium at the Stan Fulton Building September 11, 2012. The symposium and participants were part of a collaboration between HRC/UNLV, Oak Ridge National Laboratory, the University of Tennessee, Louisiana Tech, and Mississippi State University
- Co-organized and co-hosted the USAF-UNLV UAS and Cyber Security Meeting, 7 March, 2013
- Co-organized with USAF and moderated a Symposium called 'Titans of Industry', JW Marriott Las Vegas Resort & Spa • 26 & 27 June, 2013

15. Professional Memberships

American Physical Society (1988 to 2014)
American Association for the Advancement of Sciences (2010 to 2014)

16. Teaching

Fall 2001	UNLV Chemistry	Molecular Spectroscopy – CHE 793

17. Publications – Refereed Journal Articles

1.) U. Becker, R. Wehlitz, O. Hemmers, B. Langer, and A. Menzel: Observation of Participator Auger Decay following Valence Photoionization with Excitation
Phys. Rev. Lett. 63, 1054-1057 (1989)

2.) B. Langer, J. Viefhaus, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker: High-resolution photoelectron spectrometry study of conjugate shakeup processes in the Li 1s threshold region
Phys. Rev. A 43, Rap. Comm. 1652-1655 (1991)

3.) R. Wehlitz, F. Heiser, O. Hemmers, B. Langer, A. Menzel, and U. Becker: Electron-Energy and -Angular Distributions in the Double Photoionization of Helium
Phys. Rev. Lett. 67, 3764-3767 (1991)

4.) U. Becker, O. Hemmers, B. Langer, A. Menzel, R. Wehlitz, and W. B. Peatman: Evidence for atomic processes in molecular valence double ionization
Phys. Rev. A 45, R1295-R1298 (1992)

5.) U. Becker, O. Hemmers, B. Langer, I. Lee, A. Menzel, R. Wehlitz, and M.Ya. Amusia: Multiplet-changing Auger transitions in valence double photoionization
Phys. Rev. A 47, R767-R770 (1993)

6.) O. Hemmers, F. Heiser, J. Eiben, R. Wehlitz, and U. Becker: Observation of Non-isotropic Auger Angular Distribution in the C(1*s*) Shape Resonance of CO
Phys. Rev. Lett. 71, 987-990 (1993)

7.) O. Hemmers, F. Heiser, J. Eiben, R. Wehlitz, and U. Becker: Variation of the C (KVV) Auger angular distribution in the C(1s) σ^*-resonance of CO
Nucl. Instrum. And Methods B87, 209-214 (1994)

8.) B. Langer, J. Viefhaus, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker: Observation of parity-unfavored transitions in the nonresonant photoionization of argon
Phys. Rev. A 51, R882-R885 (1995)

9.) N. Saito, F. Heiser, O. Hemmers, A. Hempelmann, K. Wieliczek, J. Viefhaus, and U. Becker: Vibrational-state-dependent decay of the CO C(1s) excitation
Phys. Rev. A 51, R4313-R4316 (1995)

10.) T. Liebsch, O. Plotzke, F. Heiser, U. Hergenhahn, O. Hemmers, R. Wehlitz, J.Viefhaus, B. Langer, S.B. Whitfield, and U. Becker: Angle-resolved photoelectron spectroscopy of C_{60}
Phys. Rev. A 52, 457-464 (1995)

11.) O. Hemmers, S.B. Whitfield, N. Berrah, B. Langer, R. Wehlitz, and U. Becker: Angular distributions of the C(1s) photoelectron satellites in CO
J. Phys. B 28, L693-L700 (1995)

12.) B. Langer, N. Berrah, A. Farhat, O. Hemmers, and J.D. Bozek: Auger resonant Raman spectroscopy used to study the angular distributions of the Xe $4d_{5/2} \rightarrow 6p$ decay spectrum
Phys. Rev. A 53, R1946-R1949 (1996)

13.) Norio Saito, Franz Heiser, Oliver Hemmers, Kornel Wieliczek, Jens Viefhaus, and Uwe Becker: Kinetic-energy- and angular-resolved fragmentation of CO in vibrational-resolved C 1*s* excitation
Phys. Rev. A 54, 2004-2010 (1996)

14.) W. Ng, G. Jones, R.C.C. Perera, D. Hansen, J. Daniels, O. Hemmers, P. Glans, S.B. Whitfield, H.Wang, and D.W. Lindle: First Results from the High-Brightness X-Ray Spectroscopy Beamline at ALS
Rev. Sci. Instr. 67, (9) (1996)

15.) N. Berrah, B. Langer, J.D. Bozek, T. Gorczyca, O. Hemmers, D.W. Lindle, and O.F. Toader: Angular-distribution parameters and R-matrix calculations of Ar $3s^{-1} \rightarrow np$ Resonances
J. Phys. B 29, 5351-5365 (1996)

16.) R. Wehlitz, I.A. Sellin, O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.W. Lindle, B. Langer, N. Berrah, J. Viefhaus, and U. Becker: Photon energy dependence of ionization-excitations in helium at medium energies
J. Phys. B 30, L51-L58 (1997)

17.) E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, S.T. Manson, O. Hemmers, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera: Breakdown of the Independent Particle Approximation in High-Energy Photoionization
Phys. Rev. Lett. 78, 4553-4556 (1997)

18.) D.W. Lindle, O. Hemmers, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, R. Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera: The X-Ray Atomic and Molecular Spectroscopy Program at the Advanced Light Source
Indian J. Phys. 71B(3), 325-334 (1997)

19.) W. C. Stolte, Y. Lu, J.A.R. Samson, O. Hemmers, D.L. Hansen, S.B. Whitfield, H. Wang, P. Glans, and D.W. Lindle: The K-shell Auger decay of atomic oxygen
J. Phys. B 30, 4489-4497 (1997)

20.) O. Hemmers, G. Fischer, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, and S.T. Manson: Beyond the dipole approximation: angular-distribution effects in valence photoemission
J. Phys. B 30, L727-L733 (1997)

21.) D.L. Hansen, M.E. Arrasate, J. Cotter, G.R. Fisher, O. Hemmers, K.T. Leung, J.C. Levin, R. Martin, P. Neill, R.C.C. Perera, I.A. Sellin, M. Simon, Y. Uehara, B. Vanderford, S.B. Whitfield, and D.W. Lindle: Photofragmentation of third-row hydrides following photoexcitation at deep-core levels
Phys. Rev. A 58, 3757 (1998)

22.) O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.W. Lindle, R. Wehlitz, and I.A. Sellin: High-resolution electron time-of-flight apparatus for the soft-x-ray region
Rev. Sci. Instrum. 69, 3809 (1998)

23.) O. Hemmers, F. Heiser, J. Viefhaus, K. Wieliczek and U. Becker: Angle-resolved resonant Auger electron spectroscopy of CO after vibrational-resolved C $1s \rightarrow \eta\ell\lambda$ excitations
J. Phys. B 32, 3769 (1999)

24.) D.L. Hansen, O. Hemmers, H. Wang, D.W. Lindle, P. Focke, I.A. Sellin, C. Heske, H.S. Chakraborty, P.C. Deshmukh, S.T. Manson: Validity of the independent-particle approximation in x-ray photoemission: The exception, not the rule
Phys. Rev. A 60, R2641 (1999)

25.) D.W. Lindle and O. Hemmers: Breakdown of the Dipole Approximation in Soft-X-Ray Photoemission
J. Electron Spectrosc. Relat. Phenom. 100, 297 (1999)

26.) A. Derevianko, O. Hemmers, S. Oblad, P. Glans, H. Wang, S.B. Whitfield, R. Wehlitz, I.A. Sellin, W.R. Johnson, and D.W. Lindle: Electric-octupole and pure-electric-quadrupole effects in soft x-ray photoemission
Phys. Rev. Lett. 84, 2116 (2000)

27.) N. Saito, A. Hempelmann, F. Heiser, O. Hemmers, K. Wieliczek, J. Viefhaus, and U. Becker: Lifetime effects on the dissociation of core-excited N_2 and CO molecules
Phys. Rev. A 61, 022709 (2000)

28.) P.W. Langhoff, J.C. Arce, J.A. Sheehy, O. Hemmers, H. Wang, P. Focke, I.A. Sellin, and D.W. Lindle: On the angular distributions of electrons photoejected from fixed-in-space and randomly oriented molecules, in A. Hitchcock and K.T. Leung, eds., Proceedings of the Eighth International Conference on Electronic Spectroscopy & Structure (ICESS8), Berkeley, CA, USA, August 8-12, 2000, J. Electron Spectrosc. Relat. Phenom. 114-116, 23 (2001)

29.) H.S. Chakraborty, D.L. Hansen, O. Hemmers, P.C. Deshmukh, P. Focke, I.A. Sellin, C. Heske, D.W. Lindle, and S.T. Manson: Interchannel coupling in the photoionization of the M-shell of Kr well above threshold: Experiment and Theory
Phys. Rev. A 63, 042708 (2001)

30.) W.C. Stolte, D.L. Hansen, M.N. Piancastelli, I. Dominguez Lopez, A. Rizvi, O. Hemmers, H. Wang, A.S. Schlachter, M.S. Lubell, and D.W. Lindle: Anionic Photofragmentation of CO: A Selective Probe of Core-Level Resonances
Phys. Rev. Lett. 86, 4504 (2001)

31.) O. Hemmers, S.T. Manson, M.M. Sant'Anna, P. Focke, H. Wang, I.A. Sellin, and D.W. Lindle: Relativistic effects on interchannel coupling in atomic photoionization: the photoelectron angular distribution of Xe 5*s*
Phys. Rev. A 64, 022507 (2001)

32.) D.W. Lindle and O. Hemmers: Time-of-Flight Photoelectron Spectroscopy of Atoms and Molecules
J. Alloys Comp. 328, 27 (2001)

33.) H. Wang, G. Snell, O. Hemmers, M.M. Sant'Anna, I.A. Sellin, N. Berrah, D.W. Lindle, P.C. Deshmukh, N. Haque, and S.T. Manson: Dynamical relativistic effects in photoionization: Spin-orbit-resolved angular distributions of xenon 4d photoelectrons near the Cooper minimum

Phys. Rev. Lett. 87, 123004 (2001)

34.) J.C. Arce, J.A. Sheehy, P.W. Langhoff, O. Hemmers, H. Wang, P. Focke, I.A. Sellin, and D.W. Lindle: On the Angular Distributions of Molecular Photoelectrons: Dipole Cross Sections for Fixed-in-Space and Randomly Oriented Molecules
Chem. Phys. Lett. 346, 341 (2001); Erratum 349, 349 (2001)

35.) O. Hemmers, H. Wang, P. Focke, I.A. Sellin, D.W. Lindle, J.C. Arce, J.A. Sheehy, and P.W. Langhoff: Large Nondipole Effects in the Angular Distributions of K-Shell Photoelectrons from Molecular Nitrogen
Phys. Rev. Lett. 87, 273003 (2001)

36.) O. Hemmers, M. Blackburn, T. Goddard, P. Glans, H. Wang, S.B. Whitfield, R. Wehlitz, I.A. Sellin, and D.W. Lindle: Dipole and Nondipole Angular-Distribution Effects in the Valence Photoemission of Neon
J. Electron Spectrosc. Relat. Phenom. 123, 257 (2002)

37.) B. Krässig, E.P. Kanter, S.H. Southworth, R. Guillemin, O. Hemmers, D.W. Lindle, R. Wehlitz, and N.L.S. Martin: Photoexcitation of a Dipole-Forbidden Resonance in Helium
Phys. Rev. Lett. 88, 203002 (2002)

38.) R. Guillemin, O. Hemmers, D.W. Lindle, K. Le Guen, D. Ceolin, C. Miron, N. Leclercq, P. Morin, M. Simon, and P.W. Langhoff: Non-Dipolar Electron Angular Distributions from Fixed-in-Space Molecules
Phys. Rev. Lett. 89, 033002 (2002)

39.) S. Laidman, M. Pangilinan, R. Guillemin, S.W. Yu, G. Öhrwall, D.W. Lindle, and O. Hemmers: Exploring the Limits of the Dipole Approximation with Angle-Resolved Electron Time-of-Flight Spectrometry
Journal of Undergraduate Research, Office of Science, U.S. Department of Energy, Vol. II, 65-70 (2002)

40.) D.L. Hansen, W.C. Stolte, O. Hemmers, R. Guillemin, and D.W. Lindle: Anion formation moderated by post-collision interaction following core-level photoexcitation of CO
J. Phys. B 35, L381 (2002)

41.) O. Hemmers, R. Guillemin, E.P. Kanter, B. Krässig, D.W. Lindle, S.H. Southworth, R. Wehlitz, J. Baker, A. Hudson, M. Lotrakul, D. Rolles, W.C. Stolte, I.C. Tran, A. Wolska, S.W. Yu, M.Ya. Amusia, K.T. Cheng, L.V. Chernysheva, W.R. Johnson, and S.T. Manson: Dramatic nondipole effects in low-energy photoionization: experimental and theoretical study of Xe 5*s*
Phys. Rev. Lett. 91, 053002 (2003)

42.) E.P. Kanter, B. Krässig, S.H. Southworth, R. Guillemin, O. Hemmers, D.W. Lindle, R. Wehlitz, M.Ya. Amusia, L.V. Chernysheva, and N.L.S. Martin: E1-E2 interference in the VUV photoionization of He
Phys. Rev. A 68, 012714 (2003)

43.) O. Hemmers, R. Guillemin and D.W. Lindle: Nondipole effects in soft x-ray photoionization
Radiat. Phys. Chem. 70, 123 (2004)

44.) R. Guillemin, O. Hemmers, D. Rolles, S.-W. Yu, A. Wolska, I. Tran, A. Hudson, J. Baker, and D.W. Lindle: Nearest-Neighbor-Atom Core-Hole Transfer in Isolated Molecules
Phys. Rev. Lett. 92, 223002 (2004)

45.) O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, D.W. Lindle, K.T. Cheng, W.R. Johnson, H.L. Zhou, and S.T. Manson: Nondipole effects in the photoionization of Xe $4d_{5/2}$ and $4d_{3/2}$: Evidence for quadrupole satellites
Phys. Rev. Lett. 93, 113001 (2004)

46.) O. Hemmers, R. Guillemin, A. Wolska, D.W. Lindle, D. Rolles, K.T. Cheng, W.R. Johnson, H.L. Zhou, and S.T. Manson: Nondipole effects in Xe 4d photoionization
J. Electron Spectrosc. Relat. Phenom. 144-147, 51 (2005)

47.) O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, D.W. Lindle, E. Kanter, B. Krässig, S. Southworth, R. Wehlitz, P. Langhoff, V. McKoy, and B. Zimmermann: Nondipole effects in molecular nitrogen valence shell photoionization
J. Electron Spectrosc. Relat. Phenom. 144-147, 155 (2005)

48.) R. Guillemin, O. Hemmers, D.W. Lindle, and S.T. Manson: Experimental investigation of nondipole effects in photoemission at the Advanced Light Source
Radiat. Phys. Chem. 73, 311 (2005)

49.) O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, D.W. Lindle, E.P. Kanter, B. Krässig, S.H. Southworth, R. Wehlitz, B. Zimmermann, V. McKoy, and P.W. Langhoff: Low-Energy Nondipole Effects in Molecular Nitrogen Valence-Shell Photoionization
Phys. Rev. Lett. 97, 103006 (2006)

50.) D. Céolin, M.N. Piancastelli, R. Guillemin, W.C. Stolte, S.-W. Yu, O. Hemmers, and D.W. Lindle: Fragmentation of methyl chloride studied by partial positive and negative ion yield spectroscopy
J. Chem. Phys. **126**, 084309 (2007)

51.) G.W.C. Silva, L. Ma, O.A. Hemmers, and D.W. Lindle: Micro-Structural characterization of precipitation-synthesized fluorapatite nano-material by transmission electron microscopy using different sample preparation techniques
Micron **39**, 269 (2008)

52.) P.C. Deshmukh, T. Banerjee, H.R. Varma, O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, S.W. Yu, D.W. Lindle, W.R. Johnson, and S.T. Manson: Theoretical and Experimental Demonstration of the Existence of Quadrupole Cooper Minima
J. Phys. B: At. Mol. Opt. Phys. **41**, 021002 (2008)

53.) K.E. Lipinska-Kalita, P.E. Kalita, O.A. Hemmers, T. Hartmann: Equation of State of Gallium Oxide to 70 Gpa: Comparison of Quasihydrostatic and Nonhydrostatic Compression
Phys. Rev. B **77**, 094123 (2008)

54.) G.W. Chinthaka Silva, O. Hemmers, K.R. Czerwinski, and D.W. Lindle: Investigation of Nanostructure and Thermal Behavior of Zinc-Substituted Fluorapatite.
Inorg. Chem., **47**(17), 7757-7767 (2008)

55.) K.E. Lipinska-Kalita, O.A. Hemmers, P.E. Kalita, G. Mariotto, S. Gremsch, R.J. Hemley, T. Hartmann: High-Pressure Structural Integrity and Structural Transformations of glass-derived Nanocomposites: a Review
J. of Phys. and Chem. of Solids, **69**, 2268-2273 (2008)

56.) Kristina E. Lipinska-Kalita, Patricia. E. Kalita, Cédric Gobin, Oliver A. Hemmers, Thomas Hartmann and Gino Mariotto: Stability and equation of state of a nanocrystalline Ga-Ge mullite in a vitroceramic composite: A synchrotron x-ray diffraction study
Phys. Rev. B **77**, 134107 (2008)

57.) I.N. Demchenko, K. Lawniczak-Jablonska, T. Tyliszczak, N.R. Birkner, W.C. Stolte, M. Chernyshova, and O. Hemmers, XANES studies of modified and newly synthesized nanostructured manganese oxides
J. Elect. Spect. Rel. Phen. **24**, 171 (2009)

58.) W.C. Stolte, R. Guillemin, I.N. Demchenko, G. Öhrwall, S.-W. Yu, J.A. Young, M. Taupin, O. Hemmers, M.N. Piancastelli and D.W. Lindle, Inner-shell photofragmentation of Cl_2
J. Phys. B: At. Mol. Opt. Phys. **43,** 155202 (2010)

59.) I. N. Demchenko, J. D. Denlinger, M. Chernyshova, K. M. Yu, D. T. Speaks, P. Olalde-Velasco, O. Hemmers, W. Walukiewicz, A. Derkachova, and K. Lawniczak-Jablonska, Full multiple scattering analysis of XANES at the Cd L 3- and O K- edges in CdO films combined with a soft-x-ray emission investigation
Phys. Rev. B **82**, 075107 (2010)

60.) K. Lipinska, P. Kalita, O. Hemmers, S. Sinogeikin, G. Mariotto, C. Segre and Y. Ohki, "Exploring New Routes for the Development of Functional Nanomaterials using Extreme Pressure", Processing and Properties of Advanced Ceramics and Composites II
Ceramic Transactions **220**, 6 (2010)

61.) I.N. Demchenko, M. Chernyshova, T. Tyliszczak, J.D. Denlinger, K.M. Yu, D.T. Speaks, O. Hemmers, W. Walukiewicz, G. Derkachov and K. Lawniczak-Jablonska, Electronic structure of CdO studied by soft X-ray spectroscopy
J.Elect. Spect. Rel. Phen. (2010)

62.) Jian Ma and Oliver Hemmers, Technoeconomic Analysis of Microalgae Cofiring Process for Fossil Fuel-Fired Power Plants
J. Energy Resource. Technol. 133, 011801, DOI:10.1115/1.4003729, (2011)

63.) P. Kalita, A. Cornelius, K. Lipinska, M. Lufaso, Z. Kann, S. Sinogeikin, O. Hemmers, and H. Schneider, Pressure Induced Phase Transitions in Mullite-Type $Bi_2(Fe_{4-x}Mn_x)O_{10-d}$ Complex Oxides
International Journal of Materials Research, 103, 4 (2012)

64.) P. Kalita, H. Schneider, K. Lipinska, S. Sinogeikin, O. Hemmers, A. Cornelius, High-Pressure Behavior of Mullite: An X-Ray Diffraction Investigation
Journal of American Ceramic Society, Volume 96, Issue 5, Pages: 1635–1642, (2013)

18. Publications – Books

O. Hemmers, *Korrelationseffekte in kleinen Molekülen*. Vol. 3 in the series (studies of vacuum ultraviolet and x-ray processes, ed. U. Becker), AMS Press, New York (1993)

19. Publications – Contributed News Articles

O. Hemmers, P. Glans, D.L. Hansen, H.Wang, S.B. Whitfield, D.W. Lindle, R.Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera: Photoelectron Spectroscopy and the Dipole Approximation
Synch. Rad. News Vol. 9, No. 6, 40-45 (1996); Vol. 10, No. 3, 21 (1997)

20. Publications – Non-Refereed Journal Articles

1.) B. Langer, A. Farhat, B. Nessar, N. Berrah, O. Hemmers, J.D. Bozek: Angle Resolved Study of the Xe $4d \rightarrow 6p$ Resonant Auger Process with High Resolution
Proceedings of the Workshop on Atomic Physics with Hard X-Rays from High Brilliance Synchrotron Light Sources, Argonne, Illinois, May 20-21, 1996

2.) B. Langer, A. Farhat, B. Nessar, N. Berrah, O. Hemmers, J.D. Bozek: Angle Resolved Resonant Raman Auger Spectroscopy of the Xe $4d \rightarrow 6p$ Transition
Application of Accelerators in Research and Industry, Denton 1996, edited by J.L. Duggan and I.L. Morgan (AIP Press, Woodbury, New York, 1997), pp. 161

3.) B. Langer, N. Berrah, A. Farhat, O. Hemmers, J.D. Bozek: Auger Resonant Raman Spectroscopy Used to Study the Angular Distributions of the Xe $4d \rightarrow 6p$ Decay Spectrum
Advanced Light Source Compendium of User Abstracts and Technical Reports 1993-1996, April 1997, p. 263

4.) H. Wang, P. Glans, O. Hemmers, S.B. Whitfield, D.W. Lindle, R. Wehlitz, I.A. Sellin, J.C. Levin, G.B. Armen, and R.C.C. Perera: An Autoionization Study of the Argon 2p Satellites Excited near the Argon 2s Threshold
Advanced Light Source Compendium of User Abstracts and Technical Reports 1993-1996, April 1997, p. 188

5.) W.C. Stolte, Y. Lu, J.A.R. Samson, O. Hemmers, D.L. Hansen, P. Glans, S.B. Whitfield, H. Wang, and D.W. Lindle: The K-Shell Auger Decay of Atomic Oxygen
Advanced Light Source Compendium of User Abstracts and Technical Reports 1993-1996, April 1997, p. 56

6.) R. Wehlitz, I.A. Sellin, O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.W. Lindle, B. Langer, N. Berrah, J. Viefhaus, and U. Becker: Partial Cross Sections of Helium Satellites at Medium Photon Energies
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7.) O. Hemmers, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera, and D.W. Lindle: Photoelectron Spectroscopy and the Dipole Approximation
Advanced Light Source Compendium of User Abstracts and Technical Reports 1993-1996, April 1997, p. 224

8.) R.C.C. Perera, W. Ng, G. Jones, D.L. Hansen, J. Daniels, O. Hemmers, P. Glans, S.B.Whitfield, H. Wang, and D.W. Lindle: First Results from the High-Brightness X-Ray Spectroscopy Beamline at ALS
Advanced Light Source Compendium of User Abstracts and Technical Reports 1993-1996, April 1997, p. 312

9.) R.Wehlitz, I.A. Sellin, O. Hemmers, S.B. Whitfield, P. Glans, H.Wang, D.W. Lindle, B. Langer, N. Berrah, J. Viefhaus, and U. Becker: Making a Link from Ionization-Excitation to the Double Photoionization of Helium
Book of Abstracts of Contributed Papers, Vol. 2, p. MO 070, Twentieth International Conference on the Physics of Electronic and Atomic Collisions, XX. ICPEAC, Vienna, Austria, 23-29 July, 1997

10.) O. Hemmers, P. Glans, D.L. Hansen, H.Wang, S.B. Whitfield, D.W. Lindle, R.Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, and S.T. Manson: Breakdown of the Independent Particle Approximation in High-Energy Photoionization
Advanced Light Source Compendium of User Abstracts and Technical Reports 1997, July 1998, p. 208

11.) O. Hemmers, P. Glans, H. Wang, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera, and D.W. Lindle: Beyond the Dipole Approximation: Angular-Distribution Effects in N2 1s Photoemission
Advanced Light Source Compendium of User Abstracts and Technical Reports 1997, July 1998, p. 204

12.) O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.W. Lindle, R. Wehlitz, and I.A. Sellin: High-resolution electron time-of-tight apparatus for the soft x-ray region
Advanced Light Source Compendium of User Abstracts and Technical Reports 1998, August 1999

13.) O. Hemmers, P. Glans, D.L. Hansen, H.Wang, S.B. Whitfield, D.W. Lindle, R.Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera: Breakdown of the Dipole Approximation in Soft-X-Ray Photoemission
Advanced Light Source Compendium of User Abstracts and Technical Reports 1998, August 1999

14.) D.L. Hansen, O. Hemmers, H. Wang, D.W. Lindle, P. Focke, I.A. Sellin, C. Heske, H.S. Chakraborty, P.C. Deshmukh, and S.T. Manson: Validity of the independent-particle approximation in x-ray photoemission: The exception not the rule
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15.) O. Hemmers, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera, and D.W. Lindle: Beyond the Dipole Approximation: Surprising New Results in Soft-X-Ray Photoemission
ALS Activity Report, Science Highlights 1997-98, p. 41

16.) D.W. Lindle, O. Hemmers, H. Wang, P. Focke, I.A. Sellin, J.D. Mills, J.A. Sheehy, and P.W. Langhoff: Beyond the Dipole Approximation: Angular-Distribution Effects in the 1s Photoemission from Small Molecules
AIP Conference Proceedings of the XXI. International Conference on the Physics of Electronic and Atomic Collisions (XXI ICPEAC), Sendai, Japan, July 22-27, 1999, p. 156

17.) O. Hemmers, H. Wang, D.W. Lindle, P. Focke, I.A. Sellin, J.D. Mills, J.A. Sheehy, and P.W. Langhoff: Beyond the Dipole Approximation: Angular-Distribution Effects in the 1s Photoemission from Small Molecules
in *X-Ray and Innershell Processes*, edited by R. W. Dunford et. al (American Institute of Physics, Melville, NY, 2000) Proceedings of the Eighteenth International Conference on X-ray and Inner-Shell Processes (X-99), Chicago, IL, USA, August 23-27, 1999, p. 222

18.) O. Hemmers, S. Oblad, P. Glans, H. Wang, S.B. Whitfield, R. Wehlitz, I.A. Sellin, D.W. Lindle, A. Derevianko, and W.R. Johnson: Electric-octupole and pure-electric-quadrupole effects in soft-x-ray photoemission
Advanced Light Source Compendium of User Abstracts and Technical Reports 1999, August 2000

19.) D.L. Hansen, W.C. Stolte, I. Dominguez-Lopez, G. Öhrwall, L. Dang, M.M. Sant'Anna, O. Hemmers, R.C.C. Perera, and D.W. Lindle: Relaxation dynamics of H_2O and H_2S following excitation of 1s core electrons
Advanced Light Source Compendium of User Abstracts and Technical Reports 1999, August 2000

20.) D.W. Lindle and O. Hemmers: Time-of-Flight Photoelectron Spectroscopy of Atoms and Molecules
Proceedings of the Pan American Advanced Studies Institute (PASI), Angra dos Reis, Brazil, April 27-May 7, 2000 edited by H. Bryant and C. Cisneros

21.) O. Hemmers and D.W. Lindle: Non-Dipolar Effects in Soft-X-Ray Photoemission Proceedings of the Pan American Advanced Studies Institute (PASI), Angra dos Reis, Brazil, April 27-May 7, 2000 edited by H. Bryant and C. Cisneros

22.) O. Hemmers and D.W. Lindle: Photoelectron Spectroscopy and the Dipole Approximation
Proceedings of the Sixteenth International Conference on the Application of Accelerators in Research and Industry (CAARI), Denton, TX, USA, November 1-4, 2000, edited by J.L. Duggan and I.L. Morgan (AIP Press, Woodbury, New York, 2001), p. 189

23.) O. Hemmers, H. Wang, G. Snell, M.M. Sant'Anna, I.A. Sellin, N. Berrah, D.W. Lindle, P.C. Deshmukh, N. Haque, and S.T. Manson: Dynamical Relativistic Effects in Photoionization: Spin-Orbit-Resolved Angular Distributions of Xenon 4d Photoelectrons near the Cooper Minimum
Advanced Light Source Compendium of User Abstracts and Technical Reports 2001, August 2002

24.) O. Hemmers, M. Blackburn, T. Goddard, P. Glans, H.Wang, S.B. Whitfield, R.Wehlitz, I.A. Sellin, and D.W. Lindle: First Separate Measurements of the Nondipole Parameters γ and δ Showcase Neon 2p Photoemission
Advanced Light Source Compendium of User Abstracts and Technical Reports 2001, August 2002

25.) N. Mannella, B.S. Mun, S.-H. Yang, A.W. Kay, F.J. Garcia de Abajo, E. Arenholz, A.T. Young, Z. Hussain, H. Wang, O. Hemmers, D.W. Lindle, M.A. Van Hove, and C.S. Fadley: Multi-Atom Resonant Photoemission Effects from Solid Surfaces and Free Molecules
Advanced Light Source Compendium of User Abstracts and Technical Reports 2001, August 2002

26.) O. Hemmers, D.W. Lindle, H. Wang, P. Focke, I.A. Sellin, J.C. Arce, J.A. Sheehy, and P.W. Langhoff: Large Nondipole Effects in the Angular Distributions of K-Shell Photoelectrons from N_2
ALS Activity Report, Science Highlights 2002, p. 52, June 2003

27.) J. Dunn, R.F. Smith, A.J. Nelson, S.J. Moon, J. Nilsen, R. Keenan, T.W. Van Buuren, J.R. Hunter, J. Filevich, J.J. Rocca, M.C. Marconi, A. Ng, O. Hemmers, D.W. Lindle, and V.N. Shlyaptsev: Picosecond-Driven X-ray Lasers for Probing Matter Undergoing Rapid Changes
Applications of High Field and Short Wavelength Sources X, Centre de Congrs "Casino Municipal" Biarritz, France October 12-15, 2003

28.) A.J. Nelson, J. Dunn, T.W. van Buuren, J. Hunter, R.F. Smith, O. Hemmers, D.W. Lindle: X-ray laser induced time-of-flight photoelectron spectroscopy
Soft X-Ray Lasers and Applications V, Editor: Ernst E. Fill, Proc. SPIE 5197, 168, 2003

29.) O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, D.W. Lindle, E.P. Kanter, B. Krässig, S.H. Southworth, R. Wehlitz, B. Zimmermann, V. McKoy, and P.W. Langhoff: Low-Energy Nondipole Effects in Molecular Nitrogen Valence-Shell Photoionization
ALS Activity Report, Science Highlights 2006, p. 72, July 2007

30.) K. E. Lipinska-Kalita, C. Segre, P. E. Kalita, O. Hemmers, Y. Ohki, J. Cecil, M. Chavarcha: Novel Oxide Based Nanocomposites: Development and Structural Characterization
Bull. Am. Phys. Soc. **53**, No. 2, 713, 2008

31.) K. Lipinska, P. Kalita, O. Hemmers, S. Sinogeikin, O. Shebanova, W. Yang, G. Mariotto: Structural Integrity and Microstructure of Na^+ Conducting Ceramics
Bull. Am. Phys. Soc. **55**, No. 2, 993, 2010

32.) J. Ma and O. Hemmers: Thermo-economic Analysis of Microalgae Co-firing Process for Fossil Fuel-fired Power Plants, ASME 4th International Conference on Energy Sustainability, May 19-22, Phoenix, Arizona 2010

33.) P. Kalita, A, Cornelius, K. Lipinska, **O. Hemmers**, S. Sinogeikin, M. Murshed and T, Gesing: New Structural Phase Transitions in $PbMBO_4$ Complex Oxides: Raman Spectroscopy and X-ray Diffraction Studies, Bulletin of the American Physical Society, Volume 57, Number 1 2012

34.) P. Kalita, A. Cornelius, S. Sinogeikin, K. Lipinska, O. Hemmers, M. Lufaso, Z. Kann, H. Schneider: New Structural Phase Transition in $Bi_2(Fe_{4-x}Mn_x)O_{10-x}$ Complex Oxides and its Implications in the Mullite Family of Materials; Bull. Am. Phys. Soc. 56, No. 1, J17.1 2011

35.) P. Kalita, A. Cornelius, K. Lipinska, **O. Hemmers**, S. Sinogeikin, M. Murshed and T, Gesing: New Structural Phase Transitions in $PbMBO_4$ Complex Oxides: Raman Spectroscopy and X-ray Diffraction Studies. Bulletin of the American Physical Society, Volume 57, Number 1 2012

21. Scientific Presentations – Invited Talks

1.) „Photoelektronen-Spektrometrie an CO zwischen 20 und 1000 eV"
DPG-Frühjahrstagung, Freiburg, Germany, March 11-15, 1991

2.) „Intrinsische Elektronenanisotropien beim C-KVV Augerzerfall von CO"
DPG-Frühjahrstagung, Hannover, Germany, March 23-27, 1992

3.) „Anregungsabhängiges Verhalten der C-KVV Satelliten-Augerlinien von CO im Shape Resonanz Bereich"
DPG-Frühjahrstagung, Berlin, Germany, March 15-19, 1993

4.) "Variation of the C (KVV) Auger angular distribution in the C(1s) σ^*-resonance of CO"
Sixteenth International Conference on X-Ray and Inner-Shell Processes (X-93), Debrecen, Hungary, July 12-16, 1993

5.) "Electron and Ion Time of Flight Spectroscopy with Synchrotron Radiation"
Department of Chemistry, University of Nevada, Las Vegas, USA, February 24, 1995

6.) "First Order Corrections of the Dipole Approximation for Angular-Distribution Effects in Valence Photoemission"
Department of Chemistry, University of Nevada, Las Vegas, USA, October 18, 1996

7.) "First Order Corrections of the Dipole Approximation for Angular-Distribution Effects in Valence Photoemission"
Workshop on Atomic and Molecular Physics at the Advanced Light Source, Berkeley, CA, USA, October 23, 1996

8.) "Non-Dipole Effects in Atoms and Molecules"
Joint Meeting of the APS/AAPT with DAMOP and CAM'97, Washington, D.C., USA, April 20, 1997

9.) "Beyond the Dipole Approximation: Angular-Distribution Effects in the 1s Photoemission from Small Molecules"
Eighteenth International Conference on X-ray and Inner-Shell Processes (X-99), Chicago, IL, USA, August 24, 1999

10.) "Non-Dipolar Effects in Soft X-Ray Photoemission"
Advanced Light Source Users' Meeting, Berkeley, CA, USA, October 19, 1999

11.) "Non-Dipolar Effects in Soft X-Ray Photoemission"
Pan American Advanced Studies Institute (PASI), Atoms and Molecules in a New Light, Angra dos Reis, Brasil, May 2, 2000

12.) "Photoelectron Spectroscopy and the Dipole Approximation"
Sixteenth International Conference on the Application of Accelerators in Research and Industry (CAARI 2000), Denton, TX, USA, November 2, 2000

13.) "Large Nondipole Effects in the Core-Level Threshold Regions of Small Molecules"
Seminar Talk, Lure, Paris, France, November 12, 2001

14.) "Large Nondipole Effects in the Core-Level Threshold Regions of Small Molecules"
Seminar Talk, Fritz-Haber-Institut of the Max-Planck Society, Berlin, Germany, November 16, 2001

15.) "High-Resolution Electron Time-of-Flight Spectroscopy"
Seminar Talk, Lawrence Livermore National Laboratory, Livermore, CA, December 13, 2002

16.) "Macroscopic Effects in Nondipolar Photoemission: First Measurements of Drag Currents"
International Workshop on Photoionization (IWP), Campinas, Brazil, July 2005

17.) Invited Presentation at Brookings in Washington D.C. on "Climate Research – Another Look and New Perspectives", November 6, 2012

18.) Poster presentation "Explore the Six Fundamentals UNLV Accelerated: High-Energy X-Ray Applications (HEXA)"and tour of the UNLV Accelerator Facility, UNLV-NSTec Symposium, March 28, 2014

22. Public Presentations – Invited Talks

1.) "Latest Development in Backing Up Data"
CEO-CFO group of Southern Nevada on January 15, 2004

2.) "Renewable Energy Projects at UNLV"
NSHE Board of Regent's RED committee on January 18, 2007

3.) "Solar, Hydrogen, Bio-Fuels & Sustainability Projects at UNLV"
CEO-CFO group of Southern Nevada on April 27, 2007

4.) "Solar Energy Initiatives in Nevada"
The Las Vegas Future Salon on July 13, 2007

5.) Presentations on „UNLV's renewable energy (algae) research" at the CEO-CFO group of Southern Nevada in June 2008

6.) Presentation on "Biofuels-Sense and Nonsense" Las Vegas Southwest Rotary Club, July 21, 2008.

7.) Presentation on „Renewable Energy Technologies: Gaps, Challenges and Solutions" at the Global Commerce Forum's International Conference on Energy, Logistics & the Environment at the Mirage Hotel, Las Vegas, October 29, 2008

8.) Panelist in round-table discussion on "Reducing U.S. Dependence on Foreign Oil: Lessons from Abroad" at Renaissance Hotel, Las Vegas, November 14, 2008

9.) Key-note speaker at the AECOM Energy Forum on "Renewable Energy Technologies: Gaps, Challenges and Solutions" at the Phoenician, Phoenix, AZ on November 19, 2008

10.) Presenter and Panelist at the Global Commerce Forum's 2nd International Conference on Energy, Logistics & the Environment on "Renewable Energy Technologies and Gaps" Panel Discussion and Case Studies at the Mirage Hotel, Las Vegas, October 24, 2009

11.) Panelist in round-table discussion on "America's Portfolio: What is Nuclear Energy's Role?" at The Atomic Testing Museum, Las Vegas, March 4, 2010

12.) Presentation on "Renewable Energy Projects in Nevada" at the Global Commerce Forum's 3rd International Conference on Energy, Logistics & the Environment on "Renewable Energy Technologies and Gaps Panel" at the Grand Hyatt Hotel, Denver, October 8-9, 2010

13.) Organizer and Panelist of the Forum "Fukushima Daiichi Nuclear Power Plant Accident: What happened, could it happen here, and what are the implications to U.S. policy?" at the Barrick Museum Auditorium, Las Vegas, March 21, 2011

14.) Participated in round-table hosted by the Nevada Business Magazine, titled "Industry Focus: Alternative Energy", Reno, Nevada, January 12, 2011, Find article at: https://www.nevadabusiness.com/2011/03/industry-focus-alternative-energy/

15.) Organizer and Panelist commemorating the 25th anniversary of the Chernobyl nuclear plant disaster and a round-table discussion on "America's Portfolio: What is Nuclear Energy's Role?" at the Barrick Museum Auditorium, Las Vegas, April 26, 2011

16.) Attended the Young Professionals in Energy (YPE) Summit in Las Vegas, held April 23-25, 2012. The booth, entitled "Clean Energy Education and Research are Hot in Nevada," also featured UNR and DRI, and was in cooperation with the Nevada Institute for Renewable Energy Commercialization (NIREC)

17.) Participated in round-table hosted by the Nevada Business Magazine, titled "Industry Focus: Alternative Energy", Reno, Nevada, March 6, 2013, *Find article at: http://www.nevadabusiness.com/2013/04/industry-focus-alternative-energy-4/*

18.) Invited to participate in the "Alternative Energy Roundtable" discussion, Nevada Business Magazine, Reno, NV, February 12, 2014. Article published at: http://www.nevadabusiness.com/2014/03/industry-focus-alternative-energy-5/

19.) Moderator of the public panel to the 3rd anniversary of Fukushima Daiichi Nuclear Power Plant Accident, organized by the American Nuclear Society-Nevada Chapter, at the Auditorium of the National Atomic Testing Museum, Las Vegas, Nevada, April 24, 2014

20.) Presentation on "Why Climate Models Fail" at the Bob Maheu First Wednesday luncheon, Las Vegas Country Club, Las Vegas, Nevada, July 9, 2014

21.) Presentation on "Why Climate Models Fail" at the American Nuclear Society-Nevada Chapter, at the Science and Engineering Building at UNLV, Las Vegas, Nevada, July 10, 2014

22.) Presentation on "The Science of Climate Change" at the Nevada Legislative Committee on Energy, Las Vegas, Nevada, February 8, 2016

23.) Presentation on "Quantum Computing – Speed, Encryption, Security" Aasim Cyber Group, at the Innevation Center, Las Vegas, Nevada, February 25, 2016

24.) Presentation on "Clean Energy Projects at the UNLV Harry Reid Center", October 17, 2021, Cesar's Palace at the 14th International Conference on Climate Change (ICCC-14) in Las Vegas, NV, October 15-17, 2021

23. Scientific Presentations – Conferences

Eleventh International Conference on Atomic Physics (ELICAP), Paris, France, July 4-8, 1988

1. U. Becker, O. Hemmers, B. Langer, H.-G. Kerkhoff, M. Kupsch, A. Sivasli, D. Szostak, and R.Wehlitz
Probing Electron Correlations: Multi-Electron-Processes in Photoionization

Symposium on the Auger Effect, Paris, France, March 30-31, 1989

2. U. Becker, O. Hemmers, B. Langer, and R. Wehlitz
Participator Auger decay following inner-valence photoionization - a new type of Auger transition

Third European Conference on Atomic and Molecular Physics (ECAMP 3), Bordeaux, France, April 3-7, 1989

3. U. Becker, O. Hemmers, B. Langer, A. Menzel, and R. Wehlitz
Radiationless decay of excited inner-valence hole states in neon

4. U. Becker, O. Hemmers, H.-G. Kerkhoff, M. Kupsch, B. Langer, and R. Wehlitz
Valence and inner-shell photoionization of CO between 30 and 1000 eV

Ninth International Conference on Vacuum Ultraviolet Radiation Physics (VUV9), Honolulu, Hawaii, USA, July 17-21, 1989

5. U. Becker, O. Hemmers, B. Langer, A. Menzel, J. Viefhaus, and R. Wehlitz
Photoelectron asymmetries and threshold behavior of conjugate shake-up satellites associated with 1s and 2s photoionization

Sixteenth International Conference on the Physics of Electronic and Atomic Collisions (XVI. ICPEAC), New York, NY, USA, July 26-August 1, 1989

6. U. Becker, O. Hemmers, B. Langer, A. Menzel, and R. Wehlitz
Auger decay of valence vacancies in rare gases

54. Physikertagung, München, Germany, March 12-16, 1990

7. J. Viefhaus, B. Langer, O. Hemmers, A. Menzel, R. Wehlitz und U. Becker
Hochauflösende Untersuchung des Li 1s "Conjugate shake-up"- Übergangs

8. F. Heiser, A. Menzel, O. Hemmers, B. Langer, R. Wehlitz und U. Becker
Bestimmung der Anisotropie-Koeffizienten verschiedener Xe 4d Augerübergänge

9. B. Langer, V. v. Garnier, O. Hemmers, A. Menzel, R. Wehlitz und U. Becker
Zur Photoionisation der Cd 4d Schale

10. R. Wehlitz, O. Hemmers, B. Langer, A. Menzel und U. Becker
Untersuchung von Valenz-Doppelionisationsprozessen mittels winkelaufgelöster Photoelektronenspektroskopie

Fifteenth International Conference on X-Ray and Inner-Shell Processes (X-90), Knoxville, TN, USA, July 9-13, 1990

11. B. Langer, V.v. Garnier, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker
Angular Distributions of Photoelectrons and Electron Correlation Satellites of 4d Photoionization in Atomic Cadmium

12. B. Langer, J. Viefhaus, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker
Li 1s conjugate shake-up processes

Twelfth International Conference on Atomic Physics (12. ICAP), Ann Arbor, MI, USA, July 29-August 3, 1990

13. R. Wehlitz, O. Hemmers, B. Langer, A. Menzel, and U. Becker
Energy- and angular-distribution of shake-off electrons of He near threshold

DPG-Frühjahrstagung, Freiburg, Germany, March 11-15, 1991

14. R.Wehlitz, O. Hemmers, B. Langer, A. Menzel und U. Becker
Winkelverteilungs-Asymmetrien von Shake-off Elektronen in Schwellnähe

15. J.C. Allman, U. Becker, M. Domke, F. Heiser, O. Hemmers, G. Kaindl, L.J. Medhurst, O. Plotzke, A. Puschmann, D.A. Shirley, J. Viefhaus
Nullvoltelektronen und Ionisationsspektroskopie im weichen Röntgenbereich

16. J.C. Allman, U. Becker, M. Domke, F. Heiser, O. Hemmers, G. Kaindl, L.J. Medhurst, O. Plotzke, A. Puschmann, D.A. Shirley, J. Viefhaus
High-Resolution Zerovolt-Electron and Ion-Yield Spectroscopy with Soft X-Rays

17. O. Hemmers, B. Langer, A. Menzel, R. Wehlitz und U. Becker
Photoelektronen-Spektrometrie an CO zwischen 20 und 1000 eV

Seventeenth International Conference on the Physics of Electronic and Atomic Collisions (XVII. ICPEAC), Brisbane, Australia, July 10-16, 1991

18. U. Becker, O. Hemmers, B. Langer, A. Menzel, and R. Wehlitz
Evidence for Sequential Processes in Molecular Valence Double Ionization

19. U. Becker, J. Eiben, F. Heiser, O. Hemmers, and R. Wehlitz
Molecular Orientation and Intrinsic Auger Anisotropy Following K-Shell Photoionization of CO

20. R. Wehlitz, O. Hemmers, B. Langer, A. Menzel, and U. Becker
Two-Electron Emission in the Valence Photoionization of Rare Gases

DPG-Frühjahrstagung, Hannover, Germany, March 23-27, 1992

21. B. Langer, W. Mahler, O. Hemmers, A. Menzel, R. Wehlitz und U. Becker
Anregungsenergieabhängiges Verhalten der Ar 3s und Xe 5s Korrelationssatelliten

22. A. Menzel, O. Hemmers, B. Langer, R. Wehlitz und U. Becker
Winkelverteilungen der Zerfallselektronen von rumpfangeregtem HCl

23. O. Hemmers, J. Eiben, F. Heiser, R. Wehlitz und U. Becker
Intrinsische Elektronenanisotropien beim C-KVV Augerzerfall von CO

Fourth European Conference on Atomic and Molecular Physics (ECAMP 4), Riga, Latvia, April 6-10, 1992

24. R. Wehlitz, O. Hemmers, B. Langer, A. Menzel, and U. Becker
Electron-energy and -Angular Distributions in the Double Photoionization of Rare Gases

25. U. Becker, O. Hemmers, B. Langer, A. Menzel, and R. Wehlitz
Evidence for Atomic Processes in Molecular Valence Double Ionization

26. B. Langer, W. Mahler, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker
Photon Energy Dependent Behavior of the Valence Electron Correlation Satellites in Argon and Xenon

27. O. Hemmers, F. Heiser, J. Eiben, R. Wehlitz, and U. Becker
Intrinsic Auger Anisotropies in the C-KVV Auger Decay of CO

28. A. Menzel, O. Hemmers, B. Langer, R. Wehlitz, and U. Becker
Angular Distributions of Electrons in the Decay-Spectra of Core-excited HCl

Tenth International Conference on Vacuum Ultraviolet Radiation Physics (VUV10), Paris, France, July 27-31, 1992

29. U. Becker, O. Hemmers, B. Langer, I. Lee, A. Menzel, R. Wehlitz, and M.Ya. Amusia

Multiplet-Changing Auger Transitions in Valence Double Photoionization

30. B. Langer, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker
He $n = 2$ Satellite Production Reconsidered

31. A. Menzel, O. Hemmers, B. Langer, R. Wehlitz, and U. Becker
Alignment Transfer in the Dissociation of Core-excited HCl

32. O. Hemmers, F. Heiser, J. Eiben, R. Wehlitz, and U. Becker
Shape Resonance Induced Alignment Variation Observed via C-KVV Diagram and Satellite Auger Transitions of CO

Thirteenth International Conference on Atomic Physics (13. ICAP), München, August 3-7, Germany, 1992

33. B. Langer, J. Viefhaus, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker
Observation of Parity Unfavoured Transitions in the Nonresonant Photoionization of Argon

International Workshop on Photoionization (IWP-92), Berlin, Germany, August 24-28, 1992

34. B. Langer, J. Viefhaus, O. Hemmers, A. Menzel, R. Wehlitz, and U. Becker
Observation of Parity Unfavoured Transitions in the Nonresonant Photoionization of Argon

35. U. Becker, O. Hemmers, B. Langer, I. Lee, A. Menzel, R. Wehlitz, and M.Ya. Amusia
Multiplet-changing Auger Transitions in Valence Double Photoionization

36. A. Menzel, O. Hemmers, B. Langer, R. Wehlitz, and U. Becker
Alignment Transfer in the Dissociation of Core-excited HCl

DPG-Frühjahrstagung, Berlin, Germany, March 15-19, 1993

37. A. Menzel, O. Hemmers, B. Langer, R. Wehlitz und U. Becker
Untersuchung der Valenz- und Innerschalen-Photoionisation von HCl

38. V. Dzidzonou, J. Viefhaus, O. Hemmers, B. Langer und U. Becker
Untersuchung der Photoionisation von $HgCl_2$

39. O. Hemmers, F. Heiser, J. Eiben, R.Wehlitz und U. Becker
Anregungsabhängiges Verhalten der C-KVV Satelliten-Augerlinien von CO im Shape-Resonanz Bereich

40. R. Wehlitz, O. Hemmers, B. Langer, A. Menzel und U. Becker
Die Elektronen-Winkelverteilung bei der Doppelionisation von He

Fifteenth International Symposium on Molecular Beams (ISMB-15), Berlin, Germany, May 16-21, 1993

41. U. Becker, F. Heiser, O. Hemmers, A. Menzel, and R. Wehlitz
Ionization and fragmentation of core excited molecules

Sixteenth International Conference on X-Ray and Inner-Shell Processes (X-93), Debrecen, Hungary, July 12-16, 1993

42. O. Hemmers, F. Heiser, J. Eiben, R. Wehlitz, and U. Becker
Variation of the C-KVV Auger Angular-Distribution in the C $1s\ \sigma^*$ - Resonance of CO

43. A. Menzel, O. Hemmers, B. Langer, R. Wehlitz, and U. Becker
Study of the Cl 2p Excitation and Ionization in HCl

Eighteenth International Conference on the Physics of Electronic and Atomic Collisions (XVIII. ICPEAC), Århus, Denmark, July 21-27, 1993

44. R. Wehlitz, O. Hemmers, B. Langer, A. Menzel, and U. Becker
Angular Distribution of Photoelectrons Following Double Ionization of He

58. Physikertagung, Hamburg, Germany, March 14-18, 1994

45. T. Liebsch, O. Plotzke, F. Heiser, U. Hergenhahn, O. Hemmers, R. Wehlitz und U. Becker
Winkelaufgelöste Elektronenspektroskopie an C_{60}

46. R. Wehlitz, J. Viefhaus, O. Hemmers und U. Becker
Beobachtung ausgeprägter *n*-Abhängigkeiten beim Zerfall der Ne $1s \rightarrow np$ Resonanzen

47. A. Menzel, O. Hemmers, B. Langer, J. Viefhaus, R. Wehlitz und U. Becker
Elektronische Relaxation vs. schnelle Dissoziation beim Zerfall der Cl $2p$ Anregungen von HCl und DCl

1994 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Washington, DC, USA, April 18-21, 1994

48. U. Becker, N. Berrah, O. Hemmers, B. Langer, J. Viefhaus, R. Wehlitz, and S. B. Whitfield
Pronounced *n*-Dependences of Auger Spectra after Ne $1s \rightarrow np$ Excitations

Gordon Research Conference on Electron Spectroscopy, New England College, New Hamphshire, USA, July 3-8, 1994

49. U. Becker, F. Heiser, O. Hemmers, and K. Wieliczek
Angle resolved studies of photodissociation dynamics of small molecules

Fourteenth International Conference on Atomic Physics (14. ICAP) Boulder, Colorado, USA, July 31-August 5, 1994

50. U. Becker, N. Berrah, O. Hemmers, U. Hergenhahn, B. Langer, J. Viefhaus, R. Wehlitz, and S.B. Whitfield
Double Ionization Following $1s \rightarrow np$ Excitation of Atomic Neon

European Conference on Atomic and Molecular Physics (ECAMP-5), Edinburgh, UK, April 3-7, 1995

51. F. Heiser, N. Saito, K. Wieliczek, O. Hemmers, N. Berrah and U. Becker
Angle resolved ionic fragmentation studies of small molecules

1995 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Toronto, Ontario, Canada, May 16-19, 1995

52. B. Langer, O. Hemmers, O. Toader, J.D. Bozek, and N. Berrah
Angle Resolved High Resolution Studies of the Xe $4d^{-1} \rightarrow 5p^{-2}np$ Resonances

53. A. Farhat, B. Langer, O. Hemmers, M. Humphrey, N. Berrah
Photoionization with Excitation of the 4s and 4p Subshells in Krypton

54. N. Berrah, O. Toader, B. Langer, J.D. Bozek, D.W. Lindle, O. Hemmers
Autoionization of Ar, Kr, and Xe near the ns threshold-determination of partial cross section and β parameter in ns-εp transitions

Nineteenth International Conference on the Physics of Electronic and Atomic Collisions (XIX. ICPEAC), Whistler, Canada, July 26-August 1, 1995

55. B. Langer, N. Berrah, J.D. Bozek, O. Hemmers, D.W. Lindle, and O. Toader
High Resolution Angle Resolved Photoelectron Spectroscopy at the ALS: The Ar3$s^{-1} \rightarrow np$ Resonances

56. F. Heiser, N. Saito, K. Wieliczek, O. Hemmers, N. Berrah and U. Becker
Fragmentation dynamics of core excited molecules

57. N. Saito, F. Heiser, O. Hemmers, A. Hempelmann, K. Wieliczek, J. Viefhaus and U. Becker
High resolution ionic fragmentation studies of small molecules

Eleventh International Conference on Vacuum Ultraviolet Radiation Physics (VUV-11), Tokyo, Japan, August 27-September 1, 1995

58. R.C.C. Perera, W. Ng, G. Jones, O. Hemmers, P. Glans, S. Whitfield, H. Wang, D.W. Lindle
Results from the High-Brightness X-Ray Spectroscopy Beamline at ALS for 2-5 keV Region

59. F. Heiser, N. Saito, K. Wieliczek, O. Hemmers, N. Berrah and U. Becker
Dissociation dynamics of small molecules

National Synchrotron Radiation Instrumentation Meeting (SRI-95), Argonne, Illinois, USA, October 18-25, 1995

60. W. Ng, G. Jones, R.C.C. Perera, D. Hansen, J. Daniels, O. Hemmers, P. Glans, S.B. Whitfield, H. Wang, and D.W. Lindle
First Results from the High-Brightness X-Ray Spectroscopy Beamline at ALS

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 23-24, 1995

61. P. Glans, D. Hansen, O. Hemmers, H. Wang, S.B. Whitfield, D.W. Lindle, W.C. Stolte, J.A.R. Samson
Ion Time-of-Flight Spectroscopy of CH_3Cl

62. D.L. Hansen, P. Glans, O. Hemmers, H. Wang, S.B. Whitfield, D.W. Lindle, W. Ng, R.C.C. Perera, G. Fisher, W.C. Stolte, J.C. Levin
Ion Time of Flight Mass Spectroscopy at Beamline 9.3.1

63. W.C. Stolte, J.A.R. Samson, D.L. Hansen, P. Glans, O. Hemmers, H. Wang, S.B. Whitfield, D.W. Lindle
K-Shell Excitation and Photoionization of Atomic Oxygen

64. O. Hemmers, G. Fisher, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, and I.A. Sellin
First Results of Non-Dipole Measurements on Beamline 8.0

DPG-Frühjahrstagung, Rostock, Germany, March 18-22, 1996

65. A. Hempelmann, F. Heiser, O. Hemmers, N. Saito, J. Viefhaus, K. Wieliczek, und U. Becker
Hochaufgelöste Ionisations- und Nullvoltspektroskopie kleiner Moleküle

1996 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Ann Arbor, MI, USA, May 15-18, 1996

66. A. Farhat, B. Langer, N. Berrah, O. Hemmers, J.D. Bozek
Angle Resolved Study of the Xe $4d \rightarrow 6p$ Resonant Auger Process with High Resolution

67. R. Wehlitz, I.A. Sellin, O. Hemmers, S.B. Whitfield, D.W. Lindle, B. Langer, N. Berrah, J. Viefhaus, and U. Becker
Ionization-Excitation of Helium at High Photon Energies

68. O. Hemmers, G. Fisher, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, and I.A. Sellin
Non-Dipolar Angular Distributions of Ne 2*s* and 2*p* Valence Photoelectrons

69. W.C. Stolte, Y. Lu, J.A.R. Samson, D.L. Hansen, S.B. Whitfield, P. Glans, H. Wang, O. Hemmers, D.W. Lindle
Effects of Post-Collision Interaction for the Auger decay of the Oxygen K-Shell

Seventeenth International Conference on X-Ray and Inner-Shell Processes (X-96), Hamburg, Germany, September 9-13, 1996

70. O. Hemmers, R. Wehlitz, G. Fisher, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, J.C. Levin, I.A. Sellin, and D.W. Lindle
Non-Dipole Effects in Ne and Xe below 1.2 keV

71. H. Wang, P. Glans, O. Hemmers, S.B. Whitfield, and D.W. Lindle
An Autoionization Study of Argon 2*p* Satellites Excited near the Argon 2*s* Threshold

72. N. Berrah, B. Langer, A. Farhat, O. Hemmers, J.D. Bozek
Angle Resolved High Resolution Studies of the Xe $4d_{5/2} \rightarrow 6p$ Resonance

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 21-22, 1996

73. O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.L. Hansen, G. Fisher, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, S.T. Manson
Non-Dipole Effects in Ne and Xe below 1.2 keV

74. R. Wehlitz, I.A. Sellin, O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.W. Lindle, B. Langer, N. Berrah, J. Viefhaus, U. Becker
Photon energy dependence of ionization-excitation in helium at medium energies

75. H. Wang, G.B. Armen, P. Glans, O. Hemmers, R. Wehlitz, S. B. Whitfield, and D. W. Lindle
An Autoionization Study of Argon 2*p* Satellites Excited near the Argon 2*s* Threshold

1997 Joint Meeting of the APS/AAPT with DAMOP and CAM'97, Washington, D.C., USA, April 18-21, 1997

76. R. Wehlitz, I.A. Sellin, O. Hemmers, S.B. Whitfield, P. Glans, H. Wang, D.W. Lindle, B. Langer, N. Berrah, J. Viefhaus, and U. Becker
Partial Photoionization Cross-Sections of Helium Satellites at Medium Photon Energies

77. S.T. Manson, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, O. Hemmers, G. Fisher, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera
Breakdown of the Independent Particle Approximation in High-Energy Photoionization

International Workshop on Photoionization (IWP-97), Chester, England, July 16-21, 1997

78. S.T. Manson, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, O. Hemmers, G. Fisher, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera
Breakdown of the Independent Particle Approximation in High-Energy Photoionization

Twentieth International Conference on the Physics of Electronic and Atomic Collisions (XX. ICPEAC), Vienna, Austria, July 23-29, 1997

79. S.T. Manson, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, O. Hemmers, G. Fisher, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera
Breakdown of the Independent Particle Approximation in High-Energy Photoionization

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 13-14, 1997

80. O. Hemmers, P. Glans, H. Wang, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera
Beyond the Dipole Approximation: Angular-Distribution Effects in Molecular Nitrogen

81. O. Hemmers, P. Glans, D.L. Hansen, H. Wang, S.B. Whitfield, D.W. Lindle, E.W.B. Dias, H.S. Chakraborty, P.C. Deshmukh, S.T. Manson, R. Wehlitz, J.C. Levin, I.A. Sellin, and R.C.C. Perera
Breakdown of the Independent Particle Approximation in High-Energy Photoionization

Nevada Science and Technology Symposium, Univ. of Nevada, Las Vegas, Nevada, January 9, 1998

82. D.W. Lindle, O. Hemmers, P. Glans, H. Wang, R. Wehlitz, J.C. Levin, I.A. Sellin
Beyond the Dipole Approximation: Angular-Distribution Effects in N_2

1998 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Santa Fe, NM, USA, May 27 - 30, 1998

83. J. York, S.B. Whitfield, P. Glans, D.L. Hansen, O. Hemmers, H. Wang, D.W. Lindle, R. Wehlitz, I.A. Sellin
Non-dipole Effects in the Photoionization of the Xe n = 4 and n = 5 Subshells

84. O. Hemmers, P. Glans, H. Wang, D.W. Lindle, R. Wehlitz, J.C. Levin, I.A. Sellin, R.C.C. Perera
Beyond the Dipole Approximation: Angular-Distribution Effects in N_2

Twelfth International Conference on Vacuum Ultraviolet Radiation Physics (VUV-12), San Francisco, California, USA, August 3-7, 1998

85. H. Wang, P. Glans, O. Hemmers, S.B. Whitfield, D.W. Lindle, R. Wehlitz, I.A. Sellin, G.B. Armen, J.C. Levin, R.C.C. Perera
An Angle-Resolved Autoionization Study of the Argon 2*p* Satellites Excited Near the Argon 2*s* Threshold

86. O. Hemmers, H. Wang, P. Glans, R. Wehlitz, P. Focke, J.C. Levin, I.A. Sellin, R.C.C. Perera, P.W. Langhoff, J.A. Sheehy, J.D. Mills, D.W. Lindle
Beyond the Dipole Approximation: Angular-Distribution Effects in 1*s* Photoemission from Small Molecules

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 22-23, 1998

87. D.L. Hansen, O. Hemmers, H. Wang, D.W. Lindle, H.S. Chakraborty, P.C. Deshmukh, S.T. Manson:
High-Energy Valence Photoionization of Argon
Effect of Interaction with 3*s* Photoionization Channels

88. O. Hemmers, H. Wang, P. Glans, W. Stolte, R. Wehlitz, P. Focke, J.C. Levin, I.A. Sellin, R.C.C. Perera, P.W. Langhoff, J.A. Sheehy, J.D. Mills, D.W. Lindle: Beyond the Dipole Approximation
Angular-Distribution Effects in 1*s* Photoemission from Small Molecules

1999 Centennial Meeting of the American Physical Society, Atlanta, GA, USA, March 20-26, 1999

89. W.R. Johnson, A. Derevianko, K.T. Cheng, V.K. Dolmatov, S.T. Manson, O. Hemmers, S. Oblad, P. Glans, S.B. Whitfield, H. Wang, D.W. Lindle, R. Wehlitz, I.A. Sellin
RPA studies of nondipolar angular-distribution asymmetry parameters in the n = 2 shell of neon

90. W.C. Stolte, D.L. Hansen, H. Wang, O. Hemmers, D.W. Lindle, I.D. Lopez, A. Rizvi, A.S. Schlachter, M.S. Lubell
Production of oxygen anions in the K-shell photoionization of CO

91. D.L. Hansen, O. Hemmers, H. Wang, D.W. Lindle, H.S. Chakraborty, P.C. Deshmukh, and S.T. Manson:
High-Energy Valence Photoionization of Argon
Effect of Interaction with 3*s* Photoionization Channels

92. O. Hemmers, H. Wang, D.W. Lindle, P. Focke, I.A. Sellin, J.A. Sheehy, J.D. Mills, and P.W. Langhoff:
Beyond the Dipole Approximation
Angular-Distribution Effects in the 1*s* Photoemission from Small Molecules

Twentyfirst International Conference on the Physics of Electronic and Atomic Collisions (XXI. ICPEAC), Sendai, Japan, July 22-27, 1999

93. A. Hempelmann, N. Saito, F. Heiser, O. Hemmers, K. Wieliczek, J. Viefhaus, and U. Becker
Evidence for Fragmentation Channel Dependent Linewidth Narrowing in K-Shell Photoexcitation Spectroscopy of N_2 and CO

94. O. Hemmers, P. Glans, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, I.A. Sellin, A. Derevianko, and W.R. Johnson
First and Second Order Corrections to the Dipole Approximation observed in neon below 1000 eV

Berkeley Lab Center for Science and Engineering Education, Summer Student Poster Session, Berkeley, CA, USA, August 4, 1999

95. M. Blackburn, F. Schlachter, and O. Hemmers
Hard Exams? (In Atomic & molecular Spectroscopy)

Eighteenth International Conference on X-Ray and Inner-Shell Processes (X-99), Chicago, IL, USA, August 23-27, 1999

96. O. Hemmers, H. Wang, D.W. Lindle, P. Focke, I.A. Sellin, J.A. Sheehy, J.D. Mills, and P.W. Langhoff:
Beyond the Dipole Approximation
Angular-Distribution Effects in the 1*s* Photoemission from Small Molecules

97. O. Hemmers, P. Glans, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, I.A. Sellin, A. Derevianko, and W.R. Johnson
First and Second Order Corrections to the Dipole Approximation observed in neon below 1000 eV

98. P.R. Focke, O. Hemmers, H. Wang, I.A. Sellin, J.C. Levin, and D.W. Lindle
Angular Distribution of Xe M-NN Auger Decay following 834 eV Photoionization

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 18-20, 1999

99. O. Hemmers, P. Glans, H. Wang, S.B. Whitfield, D.W. Lindle, R. Wehlitz, I.A. Sellin, A. Derevianko, W.R. Johnson
Comprehensive Photoelectron Angular Distributions Study of the Valence Shells in Neon

100. P.R. Focke, O. Hemmers, H. Wang, I.A. Sellin, J.C. Levin, and D.W. Lindle
Angular Distribution of Xe M-NN Auger Decay Following 834 eV Photoionization

2000 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Storrs, Ct, USA, June 14 - 17, 2000

101. P.W. Langhoff, J.C. Arce, J.A. Sheehy, O. Hemmers, H. Wang, D.W. Lindle, P. Focke, I.A. Sellin
On the angular distributions of electrons photoejected from fixed-in-space and randomly oriented molecules

Southern Nevada Summer Research Experience Programs, UNLV-EPSCoR, Summer 2000

102. M. Lotrakul, O. Hemmers, and D.W. Lindle
Dipole/Nondipole Angular-Distribution Effects in CO by Time-of-Flight Photoelectron Spectroscopy with Synchrotron Radiation

Eighth International Conference on Electronic Spectroscopy & Structure (ICESS8), Berkeley, CA, USA, August 8-12, 2000

103. H.Wang, O. Hemmers, P. Focke, M.M. Sant'Anna, D. Lukic, M. Grush, I.A. Sellin and D.W. Lindle
Observation of Non-Dipolar Effects of Xenon 4*d* Photoelectrons in the Vicinity of Cooper Minimum

104. H. Wang, G. Snell, O. Hemmers, B. Langer, M.M. Sant'Anna, N. Berrah, and D.W. Lindle
Dipolar Angular Distributions and Branching Ratio of Xenon 4*d* Photoelectrons in the Photon Energy Range of 100-250 eV

105. H. Wang, O. Hemmers, P. Focke, M.M. Sant'Anna, D. Lukic, C. Heske, R.C.C. Perera, I.A. Sellin, and D.W. Lindle
Non-Dipolar and Dipolar Angular Distribution of S 2*s* and 2*p* of SF6 Core-Level Photoionization in the Vicinity of F 1*s* Excitation

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 16-18, 2000

106. D.L. Hansen, W.C. Stolte, M.N. Piancastelli, I. Dominguez Lopez, A. Rizvi, O. Hemmers, H.Wang, A.S. Schlachter, M.S. Lubell, and D.W. Lindle
Post-Collision Interaction Moderated Anion Formation Following Photofragmentation of CO

107. H.Wang, O. Hemmers, P. Focke, M.M. Sant'Anna, D. Lukic, M. Grush, I.A. Sellin, and D.W. Lindle
Observation of Non-Dipolar Effects of Xenon 4*d* Photoelectrons in the Vicinity of Cooper Minimum

108. H. Wang, G. Snell, O. Hemmers, B. Langer, M.M. Sant'Anna, N. Berrah, and D.W. Lindle
Dipolar Angular Distributions and Branching Ratio of Xenon 4*d* Photoelectrons in the Photon Energy Range of 100-250 eV

109. H. Wang, O. Hemmers, P. Focke, M.M. Sant'Anna, D. Lukic, C. Heske, R.C.C. Perera, I.A. Sellin, and D.W. Lindle
Non-Dipolar and Dipolar Angular Distribution of S 2*s* and 2*p* of SF6 Core-Level Photoionization in the Vicinity of F 1*s* Excitation

110. P.W. Langhoff, J.C. Arce, J.A. Sheehy, O. Hemmers, H. Wang, P. Focke, I.A. Sellin, and D.W. Lindle
On the angular distributions of electrons photoejected from fixed-in-space and randomly oriented molecules

2001 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), London, Ontario, Canada, May 16-19, 2001

111. O. Hemmers, S.T. Manson, M. Sant'Anna, P. Focke, H. Wang, I.A. Sellin, and D.W. Lindle
Relativistic effects on interchannel coupling in atomic photoionization: the photoelectron angular distribution of Xe 5*s*

Twentysecond International Conference on the Physics of Electronic and Atomic Collisions (XXII. ICPEAC), Santa Fe, NM, USA, July 18-24, 2001

112. O. Hemmers, M. Lotrakul, G. Öhrwall, S.W. Yu, D. Lukic, I.A. Sellin, and D.W. Lindle

Large Nondipole Effects in the Core-Level Threshold Regions of Small Molecules

Berkeley Lab Center for Science and Engineering Education, Summer Student Poster Session, Berkeley, CA, USA, August 7, 2001

113. Monica Pangilinan, Sierra Laidman, Alfred Schlachter, Oliver Hemmers, Dennis Lindle, Gunnar Öhrwall, Sung Woo Yu, Renaud Guillemin, Wayne Stolte
Light at the End of the Tunnel (Exploring the Limitations of the Dipole Approximation)

114. Sierra Laidman, Monica Pangilinan, Alfred Schlachter, Oliver Hemmers, Dennis Lindle, Gunnar Öhrwall, Sung Woo Yu, Renaud Guillemin, Wayne Stolte
Let there be Light (Beamline 8.0.1 and a Time-of-Flight Apparatus)

The Thirteenth International Conference on Vacuum Ultraviolet Radiation Physics (VUV-13), Trieste, Italy, July 23-27, 2001

115. O. Hemmers, M. Lotrakul, G. Öhrwall, S.W. Yu, D. Lukic, I.A. Sellin, and D.W. Lindle
Large Nondipole Effects in the Core-Level Threshold Regions of small Molecules

116. G. Öhrwall, O. Hemmers, S.W. Yu, M. Lotrakul, D. Lukic, I.A. Sellin, and D.W. Lindle
Nondipole Effects in Core-Electron Photoemission Angular Distributions of small Molecules

VUV-13 Satellite Meeting "Decay Processes in Core-Excited Species" Rome, Italy, July 30 - Aug 2, 2001

117. G. Öhrwall, O. Hemmers, S.W. Yu, R. Guillemin, M. Lotrakul, D. Lukic, I.A. Sellin, and D.W. Lindle
Non-Dipole Effects in Atomic and Molecular Photoemission

Advanced Light Source Users' Association Annual Meeting, Berkeley, CA, October 15-17, 2001

118. O. Hemmers, M. Lotrakul, G. Öhrwall, S.W. Yu, D. Lukic, I.A. Sellin, and D.W. Lindle
Large Nondipole Effects in the Core-Level Threshold Regions of small Molecules

2002 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Williamsburg, VA, USA, May 29-June 1, 2002

119. E.P. Kanter, B. Krässig, S.H. Southworth, R. Guillemin, O. Hemmers, D.W. Lindle, N.L.S. Martin, and R. Wehlitz
Dipole-forbidden Photoionization through the He $2p^2\ {}^1D_2$ Autoionizing Resonance

120. O. Hemmers, R. Guillemin, G. Öhrwall, M. Lotrakul, S.W. Yu, D.W. Lindle, P.C. Deshmukh, S.T. Manson, and I.A. Sellin: Relativistic Effects on Dipole and Nondipole Interchannel Coupling in Atomic Photoionization
The Photoelectron Angular Distributions of Xe 5*s* and 5*p*

121. O. Hemmers, D.W. Lindle, M. Blackburn, T. Goddard, P. Glans, H. Wang, S.B. Whitfield, R. Wehlitz, and I.A. Sellin
First Separate Measurements of the Nondipole Parameters γ and δ: Showcase Neon 2*p* Photoemission

122. O. Hemmers, M. Lotrakul, G. Öhrwall, R. Guillemin, S.W. Yu, D.W. Lindle,D. Lukic, and I.A. Sellin
Large Nondipole Effects in the Core-Level Threshold Regions of Small Molecules

123. N.L.S. Martin, E.P. Kanter, B. Krässig, S.H. Southworth, R. Guillemin, O. Hemmers, D.W. Lindle, and R. Wehlitz
Resonant Non-Dipole Parameters for He $2\ell 2\ell'$ Autoionizing Resonances

124. R. Guillemin, O. Hemmers, D.W. Lindle, E. Shigemasa, K. Le Guen, D. Ceolin, C. Miron, N. Leclercq, P. Morin, M. Simon, and P.W. Langhoff
Non-Dipolar Electron Angular Distributions from Fixed-in-Space Molecules

Symposium in Honor of C.E. Brion (85th Canadian Society for Chemistry Conference and Exhibition): Electron and VUV Photon Impact Methods, Vancouver, British Columbia, Canada, June 4-5 2002

125. D.W. Lindle, W.C. Stolte, O. Hemmers, G. Öhrwall, D.L. Hansen, L.T.N. Dang, M.M. Sant'Anna, A.S. Schlachter, I. Dominguez-Lopez, M.N. Piancastelli, and M.Lubell
Anionic Photofragmentation of Core-Excited Small Molecules

126. D.W. Lindle, O. Hemmers, M. Lotrakul, G. Öhrwall, R. Guillemin, S.W. Yu, D. Lukic, and I.A. Sellin
Nondipole Angular-Distribution Effects in Photoemission from Atoms and Molecules

Nineteenth International Conference on X-Ray and Inner-Shell Processes (X-02), Rome, Italy, June 24-28, 2002

127. O. Hemmers, D.W. Lindle, M. Blackburn, T. Goddard, P. Glans, H. Wang, S.B. Whitfield, R. Wehlitz, and I.A. Sellin
First Separate Measurements of the Nondipole Parameters γ and δ: Showcase Neon 2*p* Photoemission

128. O. Hemmers, M. Lotrakul, G. Öhrwall, R. Guillemin, S.W. Yu, D.W. Lindle, D. Lukic, and I.A. Sellin
Large Nondipole Effects in the Core-Level Threshold Regions of Small Molecules

129. R. Guillemin, O. Hemmers, D.W. Lindle, E. Shigemasa, K. Le Guen, D. Ceolin, C. Miron, N. Leclercq, P. Morin, M. Simon, and P.W. Langhoff
Non-Dipolar Electron Angular Distributions from Fixed-in-Space Molecules

International Workshop on Photoionization (IWP-02), SPring-8, Hyogo, Japan, August 22-26, 2002

130. O. Hemmers, R. Guillemin, G. Öhrwall, M. Lotrakul, S.W. Yu, D.W. Lindle, P.C. Deshmukh, S.T. Manson, and I.A. Sellin
Relativistic Effects on Dipole and Nondipole Interchannel Coupling in Atomic Photoionization: The Photoelectron Angular Distributions of Xe 5*s* and 5*p*

131. O. Hemmers, D.W. Lindle, M. Blackburn, T. Goddard, P. Glans, H. Wang, S.B. Whitfield, R. Wehlitz, and I.A. Sellin
First Separate Measurements of the Nondipole Parameters γ and δ Showcase Neon 2*p* Photoemission

132. O. Hemmers, M. Lotrakul, G. Öhrwall, R. Guillemin, S.W. Yu, D.W. Lindle, D. Lukic, and I.A. Sellin
Large Nondipole Effects in the Core-Level Threshold Regions of Small Molecules

133. R. Guillemin, O. Hemmers, D.W. Lindle, E. Shigemasa, K. Le Guen, D. Ceolin, C. Miron, N. Leclercq, P. Morin, M. Simon, and P.W. Langhoff
Non-Dipolar Electron Angular Distributions from Fixed-in-Space Molecules

134. R. Guillemin, D. Rolles, S.W. Yu, O. Hemmers, and D.W. Lindle
Non-Dipolar Electron Angular Distributions from Nitrous Oxide

2003 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Boulder, CO, USA, May 20-24, 2003

135. R. Guillemin, O. Hemmers, D.W. Lindle, H. Wang, W.C. Stolte, S.-W. Yu, A. Wolska, I. Tran, A. Hudson, J. Baker, D. Rolles
Nearest-neighbor-Atom Core-HoleTransfer effect: Interatomic core-to-core electron correlation in molecules

136. O. Hemmers, R. Guillemin, D.W. Lindle, J. Baker, A. Hudson, M. Lotrakul, W. Stolte, I.C. Tran, A. Wolska, S.W. Yu, E.P. Kanter, B. Krässig, S.H. Southworth, R. Wehlitz, M.Ya. Amusia, L.V. Chernysheva, K.T. Cheng, W.R. Johnson, D. Rolles, S.T. Manson
Dramatic nondipole effects in low-energy photoionization: experimental and theoretical study of Xe 5*s*

Ninth International Conference on Electronic Spectroscopy & Structure (ICESS9), Uppsala, Sweden, June 30- July 4, 2003

137. O. Hemmers, R. Guillemin, E.P. Kanter, B. Krässig, D.W. Lindle, S.H. Southworth, R. Wehlitz, J. Baker, A. Hudson, M. Lotrakul, D. Rolles, W.C. Stolte, I.C. Tran, A. Wolska, S.-W. Yu, M. Ya Amusia, K.T. Cheng, L.V. Chernysheva, W.R. Johnson, S.T. Manson
Dramatic nondipole effects in low-energy photoionization: experimental and theoretical study of Xe 5*s*

138. R. Guillemin, O. Hemmers, D. Rolles, S.-W. Yu, A. Wolska, I. Tran, A. Hudson, J. Baker and D.W. Lindle
Nearest-neighbor-Atom Core-Hole Transfer: Interatomic core-to-core electron correlation in molecules

Twentythird International Conference on Photonic Electronic and Atomic Collisions (XXIII. ICPEAC), Stockholm, Sweden, July 23-29, 2003

139. O. Hemmers, R. Guillemin, D.W. Lindle, J. Baker, A. Hudson, M. Lotrakul, W. Stolte, I.C. Tran, A. Wolska, S.-W. Yu, E.P. Kanter, B. Krässig, S.H. Southworth, R. Wehlitz, M. Ya Amusia, L.V. Chernysheva, K.T. Cheng, W.R. Johnson, D. Rolles, S.T. Manson
Dramatic nondipole effects in low-energy photoionization: experimental and theoretical study of Xe 5*s*

140. D. Rolles, R. Guillemin, S.-W. Yu, O. Hemmers and D.W. Lindle
Giant nondipole effect due to intramolecular interchannel coupling in K-shell photoionization of Nitrous oxide

Advanced Light Source Users' Association Annual Meeting, LBNL, Berkeley, CA, October 6-8, 2003

141. O. Hemmers, R. Guillemin, D.W. Lindle, J. Baker, A. Hudson, M. Lotrakul, W. Stolte, I.C. Tran, A. Wolska, S.-W. Yu, E.P. Kanter, B. Krässig, S.H. Southworth, R. Wehlitz, M. Ya Amusia, L.V. Chernysheva, K.T. Cheng, W.R. Johnson, D. Rolles, S.T. Manson
Dramatic nondipole effects in low-energy photoionization: experimental and theoretical study of Xe 5*s*

142. R. Guillemin, O. Hemmers, D. Rolles, S.-W. Yu, A. Wolska, I. Tran, A. Hudson, J. Baker and D.W. Lindle
Nearest-neighbor-Atom Core-Hole Transfer: Interatomic core-to-core electron correlation in molecules

2004 ANS (American Nuclear Society) Student Conference, University of Wisconsin at Madison, WI, April 1-3, 2004

143. C.P. Rodrigo, G.W.C. Silva, O. Hemmers, D.L. Perry, and D.W. Lindle
Evaluation of Fluorapatite as a Waste Form

144. G.W.C. Silva, D.L. Perry, A.L. Johnson, O. Hemmers, and D.W. Lindle
Characterization of the thermal stability of Apatites containing different cations

Graduate and Professional Student Research Forum, University of Nevada, Las Vegas, April 17, 2004

145. G.W.C. Silva, D.L. Perry, A.L. Johnson, O. Hemmers, and D.W. Lindle
Characterization of the thermal stability of Apatites containing different cations

The 35th Annual Meeting of the Division of Atomic, Molecular and Optical Physics(DAMOP), Tucson, AZ, USA, May 25-29, 2004

146. O. Hemmers, R. Guillemin, A. Wolska, D.W. Lindle, D. Rolles, K.T. Cheng, W.R. Johnson, H.L. Zhou, S.T. Manson
Nondipole effects in the photoionization of Xe *4d*: Evidence for quadrupole satellites

147. O. Hemmers, R. Guillemin, I. Bashta, A. Wolska, D.W. Lindle, D. Rolles, B. Krässig, E. Kanter, S. Southworth, R. Wehlitz, P. Langhoff, V. McKoy, B. Zimmermann
Nondipole effects in valence shell photoionization of nitrogen at low photon energies

148. A. Hudson, R. Guillemin, W.C. Stolte, O. Hemmers, D.W. Lindle
Polarized Cl K-*α* Emission from Freon 13

The Fourteenth International Conference on Vacuum Ultraviolet Radiation Physics (VUV-XIV), Cairns, Australia, July 19-23, 2004

149. O. Hemmers, R. Guillemin, A. Wolska, D.W. Lindle, D. Rolles, K.T. Cheng, W.R. Johnson, H.L. Zhou, and S.T. Manson
Nondipole effects in the photoionization of Xe *4d*: Evidence for quadrupole satellites

150. O. Hemmers, R. Guillemin, A. Wolska, I. Bashta, D.W. Lindle, D. Rolles, B. Krässig, E. Kanter, S. Southworth, R. Wehlitz, P. Langhoff, V. McKoy, and B. Zimmermann
Nondipole effects in valence shell photoionization of nitrogen at low photon energies

151. R. Guillemin, O. Hemmers, D. Rolles, S.-W. Yu, A. Wolska, I. Tran, A. Hudson, J. Baker, and D.W. Lindle
Nearest-Neighbor-Atom Core-Hole Transfer in Isolated Molecules

152. A.C. Hudson, R. Guillemin, W.C. Stolte, O. Hemmers, and D.W. Lindle
Polarized Cl K-*α* Emission from Freon 13

Advanced Light Source Users' Association Annual Meeting, LBNL, Berkeley, CA, October 16-18, 2004

153. O. Hemmers, R. Guillemin, A. Wolska, D.W. Lindle, D. Rolles, K.T. Cheng, W.R. Johnson, H.L. Zhou, and S.T. Manson
Nondipole effects in the photoionization of Xe *4d*: Evidence for quadrupole satellites

154. O. Hemmers, R. Guillemin, A. Wolska, I. Bashta, D.W. Lindle, D. Rolles, B. Krässig, E. Kanter, S. Southworth, R. Wehlitz, P. Langhoff, V. McKoy, and B. Zimmermann
Nondipole effects in valence shell photoionization of nitrogen at low photon energies

155. D. Rolles, R. Guillemin, O. Hemmers, S.-W. Yu, A. Wolska, and D.W. Lindle
Nearest-Neighbor-Atom Core-Hole Transfer in Isolated Molecules

156. A.C. Hudson, R. Guillemin, W.C. Stolte, O. Hemmers, and D.W. Lindle
Polarized Cl K-*α* Emission from Freon 13

American Nuclear Society (ANS) Student Conference, Columbus, OH, April 2005

157. G.W.C. Silva, O.A. Hemmers, and D.W. Lindle
Characterization of the ThermalStability of Zinc-containing Fluorapatite

158. C.P. Rodrigo, O.A. Hemmers, and D.W. Lindle
Characterization of Fluorapatite as a Waste Form

Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), Lincoln, Nebraska, May 2005

159. O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, S.-W. Yu, D.W. Lindle, and S.T. Manson
Study of Spin-orbit-resolved Angular-Distribution Components of Xe 5*p*

160. O.A. Hemmers, W.C. Stolte, R. Guillemin, D. Rolles, and D.W. Lindle
First Measurements of Macroscopic Drag Currents under the Action of Photon Flux

161. A. Hudson, W.C. Stolte, R. Guillemin, O.A. Hemmers, P.W. Langhoff, and D.W. Lindle
Cl K-α Resonant X-ray Raman Scattering from CF_3Cl

162. M. Simon, L. Journel, S. Carniato, R. Taieb, I. Minkov, F. Gel'mukhanov, H. Ågren, R. Guillemin, W.C. Stolte, A. Hudson, O.Hemmers, and D.W. Lindle
Cl K-α and Cl K-β Resonant X-ray Raman Emission from HCl

International Conference on X-Ray and Inner-Shell Processes (X-05), Melbourne, Australia, July 2005

163. A. Hudson, W.C. Stolte, R. Guillemin, O.A. Hemmers, P.W. Langhoff, J.D. Mills, and D.W. Lindle
Cl K-α Resonant X-ray Raman Scattering from CF_3Cl and CF_2Cl_2

International Workshop on Photoionization (IWP), Campinas, Brazil, July 2005

164. A. Hudson, W.C. Stolte, R. Guillemin, O.A. Hemmers, P.W. Langhoff, J.D. Mills, and D.W. Lindle
Cl K-α Resonant X-ray Raman Scattering from CF_3Cl and CF_2Cl_2

165. O.Hemmers, R. Guillemin, D. Rolles, A. Wolska, S.-W. Yu, D.W. Lindle, and S.T. Manson
Study of Spin-orbit-resolved Angular-Distribution Components of Xe 5*p*

166. O.A. Hemmers, W.C. Stolte, R. Guillemin, D. Rolles, and D.W. Lindle
First Measurements of Macroscopic Drag Currents under the Action of Photon Flux

Advanced Light Source Annual Users' Meeting, Berkeley, CA, October 2005

167. A. Hudson, W.C. Stolte, R. Guillemin, O.A. Hemmers, P.W. Langhoff, J.D. Mills, and D.W. Lindle
Cl K-α Resonant X-ray Raman Scattering from CF_3Cl and CF_2Cl_2

168. O.Hemmers, R. Guillemin, D. Rolles, A. Wolska, S.-W. Yu, D.W. Lindle, and S.T. Manson
Study of Spin-orbit-resolved Angular-Distribution Components of Xe 5*p*

169. O.A. Hemmers, W.C. Stolte, R. Guillemin, D. Rolles, and D.W. Lindle
First Measurements of Macroscopic Drag Currents under the Action of Photon Flux

Annual Meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP), Knoxville, Tennessee, May 16-20, 2006

170. P.C. Deshmukh, O. Hemmers, R. Guillemin, A. Wolska, D.W. Lindle, D. Rolles, S.-W. Yu, and S.T. Manson
First Observation of a Quadrupole Cooper Minimum in the Photoionization of Xe 5*p*

International Conference on Electronic Spectroscopy and Structure (ICESS10), Foz do Iguacu, PR, Brazil, August 28 - September 1, 2006

171. D. Céolin, M.N. Piancastelli, R. Guillemin, W.C. Stolte, S.-W. Yu, O. Hemmers, and D.W. Lindle
Fragmentation of methyl chloride studied by partial positive and negative ion yield spectroscopy

Advanced Light Source Annual Users' Meeting, Berkeley, CA, October 9-11, 2006

172. P.C. Deshmukh, O. Hemmers, R. Guillemin, A. Wolska, D.W. Lindle, D. Rolles, S.-W. Yu, and S.T. Manson
First Observation of a Quadrupole Cooper Minimum in the Photoionization of Xe 5*p*

173. D. Céolin, M.N. Piancastelli, R. Guillemin, W.C. Stolte, S.-W. Yu, O. Hemmers, and D.W. Lindle
Fragmentation of methyl chloride studied by partial positive and negative ion yield spectroscopy

UNLV Undergraduate Student Research Projects, August 9, 2007

174. K. Bowen, O. Hemmers, D.W. Lindle
The role of bond length in the nondipole effect in x-ray molecular photoionization

UNLV 2007 Inaugural Energy Symposium, Las Vegas, NV, August 15-17, 2007

175. O. Hemmers, K. Lipinska-Kalita, D. Lindle, I. Demchenko, and W.C. Stolte
Synchrotron X-Ray Spectroscopy Studies for H_2 Storage

176. O. Hemmers, K. Lipinska-Kalita, R. Kaushal, and C. Silva
Biofuels for Transport: Solving Issues with Condensed Matter Physics Tools

Pahrump Fall Festival, Pahrump, NV, October 4 – 7, 2007

177. O. Hemmers, K. Lipinska-Kalita, R. Kaushal, and C. Silva
Biofuels for Transport: Solving Issues with Condensed Matter Physics Tools

Advanced Light Source Annual Users' Meeting, Berkeley, CA, October 4-6, 2007

178. O. Hemmers, K. Lipinska-Kalita, D. Lindle, I. Demchenko, and W.C. Stolte
Synchrotron X-Ray Spectroscopy Studies for H_2 Storage

National Clean Energy Summit, Las Vegas, NV, August 19, 2008

179. O. Hemmers, C. Bae, and K. Lipinska-Kalita
New Technologies for Future Biodiesel Production

UNLV 2008 Renewable Energy Symposium, Las Vegas, NV, August 20, 2008

180. O. Hemmers, C. Bae, and K. Lipinska-Kalita
New Technologies for Future Biodiesel Production

Advanced Light Source Annual Users' Meeting, Berkeley, CA, October 13-15, 2008

181. I.N.Demchenko, Lawniczak-Jablonska, T. Tyliszczak, N.R. Birkner, W.C. Stolte, M. Chernyshova, and O. Hemmers
XANES studies of newly synthesized nanostructured manganese oxides

182. I.N. Demchenko, E. Piskorska-Hommel, D. Hommel, W.C. Stolte, and O.Hemmers
The local environment around In atoms in InGaN layers grown by MBE

The 14th International Conference on X-ray Absorption Fine Structure, Camerino, Italy, July 26-31, 2009

183. E. Piskorska-Hommel, I.N. Demchenko, T. Yamaguchi, W.C. Stolte, W. Yang, O. Hemmers
Polarization dependent studies of InGaN layers by means of XANES

Advanced Light Source Annual Users' Meeting, Berkeley, CA, October 15-17, 2009

184. I.N.Demchenko, M. Chernyshova, J.D. Denlinger, K.M. Yu, D. Speaks, P. Olalde-Velasco, O. Hemmers, W. Walukiewicz, A. Derkachova and K. Lawniczak-Jablonska
Full multiple scattering analysis of X-ray absorption near edge structure at the O K- and Cd L_3- edges in CdO thin layer combined with X-ray emission spectroscopy investigation

41st Annual Meeting of the Division of Atomic Molecular and Optical Physics, May 25-29, 2010, Houston, Texas

185. K.P. Bowen, W.C. Stolte, J.A. Young, I.N. Demchenko, R. Guillemin, O. Hemmers, M.N. Piancastelli, D.W. Lindle
Nondipole photoemission from chiral enantiomers of camphor

The 10th jubilee International School and Symposium on Synchrotron Radiation in Natural Science, Szklarska Poreba, Poland, June 6-11, 2010

186. I.N. Demchenko, T. Tyliszczak, M. Chernyshova, K.M. Yu, J.D. Denlinger, D. Speaks, P. Olalde-Velasco, O. Hemmers, W. Walukiewicz, G. Derkachov, and K. Lawniczak-Jablonska
Modification of the local structure of oxygen in CdO under irradiation

37th International Conference on Vacuum UltraViolet and X-ray Physics, University of British Columbia, Vancouver, BC, Canada, July 11 – 16, 2010

187. K.P. Bowen, W.C. Stolte, J.A. Young, I.N. Demchenko, R. Guillemin, O. Hemmers, M.N. Piancastelli, D.W. Lindle
Nondipole photoemission from chiral enantiomers of camphor

188. I.N. Demchenko, J.D. Denlinger, M. Chernyshova, K.M. Yu, D. Speaks, P. Olalde-Velasco, W.C. Stolte, O. Hemmers, W. Walukiewicz, A. Derachaova, K. Lawniczak-Jablonska
Electronic structure of CdO studied by soft X-ray spectroscopy

189. W.C. Stolte, I.N. Demchenko, O. Hemmers
Full multiple scattering analyses of XANES and X-ray emission studies of AgCl near the Cl K-edge

5th International Workshop on Mullite & Mullite-type Materials, Avilés, Spain, May 8th - 11th, 2011

190. P. Kalita, A. Cornelius, K. Lipinska, S. Sinogeikin, M. Lufaso, Z. Kann, O. Hemmers, and H. Schneider
Pressure Induced Phase Transitions in Mullite-Type $Bi_2(Fe_{4-x}Mn_x)O_{10-x}$ Complex Oxides

2011 DOE Hydrogen Fuel Cells Program and Vehicle Technologies Program Annual Merit Review and Peer Evaluation Meeting, Arlington, VA, May 9-13, 2011

191. K. Lipinska and O. Hemmers
Glasses and Nanocomposites for Hydrogen Storage

2011 DOE Biomass Program Review Integrated Biorefineries Platform IBR & Infrastructure, Washington D.C. Feb. 1-3, 2011

192. K. Lipinska, O. Hemmers and S. Balagopal
Development of Biofuels Using Ionic Transfer Membranes – Phase II

APS March Meeting, Boston, MA, Feb, 28-March 2, 2012

193. P. Kalita, A. Cornelius, K. Lipinska, O. Hemmers, S. Sinogeikin, M. Murshed and T. Gesing
New Structural Phase Transitions in PbMBO4 Complex Oxides

2012 DOE Hydrogen Fuel Cells Program and Vehicle Technologies Program Annual Merit Review and Peer Evaluation Meeting, Arlington, VA, May 9-13, 2012

194. K. Lipinska and O. Hemmers
Glasses and Nanocomposites for Hydrogen Storage

2013 DOE Bioenergy Technologies Office (BETO) Project Peer Review
Technology Area Review: Biofuels, May 20-23, 2013

195. K. Lipinska, S. Balagopal, O. Hemmers, and C. Bae
Development of Biofuels Using Ionic Transfer Membranes Phase III

APS March Meeting, Baltimore, MD, March 18-22, 2013

196. P. Kalita, A. Cornelius, K. Lipinska, O. Hemmers, S. Sinogeikin, R. Fisher, H. Schneider
Mullite Ceramics at Extreme Conditions

In the Media

UNLV Security Studies, KNPR's State of Nevada, AIR DATE: November 13, 2008
http://www.knpr.org/son/archive/detail2.cfm?SegmentID=4731

Now that's green energy, Las Vegas Sun Tuesday, Feb. 24, 2009
http://www.lasvegassun.com/news/2009/feb/24/now-s-green-energy/

Algae Energy, KNPR's State of Nevada, AIR DATE: March 10, 2009
http://www.knpr.org/son/archive/detail2.cfm?SegmentID=5093

Biofuel. KNPR's State of Nevada, AIR DATE: April 9, 2010
http://www.knpr.org/son/archive/detail2.cfm?SegmentID=6816

Experts Call New Fuel Plant a Win-Win, Residents Not So Sure, Channel 8 Now – Las Vegas, Posted: Feb 05, 2014 5:44 PM PST
http://www.8newsnow.com/story/24647463/experts-call-new-fuel-plant-a-win-win-residents-not-so-sure

Meetings Attended

Invited to attend the SciTech Hookup event, held at the World Market Center on October 24, 2012.

8th Cyber Security and Information Intelligence Research Workshop, Oak Ridge National Laboratory, January 8 – 10, 2013.

Coalition of EPSCoR/IDeA States' Annual Meeting will take place in Washington, DC on March 11-12, 2013.
Visit of the NNSS to explore the infrastructure that may be used in the extreme cyber test bed initiative, March 14, 2013.

Louisiana Tech University, Cyber Security Meeting (TMNL) in Ruston, LA, March 20, 2013
Attended the AUVSI's Unmanned Systems North America 2013 Conference August 12-15, 2013 Washington, D.C.

Invited to attend the SciTech Hookup event, held at the World Market Center on October 25, 2013.

Attended the 9th International Conference on Climate Change (ICCC-9) in Las Vegas, NV, July 7-9, 2014

Attended and Presented at the 14th International Conference on Climate Change (ICCC-14) in Las Vegas, NV, April 16-17, 2021

EXHIBIT D

EXHIBIT D

DECLARATION OF EXPERT G DONALD ALLEN

G DONALD ALLEN declares, under penalty of perjury, that the following is true and correct.

1. I am a Professor Emeritus in the Department of Mathematics at Texas A&M University and also an author of numerous works pertaining to mathematics, politics, as well as to government agencies, including classified work.
2. Prior to my retirement in 2017, I taught Mathematics at both the undergraduate and graduate levels for 46 years. I developed many graduate courses in problem-solving and related subjects. I developed the online masters program in mathematics, first in the USA, beginning in 2001, and various computer codes relating to numerical analysis.
3. I have published more than 80 research articles related to operator theory, functional analysis, mathematics education, nutronics, political systems, and some philosophy topics. I've also reviewed dozens of mathematical papers submitted for publication. As well, I've published books in linear algebra, history of mathematics, and calculus. In addition, prior to retirement I was a Principal Investigator (PI) or co-PI on more than $10 million in grant funding.
4. I have reviewed, mathematically, the reports by Edward Solomon furnished to me which mathematically analyzes the June 14, 2022, Republican gubernatorial primary in Clark County, Nevada, as well as other races.

5. In my expert opinion, these reports demonstrate clear and convincing evidence that the election results analyzed in these reports were not produced by accurate counting of the votes cast, but were instead artificially contrived according to a predetermined plan or algorithm.

6. In the paragraphs below, we summarize the salient points of the report by Mr. Solomon, simplifying his notation, and clarifying how relatively simple it is to manipulate election outcomes using voting algorithms. Yet, the problem has two parts. The first is to establish the election is incorrect. However, the important component is to estimate what the vote total should be.

7. The basic configuration for Candidate A and Candidate B where there are only mail-in and election-day votes. Assume the proportion of the mail-in votes for Candidate A is h. Therefore the proportion of mail-in votes for Candidate B is $1-h$. Actual vote totals can be computed by multiplying the total number of mail-in votes. Similarly, the proportion of election day votes for Candidate A is k and the proportion of election-day votes for Candidate B is $1-k$. Again, the total votes for each is obtained by multiplying by the total number of election-day votes. Now let M be the number of mail-in ballots and K be the number of votes on election day. Then, the proportion of votes for Candidate A is

$$\frac{hM + kK}{M + K}$$

If voting has been algothmized by adjusting the proportion of k to a new proportion r the vote total will be the same but the net proportion can be made to whatever, say $r < 0.5$, it is only required to solve the equation

$$\frac{(1-h)M+(1-k)K}{M+K}=1-r$$

for k. This is done to favor Candidate B. A similar equation is to favor Candidate A. This new value is merely programmed to change votes to obtain the desired proportion. Programming this is remarkably simple. Going into any election, if the mail-in data is known, and a good estimate of K is known, the equation has a unique solution. If accurate poll data is known, and it generally is, then all we need is M and we can use the poll estimates to reflect the proportions and then estimate what value k should be to obtain the desired proportion r to be programmed in.

All this is for just one voting station and literally could not be detected. However, if the same or similar proportion obtains over hundreds of precincts, then error is ascertained. That is, plotting the values of h and k of actual election results will reveal that k seems to be constant over all voting stations or precincts

8. If there is some control over the total number of mail-in ballots, say by supplementing mail-in ballots after the election-day ballots are counted, then both h and k can be manipulated, to a value where the equation above is solved for h to determine the number of ballots that need to be added. In the absence of both proportions, then poll numbers must be used to fix h and then estimate k based on the desired proportion r.
9. If all mail-in ballots total are known beforehand, and if algorithms are applied as above with differing values of k, massive evidence of error can be detected by noting the proportion of votes for Candidate B generally computes to the same total proportion over the spectrum of reporting stations.

10. In each of these cases, the algorithmic is clear and essentially proved. Please note that while a mathematical proof is desired, we are working with field data, and therefore must be replaced with statistical proof for example as applied to forensic psychology.

11. Another, more complex example of algorithmic error, is absolutely clear and convincing when the computed proportions between Candidates A and B do not add up to one. These values we never see, as all reported numbers are lumped together for presentation. Even in the case of newly discovered ballots, we often see total vote proportions change as the count is reported, though this is less indicative of error.

12. How to estimate the votes Candidate A would have if the algorithm flaws did not occur? For this, we use a statistical argument and assume the mail-in proportions, which are assumed to be known and correct are the same as the election-day voting proportions. Alternatively, we know an established relationship between the two. From this, we can back-project to what the values of k should have been for each precinct. These in turn can be averaged in a weighted scheme (by numbers of voters) to gain the average value of k. Using the standard deviation we estimate the range of all k values within two standard deviations and compute the expected vote count. In this way, the number of votes lost to Candidate A can be estimated. Alternatively, precinct by precinct poll numbers could be used, thus canceling the effects of mail-in voters that are known to behave in different ways from election day voters. Such are standard methods in statistical analysis. In this particular case, they apply to the Gilbert and Sheriff's election results. Solomon uses a geometrical argument, rotating actual results to assumed slope one expectations.

G Donald Allen

G. Donald Allen

EXHIBIT E

EXHIBIT E

July 6, 2022

CURRICULUM VITA: **G. Donald Allen**

CURRENT OFFICE ADDRESS AND CONTACT POINTS
Professor of Mathematics
Department of Mathematics
Texas A&M University
College Station, Texas 77843-3368

Office: Room 221C Blocker Building
Phone 979/845-7950 (Office) 979/845-6028 (Fax)
Email: dallen@math.tamu.edu
Homepage: http://www.math.tamu.edu/~dallen

Current Home Address
9215 Brookwater Circle
College Station, Texas 77845

Citizenship: U.S.A.

Degree	Major	University	Year
	Mathematics	University of Wisconsin, Madison	1971
	Mathematics	University of Wisconsin, Milwaukee	1966
	Mathematics	University of Wisconsin, Milwaukee	1965

SERVICE: UNIVERSITY SERVICE AND COMMITTEES

- SYMCOMP2019 (PC member)
- 2015 Pearson Scholarship for Higher Education, Judge, July 2015
- Appointed to the Advisory Board, Global STEMx Education Conference, September 19-21, 2013. See, http://stemxcon.com/page/2013-global-advisory-board
- Appointed, Assessment and Effective Teaching 2013, Easy Chair Conferences, 2013-. Information Technology Working Group (ITWG), 2000- founding member.
- Co-director IT Lab, College of Science, 2001- present.
- Appointed, (Southwest Educational Research Association), Instruction, learning and cognition section, co Division Chair 2008-2009.
- Member, Teacher Quality Grants Instructional Leaders Community, 2007-2009.
- Consulting Editor, Thomson Higher Education, 2006-2007.
- Math TEKS Connections (MTC) - Geometry Advisory Board, funded through the TEA, 2006-2007. Chair, GK-12 Educational Outreach Institutionalization Committee, 2007 - 2010.
- Member, STEPS Management Team (College of Engineering), 2006 - 2008.
- Member, Camtasia Steering Committee, November 2005 - 2008.
- Member, Sigma Xi educational outreach committee, William Klemm, Chair, July 2005 - 2008.

- Member, Committee on Academic Freedom, Responsibility, and Tenure (CAFRT), Preliminary Screening Committee, Vice-Chair, 2005-2006.
- Member, Quality Enhancement Plan (QEP) Council, College of Science, 2004 - 2007.
- Member, President's Executive Committee Task Force for Enhancing the Undergraduate Experience, Jim Eddy, Chair, 2004 -2005.
- Grass Roots P-16 Consortium, (Statewide) 2005 - present.
- Regents Scholar Mentor program (11/29/2004 - 2007).
- Member, NSF PEER Distance Learning Community group, a component of the Partnership for Environmental Education and Rural Health, (See, http://peer.tamu.edu/DLC/NSF_Resources.asp), 2004 - 2008.
- Member, Regent Initiative, Academy for Educator Development Advisory Committee, TAMUS, 2004 -2005.
- Member, College of Science University Curriculum Committee, Sept 2004 - 2007.
- Member, College of Science Quality Enhancement Plan Council, (members: Dr. Michael Hall, Chemistry/Dean's Office (Chair) Dr. Vincent Cassone, Biology Dr. Donald Allen, Mathematics Dr. Lewis Ford, Physics Dr. Michael Speed, Statistics), 2004-2007.
- Member, Clinical Faculty Review Committee for TLAC (Department of Teaching Learning and Culture, College of Education), 2004-2005.
- Member, NSF G-K12 Fellows steering committee, (Larry Johnson, Dept of Vet Science, Chair), 2004-2009.
- Member, NSF G-K12 Fellows Recruiting and Selection Committee, (Vince Cassone, Dept of Biology, Chair), 2004 -2009.
- Member, Distance Education Review Committee, (Provost's office) F. Michael Speed, chair, 2003-2004.
- Co-director Information Technology (IT) Lab, College of Science, (2001-present)
- Member, Distance Education Coordinators in the Office of Distance Education, 2002 - 2005.
- Committee on Academic Freedom, Responsibility, and Tenure, (CAFRT) 2002-2005.
- Member, Computational Kinetics Theory Group, (Primary interest is in mathematical models and numerical solutions to the Transport Equation, particularly related to neutron kinetics and vehicular traffic flow modeling. The CKTG is headed by Dr. Paul Nelson who is affiliated with the Math, Computer Science, and Nuclear Engineering, Departments at Texas A&M University.) 1997 -2004.
- Office of Distance Education Faculty Advisory Committee, (2002 -)
- Committee on Academic Freedom, Responsibility, and Tenure, (CAFRT) 2002-2005
- Faculty Search Committee, Department of Teaching, Learning, and Culture, 2002
- Reviewer for Distance Education RPF for online course development (Oct/Nov 2001)
- APC Faculty Workstation Committee (TAMU), 2001- (Pierce Cantrell, Chair)
- AdHoc Committee on Intellectual Property, 2000. (C. Roland Haden, Chair)
- Faculty Workstation Committee (TAMU), 2001 - 2005 .
- Texas A&M University ad hoc Intellectual Property Committee (TAMU), 2000-2001.
- University Laboratory Renovation Committee (TAMU), (William Perry, chair),1999- 2001.
- Member, Faculty Senate 1999-. Academic Affairs Committee 1999-2000.
- Member, Faculty Senate 1985-1987, 1999-2002. Chair, Personnel and Welfare Committee 1986-87.
- Faculty Senate, 1999-2002.

- Member, Faculty Senate 1999-. Academic Affairs Committee 1999-.
- Faculty Senate, 1999-2002.
- Faculty Advisory Council, College of Science, vice-chair (1997-98) chair (1998-1999), 1996-1999.
- Mentors, 1990-current.
- Mentors Executive Committee, 1996-1997, an oversight group for the welfare of student life, Texas A&M University, 1990-1998.
- University recruiting representative to University of Minnesota, Carleton University, St. Olaf's College, Oct. 25-27, 1988.
- College of Science Faculty Advisory Committee, 1983-1985.
- University Faculty Advisory Committee, 1978.

DEPARTMENTAL SERVICE AND COMMITTEES:

- Associate Department Head for Operations: from 1981-1983 and 1992-1994, 2006 -2011. Duties include:
    - Scheduling and assigning courses
    - Supervising over twenty-five lecturers
    - Liaison with students
    - Administering complaint issues
    - Attending Executive Committee meetings
    - Liaison with other administrative units
    - Curriculum development
    - General administrative duties
    - Administering IEEF (Institutional Enhancement Equipment Fee) funds
- Executive Committee, 1994-1995, 1997-1999, 2006-2011.
- Honors Committee, 2005 - 2012.
- Undergraduate Studies Committee, 2006 - 2011.
- Texas Math Talent Search, (Peter Kuchment, chair), 2004-2010.
- Undergraduate Studies Committee, (2004 - 2008), Chair.
- Scholarship Committee (2004-2008), Chair.
- Undergraduate Recruiting Committee, 2004.
- Graduate Studies Committee (2003-2004).Teaching Evaluation Committee, 2002-2003.
- Committee to develop an undergraduate mathematics major with an Information Technology specialty, 2002.
- Promotion & Tenure policy review committee, 2001, Chair.
- Information Technology Working Group, founding member, 1999 - .
- Department of Mathematics, Executive Committee, 1999 - 2001
- Undergraduate Committee, Department of Mathematics, 1996 – 2000.
- Chair, Faculty Advisory Council, College of Science, 1998-1999, Chair 1999
- Member, Faculty Advisory Council, College of Science, 1996-1998.
- Member, Undergraduate Studies Committee, 1996-1999.
- Member, Subcommittee P, Department of Mathematics, 1992.

- Chair, Committee on Computer Software, Department of Mathematics, 1992.
- Chair, Committee on Space, Department of Mathematics, 1992.
- Committee on Academic Freedom, Tenure and Responsibility, 1991-1993, TAMU.
- Course Coordinator of Math 151, Math 152, Math 142, and other for various years.
- Department Head Search Committee, Department of Mathematics 1983.
- Graduate Studies Committee, 2002-2004.
- Undergraduate Studies Committee, 1998-2002.
- Undergraduate Advisor 1986-1992.
- Library Committee, 1971-1976.
- Promotion and Tenure Committee, 1975-1978.
- Colloquium Committee, 1976-1977.

OTHER SERVICE AND COMMITTEES

- Executive Steering Committee - ICTCM (International Conference on Technology in Collegiate Mathematics) 2000 - present.
- Grass Roots P-16 Consortium, (Statewide) 2005 - present.
- Member, Teacher Quality Grants Instructional Leaders Community, 2007-2010.
- Consulting Editor, Thomson Higher Education, 2006-2007.
- Math TEKS Connections (MTC) - Geometry Advisory Board, funded through the TEA, 2006-2007.
- Member, Assessment Strand Speakers Committee, ICTCM, 2005 - 2006.
- Chair, Review Committee for Nicholls State University, appointed by the State of Louisiana Board of Regents, June 8-12, 2003.
- Co-chair. Multimedia Speakers Committee, ICTCM, Oct 30, 2001- Nov2, 2003.
- Regent's Initiative, Academy for Educator Development, member. 2002 - 2006.
- Strategic Planning Process, a district planning project of the College Station Independent School District, 1998-1999.
- Urban Systemic Initiative, Coalition of 8 ISD's in San Antonio. Pre-grant preparation. (Amount requested, $15M.) September 1994-August 1995.
- Judge, Brazos Valley Regional Science Fair, March 1996-2001, College Station Team Projects, Chair.
- Judge, Regional Science Bowl, at Texas A&M University, February, 1998-2000.Judge, Department of Energy Science Bowl, 1998, College Station, TX.
- Participant in the Conservation and Sustainable Development Initiative, Futurescapes II, TAMU April 13-14, 1989.
- Judge, Brazos Valley Regional Science and Engineering Fair, 1989-1999.
- Judge for the National Council of Teachers of Mathematics at the Brazos Valley Regional Science and Engineering Fair, 1991-1993.
- Participant in the Academic Administrator and Development Seminar, Texas A&M University, April 19-21, 1993.

IN THE PROFESSION - PART I

- 2006-2011, Associate Head, Department of Mathematics
- 1995- Professor, Texas A&M University

- 1994-1995 Associate Dean, University of Texas---San Antonio, Texas (on leave)
- 1992-1994 Associate Head for Operations, Mathematics, Texas A&M
- 1988- Professor of Mathematics, Texas A&M.
- 1981-83 Associate Head, Mathematics, Texas A&M
- 1976-88 Associate Professor of Mathematics, Texas A&M.
- 1974 ONR Research Support Contract N0014-680A-0303-0003(Summer) R.E. Schapery, P.I.
- 1973 NSF Research Support, Contract GP 38486. College (Summer) of Science (TAMU) Research support.
- 1972 Research Support, Texas A&M University. (Summer)
- 1971-76 Assistant Professor, Department of Mathematics, Texas A&M University, College Station, Texas.

IN THE PROFESSION – PART II

- Editorial Board, MDPI journals, Basil, Switzerland, 2020-.
- Editorial Board, Journal of Contemporary Mathematics, 2019-
- Editorial Board-Mathematics and Humanities Engineering, 2018 -
- Editorial Board, SAS Journals 2019 -
- Editorial Board, Journal of Advances in Sports and Physical Education, 2016
- Editorial Board, International Journal on Recent and Innovation Trends in Computing and Communication (IJRITCC), 2017-
- Editorial Board, Austin Mathematics 2014-
- Editorial Board, Advanced Emergency Medicine, 2017-.
- Associate Editor, School Science and Mathematics Journal, 2005-2009
- Associate Editor, Focus on Mathematics Pedagogy and Content - a newsletter for math teachers,
- Youtube.com channel on Numerical Analysis, 2012-.
- Editor, *The Math/Science-Online Newsletter* 1999 – 2004.
- Associate Editor (Reviews) College Mathematics Journal, 1999-2005
- Associate Editor, Transport Theory and Statistical physics, 1990-1997.
- Member, Computational Kinetics Theory Group, (Primary interest is in mathematical models and numerical solutions to the Transport Equation, particularly related to neutron kinetics and vehicular traffic flow modeling. The CKTG is headed by Dr. Paul Nelson who is affiliated with the Math, Computer Science, and Nuclear Engineering, Departments at Texas A&M University.) 1997 -2003
- Member, Society for Industrial and Applied Mathematics
- Associate Member, Center for Approximation Theory, Texas A&M, 2002-2008.
- Editor, *The Math/Science-Online Newsletter*
- Editorial Review Board for AACE/SITE Journal
- Member, Mathematical Association of America
- Referee for numerous journals.
  a) Asian Research Journal of Mathematics (ARJM)
  b) Athens Journal of Sciences (AJS)
  c) Academia Letters

d) Science & Education
e) Journal School Science and Mathematics
f) College Mathematics Journal
g) The Texas Journal of Science
h) Mathematical Modeling and Analysis Science and Education
i) School Science and Mathematics
j) Journal of STEM Education
k) Transport Theory and Statistical Physics
l) Journal of Mathematical Sociology
m) Discrete and Continuous Dynamical Systems and Differential Equations
n) SIAM J. Math. Anal.
o) Athens Journal of Education
p) SOAOJ, Mathematics and Humanities Engineering Open Access Open Journal (MHEOAOJ)
q) SYMCOMP2019 (PC member, reviewer)

Consulting

1. Reviewer for UConn SPARK Technology Commercialization Fund, 2019
2. MTC geometry grant, 2007 (TEA Award number is 050245247110001).
3. WebALT (Web Alternative Learning Technologies), 2006- 2010.
4. Thomson Higher Education, Consulting Editor, 2006-2008.
5. Department of Mathematics, University of Idaho, online calculus project, funded through a Congressional earmark. June 13-20, 2005
6. TAMUS/Teacher Education Agency on professional development materials, 2004-2005.
7. Wiley (2003-2004) Q&A work for Boyce-DiPrima, Ordinary Differential Equations
8. LSU - Eunice, LA, SACS (Southern Association of Colleges and Schools) pre accreditation consultation team, March 29-31, 2004.Aerospace Academy for Engineering and Teacher Education, an education-industry-government collaboration, http://www.aerospaceacademy.org/index-ie.html. 2002-2003
9. Bowling Green University (2002) - Creating an online masters degree
10. University of Houston (2001-2002)- Putting mathematics courses online; developing an online masters program.
11. Addison-Wesley-Longman, 1999 - 2002.

Recent Grants

1. Texas Higher Education Coordinating Board (THECB), Algebra, ~$98,000, 2012-2014. *Investigations in Secondary Mathematics and Science.* Co-PI with Nite, S. B.
2. Texas Higher Education Coordinating Board (THECB), Algebra, ~$98,000, 2012-2014. Investigations in Secondary Mathematics and Science. Co-PI with Nite, S. B., Texas Higher Education Coordinating Board, Funded $589,000, 2/1/2014 - 4/30/2016
3. Halliburton Corporation, Mathematics All Around Us: Oil and Gas Applications, $27,716, 2011-2012
4. Developmental Education Demonstration Project Evaluation 2011-2012: Co-Pi with Jim Dyer, M. M. Capraro. Awarded April, 2011 to Texas Higher Education Coordinating Board, Awarded $399,998, co-Investigator, 6/10/11 – 10/31/12.
5. National Science Foundation (NSF), Preservice Teacher Effectiveness for Algebra I, Gerald

Kulm, PI, September 1, 2010 - August 31, 2015, $1,778,741, co-PI.

6. National Science Foundation (NSF), Retention through Remediation in PreCalculus, $1,980,712, STEP Proposal # 0856767, June 15, 2009 - June 14, 2014, PI.
7. West Sabine Independent School District, Mathematical Instructional Coaches Pilot Program (TEA - Texas Education Agency) - West Sabine ISD, $26,125, 4/1/2009-5/31/2011, amended to $28,125 on April 11, 2011, PI.
8. Gladewater Independent School District, Mathematical Instructional Coaches Pilot Program, $42,000, PI.
9. Texas Education Agency (TEA), Professional Development Activities for Teachers and Administrators: Mathematics College and Career Readiness Standards, TEA Funding Source #10450967, TAMU-RF #0902074, $500,000, August 14, 2009 - February 28, 2011.
10. Texas Higher Education Coordinating Board (THECB), Design & Pilot of Framework & Tools for CCRS/ Texas Educator Preparation Demonstration Sites, $500,000, September 1, 2009 - August 31, 2010 (Proposal 09-1202 "TAMU Educator Preparation Collaborative for Enhancing College and Career Readiness in Texas").
11. Texas Higher Education Coordinating Board (THECB), Algebra I-II Focus on Alignment, Total Award Amt: $190,000, May 1, 2009 - May 31, 2011, supplement of $28,900 awarded on 5/4/2010. Total $218,900. PI
12. Texas Education Agency via El Paso Independent School District, Math Coachers Service provider contract, $56,600, November 25, 2008- May 31, 2010, PI.
13. NSF: "Continuing GK-12 Fellows Integrate Science/Math in Rural Middle Schools," PI and Co-PIs: Larry Johnson, James Kracht, W. R. Klemm, G. Donald Allen, Rajesh Miranda, and James Lindner. $1,547,601, Award No. DGE-0638738, Proposal No. DGE-0638738, February 1 , 2007 and expires January 31, 2010.
14. THECB/Dana Center, Teacher Quality Grant - Algebra I, TAMU Account 02-421104 $84,990, May 1, 2008 - May 31, 2009, PI.
15. THECB/Dana Center, Teacher Quality Grant - Algebra I, TAMU Account 02-421104 $76,000, May 1, 2008 - May 31, 2009, PI.
16. THECB/Dana Center, Teacher Quality Grant - Algebra II, TAMU Account 02-421104 $77,000, May 1, 2008 - May 31, 2009, PI.
17. THECB (Texas Higher Education Coordinating Board): "Course Redesign for Math 1324," PI and director: G. Donald Allen, $349,827, July 20, 2007 - August 31, 2009, TAMRF #0701594.
18. THECB (Texas Higher Education Coordinating Board): "Course Redesign for Math 1324," PI and director: G. Donald Allen, $349,827, July 20, 2007 - August 31, 2009, TAMRF #0701594.
19. National Science Foundation Award No. DUE-0336591 Title: "Retention Through an Applied Physics, Engineering, and Mathematics (PEM) Model" Award Amount: $1,999,999.00 PI and Current Co-PI's: Drs. Jo W. Howze, Arun R. Srinivasa, Michael S. Pilant, Timothy P. Scott, and William H. Bassichis Funding Period: 9/15/2003 - 8/31/2008, co-PI.
20. National Science Foundation, ITEST grant, National Middles School Aerospace Scholars. (NaMAS), evaluator. Sharon Sledge, PI, Award No. ESI-0422698, $1,193,506, January 1, 2005 - August 31, 2008, evaluator.
21. Texas Education Agency (TEA), Math Coaches Program, Approved Service Provider for the Mathematics Instructional Coaches Pilot Program, in response to RFP 701-08-021 / RFP

701-08-040, 2008-09.

22. THECB: "High Quality Algebra II Instruction," $88,197, June 1, 2007 - August 31, 2008.
23. TEA, 21st Century Community Learning Centers Program, Department of Education through the Texas Education Agency, with Covington ISD, $200,000, June 1, 2006 - May 31, 2008.
24. MTA/MTC - Math TEKS Awareness, Texas Education Agency through the TAMU College of Education, Sept 1, 2005 - June 30, 2007, co-Investigator, (three months salary), co-Investigator.
25. THECB/Dana Center, Teacher Quality Grant, Algebra II, TAMU Account 02-421104 $84,990, May 1, 2006 - May 31, 2007.
26. Texas Education Agency (TEA RFP 701-05-006 - Grant#056944087110059), Improving student Achievement through Professional Development, $143,839, August 15, 2005-September 30, 2006, PI's G. Donald Allen, Cathy Ezrailson.
27. Texas Education Agency (TEA RFP 701-05-006) - Snook, $100,500, August 31, 2005, September 30, 2006.
28. Texas Education Agency (TEA RFP 701-05-006) - Pasadena, TOOLS - The Teaching of Ongoing Learning Strategies, $150,000, August 31, 2005, September 30, 2006, co-PI.
29. Texas Education Agency (TEA RFP 701-05-006) - Mathis ISD, $150,000, August 31, 2005, September 30, 2006, co-PI.
30. P-16 Educational Improvement Consortium (PEIC) program, a Texas Education Agency funded program administered through the College of Education and the Department of Teaching Learning and Culture. TAMU, $12,388, July 1-July 31, 2005.
31. Office of Distance Education, TAMU, The Computational Masters Degree, July 20, 2005 - July 19, 2007, $150,000.
32. Texas Higher Education Teacher Quality Grant -Type B, "Assuring excellence in algebra II instruction," June 1, 2005 - August 31, 2006, co-PI's G. Donald Allen, $81,687.
33. Texas Higher Education Teacher Quality Grant -Type B, "Assuring excellence in middle school mathematics instruction," June 1, 2005 - August 31, 2006, co-PI's G. Donald Allen, and Dianne Goldsby, $81,500.
34. Texas Higher Education Teacher Quality Grant -Type B, "Assuring excellence in pre-calculus instruction," August 1, 2004 - January 31, 2006, co-PI's G. Donald Allen and Dianne Goldsby, $79,993.
35. Star Schools Project - Math Star Extension Grant to Los Angeles County Office of Education, US Department of Education, 84-203F, Donald Lake and Edna Murphy, co-directors, $9.221m, June 15, 2004 - June 15, 2007; portion funding to Texas A&M with collaborators G. Donald Allen and Deborah Jolly, $154,000.
36. Texas Higher Education Teacher Quality Grant -Type B, "Pre-Calculus," March 12, 2004 - July 31, 2005, co-PI's G. Donald Allen and Sharon Sledge, $80,000.
37. Texas Higher Education Teacher Quality Grant -Type A, "Pre-Calculus - Practices of Good Teaching through Content, Technology, and Interaction," January 9, 2004 - January 31, 2005, PI's G. Donald Allen and Michael Pilant, $295,391.
38. NSF: "Fellows Integrate Science/Math in Rural Middle Schools," PI and Co-PIs: Larry Johnson, James Kracht, W. R. Klemm, Vincent Cassone, Rajesh Miranda, and James Lindner. $1,210,000, January 1, 2004 - December 31, 2006. (I am co-Investigator on this award.)
39. Collaborative Research Grants: Project Year 5, Online assessment for teachers, Texas A&M University System, $18,630, 2003-2004, co-PIs, G. Donald Allen and Dianne Goldsby.

40. Quality Enhancement Program, Making assessment a part of the curriculum, Texas A&M University, $6,500. 2003-04.
41. Regents' Initiative for Excellence in Education. Collaborative Research project. "Group Perceptions of Pre-service and In-service Teachers, College/University Faculty and Administrators on Math/Science Teacher Preparation", with Larry Kelly, Dianne Goldsby, and Dawn Parker, 2003-04, $8,000.
42. Math/Physics Modeling Team Project. Funded through the Information Technology Center. January 10, 2001 - December 31, 2002, $80,000. (Joint with Raytcho Lazarov and Joseph Pasciak.)
43. Texas A&M University, "Advanced Technology Mediated Instructional Laboratory", January 1, 2001, $20,000, with Michael Pilant.
44. Texas A&M University, "Masters in Mathematics Education Using Distance Learning Protocols", September 1, 1999 to August 31, 2001, $150,000.
45. Texas A&M University System, Regents' Initiative for Excellence in Education. Collaborative Research project. "Group Perceptions of Pre-service and In-service Teachers, College/University Faculty and Administrators on Math/Science Teacher Preparation", with Larry Kelly, Dianne Goldsby, and Dawn Parker, 2003, $8,000.
46. Texas A&M University, "Advanced Technology Mediated Instructional Laboratory", January 1, 2001, $20,000, with Michael Pilant. National Science Foundation: "Workshop on the efficacy of Maple in the Classroom", part of a contract with SRI, $135,000, April, 1998. (Joint with David Sanchez, Math)
47. Electronic and Learning Incentives Program, sponsored by the Academy for Advanced Telecommunications and Learning Technologies, TAMU. $5,000. July 1, 1997-Dec 31, 1997.
48. National Science Foundation: "Novel Methods for the solution of the transport equation", September 1, 1994 to August 31, 1998, $315,000. CCR-9302782 (joint with Paul Nelson and Marvin Adams)
49. Electronic and Learning Incentives Program, sponsored by the Academy for Advanced Telecommunications and Learning Technologies, TAMU. $5,000. July 1, 1997-Dec 31, 1997.
50. National Science Foundation, Second Texas-Mexico Workshop on Numerical Particle Transport, 1992, $7,000, with Paul Nelson.
51. Development of Numerical Techniques to Measure Migration of Radio nuclides Through Porous Materials. Cray Research, Inc, 1992-1993.
52. Texas Advanced Research Program, Studies of the Transport Equation: An International Effort, $58,609, 1990-1992.
53. National Science Foundation: "Third Texas-Mexico Workshop on Numerical Particle Transport", May 1, 1995 to April 30, 1996, $7,943.
54. DOD/D of AF/AFSC, System Impact of Hit Assessment for NPB (Neutral Particle Beam) Discrimination, $50,000, 1990-1991.

PUBLICATIONS - PAPERS PUBLISHED

1) G.D. Allen, ``On embedding set functions into covariance functions" Trans. AMS, 179 (1973) 23-33.
2) G.D. Allen, ``Extensions of Kolmogorov's Theorem for continuous covariances", Proc. AMS, Vol. 39 (1973) 214-216.

3) G.D. Allen and S. Cambanis, ``Some remarks on Kolmogorov's Theorem" Proc. of the Symposium on Vector Valued Measures (1972) Academic Press.
4) G.D. Allen, C.K. Chui, W.R. Madych, F.J. Narcowich and P.W. Smith, ``Pade Approximation and orthogonal polynomials", Bull. Austral. Math Soc. 10 (1974) 263-271.
5) G.D. Allen, ``Pade approximation and Gaussian quadrature" Bull. Austral. Math. Soc. 11 (1974) 63-71.
6) G.D. Allen ``Pade approximation of Stieltjes Series" J. Approx. Theory, 14 (1975) 302-316.
7) G.D. Allen, ``On the multiplicity and spectral type of class of stochastic processes", SIAM J. of Appl. Math., 29 (1975).
8) G.D. Allen and F.J. Narcowich, ``On the representation and approximation of a class of operator-valued analytic functions", Bull. AMS 81 (1975) 410-413.
9) G.D. Allen, ``Convergence of the diagonal operator-valued Pade approximants to the Dyson expansion", Comm. Math. Phys. 45 (1975) 153-157.
10) G.D. Allen ``On the structure of certain bounded linear operators" Proc. AMS, 53 (1975) 404.
11) G.D. Allen, F.J. Narcowich and J.P. Williams, ``An operator version of a theorem of Kolmogorov" Pac. J. of Math., 61 (1975) 305-312.
12) G.D. Allen and F.J. Narcowich, ``R-Operators. A representation theory and applications", Indiana J. of Math. 25 (1976) 945-963.
13) G.D. Allen and G.S. Brockway, ``On the mechanical constitution of damageable materials", J. of Eng. Scie., to appear.
14) G.D. Allen and L.C. Shen, ``On the structure of principal ideals of operators", Trans. of AMS, 238 (1978) 253-270.
15) G.D. Allen and J.D. Ward, ``Hermitian liftings of $B(\ell_p)$ " J. of Operator Theory 1 (1979).
16) G.D. Allen, ``Duals of Lorentz Spaces", Pac. J. Math. 77 (1978) 287-291.
17) G.D. Allen and J.D. Ward, ``A Simultaneous lifting theorem in Hilbert spaces", Trans AMS 250 (1980), 379-387.
18) G.D. Allen, D.A. Legg, J.D. Ward, Hermitian Liftings in Orlicz Sequence Spaces, Pac. J. Math. 86 (1980) 379-387.
19) G.D. Allen and J.D. Ward, Hermitian lifting in $B(\ell_p)$, Proc. AMS 80 (1980) 71-77.
20) G.D. Allen, Locally Continuous Operators in **Prediction Theory** and **Harmonic Analysis**, V. Mandrekar and H. Salehi, Editors, North Holland, 1984.
21) Locally Continuous Operators II, Indiana U. Math. Journal, 38 (1989) 711-743.
22) Similarity Theory for Nest Algebras on L_p , with D.R. Larson, J.D. Ward and G. Woodward, J. of Functional Analysis, 92 (1990) 49-76.
23) Power Majorization and Majorization of Sequences, Results in Mathematics, 12 (1988) 211-222.
24) G.D. Allen, K.T. Andrews, and J.D. Ward, A Note on the Similarity of L_p nests, Acta Mathematica Hungarica, to appear.
25) G.D. Allen, C.K. Chui & W.L. Perry, 2nd Ed. Elements of Calculus, Brooks/Cole Publishing Co. 1989, Monterey, California.
26) G.D. Allen and Paul Nelson, On Generalized Finite Difference Methods for Approximation Solutions to Integral Equations, in ***Advances in Numerical Partial Differential Equations and Optimization***, Proceedings of the Fifth Mexico-United States Workshop on Numerical Analysis, SIAM, 1991, pp. 112-140.

27) G. D. Allen and Paul Nelson, Convergence of Inner Iterations for Closed LOF Methods, submitted, SIAM J. of Numerical Analysis.
28) G. D. Allen, Toward a Dynamics for Power and Control in Society, Journal of Mathematical Sociology, 22 (1992) pp. 1-38.
29) G. D. Allen and W. W. Pitt, Monolithic Waste Forms---An Underrated and Under-Utilized Technology, Proceedings of the Symposium on Waste Management, Tuscon AZ, March 2-6, 1992, American Nuclear Society, 1992.
30) G. D. Allen and W. W. Pitt, Accounting for Boundary Layer Effects in the Modeling of Leaching from Monolithic Waste Forms, Proceedings of the Second Interagency Symposium on Stabilization of Soils and Other Materials, Metarie, LA., November 2-5, 1992, U. S. Corps of Army Engineers, 1992, pp.6:3-12.
31) G. D. Allen, Smoothness and super convergence for approximate solutions to the one dimensional monoenergetic transport equation, in ***Advances in Numerical Partial Differential Equations and Optimation***, Proceedings of the Sixth Mexico-United States Workshop on Numerical Analysis, Kluwer Academic Publishers, 1993 pp. 1-14.
32) G. D. Allen, Dapeng Xin, and Dan G. Zollinger, A method to determine moisture diffusivity in concrete from measured moisture profiles, Advanced Cement Based Material, **2**, (1995), 34-39.
33) G. D. Allen, Dynamic Models for Competitive-Cooperative Species, ***Proceedings of the International Conference on Dynamical Systems and Differential Equations***, 1997, 1-20.
34) G. D. Allen, A hierarchical model for power systems. Stability, ***J. Math. Soc.***, to appear.
35) G. D. Allen, The Web-Based Mathematics Course, a survey of the required features for an on-line math course and experiences in teaching one, Syllabus Magazine, with M. Stecher and P. Yasskin, Nov/Dec 1998.
36) G. D. Allen, WebCalC I, a description of the WebCalC project, it's history and features, to appear in the Proceeding of the ICTCM Conference, Nov 1998, Addison-Wesley-Longman, Reading. with M. Stecher and P. Yasskin.
37) G. D. Allen, Internet Based Drills and Quizzes, techniques for constructing math drills in subjects from algebra to calculus, to appear in the Proceeding of the ICTCM Conference, Nov 1998, Addison-Wesley-Longman, Reading. with M. Stecher and P. Yasskin.
38) G. D. Allen, Jeff Morgan and Sayed El Attar, Asymptotically short term behavior of solutions to one dimensional diffusion processes, with Jeff Morgan and Sayed El Attar, *Journal of Analysis and Applications*, 240 (1999) 145-162.
39) G. D. Allen, David Sanchez,Jim Herod, Mark Holmes, Vince Ervin, Robert Lopez, Joe Marlin, Strategies and Guidelines for Using a Computer Algebra System in the Classroom, with David Sanchez, et.Al., to appear, *International Journal of Engineering Education*, 15, no. 6, 1999, pp. 411-416.
40) G. D. Allen and Paul Nelson, Linear One-Cell Functional Methods for the Two Dimensional Transport Equation. Part I. The Nodal Formulation, *Ann. Nucl. Sci. and Eng.* (25 pages)
41) G. D. Allen, WebCalC --- Two Years Later, *Computers in Schools,* 17, p17-30, 2001.
42) Online Choices for Online Courses. A survey of the issues of developing an online course. Included is a discussion of various development products. To appear in the Proceedings of the 13th ICTCM Conference, Atlanta GA. November 16, 2000. URL: ://www.math.tamu.edu/ webcalc/allen/onlinechoices121100.htm
43) G. D. Allen, The Distance Education Degree Program for The Master of Mathematics with a Teaching Option at Texas A&M University, Proceedings of the AACE Conference: SITE

2001--Society for Information Technology and Teacher Education International Conference, Orlando, Florida; March 5-10, 2001 with M. Pilant.

44) G. D. Allen, Online Calculus, in Using Information Technology in Mathematics Education, D. James Tooke, Norma Henderson, Eds., Haworth Press, New York, 2001.
45) Online Calculus, The Course and Survey Results, Computers in the Schools, 17, p.17-30, 2001.
46) G. D. Allen, Michael Pilant and Jon Pitts, On building a quality masters degree program, Proceedings of the 2003 DEC (Distance Education Conference) conference, January 21-24, 2003.
47) G. D. Allen, C. Ezrailson and C. Loving, Analyzing Dynamic Pendulum Motion in an Interactive Online Environment Using Flash, Science and Education Journal Special Issues, to appear 2004.
48) G. D. Allen, Making Animations, to appear, to appear in the Proceeding of the 15th ICTCM Conference, Baltimore, Md. November 16-18, 2003.
49) Can an Online Mathematics Course Work?, College Mathematics Journal, 34, No. 4, 2003, pp. 270-279.
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51) The Pendulum: Scientific, Historical, Philosophical and Educational Perspectives, Springer, Dordrecht. Reprint of the first article.
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EXHIBIT F

EXHIBIT F

DECLARATION OF EXPERT WALTER C. DAUGHERITY

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

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.

6. I have reviewed the reports by Edward Solomon furnished to me which mathematically analyze the June 14, 2022, Republican gubernatorial primary in Clark County, Nevada, as well as other races. In order to check results in those reports I downloaded the official election data posted by the Clark County Election Department at https://www.clarkcountynv.gov/government/departments/elections/past_elections.php.

7. In my expert opinion these reports overwhelmingly demonstrate clear and convincing evidence that the election results analyzed in these reports were not produced by accurate counting of the votes cast, but were instead artificially contrived according to a predetermined plan or algorithm.

8. The first key finding of the Edward Solomon reports for the June 14, 2022, Republican gubernatorial primary in Clark County, Nevada, is that certain ratios calculated from the mail-in and in-person totals, which should be independent, are in fact dependent. (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.)

9. In this primary race, as in each election, votes for each candidate are reported in three categories: mail-in (absentee), early vote (in-person), and election day (in-person). Since

each voter choosing a particular candidate can vote in any of these three ways, the totals should be independent. For example, knowing how many mail-in and early in-person votes Joey Gilbert received does not provide enough information to know how many election day in-person votes he received. In other words, you could not bet on a particular exact number of election day in-person votes and expect to win the bet, since the exact number is unpredictable.

10. Since there were so many candidates in addition to Joey Gilbert, the following precinct analysis divides all the votes into two categories, "Lombardo" and "Gilbert et al." Using the same variable names as in the Edward Solomon reports, and considering only votes prior to election day, let

a be Lombardo's mail-in vote total,

b be Gilbert et al.'s mail-in vote total,

c be Lombardo's early in-person vote total, and

d be Gilbert et al.'s early in-person vote total.

11. Clearly these numbers should be independent, that is, knowing some of the numbers should not allow exactly predicting the other numbers. For example, knowing that in precinct 1000, b=13, c=21, and d=32 should not allow an exact prediction of a, Lombardo's mail-in vote total. In an honest and fair election we could only estimate that since Lombardo received $c/(c+d)$=0.396226, that is, 39.6% of the early in-person vote, we would expect that Lombardo would also receive about 39.6% of the mail-in vote, since the way people cast ballots does not influence their choice.

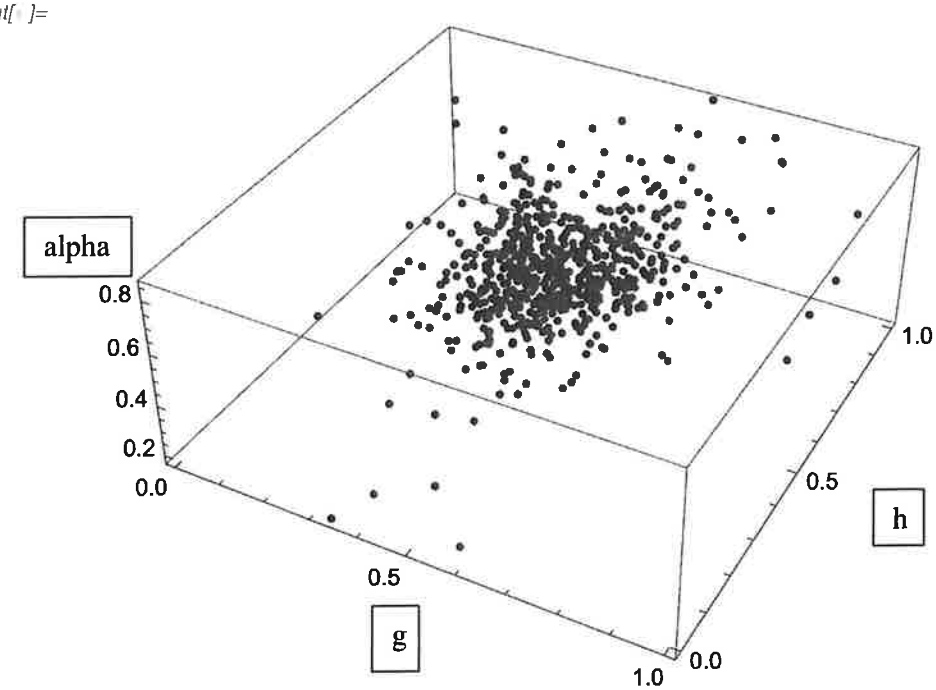
12. Solving $a/(a+b)$=0.396226 for a yields 21.53125, which rounds up to 22 votes. This estimate is only a "best guess," and the true number of mail-in votes could be anything: 22, or higher, or lower, so a bet on 22 would only win once in a while, not very often.

13. However, in the June 14, 2022, Republican gubernatorial primary in Clark County, Nevada, the four numbers ***a***, ***b***, *c*, and ***d*** were not only not independent, as they should be in a fair and honest election, they were so tightly dependent that ***a*** can be exactly predicted from ***b***, *c*, and ***d*** not only in precinct 1000 (yielding 25, *the exact number of mail-in votes for Lombardo*), but also is *every single precinct in the entire county*!

14. This is a total of 669 precincts with an exact prediction, omitting precincts with zero votes or missing data on the Clark County Elections Department's website. Note that 25, the actual count, is close to the estimate of 22, but not exact, whereas the dependent formula described next gives exactly 25.

15. I calculated the values Edward Solomon names ***g***, ***h***, and ***alpha*** for each ballot style (*i.e.*, split precinct) for this county, and graphed (***g***, ***h***, ***alpha***) as (***x***, ***y***, ***z***), respectively, which produced the following graph, where each point is one precinct:

Out[ ]=

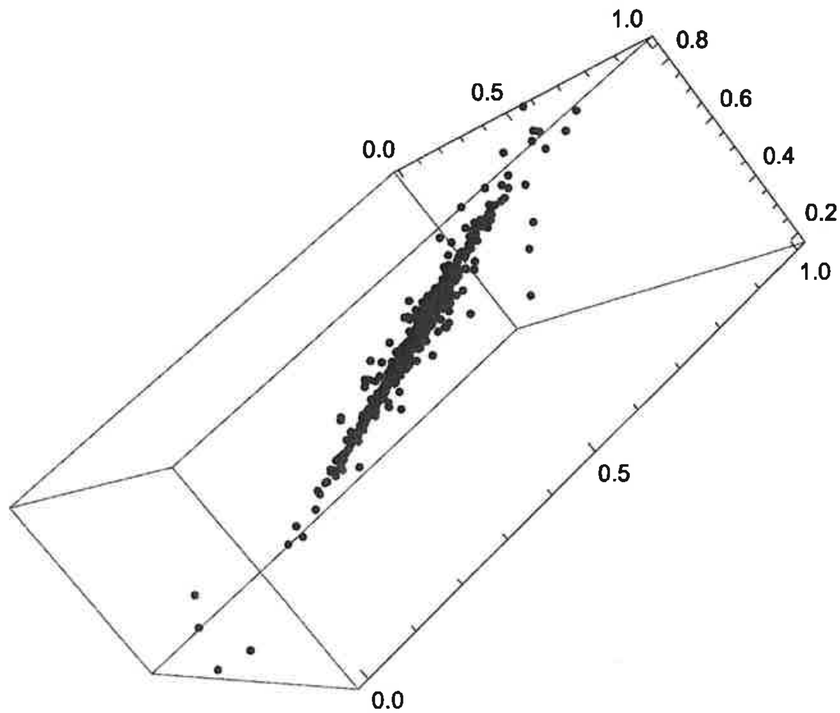


16. From the initial vantage point, the graphed data appears to be uncorrelated

(independent), as it should in a fair election, but by rotating the 3-dimensional graph it becomes clear that the points lie very close to a 2-dimensional plane, indicating strong correlation (dependence) which should not occur in a fair election.

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

Out[ ]=



which of course looks like a line. This improper dependence confirms that the election results in the June 14, 2022, Republican gubernatorial primary in Clark County, Nevada, were artificially contrived.

18. Using the standard mathematical method of least-squares linear regression, the equation of the plane is

$$g = 0.01818144438 + 1.758536682\, alpha - 0.8083882873\, h,$$

which is used in the following paragraphs.

19. As an example of how this improper dependence could be used to manipulate an

election, consider the following scenario: If ***alpha*** were hypothetically predetermined for each precinct in this 2022 Republican gubernatorial primary from this plane, then after the early in-person votes for candidate Lombardo are counted, and the mail-in and early in-person votes for Gilbert et al. are counted, the exact required mail-in vote for candidate Lombardo can be calculated *without counting*.

20. Specifically, the following procedure would *exactly* predict the required mail-in vote for candidate Lombardo *for nearly every single precinct in the county*:

Let ***alpha*** be the value for the precinct hypothetically predetermined from the plane,

b be Gilbert et al.'s mail-in vote total,

c be Lombardo's early in-person vote total, and

d be Gilbert et al.'s early in-person vote total.

Then Lombardo's mail-in vote count ***a*** is given exactly by the formula

$$a = \frac{(b+d)(1-alpha)}{alpha} - c, \text{ rounded to the nearest integer.}$$

21. For example, in precinct 1012 suppose ***alpha*** were hypothetically set in advance to 0.463855422 from the 2-dimensional plane described in ¶ 19 above. Then counting 95 mail-in votes for Gilbert et al. (***b***), 45 early in-person votes for Lombardo (***c***), and 59 early in-person votes for Gilbert et al. (***d***) and substituting those values into this formula gives ***a*** = 133, the exact required number of mail-in votes for Lombardo, *before those votes have even been counted.* After counting, mail-in ballots can be added or removed to adjust the total to the required 133.

22. In my expert opinion the foregoing calculations overwhelmingly demonstrate

clear and convincing evidence that all of the election results analyzed above were not produced by accurate counting of the votes cast, but were instead artificially contrived according to the same (or a very similar) predetermined plan or algorithm.

23. Due to the prohibitive amount of calculation to accomplish this by hand, it is clear that computer software must have been used. Such manipulating software could be installed in a variety of ways, including vendor programming, operating system components, open-source or commercial off-the-shelf libraries, remote access, viruses or other malware, etc.

24. Unless and until future proposed electronic voting systems (including hardware, software, source code, firmware, etc.) are made completely open to the public and also subjected to scientific analysis by independent and objective experts to determine that they are secure from manipulation or intrusion, in my professional opinion as a computer expert, electronic voting systems should not even be considered for use in any future elections, as they cannot be relied upon to generate secure and transparent election results free from the very real possibility of unauthorized manipulation. My professional opinion as a computer expert is therefore that hand-marked hand-counted paper ballots should be used instead.

25. 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 July 14, 2022.

W. C. Daugherty

Walter C. Daugherty

EXHIBIT G

EXHIBIT G

EXHIBIT A

Curriculum Vitae of Walter C. Daugherity

Walter C. Daugherity
10895 Lakefront Drive
College Station, TX 77845
(979) 845-1308 (Office)
Walter.Daugherity@post.Harvard.edu

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.

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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.

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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).

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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.

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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.

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* 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.

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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."