**IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF GEORGIA ATLANTA DIVISION**

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| **DONNA CURLING, et al.**<br>**Plaintiff,**<br>**vs.**<br>**BRAD RAFFENSPERGER, et al.**<br>**Defendant.** | **CIVIL ACTION FILE NO.: 1:17-cv-2989-AT** |

# DECLARATION OF PHILIP B. STARK

**PHILIP B. STARK** hereby declares as follows:

1. This statement supplements my declarations of September 9, 2018; September 30, 2018; October 22, 2019; December 16, 2019; August 23, 2020; August 31, 2020; September 13, 2020; and August 2, 2021. I stand by everything in the previous declarations and incorporate them by reference.

## Qualifications and Background

2. I am Professor of Statistics at the University of California, Berkeley, where I am also a faculty member in the Graduate Program in Computational Data Science and Engineering; a co-investigator at the Berkeley Institute for Data Science; principal investigator of the Consortium for Data Analytics in Risk; director of Berkeley Open Source Food; and affiliated faculty of the Simons Institute for the Theory of Computing, the Theoretical Astrophysics Center, and the Berkeley Food Institute.

Previously, I was Associate Dean of Mathematical and Physical Sciences, Interim Regional Associate for the College of Chemistry and the Division of Mathematical and Physical Sciences, Chair of the Department of Statistics, and Director of the Statistical Computing Facility.

3. I have published more than two hundred articles and books. I have served on the editorial boards of archival journals in physical science, Applied Mathematics, Computer Science, and Statistics. I currently serve on three editorial boards. I have lectured at universities, professional societies, and government agencies in thirty countries. I was a Presidential Young Investigator and a Miller Research Professor. I received the U.C. Berkeley Chancellor's Award for Research in the Public Interest, the Leamer-Rosenthal Prize for Open Social Science, and a Velux/Villum Foundation Professorship. I am a member of the Institute for Mathematical Statistics and the Bernoulli Society. I am a Fellow of the American Statistical Association, the Institute of Physics, and the Royal Astronomical Society. I am professionally accredited as a statistician by the American Statistical Association and as a physicist by the Institute of Physics.
4. I have consulted for many government agencies, including the U.S. Department of Justice, the U.S. Department of Agriculture, the U.S. Department of Commerce, the U.S. Department of Housing and Urban Development, the U.S. Department of Veterans Affairs, the Federal Trade Commission, the California Secretary of State, the California Attorney General, the California Highway Patrol, the Colorado Secretary of State, the Georgia Department of Law, the Illinois State Attorney, the New Hampshire Attorney General, and the New Hampshire Secretary of State. I currently serve on the

Board of Advisors of the U.S. Election Assistance Commission and its Cybersecurity Subcommittee. (The opinions expressed herein are, however, my own: I am not writing as a representative of any entity.)

5. I have testified before the U.S. House of Representatives Subcommittee on the Census; the State of California Senate Committee on Elections, Reapportionment and Constitutional Amendments; the State of California Assembly Committee on Elections and Redistricting; the State of California Senate Committee on Natural Resources; and the State of California Little Hoover Commission.
6. I have been an expert witness or non-testifying expert in a variety of state and federal cases, for plaintiffs and for defendants, in criminal matters and a range of civil matters, including, *inter alia*: truth in advertising, antitrust, construction defects, consumer class actions, credit risk, disaster relief, elections, employment discrimination, environmental protection, equal protection, fairness in lending, federal legislation, First Amendment, import restrictions, insurance, intellectual property, jury selection, mortgage-backed securities, natural resources, product liability class actions, *qui tam*, risk assessment, toxic tort class actions, trade secrets, utilities, and wage and hour class actions.

7. I have been qualified as an expert on statistics in federal courts, including the Central District of California, the Northern District of Georgia, the District of Maryland, the Southern District of New York, and the Eastern District of Pennsylvania.
8. I have also been qualified as an expert on statistics in state courts.

9. I have used statistics to address a wide range of questions in many fields.[1]

10. I served on former California Secretary of State Debra Bowen's Post-Election Audit Standards Working Group in 2007.

11. In 2007, I invented a statistical approach to auditing elections ("risk-limiting audits," referred to below as "RLAs") that has been incorporated into statutes in California (AB 2023, SB 360, AB 44), Colorado (C.R.S. 1-7-515), Rhode Island (RI Gen L §17-19-37.4 (2017)), Virginia (Code of Virginia 24.2-671.1), and Washington (RCW 29A.60.185), and which are in pending federal legislation (the PAVE Act of 2018 and S.1 of 2021). My election auditing methods have been used in roughly 20 U.S. States and in Denmark. (The State of Georgia has piloted some RLA procedures, but has not conducted an actual RLA, as I explain below.)

12. RLAs are widely viewed as the best way to check whether the reported winner(s) of an election really won. They have been endorsed by the Presidential Commission on Election Administration; the U.S. National Academies of Sciences, Engineering, and Medicine; the American Statistical Association; the League of Women Voters; Verified Voting Foundation; Citizens for Election Integrity Minnesota; and other groups concerned with election integrity.

13. I have worked closely with state and local election officials in California and Colorado to pilot and deploy RLAs. The software Colorado uses to conduct RLAs is based on

[1] For example, I have used statistics to analyze the Big Bang, the interior structure of the Earth and Sun, earthquake risk, the reliability of clinical trials, the accuracy of election results, the accuracy of the U.S. Census, the risk of consumer credit default, food safety, the causes of geriatric hearing loss, the effectiveness of water treatment, sequestration of carbon in agricultural soils, the fragility of ecological food webs, risks to protected species, the effectiveness of Internet content filters, high-energy particle physics data, and the reliability of models of climate, among other things.

software I wrote. All of the genuinely risk-limiting methods in VotingWorks "Arlo" software used by the State of Georgia were invented by me.[2]

14. I worked with Travis County, Texas, on the design of STAR-Vote, an end-to-end cryptographically verifiable voting system.

15. I testified as an expert witness in the general area of election integrity, including the reliability of voting equipment, in 2016 presidential candidate Jill Stein's recount suit in Wisconsin, and filed a report in her suit in Michigan.

16. I have testified as an expert in election auditing and the accuracy of election results in two election-related lawsuits in California.

17. I have testified to both houses of the California legislature regarding election integrity and election audits. I have testified to the California Little Hoover Commission about election integrity, voting equipment, and election audits.

18. I have advised the election commissions of Denmark, Mongolia, and Nigeria on issues related to election integrity, security, and audits.

19. I was a member of the three-person team that conducted a statutory forensic audit of the State Representative contest in Windham, NH, in 2021.[3]

20. Since 1988, I have taught statistics at the University of California, Berkeley, one of the top two statistics departments in the world (see, e.g., QS World University Rankings, 2014) and the nation (US News and World Reports, 2018). I teach statistics regularly at the undergraduate and graduate levels. I have created five new statistics courses at Berkeley. I developed and taught U.C. Berkeley's first online course in any subject,

[2] Arlo also implements a method that is not risk-limiting in practice.
[3] See https://www.doj.nh.gov/sb43/index.htm, last accessed 8 January 2022.

and among the first approved for credit throughout the ten campuses of the University of California system. I also developed and co-taught online statistics courses to over 52,000 students, using an online textbook and other pedagogical materials I wrote and programmed.

21. Appendix 1 is my current *curriculum vitae*, which includes my publications for the last ten years and all cases in the last four years in which I gave deposition or trial testimony.

## Opinions

22. I have been asked to assess whether the State of Georgia's current Dominion Ballot Marking Device ("BMD") voting system and the protocols for its use—including audits—provides reasonable assurance that voters' selections will be counted, and counted as cast. The answer is a clear "no."

**The 2020 "Audit"**

23. Georgia Secretary of State Brad Raffensperger has claimed, referring to the post-election audit of the November 3, 2020 presidential contest, "Georgia's historic first statewide audit reaffirmed that the state's new secure paper ballot voting system accurately counted and reported results."[4] And "[] we did a 100 percent risk-limiting audit with a hand recount which proved the accuracy of the count and also proved that the machines were accurately counting it, and that no votes were flipped."[5] VotingWorks Executive Director Ben Adida claimed "Georgia's first statewide audit

[4] https://sos.ga.gov/index.php/elections/historic_first_statewide_audit_of_paper_ballots_upholds_result_of_presidential_race, last accessed 9 January 2022

[5] https://www.effinghamherald.net/local/raffensperger-spread-election-misinformation-bipartisan-endeavor/ last accessed 9 January 2022.

successfully confirmed the winner of the chosen contest and should give voters increased confidence in the results."[6] Per the official report of the audit, "The audit confirmed the original result of the election, namely that Joe Biden won the Presidential Contest in the State of Georgia. The audit [] provides sufficient evidence that the correct winner was reported."[7] I shall explain why these claims about the audit are false.

24. There are many things the audit did not check (including the outcome), and the thing it was positioned to check—the tabulation of validly cast ballots—was not checked properly, as data from the audit itself show.

25. I shall start by listing some things the audit did not check. My statements are true and correct to the best of my knowledge, and they are consistent with the audit documentation available at the Secretary of State's website at the URL https://sos.ga.gov/index.php/elections/2020_general_election_risk-limiting_audit (last accessed 9 January 2022).

26. The audit did not check whether BMDs correctly printed voters' selections. No audit can check that, as I have previously declared. (As a consequence, Secretary Raffensperger has no basis to assert that no votes were flipped.) The declarations and testimony of Prof. J. Alex Halderman establish that BMDs can be hacked, misprogrammed, or misconfigured to print votes that differ from voters' selections as confirmed onscreen or through audio. As Prof. Andrew Appel has testified and as elaborated in my declarations, only the voter is in a position to check—but few do, and

[6] Ibid.
[7] https://sos.ga.gov/admin/uploads/11.19_.20_Risk_Limiting_Audit_Report_Memo_1.pdf. last accessed 9 January 2022

those who do check generally check poorly. To the best of my knowledge, the State of Georgia has no procedures in place to log, investigate, or report complaints from voters that BMDs altered votes, so it is not clear whether any voters did notice problems. My previous declarations also explain why logic and accuracy testing can never be adequate to establish that BMDs behave correctly in practice.[8]

27. The audit did not check whether every validly cast ballot was scanned exactly once. The audit could not check whether every validly cast ballot was scanned, because Georgia's rules for ballot accounting, pollbook and voter participation reconciliation, physical chain of custody, etc., are not adequate to ensure that every cast ballot is accounted for.

28. The audit did not check whether every memory card used in the election was accounted for, nor whether every memory card containing votes was uploaded to a tabulator. The audit found that some had not been,[9] but to my knowledge, there has been no check to confirm there are no other cards with votes outstanding.

29. The audit did not check whether any scans were duplicated, deleted, replaced or altered.

30. The audit did not check whether QR code encoding the votes on BMD printout matches the human-readable selections on any ballot.

[8] See, e.g., Stark, P.B. and R. Xie, 2019. Testing Cannot Tell Whether Ballot-Marking Devices Alter Election Outcomes, ArXiV, https://arxiv.org/abs/1908.08144, last accessed 9 January 2022.

[9] See notes 13 and 14, *infra.*

31. The audit did not check whether the voting system correctly interpreted any ballot or BMD printout. (Again, as a consequence, Secretary Raffensperger has no basis to assert that no votes were flipped.)

32. The audit did not do a very good job of checking the tabulation, as I shall explain. I focus on Fulton County. I have not investigated other counties, but I have no reason to believe the problems and errors are confined to Fulton County. I have been told by Coalition Plaintiffs that similar problems occurred in other counties, but I have not independently verified their findings.

33. I downloaded the detailed "audit spreadsheet" from the URL https://sos.ga.gov/admin/uploads/audit-report-November-3-2020-General-Election-2020-11-19.csv on 9 January 2022.

34. I downloaded images of the Fulton County RLA manual tabulation batch sheets ("Audit Board Batch Sheets", ABBSs henceforth) from https://sos.ga.gov/admin/uploads/Fulton%20RLA%20Batches.zip on 9 January 2022. That file contains five .pdf files, "Fulton Audit Documents 1_redacted.pdf," through "Fulton Audit Documents 4_redacted.pdf," which contain images of ABBSs, and "Fulton Audit Documents 5.pdf" which contains images of "Vote Review Panel Tally Sheets."

35. My understanding is that ABBSs are filled in by hand by the counting teams who counted the votes from the paper ballots (including BMD printouts). Each ABBS reflects the manual tally of votes from one physically identifiable batch of ballots. I understand that after the ABBSs were filled out, other workers transcribed data from the ABBSs into VotingWorks audit software "Arlo." My understanding is that every

ballot validly cast in Fulton County in the 2020 Presidential Election should be reflected in exactly one ABBS, and data from every ABBS should have been entered exactly once into the database from which the audit spreadsheet was exported.

36. The four ABBS image files contain 349 pages, 636 pages, 578 pages, and 364 pages, respectively, a total of 1,927 ABBSs. But the audit spreadsheet contains only 1,916 rows of data for Fulton County. It appears that at least eleven ABBSs are entirely missing, not counting possible duplicate entries in the spreadsheet.[10] This sort of "sanity check" is simple to perform, but apparently was not performed by the auditors, the County, or the Secretary of State.

37. Many ABBSs were not completely filled in. The "Batch Type," signifying the mode of mode of voting (absentee, election day, advance) was often blank, and many numbers were blank, presumably intended to denote zeros.

38. Coalition Plaintiffs have identified a sample of at least eleven ABBSs for Fulton County that do not appear in the audit spreadsheet, and I have verified their work. The software I wrote for that purpose is in Appendix 2.

39. The following table lists these examples; the final column indicates which page of which SBBS image file contains the image (for instance, "4 at 162" means page 162 of "Fulton Audit Documents 4_redacted"). The fact that the vote data in the last two rows are identical is suspicious, but the corresponding ABBS images are clearly different; see Appendix 3. Regardless, neither appears in the audit spreadsheet.

[10] However, I did see at least one ABBS marked "Dup" (presumably meaning "duplicate") for instance, page 11 of "Fulton Audit Documents 2_redacted.pdf." However, as the table after paragraph 38, *supra*, shows, there are at least 11 ABBSs that are not accounted for in the audit spreadsheet. Thus, there are presumably duplicated entries in the audit spreadsheet.

| | Scanner | Batch | Mode of voting | Trump | Biden | Jorgensen | Write-In | Undervote or blank | Overvote | Image source |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 48 | absentee | 4 | 93 | 2 | 0 | 0 | 0 | 4 at 162 |
| 2 | 2 | 52 | absentee | 6 | 92 | 0 | 0 | 0 | 0 | 1 at 1 |
| 3 | 3 | 12–14 | ? | 12 | 83 | 1 | 0 | 0 | 0 | 4 at 128 |
| 4 | 3 | 239 | ? | 13 | 87 | 0 | 0 | 0 | 0 | 3 at 177 |
| 5 | 1 | 80–84 | ? | 118 | 329 | 3 | 2 | 2 | 1 | 3 at 519 |
| 6 | 3 | 260 | absentee | 30 | 66 | 0 | 0 | 0 | 0 | 4 at 355 |
| 7 | | AP01A-1 | election day | 84 | 62 | 6 | 2 | 1 | 0 | 1 at 170 |
| 8 | 3 | 179–181 | absentee | 85 | 224 | 5 | 1 | 2 | 0 | 4 at 293 |
| 9 | 2 | 239 | absentee | 4 | 42 | 0 | 0 | 0 | 0 | 2 at 153 |
| 10 | Chastain | 12 | advance | 613 | 605 | 24 | 7 | 4 | 0 | 3 at 351 |
| 11 | Chastain | 114 | advance | 613 | 605 | 24 | ? | 4 | 0 | 3 at 270 |

40. I searched the audit spreadsheet for tallies that matched the numbers in these missing ABBSs. There are no data in the audit spreadsheet matching rows 4–11 of the table. There are data that match rows 1, 2, and 3, but with distinctively different batch identifiers.[11] It is plausible that these are genuinely different batches, and I have no reason to believe otherwise: some identical counts in different batches are to be expected. Indeed, in the entire audit spreadsheet, there are 16,807 rows that duplicate other ABBS vote counts within the same county, out of a total of 41,881 rows.

41. I checked the vote totals for Donald J. Trump, Joseph R. Biden, and Jo Jorgensen from summing SBBS entries in the audit spreadsheet against the vote totals in the summary audit result spreadsheet posted by the Secretary of State at the URL https://sos.ga.gov/admin/uploads/Georgia%202020%20RLA%20Report.xlsx, which I downloaded on 9 January 2022. (The spreadsheet does not list write-ins, undervotes, or overvotes.) Both show Trump receiving 137,620 votes, Biden receiving 381,179,

[11] The data that match row 1 are identified as "Scanner 3 Ballot [sic] 162" rather than batch 48. The data that match row 2 are identified as "Absentee Scanner 2 Batch 400" rather than batch 52. The data that match row 3 are identified as Absentee Scanner 3 Batch 253 rather than batches 12–14.

and Jorgensen receiving 6,494. Thus, the ABBSs that are missing from the audit spreadsheet are also missing from the audit's reported vote totals.

42. On the assumption that the ABBSs—the original source of the manual tally data entered into the audit spreadsheet—are correct, the omission of that sample of 11 ABBSs deprived Trump of 1,582 votes, Biden of 2,288, and Jorgensen of 65, not to mention write-ins. This sample alone has a total of over 3,900 votes that the audit tabulated but were not included in the audit's reported vote totals.

43. The original tabulation in Fulton County showed 524,659 votes; the reported audit results showed 525,293, a difference of 634 votes, about 0.12 percent.[12] Accounting for those 11 omitted ABBSs increases the apparent error of the first count from 634 votes to over 4,569 votes or 0.87 percent, far larger than the statewide margin of victory. It is also larger than 0.73 percent, which Secretary of State Raffensperger claimed was the maximum miscount in any Georgia county.[13]

44. However, there is no way to know whether including that sample of 11 ABBSs would make the audit tabulation a complete count of the votes in Fulton County. That is because Georgia's canvass is inadequate: many ballots might still remain untabulated. The proof that at least some of Georgia's jurisdictions do not keep adequate track of ballots, memory cards, and other election materials is reflected in the fact that

[12] Data from https://sos.ga.gov/admin/uploads/Georgia%202020%20RLA%20Report.xlsx, last accessed 9 January 2022.
[13] Per Secretary Raffensperger, "[i]n Georgia's recount, the highest error rate in any county recount was 0.73%." https://sos.ga.gov/index.php/elections/2020_general_election_risk-limiting_audit, last accessed 9 January 2022.

thousands of ballots and scans were "discovered" during the audit.[14] There is no trustworthy inventory of ballots to check the results against, because of Georgia's lax canvass.

45. Governor Kemp has pointed out similar flaws in the audit, saying the audit report was "sloppy, inconsistent, and presents questions about what processes were used by Fulton County to arrive at the result."[15] Governor Kemp's letter points out that the audit data include duplicated entries, which I understand Coalition Plaintiffs have verified. I have not tried to verify those findings.

**First Count, Audit, and Recount Differ Substantially**

46. I understand that Plaintiff Donna Curling votes in Fulton County precinct RW01. On 10 January 2022, I downloaded the official precinct-level results for the original tabulation from https://results.enr.clarityelections.com//GA/Fulton/105430/271723/reports/detailxls.zip and for the recount from

[14] https://www.cbs46.com/news/floyd-county-election-director-fired-after-audit-reveals-2-600-votes-went-uncounted/article_bbd08d90-2aa2-11eb-9e4d-bf96ac56ad54.html, last accessed 10 January 2022. https://www.news4jax.com/news/georgia/2020/11/18/4th-georgia-county-finds-uncounted-votes-as-hand-count-deadline-approaches/, last accessed 10 January 2022. https://www.mdjonline.com/elections/cobb-elections-finds-350-uncounted-ballots-during-audit/article_0d93e26e-22bd-11eb-8bce-17067aceee33.html, last accessed 10 January 2022. https://www.11alive.com/article/news/politics/elections/fayette-county-election-results-ballots-uncovered-during-audit/85-f79dd838-a15c-4407-80b2-9dfbc2466188, last accessed 10 January 2022.

[15] Letter from Brian P. Kemp, Governor, to the Georgia State Election Board, dated 17 November 2021, addressing the work of Mr. Joseph Rossi; Review of Inconsistencies in the Data Supporting the Risk Limiting Audit Report, Office of Governor Brian P. Kemp, 17 November 2021. These documents are attached hereto as Appendix 4.

https://results.enr.clarityelections.com//GA/Fulton/107292/275183/reports/detailxls.zip to examine the results in that precinct.

47. The following table shows the counts of election-day votes in Fulton County precinct RW01 for the three presidential candidates, according to the original machine count, the machine recount, and the "audit," and vote-by-mail and advance votes for the original election and the recount. (The audit did not report precinct-level results for vote-by-mail or advance voting.)

| Count | Election Day | | | Advance | | | Absentee by Mail | | | Provisional | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Trump | Biden | Jorgensen | Trump | Biden | Jorgensen | Trump | Biden | Jorgensen | Trump | Biden | Jorgensen |
| Original | 193 | 88 | 11 | 1455 | 1003 | 23 | 619 | 833 | 15 | 9 | 4 | 1 |
| Recount | 162 | 73 | 9 | 1487 | 1015 | 25 | 619 | 809 | 15 | 5 | 3 | 1 |
| Audit | 243 | 88 | 11 | | | | | | | | | |

48. There are large, unexplained differences among these results.[16] I do not see how Plaintiff Donna Curling can have reasonable confidence that her vote was counted at all, much less counted as cast.

49. The Secretary of State attributed all differences between the audit and the original count to human counting error, citing a 2012 study that found hand-count error rates as high as 2 percent.[17] This is simplistic, unfounded, and disingenuous.

[16] There appears to be some cancellation of error, but I understand that the hand count kept ballots cast in different ways (advance in-person, absentee by mail, and election day) separate. It is not clear how misclassification of the mode of voting would affect one candidate's totals much more than the other candidates. Regardless, these discrepancies are large and should be investigated, including inspecting the physical ballots.

[17] https://sos.ga.gov/index.php/elections/historic_first_statewide_audit_of_paper_ballots_upholds_result_of_presidential_race, last accessed 10 January 2022.

50. While human error almost certainly accounts for *some* of the difference, there is no evidence that it accounts for most of the difference, much less the entire difference, as Secretary of State Raffensperger claimed.

51. The original count and audit agree with each other (but not with the recount) regarding the number of votes for Biden and Jorgensen. The audit found 50 more votes for Trump than the original tally, and 81 more than the machine recount found: a difference of almost 50 percent. These differences have not been investigated and are unexplained. A hypothesized error rate of 2 percent in hand counts does not suffice.

52. A fact central to this case is that the differences might result from discrepancies between the QR-encoded votes and the human-readable votes on BMD printout and/or from misconfiguration, bugs, or malware on the scanners or tabulators. As discussed above, the audit checked none of these things. There is no basis whatsoever to conclude that the differences result entirely from human error without investigating the other possibilities.

53. The hand count could easily be more accurate than the machine count. Indeed, it is well known that hand counts of hand-marked paper ballots are often more accurate than machine counts, in part because human readers can interpret light, improper, and ambiguous marks better than machines can, even when the machines are working properly. Similarly, experience in Georgia in 2020[18] shows that Dominion's scanner settings (low resolution, black-and-white) can cause voters' selections not to appear at

[18] See, e.g., Judge Amy Totenberg's Opinion and Order of 11 October 2020 in the present matter, at 4, 30, 95, 101, 103, 114–135.

all in images of ballots, selections that human readers looking at the actual ballots can easily discern.

54. Evidence that hand counts are more accurate than machine counts comes from recounts and studies of the "residual vote,"[19] that is, the number of undervotes and overvotes. Hand counts generally find more valid votes than machine counts.[20]

55. Hand-count error rates are known to depend on many factors, including ballot design, the method for hand counting ("sort-and-stack" versus "read-and-mark"), and the size of each counting team. They presumably also depend on whether there are additional quality control measures in place, such as checking sorted piles of ballots to ensure that each pile really has votes for only one same candidate.

56. The study[21] cited by the Georgia Secretary of State is a laboratory study with 108 subjects and 120 ballots, each containing 27 contests with two candidates. It used three kinds of "ballots": printout from two kinds of DRE (direct-recording electronic) voting system and an optical scan ballot. The highest error rates were for thermal printout

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[19] Ansolabehere, S., and Reeves, A., 2004. Using Recounts to Measure the Accuracy of Vote Tabulations: Evidence from New Hampshire Elections 1946–2002, in *Confirming Elections: Creating Confidence and Integrity Through Election Auditing*, Alvarez, R.M., L.R. Atkeson, and T.E. Hall, eds., Palgrave MacMillan, NY. Alvarez, R.M., D. Beckett, D., and C. Stewart, 2013. Voting Technology, Vote-by-Mail, and Residual Votes in California, 1990–2010. *Political Research Quarterly*, 66(3), 658–670. https://doi.org/10.1177/1065912912467085. Alvarez, R.M., L.R. Atkeson, and T.E. Hall, 2013. *Evaluating Elections: A Handbook of Methods and Standards*, Cambridge University Press, NY.

[20] See, e.g., Ansolabehere, S., and C. Stewart, 2005. Residual Votes Attributable to Technology. *The Journal of Politics, 67(2)*, 365–389. https://doi.org/10.1111/j.1468-2508.2005.00321.x; Carrier, M.A., 2005. Vote Counting, Technology, and Unintended Consequences, *St. John's Law Review, 79(3)*, 645–687; Ansolabehere, S., B.C. Burden, K.R. Mayer, and C. Stewart III, 2018. Learninbg from Recounts, *Election Law Journal*, *17(2)*, 100–116, DOI: 10.1089/elj.2017.0440

[21] Goggin, S.N., M.D. Byrne, and J.E. Gilbert, 2012. Post-Election Auditing: Effects of Procedure and Ballot Type on Manual Counting Accuracy, Efficiency, and Auditor Satisfaction and Confidence, *Election Law Journal: Rules, Politics, and Policy*, 36–51, DOI: 10.1089/elj.2010.0098

from DREs, which does not resemble Georgia's BMD printout nor Georgia's hand-marked paper ballots. The method with the highest error was the "sort-and-stack" tally method that Georgia chose to use. This study did not observe hand vote tabulation in a real election, nor did it involve BMD summary printout. To my knowledge, there is no study of the accuracy of counting votes from BMD summary printouts.

57. Differences between the original count and the machine recount are also large and unexplained. The difference between the two machine counts of Biden's Absentee votes is almost 3 percent. Absent access to the physical ballots, software, and equipment, it is impossible to know what went wrong, nor whether the differences are primarily attributable to malware, bugs, misconfiguration, or human error.

**Summary**

58. A rigorous audit can provide confidence that a well-run election found the true winner(s). But it cannot compensate for using untrustworthy technology to record votes or for a poorly run election; in such circumstances, it distracts attention from the real problems rather than improving election integrity and justifying confidence in electoral outcomes. Absent a trustworthy record of the votes, no procedure can provide affirmative evidence that the reported winner(s) really won. Georgia lacks such a record, for many reasons, including the heavy reliance on BMDs and the lack of physical accounting of ballots, memory cards, and other election materials; lack of pollbook and voter participation reconciliation; etc.

59. By claiming to perform risk-limiting audits when its paper trail is not trustworthy, the State of Georgia is in effect adding stories to a building that needs its foundation replaced. First things first.

60. To provide reasonable assurance that every voter's selections are counted and counted accurately requires systematic improvements to how Georgia conducts elections:

a) For every voter to be assured the right to cast an accountable vote, every voter should have the opportunity to mark a ballot by hand, whether voting in person in advance, in person on election day, or absentee by mail.

b) The use of ballot-marking devices should be reduced to a minimum, for reasons I have explained in previous declarations. In particular:

i. BMDs do not necessarily print voters' selection accurately. They can be hacked or misconfigured, as explained in Prof. J. Alex Halderman's testimony.

ii. A growing body of empirical work shows that few voters check the BMD printout, and those who do rarely catch errors.

iii. There is no way for a voter to prove to an election official or anyone else that a BMD malfunctioned. Hence, there is no way to "close the loop" to ensure that a malfunctioning device is removed from service, even if some voters notice a BMD misbehaving. And if a device is observed misbehaving, there is no way to reconstruct the correct election outcome.

iv. There is no way to test BMDs adequately prior to, during, or after an election to establish whether they altered votes, even if they altered enough votes to change electoral outcomes. [22]

c) Georgia must implement better procedures and checks on chain of custody of election materials, especially voted ballots. Currently, Georgia is not in a position to determine whether every validly cast ballot was included in the reported results, nor

[22] See note 8, *supra.*

whether there was electronic or physical "ballot-box stuffing" or votes were altered.[23] Georgia needs better protocols for using and checking physical security seals on ballots and voting equipment, and demonstrating that it has. It needs to perform routine scrutiny of custody logs and surveillance video, and to institute other related security measures.

d) Internal consistency checks and physical inventories must be performed as part of Georgia's canvass, including, among other things:

   i. Verifying that the number of ballots sent to each polling location (and blank paper stock for ballot-marking devices and ballot-on-demand printers) equals the number returned voted, spoiled, or unvoted. This must be a physical check based on manual inventories, not on reports from the voting system.

   ii. Checking pollbooks and other voter participation records against the number of voted ballots received, including checking whether the appropriate number of ballots of each "style" were received.

   iii. Checking whether the number of electronic vote records ("scans" or cast-vote records) agrees with the physical inventory of ballots of each style.

[23] This is evidenced by the fact that the 2020 audit found thousands of untabulated ballots. See note 14, *supra*. Per the Secretary of State's office, "[t]he audit process also led to counties catching making mistakes they made in their original count by not uploading all memory cards." https://sos.ga.gov/index.php/elections/historic_first_statewide_audit_of_paper_ballots_upholds_result_of_presidential_race, last accessed 9 January 2022. Because of Georgia's inadequate physical accounting for voting materials, there is no way to know how many more votes validly cast in that election have not been included in any of the reported results. Moreover, the lax recordkeeping evidently resulted in scanning the same batches of ballots more than once. Similarly, some ABBSs were presumably entered more than once, and as shown above, some were not entered at all.

e) Georgia should conduct routine "compliance" audits, a necessary precursor to conducting risk-limiting audits. For a list of what compliance audits should include, see, for example, Appel, A., and P.B. Stark, 2020. Evidence-Based Elections: Create a Meaningful Paper Trail, Then Audit, *Georgetown Law Technology Review, 4*, 523–541.

f) Georgia should conduct routine, genuine,[24] risk-limiting audits of *every* contested race in every election. The audits must have the ability to correct the reported outcome if the outcome is wrong, before the outcome is certified. I understand that under current Georgia law, audits take place only every other year, for only one contest, and cannot change electoral outcome or trigger a recount—even if the audit finds that the outcome is wrong. No matter how rigorous an audit is, an audit of one or more contests provides no evidence that the outcome of any unaudited contest is correct. Errors and malware may affect some contests but not others.

g) A genuine RLA requires far more than Georgia has yet attempted. First and foremost, it requires a trustworthy record of voter intent. Georgia's records are untrustworthy for a range of reasons, starting with the fact that all in-person voters are expected or required to use ballot-marking devices (BMDs). As discussed at length in previous declarations and in testimony by Prof. Andrew Appel and Prof. J. Alex Halderman, BMD printout is not a trustworthy record of the vote. There are also issues with Georgia's verification of voter eligibility and voter participation. But even if every voter used a hand-marked paper ballot and there were no issues with voter eligibility,

[24] As explained below, the pilots of RLA procedures in Georgia were not genuine RLAs, nor was the "full hand-count audit."

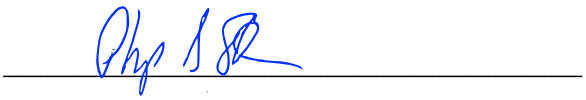
Georgia simply does not keep track of their election materials well enough. As discussed in my previous declarations, the foundation for a risk-limiting audit is a *ballot manifest*, a physical inventory of the paper ballots describing in detail how they are stored. This must be derived without reliance on the voting system; otherwise, the audit is trusting the voting system to check itself. For example, if there are ballots that were never scanned (as discovered during the 2020 "audit"), they will be missing from a manifest derived from voting system reports. The ballot manifest must be based on physical inventories of the ballots, keeping track of where the ballots are and how they are organized. Absent that, it is impossible to account for votes reliably, and impossible to limit the risk that an incorrect electoral outcome will be certified: applying risk-limiting audit procedures to an untrustworthy collection of ballots is "security theater."

61. There are additional checks that could be performed to determine the root cause of the discrepancies among the first machine tabulation, hand count, and machine recount. Those checks require access to the physical ballots (for instance, to determine whether every scan batch from the tabulators reflects a distinct collection of actual physical ballots) and access to the tabulators, software, and servers (by other experts in this matter).

62. I would like to supplement my report once the Plaintiffs have had the opportunity to review materials that Defendants have not yet produced or provided access to, including ballots, and to review Plaintiffs' experts' reports once they have inspected the hardware and software used in the November 2020 election.

I declare under penalty of perjury, in accordance with 28 U.S.C. § 1746, that the foregoing is true and correct.

Executed on this date, 11 January 2020,



Philip B. Stark

# APPENDIX 1

# Curriculum Vitae
# Philip Bradford Stark

## Biographical Information

**Born:** 7 October 1960, Houston, Texas.

**Citizenship:** U.S.A.

## Interests

**Theory**: Inference, inverse problems, multiplicity, nonparametrics, optimization, restricted parameters, sampling

**Applications**: Astrophysics, cosmology, ecology, elections, geophysics, health, legislation, litigation, marketing, physics, public policy, risk assessment and control, uncertainty quantification

## Appointments

**7/2019–6/2021** Regional Associate Dean (interim), College of Chemistry and Division of Mathematical and Physical Sciences (ChaMPS), University of California, Berkeley

**10/2015–6/2021** Associate Dean, Division of Mathematical and Physical Sciences, University of California, Berkeley

**6/2016–8/2016** Visiting Professor of Theoretical Computer Science, IT University of Copenhagen

**7/2012–6/2015** Chair, Department of Statistics, and Director, Statistical Computing Facility, University of California, Berkeley

**7/2011–6/2012** Vice Chair, Department of Statistics, University of California, Berkeley

**7/2011–8/2011** Acting Chair, Department of Statistics, University of California, Berkeley

**7/2008–present** Faculty, Designated Emphasis in Computational and Data Science and Engineering, University of California, Berkeley

**7/1998–present** Professor, Department of Statistics, University of California, Berkeley

**7/2001–6/2003** Faculty Assistant in Educational Technology (to Vice Provost for Undergraduate Education), University of California, Berkeley

**6/1996** Visiting Associate Professor, School of Mathematical Sciences, Tel Aviv University, Tel Aviv, Israel

**7/1994–6/1998** Associate Professor, Department of Statistics, University of California, Berkeley

**7/1988–6/1994** Assistant Professor, Department of Statistics, University of California, Berkeley

**7/1987–6/1990** National Science Foundation Postdoctoral Fellow in Mathematical Sciences

**1/1987–6/1987** Postgraduate Research, Department of Statistics, University of California, Berkeley

**8/1986–12/1986** Postgraduate Research, Institute for Geophysics and Planetary Physics, UC San Diego

## Awards and Fellowships

Velux/Villum Foundation Visiting Professor Programme (2015–2016)

Leamer-Rosenthal Prize for Transparency in Social Science (2015)

Chancellor's Award for Public Service, Research in the Public Interest, University of California, Berkeley (2011)

John Gideon Award for Election Integrity, Election Verification Network (2011)

Mellon Library/Faculty Fellow for Undergraduate Research (2006–2007)

Presidential Chair Fellow, University of California, Berkeley (2003–2004)

Fellow, American Statistical Association (selected 2014)

Fellow, Institute of Physics (elected 1999)

Miller Research Professor, Miller Institute for Basic Research in Science (1999)

Dobson Fellow, University of California at Berkeley (1998, 1999)

Presidential Young Investigator (1989–1995)

National Science Foundation Postdoctoral Fellowship in Mathematical Sciences (1987–1989)

University Fellowship, University of Texas at Austin (1982–1983)

## Professional Societies

American Statistical Association: Fellow and Accredited Professional Statistician

Association of Foragers

Bernoulli Society for Mathematical Statistics and Probability

Institute of Mathematical Statistics

Institute of Physics: Fellow and Chartered Physicist

International Statistical Institute

Royal Astronomical Society: Fellow

## Education

A.B. 1980, Princeton University, Princeton, New Jersey

Ph.D. 1986, University of California, San Diego, La Jolla, California

### Mentors

Robert L. Parker, Institute for Geophysics and Planetary Physics, Scripps Institution of Oceanography, University of California, San Diego (PhD dissertation advisor)

George E. Backus, Institute for Geophysics and Planetary Physics, Scripps Institution of Oceanography, University of California, San Diego (postdoctoral advisor)

David L. Donoho, Department of Statistics, Stanford University (postdoctoral advisor)

## Publications

### Refereed Publications

1. Stark, P.B. and C. Frohlich, 1985. The depths of the deepest deep Earthquakes, *Journal of Geophysical Research*, *90*, 1859–1869.

2. Stark, P.B., R.L. Parker, G. Masters, and J.A. Orcutt, 1986. Strict bounds on seismic velocity in the spherical Earth, *Journal of Geophysical Research*, *91*, 13,892–13,902.

3. Stark, P.B., 1986. *Travel-Time Inversion: Regularization and Inference*, Ph.D. Thesis, Scripps Instution of Oceanography, University of California, San Diego, 106pp.

4. Stark, P.B., and R.L. Parker, 1987. Smooth profiles from tau(p) and X(p) data, *Geophysical Journal of the Royal Astronomical Society*, *89*, 2713–2719.

5. Stark, P.B., and R.L. Parker, 1987. Velocity bounds from statistical estimates of tau(p) and X(p), *Journal of Geophysical Research*, *92*, 2713–2719.

6. Stark, P.B., 1987. Rigorous velocity bounds from soft tau(p) and X(p) data, *Geophysical Journal of the Royal Astronomical Society*, *89*, 987–996.

7. Orcutt, J.A., R.L. Parker, P.B. Stark, and J.D. Garmany, 1988. Comment concerning "A method of obtaining a velocity-depth envelope from wide-angle seismic data" by R. Mithal and J.B. Diebold. *Geophysical Journal*, *95*, 209–212.

8. Stark, P.B. and R.L. Parker, 1988. Correction to "Velocity bounds from statistical estimates of tau(p) and X(p)." *Journal of Geophysical Research*, *93*, 13,821–13,822.

9. Donoho, D.L. and P.B. Stark, 1989. Uncertainty principles and signal recovery. *SIAM Journal of Applied Mathematics*, *49*, 906–931.

10. Stark, P.B., 1992. Affine minimax confidence intervals for a bounded Normal mean, *Statistics and Probability Letters*, *13*, 39–44.

11. Stark, P.B., 1992. Minimax confidence intervals in geomagnetism, *Geophysical Journal International*, *108*, 329–338.

12. Stark, P.B., 1992. Inference in infinite-dimensional inverse problems: Discretization and duality, *Journal of Geophysical Research*, *97*, 14,055–14,082. Reprint:
`http://onlinelibrary.wiley.com/doi/10.1029/92JB00739/epdf`

13. Donoho, D.L. and P.B. Stark, 1993. A note on rearrangements, spectral concentration, and the zero-order prolate spheroidal wavefunction. *IEEE Transactions on Information Theory*, *39*, 257–260.

14. Pulliam, R.J. and P.B. Stark, 1993. Bumps on the core-mantle boundary: Are they facts or artifacts?, *Journal of Geophysical Research*, *98*, 1943–1956.

15. Stark, P.B. and N.W. Hengartner, 1993. Reproducing Earth's kernel: Uncertainty of the shape of the core-mantle boundary from PKP and PcP travel-times, *Journal of Geophysical Research*, *98*, 1957–1972.

16. Stark, P.B., 1993. Uncertainty of the COBE quadrupole detection, *Astrophysical Journal Letters*, *408*, L73–L76.

17. Stark, P.B. and D.I. Nikolayev, 1993. Toward tubular tomography, *Journal of Geophysical Research*, *98*, 8095–8106.

18. Constable, C.G., R.L. Parker, and P.B. Stark, 1993. Geomagnetic field models incorporating frozen-flux constraints, *Geophysical Journal International*, *113*, 419–433.

19. Gough, D.O. and P.B. Stark, 1993. Are the 1986–1988 changes in solar free-oscillation frequency splitting significant?, *Astrophysical Journal*, *415*, 376–382.

20. Stark, P.B., M.M. Herron, and A. Matteson, 1993. Empirically minimax affine mineralogy estimates from Fourier-transform infrared spectroscopy data using a decimated wavelet basis, *Applied Spectroscopy*, *47*, 1820–1829.

21. Pulliam, R.J. and P.B. Stark, 1994. Confidence regions for mantle heterogeneity, *Journal of Geophysical Research*, *99*, 6931–6943.

22. Genovese, C.R., P.B. Stark, and M.J. Thompson, 1995. Uncertainties for Two-Dimensional Models of Solar Rotation from Helioseismic Eigenfrequency Splitting, *Astrophysical Journal*, *443*, 843–854.

23. Stark, P.B. and R.L. Parker, 1995. Bounded-variable least-squares: an algorithm and applications, *Computational Statistics*, *10*, 129–141. Preprint:
`https://www.stat.berkeley.edu/~stark/Preprints/bvls.pdf`

24. Hengartner, N.W. and P.B. Stark, 1995. Finite-sample confidence envelopes for shape-restricted densities, *The Annals of Statistics*, *23*, 525–550.

25. Stark, P.B., 1995. Reply to Comment by Morelli and Dziewonski, *Journal of Geophysical Research*, *100*, 15,399–15,402.

26. Gough, D.O., T. Sekii, and P.B. Stark, 1996. Inferring spatial variation of solar properties from helioseismic data, *Astrophysical Journal*, *459*, 779–791.

27. Benjamini, Y. and Stark, P.B., 1996. Non-equivariant simultaneous confidence intervals less likely to contain zero, *Journal of the American Statistical Association*, *91*, 329–337.

28. Hill, F., P.B. Stark, R.T. Stebbins, E.R. Anderson, H.M. Antia, T.M. Brown, T.L. Duvall, Jr., D.A. Haber, J.W. Harvey, D.H. Hathaway, R. Howe, R. Hubbard, H.P. Jones, J.R. Kennedy, S.G. Korzennik, A.G. Kosovichev, J.W. Leibacher, K.G. Libbrecht, J.A. Pintar, E.J. Rhodes, Jr., J. Schou, M.J. Thompson, S. Tomczyk, C.G. Toner, R. Toussaint, and W.E. Williams, 1996. The solar acoustic spectrum and eigenmode parameters, *Science*, *272*, 1292–1295.

29. Thompson, M.J., J. Toomre, E.R. Anderson, H.M. Antia, G. Berthomieu, D. Burtonclay, S.M. Chitre, J. Christensen-Dalsgaard, T. Corbard, M. DeRosa, C.R. Genovese, D.O. Gough, D.A. Haber, J.W. Harvey, F. Hill, R. Howe, S.G. Korzennik, A.G. Kosovichev, J.W. Leibacher, F.P. Pijpers, J. Provost, E.J. Rhodes, Jr., J. Schou, T. Sekii, P.B. Stark, and P.R. Wilson, 1996. Differential rotation and dynamics of the solar interior, *Science*, *272*, 1300–1305.

30. Stark, P.B., 1996. A few considerations for ascribing statistical significance to earthquake predictions, *Geophysical Research Letters*, *23*, 1399–1402.

31. Evans, S.N., and P.B. Stark, 1996. Shrinkage estimators, Skorokhod's problem, and stochastic integration by parts, *The Annals of Statistics*, *24*, 809–815.

32. Genovese, C.R. and P.B. Stark, 1996. Data Reduction and Statistical Consistency in Linear Inverse Problems, *Physics of the Earth and Planetary Interiors*, *98*, 143–162.

33. Stark, P.B., 1997. Earthquake prediction: the null hypothesis, *Geophysical Journal International*, *131*, 495–499.

34. Benjamini, Y., Y. Hochberg, and P.B. Stark, 1998. Confidence Intervals with more Power to determine the Sign: Two Ends constrain the Means, *Journal of the American Statistical Association*, *93*, 309–317.

35. Tenorio, L., P.B. Stark, and C.H. Lineweaver, 1999. Bigger uncertainties and the Big Bang, *Inverse Problems*, *15*, 329–341.

36. Stark, P.B., 1999. Geophysics, Statistics in, in *Encyclopedia of Statistical Sciences, Update Volume 3*, S. Kotz, C.B. Read, and D.L. Banks,

eds., John Wiley and Sons, NY. Invited. Reprint:
`http://mrw.interscience.wiley.com/emrw/9780471667193/ess/article/ess1053/current/pdf`

37. Komm, R., Y. Gu, P.B. Stark, and I. Fodor, 1999. Multitaper Spectral Analysis and Wavelet Denoising Applied to Helioseismic Data, *Astrophysical Journal*, *519*, 407–421.

38. Freedman, D.A., and P.B. Stark, 1999. The swine flu vaccine and Guillain-Barré syndrome: a case study in relative risk and specific causation, *Evaluation Review*, *23*, 619–647. Preprint:
`https://www.stat.berkeley.edu/users/census/546.pdf`

39. Fodor, I. and P.B. Stark, 2000. Multitaper Spectrum Estimation for Time Series with Gaps, *IEEE Transactions on Signal Processing*, *48*, 3472–3483.

40. Freedman, D.A., P.B. Stark, and K.W. Wachter, 2001. A probability model for census adjustment, *Mathematical Population Studies*, *9*, 165–180.

41. D.A. Freedman and P.B. Stark, 2001. The swine flu vaccine and Guillain-Barré syndrome. *Law and Contemporary Problems*, *64*, 49–62. Reprint:
`http://www.law.duke.edu/shell/cite.pl?64+Law+&+Contemp.+Probs.+49+(Autumn+2001)`

42. Evans, S.N. and P.B. Stark, 2002. Inverse Problems as Statistics, *Inverse Problems*, *18*, R55–R97. Invited. Reprint:
`http://iopscience.iop.org/0266-5611/18/4/201/pdf/0266-5611_18_4_201.pdf`

43. Stark, P.B. and D.A. Freedman, 2003. What is the Chance of an Earthquake? in *Earthquake Science and Seismic Risk Reduction*, F. Mulargia and R.J. Geller, eds., NATO Science Series IV: Earth and Environmental Sciences, v. 32, Kluwer, Dordrecht, The Netherlands, 201–213. Invited. Preprint:
`https://www.stat.berkeley.edu/~stark/Preprints/611.pdf`

44. Stark, P.B., 2003. Capture-recapture. *Encyclopedia of Social Science Research Methods*, Sage Publications, Thousand Oaks, CA. Invited.

Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/capt2002.pdf

45. Stark, P.B., 2003. Census Adjustment. *Encyclopedia of Social Science Research Methods*, Sage Publications, Thousand Oaks, CA. Invited. Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/adj2002.pdf

46. Schafer, C.M. and P.B. Stark, 2004. Using what we know: inference with physical constraints. *Proceedings of the Conference on Statistical Problems in Particle Physics, Astrophysics and Cosmology PHYSTAT2003*, L. Lyons, R. Mount and R. Reitmeyer, eds., Stanford Linear Accelerator Center, Menlo Park, CA, 25–34.

47. Evans, S.N., B. Hansen, and P.B. Stark, 2005. Minimax Expected Measure Confidence Sets for Restricted Location Parameters, *Bernoulli*, *11*, 571–590. Also Tech. Rept. 617, Dept. Statistics Univ. Calif Berkeley (May 2002, revised May 2003). Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/617.pdf

48. Divenyi, P., P.B. Stark, and K. Haupt, 2005. Decline of Speech Understanding and Auditory Thresholds in the Elderly, *Journal of the Acoustical Society of America*, *118*, 1089–1100.

49. Freedman, D.A. and P.B. Stark, 2007. Ecological Inference, in *1 Encyclopedia of Law and Society: American and Global Perspectives*, 447–448, David S. Clark, ed., Sage Publications. Invited. Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/ecoInf07.txt

50. Luen, B. and P.B. Stark, 2008. Testing Earthquake Predictions. *IMS Lecture Notes—Monograph Series. Probability and Statistics: Essays in Honor of David A. Freedman*, 302–315. Institute for Mathematical Statistics Press, Beachwood, OH. Invited. Reprint:
http://arxiv.org/abs/0805.3032

51. Stark, P.B., 2008. The effectiveness of Internet content filters, *I/S: A Journal of Law and Policy for the Information Society*, *4*, 411–429. Reprint: http://www.is-journal.org/V04I02/Stark.pdf

Preprint: https://www.stat.berkeley.edu/~stark/Preprints/filter07.pdf

52. Stark, P.B., 2008. Conservative statistical post-election audits, *The Annals of Applied Statistics*, *2*, 550–581. Reprint: http://arxiv.org/abs/0807.4005

53. Stark, P.B., 2008. A Sharper Discrepancy Measure for Post-Election Audits, *The Annals of Applied Statistics*, *2*, 2008, 982–985. Reprint: http://arxiv.org/abs/0811.1697

54. Stark, P.B., 2008. Generalizing resolution, *Inverse Problems*, *24*, 034014. Invited; selected for 2008 Highlights for *Inverse Problems* Reprint: https://www.stat.berkeley.edu/~stark/Preprints/resolution07.pdf

55. Schafer, C.M., and P.B. Stark, 2009. Constructing Confidence Sets of Optimal Expected Size. *Journal of the American Statistical Association*, *104*, 1080–1089. Reprint: https://www.stat.berkeley.edu/~stark/Preprints/schaferStark09.pdf

56. Berlow, E.L., J.A. Dunne, N.D. Martinez, P.B. Stark, R.J. Williams and U. Brose, 2009. Simplicity on the other side of ecological complexity. *Proceedings of the National Academy of Sciences*, *106*, 187–219. Reprint: http://www.pnas.org/content/106/1/187.full.pdf+html

57. Hall, J.L., L.W. Miratrix, P.B. Stark, M. Briones, E. Ginnold, F. Oakley, M. Peaden, G. Pellerin, T. Stanionis and T. Webber, 2009. Implementing Risk-Limiting Audits in California, *2009 Electronic Voting Technology Workshop/Workshop on Trustworthy Elections (EVT/WOTE '09)*. Reprint: http://static.usenix.org/events/evtwote09/tech/full_papers/hall.pdf.
SSRN's Top Ten download list for ERN: Models of Political Processes: Rent-Seeking, Elections, Legislatures, & Voting Behavior

58. Stark, P.B., 2009. CAST: Canvass Audits by Sampling and Testing. *IEEE Transactions on Information Forensics and Security: Special Issue on Electronic Voting*, *4*, 708–717. Reprint: `https://www.stat.berkeley.edu/~stark/Preprints/cast09.pdf`

59. Miratrix, L.W. and P.B. Stark, 2009. Election Audits using a Trinomial Bound. *IEEE Transactions on Information Forensics and Security: Special Issue on Electronic Voting*, *4*, 974–981. Reprint: `https://www.stat.berkeley.edu/~stark/Preprints/trinomial09.pdf`

60. Stark, P.B., 2009. Risk-limiting post-election audits: *P*-values from common probability inequalities. *IEEE Transactions on Information Forensics and Security: Special Issue on Electronic Voting*, *4*, 1005–1014. Reprint: `https://www.stat.berkeley.edu/~stark/Preprints/pvalues09.pdf`

61. Stark, P.B., 2009. Efficient post-election audits of multiple contests: 2009 California tests. Refereed paper presented at the 2009 Conference on Empirical Legal Studies. Preprint: `http://ssrn.com/abstract=1443314`

62. Stark, P.B., 2010. Risk-Limiting Vote-Tabulation Audits: The Importance of Cluster Size. *Chance*, *23*(3), 9–12. Preprint: `https://www.stat.berkeley.edu/~stark/Preprints/auditingChance10.pdf`

63. Stark, P.B., 2010. Super-simple simultaneous single-ballot risk-limiting audits. *2010 Electronic Voting Technology Workshop/Workshop on Trustworthy Elections (EVT/WOTE '10)*, D. Jones, J.J. Quisquater and E.K. Rescorla, eds. Reprint: `http://www.usenix.org/events/evtwote10/tech/full_papers/Stark.pdf`

64. Stark, P.B. and L. Tenorio, 2010. A Primer of Frequentist and Bayesian Inference in Inverse Problems. In *Large Scale Inverse Problems and Quantification of Uncertainty*, Biegler, L., G. Biros, O. Ghattas, M. Heinkenschloss, D. Keyes, B. Mallick, L. Tenorio, B. van Bloemen Waanders and K. Willcox, eds. John Wiley and Sons,

NY. Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/freqBayes09.pdf

65. Stark, P.B., 2010. Null and Vetoed: "Chance Coincidence"? *Chance, 23(4)*, 43–46. Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/acrosticVeto09.htm

66. Benaloh, J., D. Jones, E. Lazarus, M. Lindeman, and P.B. Stark, 2011. SOBA: Secrecy-preserving Observable Ballot-level Audit. *2011 Electronic Voting Technology Workshop/Workshop on Trustworthy Elections (EVT/WOTE '11)*, USENIX. Reprint:
http://static.usenix.org/events/evtwote11/tech/final_files/Benaloh.pdf
Video: https://www.usenix.org/conference/evtwote-11/soba-secrecy-preserving-observable-ballot-level-audit

67. Higgins, M.J., R.L. Rivest and P.B. Stark, 2011. Sharper $p$-values for Stratified Post-Election Audits. *Statistics, Politics, and Policy, 2*(1), Article 7. Reprint:
http://www.degruyter.com/downloadpdf/j/spp.2011.2.issue-1/2151-7509.1031/2151-7509.1031.xml
Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/higginsRivestStark11.pdf

68. Shearer, P.M. and P.B. Stark, 2012. The global risk of big earthquakes has not recently increased. *Proceedings of the National Academy of Sciences, 109*(3), 717–721. doi: 10.1073/pnas.1118525109. (Commentary by G. Beroza, *PNAS 2012, 109*(3) 651–652. doi: 10.1073/pnas.1120744109.) Reprint:
http://www.pnas.org/content/early/2011/12/12/1118525109.full.pdf+html

69. Luen, B. and P.B. Stark, 2012. Poisson tests of declustered catalogs. *Geophysical Journal International*, *189*, 691–700. doi: 10.1111/j.1365-246X.2012.05400.x
Reprint:

http://onlinelibrary.wiley.com/doi/10.1111/j.1365-246X.2012.05400.x/pdf
Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/decluster11.pdf

70. Lindeman, M., P.B. Stark, and V.S. Yates, 2012. BRAVO: Ballot-polling Risk-Limiting Audits to Verify Outcomes. *2012 Electronic Voting Technology Workshop/Workshop on Trustworthy Elections (EVT/WOTE '12)*. Reprint:
https://www.usenix.org/system/files/conference/evtwote12/evtwote12-final27.pdf

71. Huttunen, J.M.J., and P.B. Stark, 2012. Cheap contouring of costly functions: The Pilot Approximation Trajectory Algorithm. *Computational Science & Discovery*. *5*, 015006. Reprint:
http://stacks.iop.org/1749-4699/5/015006

72. Lindeman, M. and P.B. Stark, 2012. A Gentle Introduction to Risk-Limiting Audits. *IEEE Security and Privacy*, *10*, 42–49. Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/gentle12.pdf

73. Stark, P.B., and D.A. Wagner, 2012. Evidence-Based Elections. *IEEE Security and Privacy*, *10*, 33–41. Preprint:
https://www.stat.berkeley.edu/~stark/Preprints/evidenceVote12.pdf

74. Benjamini, Y., V. Madar, and P.B. Stark, 2013. Simultaneous confidence intervals uniformly more likely to determine signs, *Biometrika*, doi: 10.1093/biomet/ass074
Reprint: http://biomet.oxfordjournals.org/content/early/2013/02/20/biomet.ass074.full.pdf
Preprint: https://www.stat.berkeley.edu/~stark/Preprints/qc11.pdf

75. Benaloh, J., M. Byrne, B. Eakin, P. Kortum, N. McBurnett, O. Pereira, P.B. Stark, and D.S. Wallach, 2013. STAR-Vote: A Secure, Transparent, Auditable, and Reliable Voting System. *JETS: USENIX Journal*

*of Election Technology and Systems*, *1*,18–37. Reprint: https://www.usenix.org/sites/default/files/jets0101-complete.pdf

76. Stark, P.B., and V. Teague, 2014. Verifiable European Elections: Risk-limiting Audits for D'Hondt and Its Relatives, *JETS: USENIX Journal of Election Technology and Systems*, *3.1* , https://www.usenix.org/jets/issues/0301/stark

77. Stark, P.B., and R. Freishtat, 2014. An evaluation of course evaluations. *Science Open*, DOI 10.14293/S2199-1006.1.-.AOFRQA.v1, https://www.scienceopen.com/document/vid/42e6aae5-246b-4900-8015-dc99b467b6e4 (post refereed)

78. Luo, T., and P.B. Stark, 2015. Nine out of 10 restaurants fail? Check, please. *Significance, 12*, 25–29. Preprint: http://arxiv-web3.library.cornell.edu/abs/1410.8603v1 Reprint: http://onlinelibrary.wiley.com/doi/10.1111/j.1740-9713.2015.00813.x/abstract

79. Saltelli, A., P.B. Stark, W. Becker, and P. Stano, 2015. Climate Models as Economic Guides: Scientific Challenge or Quixotic Quest?, *Issues in Science and Technology*, Spring 2015. Preprint: https://www.stat.berkeley.edu/~stark/Preprints/saltelliEtal15.pdf Reprint: http://issues.org/31-3/climate-models-as-economic-guides-scientific-challenge-or-quixotic-quest/

80. Matchett, J.R., P.B. Stark, R.A. Knapp, S.M. Ostoja, H.C. McKenny, M. Brooks, W. Langford, L.N. Joppa, and E. Berlow, 2015. Detecting the influence of rare stressors on rare species in Yosemite National Park using a novel stratified permutation test, *Nature Scientific Reports*, *5*. doi:10.1038/srep10702, Reprint: http://www.nature.com/srep/2015/150602/srep10702/full/srep10702.html

81. Arratia, R., S. Garibaldi, L. Mower, and P.B. Stark, 2015. Some people have all the luck. *Mathematics Magazine*, *88*, 196–211. doi:10.4169/math.mag.88.3.196.c, Reprint: https://www.stat.berkeley.edu/~stark/Preprints/luck15.pdf

82. Stark, P.B., 2015. Constraints versus priors. *SIAM/ASA Journal on Uncertainty Quantification*, *3*(1), 586–598. doi:10.1137/130920721, Reprint: http://epubs.siam.org/doi/10.1137/130920721,

Preprint: https://www.stat.berkeley.edu/~stark/Preprints/constraintsPriors15.pdf.

83. Mulargia, F., P. Gasperini, B. Lolli, and P.B. Stark, 2015. Purported precursors: poor predictors. *Bollettino di Geofisica Teorica ed Applicata*, *56*, 351–356. doi:10.4430/bgta0142, Reprint: http://www2.ogs.trieste.it/bgta/pdf/bgta0142_MULARGIA.pdf

84. Regier, J.C. and P.B. Stark, 2015. Uncertainty quantification for emulators. *SIAM/ASA Journal on Uncertainty Quantification*, *3*, 686–708. doi:10.1137/130917909, Reprint: http://epubs.siam.org/doi/10.1137/130917909, Preprint: https://www.stat.berkeley.edu/~stark/Preprints/uqEmu15.pdf.

85. Boring, A., K. Ottoboni, and P.B. Stark, 2016. Teaching evaluations (mostly) do not measure teaching effectiveness, *Science Open*, doi:10.14293/S2199-1006.1.SOR-EDU.AETBZC.v1, https://www.scienceopen.com/document/vid/818d8ec0-5908-47d8-86b4-5dc38f04b23e (post refereed)

86. Mulargia, F., P.B. Stark, and R.J. Geller, 2017. Why is Probabilistic Seismic Hazard Analysis (PSHA) Still Used? *Physics of the Earth and Planetary Interiors*, *264*, 63–75. Reprint: http://www.sciencedirect.com/science/article/pii/S0031920116303016

87. Kuusela, M., and P.B. Stark, 2017. Shape-constrained uncertainty quantification in unfolding steeply falling elementary particle spectra, *Annals of Applied Statistics*, *11*, 1671–1710. Preprint: http://arxiv.org/abs/1512.00905

88. Bernhard, M., J.A. Halderman, R.L. Rivest, P. Vora, P.Y.A. Ryan, V. Teague, J. Benaloh, P.B. Stark and D. Wallach, 2017. Public Evidence from Secret Ballots, in: Krimmer R., Volkamer M., Braun Binder N., Kersting N., Pereira O., Schürmann C. (eds), *Electronic Voting. E-Vote-ID 2017. Lecture Notes in Computer Science, 10615*. Springer. https://doi.org/10.1007/978-3-319-68687-5_6. Preprint: https://arxiv.org/abs/1707.08619

89. Mulargia, F., R.J. Geller, and P.B. Stark, 2017. Reply to comments by Console et al. *Physics of the Earth and Planetary Interiors*, to appear.

Preprint: http://www.sciencedirect.com/science/article/pii/S0031920117303084

90. Fernandez, A., K. Kashinath, J. McAuliffe, Prabhat, P. Stark, and M. Wehner, 2017. Towards a statistical model of tropical cyclone genesis. *Proceedings of the 7th International Workshop on Climate Informatics: CI 2017.*

91. Kafkafi, N., J. Agassi, E.J. Chesler, J.C. Crabbe, W.E. Crusio, D. Eilam, R. Gerlai, I. Golani, A. Gomez-Marin, R. Heller, F. Iraqi, I. Jaljuli, N.A. Karp, H. Morgan, G. Nicholson, D.W. Pfaff, H.S. Richter, P.B. Stark, O. Stiedl, V. Stodden, L.M. Tarantino, V. Tucci, W. Valdar, R.W. Williams, H. Wurbel, and Y. Benjamini, 2018. Reproducibility and replicability of rodent phenotyping in preclinical studies. *Neuroscience & Biobehavioral Reviews* https://doi.org/10.1016/j.neubiorev.2018.01.003, Preprint: *BioArXiV*, http://dx.doi.org/10.1101/079350

92. S. Behnezhad, A. Blum, M. Derakhshan, M. Hajiaghayi, M. Mahdian, C.H. Papadimitriou, R.L. Rivest, S. Seddighin and P.B. Stark, 2018. From Battlefields to Presidential Elections: Winning Strategies of Blotto and Auditing Games, *ACM-SIAM Conference on Discrete Algorithms (SODA 2018).* Preprint: https://www.stat.berkeley.edu/~stark/Preprints/behnezhadEtal18.pdf

93. Stark, P.B., and A. Saltelli, 2018. Cargo-cult Statistics and Scientific Crisis, *Significance*, *15*(4), 40–43. Preprint: https://www.significancemagazine.com/593

94. Stark, P.B., and K. Ottoboni, 2018. Random sampling: practice makes imperfect, Proceedings of the Fourth Conference of the International Society for Non-Parametric Statistics, Salerno, Italy. Preprint: http://arxiv.org/abs/1810.10985. This was accepted for publication by Springer Nature, but I refused to grant rights to derivative works, so Springer-Nature rescinded the acceptance of the manuscript.

95. Ottoboni, K., P.B. Stark, M. Lindeman, and N. McBurnett, 2018. Risk-Limiting Audits by Stratified Union-Intersection Tests of Elections (SUITE), *Electronic Voting. E-Vote-ID 2018. Lecture Notes in Computer Science*, Springer. https://link.springer.com/chapter/

10.1007/978-3-030-00419-4_12. Preprint: https://arxiv.org/abs/1809.04235

96. Evans, S.N., R.L. Rivest, and P.B. Stark, 2019. Leading the field: Fortune favors the bold in Thurstonian choice models, *Bernoulli*, *25*(1), 26–46. doi: http://dx.doi.org/10.3150/17-BEJ930 Preprint: https://www.stat.berkeley.edu/~stark/Preprints/evansEtal19.pdf

97. Ottoboni, K., M. Bernhard, A. Halderman, R.L. Rivest, and P.B. Stark, 2019. Bernoulli Ballot Polling: A Manifest Improvement for Risk-Limiting Audits, *Proceedings of the 4th Annual Workshop on Advances in Secure Electronic Voting (Voting'19)*. Preprint: http://arxiv.org/abs/1812.06361

98. Stark, P.B., D. Miller, T.J. Carlson, and K.R. de Vasquez, 2019. Open-Source Food: Nutrition, Toxicology, and Availability of Wild Edible Greens in the East Bay, *PLOS One*, DOI: 10.1371/journal.pone.0202450.

99. Mohanty, V., N. Akinyokun, A. Conway, C. Culnane, P.B. Stark, and V. Teague, 2019. Auditing Indian Elections, *Proceedings of E-Vote ID 2019. Lecture Notes in Computer Science, 11759*, R. Krimmer, M. Volkamer, V. Cortier, B. Beckert, R. Küsters, U. Serdült and D. Duenas-Cid (Eds.) Springer Nature, Switzerland. Preprint: https://arxiv.org/abs/1901.03108

100. Wojciech, J., P. Roenne, P. Y. A. Ryan, and P.B Stark, 2019. Risk-Limiting Tallies, *Proceedings of E-Vote ID 2019. Lecture Notes in Computer Science, 11759*, R. Krimmer, M. Volkamer, V. Cortier, B. Beckert, R. Küsters, U. Serdült and D. Duenas-Cid (Eds.) Springer Nature, Switzerland. Preprint: http://arxiv.org/abs/1908.04947

101. Ottoboni, K. and P.B. Stark, 2019. Election Integrity and Electronic Voting Machines in 2018 Georgia, *Proceedings of E-Vote ID 2019. Lecture Notes in Computer Science, 11759*, R. Krimmer, M. Volkamer, V. Cortier, B. Beckert, R. Küsters, U. Serdült and D. Duenas-Cid (Eds.) Springer Nature, Switzerland. Preprint: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3426250

102. Benaloh, J., P.B. Stark, and V.J. Teague, 2019. VAULT: Verifiable Audits Using Limited Transparency, *Proceedings of E-Vote ID 2019. Lecture Notes in Computer Science, 11759*, R. Krimmer, M. Volkamer, V. Cortier, B. Beckert, R. Küsters, U. Serdült and D. Duenas-Cid (Eds.) Springer Nature, Switzerland. Preprint: `https://www.stat.berkeley.edu/~stark/Preprints/vault19.pdf`

103. Stark, P.B., 2020. Sets of Half-Average Nulls Generate Risk-Limiting Audits: SHANGRLA, in *Financial Cryptography and Data Security*, Lecture Notes in Computer Science 12063, M. Bernhard, A. Bracciali, L.J. Camp, S. Matsuo, A. Maurushat, P.B. Rønne, M. Sala (Eds.) Springer-Nature. Preprint: `http://arxiv.org/abs/1911.10035`

104. Appel, A.W., R. DeMillo, and P.B. Stark, 2020. Ballot-marking devices cannot assure the will of the voters. *Election Law Journal*, *19*:3. `https://doi.org/10.1089/elj.2019.0619`. Preprint: `https://www.stat.berkeley.edu/~stark/Preprints/bmd20.pdf`

105. Appel, A.W. and P.B. Stark, 2020. Evidence-Based Elections: Create a Meaningful Paper Trail, Then Audit, *Georgetown Law Technology Review*, *4*, 523–541. `https://georgetownlawtechreview.org/wp-content/uploads/2020/07/4.2-p523-541-Appel-Stark.pdf`

106. Glazer, A., J. Spertus, and P.B. Stark, 2020. Bayesian audits are average but risk-limiting audits are above average, *Proceedings of E-Vote ID 2020. Lecture Notes in Computer Science*, R. Krimmer, M. Volkamer, B. Beckert, R. Küsters, O. Kulyk, D. Duenas-Cid, and M. Solvak, eds., Springer Nature, Switzerland. Preprint: `https://www.stat.berkeley.edu/~stark/Preprints/bayesRLA20.pdf`

107. Huang, A., R.L. Rivest, P.B. Stark, V. Teague, and D. Vukcevic, 2020. A Unified Evaluation of Two-Candidate Ballot-Polling Election Auditing Methods, *Proceedings of E-Vote ID 2020. Lecture Notes in Computer Science*, R. Krimmer, M. Volkamer, B. Beckert, R. Küsters, O. Kulyk, D. Duenas-Cid, and M. Solvak, eds., Springer Nature, Switzerland.

108. Blom, M., A. Conway, D. King, L. Sandrolini, P.B. Stark, P.J. Stuckey, and V. Teague, 2020. You can do RLAs for IRV, *Proceedings of E-VOTE ID 2020. Lecture Notes in Computer Science*, R. Krimmer,

M. Volkamer, B. Beckert, A.D. Maurer, D. Duenas-Cid, S. Glondu, I. Krivonosova, O. Kulyk, R. Küsters, B. Martin-Rozumilowicz, P. Rønne, M. Solvak, O. Spycher (Eds.), TalTech Press, ISBN 978-9949-83-601-7. (Best paper award, Track on Elections and Practical Experiences) Preprint: https://arxiv.org/abs/2004.00235

109. Mohamadlou, H., S. Panchavati, J. Calvert, A. Lynn-Palevsky, S. Le, A. Allen, E. Pellegrini, A. Green-Saxena, C. Barton, Grant Fletcher, L. Shieh, P.B. Stark, U. Chettipally, D. Shimabukuro, M. Feldman, R. Das, 2020. Multicenter validation of a machine-learning algorithm for 48-h all-cause mortality prediction. *Health Informatics Journal*. 1912–1925. https://doi.org/10.1177/1460458219894494

110. Glazer, A., J. Spertus, and P.B. Stark, 2021. More style, less work: card-style data decrease risk-limiting audit sample sizes, *Digital Threats: Research and Practice*, https://doi.org/10.1145/3457907.

111. Blom, M., P.B. Stark, P.J. Stuckey, V. Teague, and D. Vukcevic, 2021. Auditing Hamiltonian Elections, *Voting 21*, to appear. Preprint: https://arxiv.org/abs/2102.08510

112. Waudby-Smith, I., P.B. Stark, and A. Ramdas, 2021. RiLACS: Risk limiting audits via confidence sequences, In Krimmer, R., M. Volkamer, D. Duenas-Cid, O. Kulyk, P. Rønne, M. Solvak, and M. Germann (eds) *Electronic Voting. E-Vote-ID 2021. Lecture Notes in Computer Science, 12900*. Springer, Cham. *Best paper award: security, usability, and technical track*. doi: 10.1007/978-3-030-86942-7_9 Preprint: https://arxiv.org/pdf/2107.11323.pdf.

113. Blom, M., J. Budurushi, R. Rivest, P.B. Stark, P.J. Stuckey, V. Teague, and D. Vukcevic, 2021. Assertion-based approaches to auditing complex elections, with application to party-list proportional elections, In Krimmer, R., M. Volkamer, D. Duenas-Cid, O. Kulyk, P. Rønne, M. Solvak, and M. Germann (eds) *Electronic Voting. E-Vote-ID 2021. Lecture Notes in Computer Science, 12900*. Springer, Cham. doi: 10.1007/978-3-030-86942-7_4, Preprint: https://arxiv.org/abs/2107.11903

114. Ryan, P.Y.A., P.B. Roenne, P.B. Stark, D. Ostrev, N. Soroush, and F-E El Orche, 2021. Who was that masked voter? The tally won't tell! In In Krimmer, R., M. Volkamer, D. Duenas-Cid, O. Kulyk, P. Rønne, M. Solvak, and M. Germann (eds) *Electronic Voting. E-Vote-ID 2021. Lecture Notes in Computer Science, 12900*. Springer, Cham., doi: 10.1007/978-3-030-86942-7_8

115. Ryan, P.Y.A., S. Schneider, C. Schürmann, P.B. Stark, and W. Jamroga, 2022. A Declaration of Software Independence, in *Festschrift for Joshua Guttman*, Springer-Nature, Cham, to appear.

116. Benaloh, J., K. Foote, P. B. Stark, V. Teague, and D. S. Wallach, 2021. VAULT-Style Risk-Limiting Audits and the Inyo County Pilot, *IEEE Security & Privacy, 9*, 8–18, doi: 10.1109/MSEC.2021.3075107

**Papers submitted for publication**

117. Benjamini, Y., Y. Hechtlinger, and P.B. Stark, 2019. Confidence Intervals for Selected Parameters. Submitted to *JASA Theory and Methods*. Preprint: `https://arxiv.org/abs/1906.00505`

**Books and Edited Volumes**

118. Stark, P.B., 1997. *SticiGui: Statistics Tools for Internet and Classroom Instruction with a Graphical User Interface*. `https://www.stat.berkeley.edu/~stark/SticiGui`

119. Freedman, D.A., 2009. *Statistical Models and Causal Inference: A Dialog with the Social Sciences*, D. Collier, J.S. Sekhon and P.B. Stark, eds., Cambridge University Press, New York.

120. Howard, L., R.L. Rivest, and P.B. Stark, eds., 2019. *A Review of Robust Post-Election Audits: Various Methods of Risk-Limiting Audits and Bayesian Audits*, Brennan Center for Justice, `https://www.brennancenter.org/sites/default/files/2019-11/2019_011_RLA_Analysis_FINAL_0.pdf`

**Book Chapters**

121. Stark, P.B., 1988. Strict bounds and applications. in *Some Topics on Inverse Problems*, P.C. Sabatier, ed., World Scientific, Singapore.

122. Stark, P.B., 1990. Rigorous computer solutions to infinite-dimensional inverse problems. in *Inverse Methods in Action*, P.C. Sabatier, ed., Springer-Verlag. 462–467.

123. Stark, P.B., 2000. Inverse Problems as Statistics, in *Surveys on Solution Methods for Inverse Problems*, Colton, D., H.W. Engl, A.K. Louis, J.R. Mclaughlin and W. Rundell, eds., Springer-Verlag, New York, 253–275. Invited.

124. Schafer, C.M, and P.B. Stark, 2003. Inference in Microwave Cosmology: A Frequentist Perspective, in *Statistical Challenges in Astronomy*, E.D. Feigelson and G.J. Babu, eds., Springer, New York, 215–219.

125. Stark, P.B., 2004. Estimating power spectra of galactic structure: can Statistics help?, in *Penetrating Bars Through Masks of Cosmic Dust: The Hubble Tuning Fork Strikes a New Note*, D.L. Block, I. Puerari, K.C. Freeman, R. Groess and E.K. Block, eds., Springer, The Netherlands, 613–617. Invited.

126. Geller, R.J., F. Mulargia, and P.B. Stark, 2015. Why we need a new paradigm of earthquake occurrence, in *Subduction Dynamics: From Mantle Flow to Mega Disasters, Geophysical Monograph 211*, American Geophysical Union, G. Morra, D.A. Yuen, S. King, S.M. Lee, and S. Stein, eds., Wiley, New York, 183–191. Preprint: `https://www.stat.berkeley.edu/~stark/Preprints/paradigm16.pdf`

127. Stark, P.B., 2017. *Nullius in verba*, in *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*, J. Kitzes, D. Turek, and F. İmamoğlu, eds., University of California Press, Oakland, CA. `https://www.practicereproducibleresearch.org/core-chapters/0-preface.html`

128. Millman, K.J., K. Ottoboni, N.A.P. Stark, and P.B. Stark, 2017. Reproducible Applied Statistics: Is Tagging of Therapist-Patient Interactions Reliable?, in *The Practice of Reproducible Research: Case*

*Studies and Lessons from the Data-Intensive Sciences*, J. Kitzes, D. Turek, and F. İmamoğlu, eds. University of California Press, Oakland, CA. https://www.practicereproducibleresearch.org/case-studies/millmanOttoboniStark.html

129. Bell, S., J. Benaloh, M.D. Byrne, D. DeBeauvoir, B. Eakin, G. Fisher, P. Kortum, N. McBurnett, J. Montoya, M. Parker, O. Pereira, P.B. Stark, D.S. Wallach, and M. Winn, 2017. STAR-Vote: A Secure, Transparent, Auditable, and Reliable Voting System, in *Real-World Electronic Voting: Design, Analysis and Deployment*, F. Hao and P.Y.A. Ryan, eds. CRC Press, Boca Raton, FL.

**Technical Reports, White Papers, Unrefereed Publications**

130. Donoho, D.L. and P.B. Stark, 1988. Rearrangements and Smoothing, Tech. Rept. 148, Dept. Stat., Univ. Calif. Berkeley.

131. Donoho, D.L. and P.B. Stark, 1989. Recovery of a Sparse Signal When the Low Frequency Information is Missing, Tech. Rept. 179, Dept. Statistics, Univ. Calif. Berkeley.

132. Hengartner, N.W. and P.B. Stark, 1992. Conservative finite-sample confidence envelopes for monotone and unimodal densities, Tech. Rept. 341, Dept. Statistics, Univ. Calif. Berkeley.

133. Hengartner, N.W. and P.B. Stark, 1992. Confidence bounds on the probability density of aftershocks, Tech. Rept. 352, Dept. Statistics, Univ. Calif. Berkeley.

134. Stark, P.B., 1992. The Cosmic Microwave Background and Earth's Core-Mantle Boundary: A Tale of Two CMB's, Tech. Rept. 371, Dept. Statistics, Univ. Calif. Berkeley. https://www.stat.berkeley.edu/~stark/Preprints/371.pdf

135. Genovese, C. and P.B. Stark, 1993. $l_1$ spectral estimation: Algorithms and tests of super-resolution, in *GONG 1992: Seismic Investigations of the Sun and Stars, Proc. Astr. Soc. Pac. Conf. Ser.*, **42**, T. Brown, ed., 453–456.

136. Gough, D.O. and P.B. Stark, 1993. The significance of changes in solar free-oscillation splitting from 1986–1990, in *GONG 1992: Seismic Investigations of the Sun and Stars, Proc. Astr. Soc. Pac. Conf. Ser.*, *42*, T. Brown, ed., 221–224.

137. Stark, P.B., 1994. Simultaneous Confidence Intervals for Linear Estimates of Linear Functionals, Tech. Rept. 417, Dept. Statistics, Univ. Calif. Berkeley.

138. Sekii, T., C.R. Genovese, D.O. Gough, and P.B. Stark, 1995. Observational constraints on the internal solar angular velocity, in *Fourth SOHO Workshop: Helioseismology*, J.T. Hoeksema, V. Domingo, B. Fleck and B. Battrick, eds., ESA Publications Division SP-376, Noordwijk, Volume 2, 279–283.

139. Stark, P.B., 1997. Data Sampling Rate Reduction for the OERSTED Geomagnetic Satellite. `https://www.stat.berkeley.edu/~stark/Preprints/Oersted/writeup.htm`

140. Fodor, I.K., J.G. Berryman, and P.B. Stark, 1997. Comparison of Autoregressive and Multitaper Spectral Analysis for Long Time Series, *Stanford Exploration Project*, *95*, 331–355.

141. Borrill, J., and P.B. Stark, 1998. A fast method for bounding the CMB power spectrum likelihood function.

142. Stark, P.B., 1998. Testimony before U.S. House of Representatives Subcommittee on the Census, 5 May 1998. `https://www.stat.berke`

ley.edu/~stark/Census/house-5-5-98-pbs.pdf

143. Stark, P.B., 1998. Response to 25 Questions from Representative C. Maloney, Ranking Minority Member, U.S. House of Representatives Subcommittee on the Census, 13 May 1998. https://www.stat.berkeley.edu/~stark/Census/maloney-5-13-98-pbs.pdf

144. Stark, P.B., 1999. Letter to the Editor of USA Today regarding Sampling to Adjust the 2000 Census, 19 January. (original version: https://www.stat.berkeley.edu/~stark/Census/usaOpEd99.htm)

145. Komm, R.W., Y. Gu, F. Hill, P.B. Stark, and I.K. Fodor, 1998. Multitaper Spectral Analysis and Wavelet Denoising Applied to Helioseismic Data, *Proc. Tenth Cambridge Workshop on Cool Stars, Stellar Systems and the Sun*, ASP Conference Series, 154, CDR 783–790.

146. Komm, R.W., E. Anderson, F. Hill, R. Howe, A.G. Kosovichev, P.H. Scherrer, J. Schou, I. Fodor, and P. Stark, 1998. Comparison of SOHO-SOI/MDI and GONG Spectra, *Proceedings of the SOHO 6/GONG 98 Workshop*, 'Structure and Dynamics of the Interior of the Sun and Sun-like Stars,' Boston, USA, 1–4 June 1998, ESA SP-418, 253–256.

147. Komm, R.W., E. Anderson, F. Hill, R. Howe, I. Fodor, and P. Stark, 1998. Multitaper analysis applied to a 3-month time series, *Proceedings of the SOHO 6/GONG 98 Workshop*, 'Structure and Dynamics of the Interior of the Sun and Sun-like Stars,' Boston, USA, 1–4 June 1998, ESA SP–418, 257–260.

148. Fodor, I.K. and P.B. Stark, 1999. Multitaper Spectrum Estimates for Time Series with Missing Values, *Computing Science and Statistics*,

*31*: Models, Predictions, and Computing. K. Berk and M. Pourahmadi, eds., 383–387.

149. Stark, P.B., 1999. The 1990 and 2000 Census Adjustment Plans, Tech. Rept. 550, Dept. Statistics, Univ. Calif. Berkeley. `https://www.stat.berkeley.edu/~stark/Census/550.pdf` (revised May 2000)

150. Schafer, C.M. and P.B. Stark, 2006. Constructing Confidence Sets of Optimal Expected Size. Technical report 836, Department of Statistics, Carnegie Mellon University. `http://www.stat.cmu.edu/tr/tr836/tr836.html`

151. Jefferson, D., K. Alexander, E. Ginnold, A. Lehmkuhl, K. Midstokke and P.B. Stark, 2007. *Post Election Audit Standards Report—Evaluation of Audit Sampling Models and Options for Strengthening California's Manual Count*. `http://www.sos.ca.gov/elections/peas/final_peaswg_report.pdf`

152. Stark, P.B., 2009. Auditing a collection of races simultaneously. `http://arxiv.org/abs/0905.1422v1`

153. Stark, P.B., 2009. The status and near future of post-election auditing. `https://www.stat.berkeley.edu/~stark/Preprints/auditingPosition09.htm`

154. Stark, P.B., 2010. Why small audit batches are more efficient: two heuristic explanations. `https://www.stat.berkeley.edu/~stark/Preprints/smallBatchHeuristics10.htm`

155. Higdon, D., R. Klein, M. Anderson, M. Berliner, C. Covey, O. Ghattas, C. Graziani, S. Habib, M. Seager, J. Sefcik, P. Stark, and J. Stewart, 2010. Panel Report on Uncertainty Quantification and Error Analysis, in *Scientific Grand Challenges in National Security: The Role of*

*Computing at the Extreme Scale*, U.S. Department of Energy Office of Advanced Scientific Computing Research and National Nuclear Security Administration. http://science.energy.gov/~/media/ascr/pdf/program-documents/docs/Nnsa_grand_challenges_report.pdf

156. McLaughlin, K., and P.B. Stark, 2011. Workload Estimates for Risk-Limiting Audits of Large Contests. https://www.stat.berkeley.edu/~stark/Preprints/workload11.pdf

157. Scott, L.R., J. Brown, G.W. Bergantz, D. Cooley, C. Dawson, M. de Hoop, D. Estep, N. Flyer, E. Foufoula-Georgiou, M. Ghil, M. Knepley, R.J. LeVeque, L.-H. Lim, G. Papanicolaou, S. Prudhomme, A. Sandu, G. Schubert, F.J. Simons, P.B. Stark, M. Stein, S. Stein, T. Tanimoto, D. Tartakovsky, J. Weare, R. Weiss, G.B. Wright, and D. Yuen, 2012. Fostering Interactions Between the Geosciences and Mathematics, Statistics, and Computer Science. Technical Report TR-2012-02, Department of Computer Science, The University of Chicago. https://www.cs.uchicago.edu/research/publications/techreports/TR-2012-02

158. Bañuelos, J.H. and P.B. Stark, 2012. Limiting Risk by Turning Manifest Phantoms into Evil Zombies. http://arxiv.org/abs/1207.3413

159. Bretschneider, J., S. Flaherty, S. Goodman, M. Halvorson, R. Johnston, M. Lindeman, R.L. Rivest, P. Smith, and P.B. Stark, 2012. Risk-Limiting Post-Election Audits: Why and How. https://www.stat.berkeley.edu/~stark/Preprints/RLAwhitepaper12.pdf Endorsement by the American Statistical Association: http://www.amstat.org/policy/pdfs/StarkEtAlLetterOfSupport.pdf

160. Stark, P.B., 2012. Ballot-Polling Audits in Two Pages ($\pm 1$). https://www.stat.berkeley.edu/~stark/Preprints/bpa2pp.pdf

161. Benaloh, J., M. Byrne, P. Kortum, N. McBurnett, O. Pereira, P.B. Stark, and D.S. Wallach, 2012. STAR-Vote: A Secure, Transparent, Auditable, and Reliable Voting System. http://arxiv.org/abs/1211.1904

162. Lindeman, M., R.L. Rivest, and P.B. Stark, 2013. Machine Retabulation is not Auditing. https://www.stat.berkeley.edu/~stark/Preprints/retabNotAudit13.pdf

163. Lindeman, M., R.L. Rivest, and P.B. Stark, 2013. Retabulations, Machine-Assisted Audits, and Election Verification. https://www.stat.berkeley.edu/~stark/Preprints/retabulation13.htm

164. Verified Voting Foundation, 2015. *Principles for New Voting Systems*, http://www.verifiedvotingfoundation.org/voting-systems-principles/

165. Benaloh, J., R.L. Rivest, P.Y.A. Ryan, P.B. Stark, V. Teague, and P. Vora, 2015. End-to-end verifiability. http://arxiv.org/abs/1504.03778

166. Stark, P.B., 2016. Pay no attention to the model behind the curtain. https://www.stat.berkeley.edu/~stark/Preprints/eucCurtain15.pdf

167. Chilingirian, B., Z. Perumal, R.L. Rivest, G. Bowland, A. Conway, P.B. Stark, M. Blom, C. Culnane, and V. Teague, 2016. Auditing Australian Senate Ballots. https://arxiv.org/abs/1610.00127

168. Matthees, A., T. Kindlon, C. Maryhew, P. Stark, and B. Levin, 2016. A preliminary analysis of 'recovery' from chronic fatigue syndrome in the PACE trial using individual participant data. *Virology Blog*, http://www.virology.ws/2016/09/21/no-recovery-in-pace-tria

l-new-analysis-finds/

169. Rivest, R.L., P.B. Stark, and Z. Perumal, 2017. BatchVote: Voting rules designed for auditability, *Voting '17*, https://www.stat.berkeley.edu/~stark/Preprints/rivestEtal17.pdf

170. Benaloh, J., M. Bernhard, J.A. Halderman, R.L. Rivest, P.Y.A. Ryan, P.B. Stark, V. Teague, P.L. Vora, and D.S. Wallach, 2017. Public Evidence from Secret Ballots. https://arxiv.org/abs/1707.08619

171. Saltelli, A., and P.B. Stark, 2017. Statistiche al Tempo della Crisi, *Epidemiologia & Prevenzione*, *41*, 165–169, http://dx.doi.org/10.19191/EP17.3-4.P165.048.

172. Dabady, S., and P.B. Stark, 2017. Urban Foraging in Municipal Parks and Public Schools: Opportunities for Policymakers, *Berkeley Food Institute* and *Berkeley Open Source Food*, Policy Brief, July.

173. Lindeman, M., McBurnett, N., Ottoboni, K., and P.B. Stark, 2018. Next Steps for the Colorado Risk-Limiting Audit (CORLA) Program, https://arxiv.org/abs/1803.00698

174. Bochsler, D., J. Medzihorsky, C. Schürmann, and P.B. Stark, 2018. Report on the Identification of Electoral Irregularities by Statistical Methods, Opinion 874/2017, Report CDL-AD(2018)009, Venice Commission of the Council of Europe, http://www.venice.coe.int/webforms/documents/?pdf=CDL-AD(2018)009-e

175. Stark, P.B., 2018. An Introduction to Risk-Limiting Audits and Evidence-Based Elections, written testimony prepared for the Little Hoover Commission, https://www.stat.berkeley.edu/~stark/Preprints/lhc18.pdf

176. Ottoboni, K. and P.B. Stark, 2018. Random problems with R, https://arxiv.org/abs/1809.06520

177. Stark, P.B., 2019. Delayed Stratification for Timely Risk-Limiting Audits, https://www.stat.berkeley.edu/~stark/Preprints/delayed19.pdf

178. Mohanty, V., N. Akinyokun, A. Conway, C. Culnane, P.B. Stark, and V. Teague, 2019. Auditing Indian Elections, https://arxiv.org/abs/1901.03108

179. Stark, P.B., 2019. Notes on Student Evaluations of Teaching (SET), https://www.stat.berkeley.edu/~stark/Preprints/setNotes19.pdf

180. Stark, P.B., 2019. Comments on Draft VVSG 2.0, https://www.stat.berkeley.edu/~stark/Preprints/vvsg19.pdf

181. Stark, P.B., 2019. Risk-limiting audits and evidence-based elections, in *Election Auditing: Key Issues and Perspectives*, Caltech/MIT Voting Technology Project, http://electionlab.mit.edu/sites/default/files/2019-06/Election-Auditing-Key-Issues-Perspectives.pdf

182. Stark, P.B., and Ran Xie, 2019. There is no Way to Reliably Detect Hacked Ballot-Marking Devices, https://arxiv.org/abs/1908.08144

183. Lindeman, Mark, Harri Hursti, and Philip B. Stark, 2021. New Hampshire SB43 Forensic Audit Report, https://www.doj.nh.gov/sb43/documents/20210713-sb43-forensic-audit-report.pdf

184. Stark, P.B., 2022. ALPHA: Audit that Learns from Previously Hand-Audited Ballots, https://arxiv.org/abs/2201.02707

**Editorials, Reviews, Comments, Letters**

185. Stark, P.B., 2001. Review of *Who Counts?* by Margo J. Anderson and Stephen E. Fienberg, *Journal of Economic Literature*, **XXXIX**, 593–595. Invited.

186. Tenorio, L., E. Haber, P.B. Stark, D. Cox, O. Ghattas and W.W. Symes, 2008. Guest editors' introduction to the special section on statistical and computational issues in inverse problems, *Inverse problems*, *24*, 034001. Reprint: `http://www.iop.org/EJ/article/0266-5611/24/3/034001/ip8_3_034001.pdf`

187. Stark, P.B., 2008. Obituary: David A. Freedman, *IMS Bulletin*, *38*, 10–11. Preprint: `https://www.stat.berkeley.edu/~stark/Preprints/dafObituary.htm`

188. Collier, D., J.S. Sekhon and P.B. Stark, 2009. Preface to David A. Freedman, 2009. *Statistical Models: Theory and Practice, Revised edition*, Cambridge University Press, New York.

189. Ash, A., S. Pierson and P.B. Stark, 2009. Thinking outside the urn: Statisticians make their marks on U.S. Ballots. *Amstat News*, *384*. 37–40. Reprint: `http://www.amstat.org/outreach/pdfs/SP_ANJun09.pdf`

190. Audit working group, 2009. Data requirements for vote-tabulation audits: Statement to NIST, ElectionAudits.org. `http://electionaudits.org/niststatement`

191. Hall, J.L., P.B. Stark, H.E. Brady, and J.S. Sekhon, 2009. Comments on the CA SoS Precinct Level Data Pilot Project. `https://www.stat.berkeley.edu/~stark/Preprints/CACountyData09.pdf`

192. Stark, P.B., 2010. Testimony before California State Assembly Committee on Elections and Redistricting, 20 April 2010. `https://www.stat.berkeley.edu/~stark/Preprints/ab2023-assembly-20-4-10.htm`

193. Stark, P.B., 2010. Testimony before California State Senate Committee on Elections, Reapportionment and Constitutional Amendments, 15

June 2010. https://www.stat.berkeley.edu/~stark/Preprints/ab2023-senate-15-6-10.htm

194. Stark, P.B., 2010. Open letter to UC Berkeley Law School Dean Christopher Edley regarding UC Online Education. http://www.samefacts.com/2010/08/archive/technology-and-society/online-education-notes-from-the-field/

195. Stark, P.B., 2010. Testimony proffered to Judge Ira Warshawsky, New York Supreme Court, 4 December 2010. https://www.stat.berkeley.edu/~stark/Preprints/nysd7-4-12-10.htm

196. Letter to President Barack Obama re election technology, 6 December 2012 (with Barbara Simons and 48 others).

    http://www.verifiedvoting.org/wp-content/uploads/2012/12/PresidentLetter.pdf

197. Bates, D., P. Courant, C. Hesse, K. Hoekstra, M. Lovell, J. Midgley, G. Nunberg, P. Papadopoulos, H. Schiraldi, G. Sposito, P.B. Stark, and M. van Houweling, 2013. Final Report of the Commission on the Future of the UC Berkeley Library http://evcp.berkeley.edu/sites/default/files/FINAL_CFUCBL_report_10.16.13.pdf

198. Stark, P.B., 2013. Leave Election Integrity to Chance, *The Huffington Post*, 12 July 2013. http://www.huffingtonpost.com/american-statistical-association/leave-election-integrity-_b_3580649.html

199. Stark, P.B., and R. Freishtat, 2013. Evaluating Evaluations, Part 1: Do student evaluations measure teaching effectiveness?, *The Berkeley Teaching Blog*, 9 October 2013. http://teaching.berkeley.edu/blog/evaluating-evaluations-part-1 *The Berkeley Blog*, 14 October 2013. http://blogs.berkeley.edu/2013/10/14/do-student-evaluations-measure-teaching-effectiveness/

200. Stark, P.B., and R. Freishtat, 2013. What Evaluations Measure, Part 2: What exactly do student evaluations measure?, *The Berkeley Teaching Blog*, 17 October 2013. http://teaching.berkeley.edu/blog/what-evaluations-measure-part-ii *The Berkeley Blog*, 21 October

2013. http://blogs.berkeley.edu/2013/10/21/what-exactly-do-student-evaluations-measure/

201. Stark, P.B., 2015. Out of the Weeds, *Lucky Peach*, 29 June 2015, Invited. http://luckypeach.com/out-of-the-weeds/

202. Stark, P.B., 2015. Salad from the Sidewalk, *The New York Times*, 9 July 2015, Invited. http://www.nytimes.com/interactive/2015/07/09/opinion/09bittman.html

203. Arratia, R., S. Garibaldi, L. Mower, and P.B. Stark, 2015. Some people have all the luck . . . or do they? *MAA Focus*, August/September, 37–38. http://www.maa.org/sites/default/files/pdf/MAAFocus/Focus_AugustSeptember_2015.pdf

204. Stark, P.B., 2015. Science is "show me," not "trust me," *Berkeley Initiative for Transparency in the Social Sciences*, 31 December, Invited. http://www.bitss.org/2015/12/31/science-is-show-me-not-trust-me/

205. Boring, A., K. Ottoboni, and P.B. Stark, 2016. Student evaluations of teaching are not only unreliable, they are significantly biased against female instructors, *London School of Economics and Political Science Impact Blog*, 4 February, Invited. http://blogs.lse.ac.uk/impactofsocialsciences/2016/02/04/student-evaluations-of-teaching-gender-bias/

206. Stark, P.B., 2016. The value of $P$-values, *The American Statistician*, *70*, DOI:10.1080/00031305.2016.1154108, Invited. http://amstat.tandfonline.com/doi/suppl/10.1080/00031305.2016.1154108

207. Stark, P.B., 2016. Review of *Privacy, Big Data, and the Public Good: Frameworks for Engagement*, by J. Lane, V. Stodden, S. Bender, and H. Nissenbaum, eds., *The American Statistician*, Invited. http://dx.doi.org/10.1080/00031305.2015.1068625

208. Saltelli, A., S. Funtowicz, M. Giampietro, D. Sarewitz, P.B. Stark, and J.P. van der Sluijs, 2016. Climate Costing is Politics not Science, *Nature, 532*, 177. go.nature.com/wamqwt http://dx.doi.org/10.1038/532177a (signatory list) Reprint: https://www.stat.berkeley.edu/~stark/Preprints/saltelliEtal16.pdf

209. Stark, P.B., 2016. Eat your Weedies!, *The Urbanist*, Issue 549, February 2016, Invited. http://www.spur.org/publications/urbanist-article/2016-03-09/walking-oakland

210. Stark, P.B., and P.L. Vora, 2016. Maryland voting audit falls short, *The Baltimore Sun*, 28 October 2016. http://www.baltimoresun.com/news/opinion/oped/bs-ed-voting-audit-20161028-story.html

211. Rivest, R.L., and P.B. Stark, 2016. Still time for an election audit: Column, *USA Today*, 18 November 2016. http://www.usatoday.com/story/opinion/2016/11/18/election-audit-paper-machines-column/93803752/

212. Harvie Branscomb, Joe Kiniry, Mark Lindeman, Neal McBurnett, Ronald L. Rivest, John Sebes, Pamela Smith, Philip B. Stark, Howard Stanislevic, Paul Stokes, Poorvi L. Vora, and Luther Weeks, 2016. Comments on 2016 General Election: Post-Election Tabulation Audit Procedures, https://www.seas.gwu.edu/~poorvi/MarylandAudits/Final-Audit-Comments-11-27-16.pdf

213. Letter to Senators Ron Johnson and Claire McCaskill, U.S. Senate Committee on Homeland Security and Governmental Affairs, re appointment of Thomas P. Bossert as White House Homeland Security Advisor, 11 January 2017 (with Marc Rotenberg, EPIC President, and 39 others). https://epic.org/policy/SHSGAC_EPIC_Bossert_Jan_2017.pdf

214. Letter to Senator Lindsey Graham re election integrity and cybersecurity, 13 January 2017 (with Duncan Buell, JoAnne Day, J. Alex Halderman, Eleanor Hare, Frank Heindel, Candice Hoke, Joseph Kiniry, Marilyn Marks, Neal McBurnett, Stephanie Singer, Jason Grant Smith, and Daniel M. Zimmerman). https://www.scribd.com/document/336463904/Experts-Letter-to-Lindsey-Graham-20170113

215. An open letter to *Psychological Medicine* about "recovery" and the PACE trial, 13 March 2017 (with 73 others). http://www.virology.ws/2017/03/13/an-open-letter-to-psychological-medicine-about-recovery-and-the-pace-trial/

216. Letter to Georgia Secretary of State Brian Kemp, 15 April 2017 (with Andrew W. Appel, Duncan Buell, Larry Diamond, David L. Dill, Richard DeMillo, Michael Fischer, J. Alex Halderman, Joseph Lorenzo Hall, Martin E. Hellman, Candice Hoke, Harri Hursti, David Jefferson, Douglas W. Jones, Joseph Kiniry, Justin Moore, Peter G. Neumann, Ronald L. Rivest, John E. Savage, Bruce Schneier, Dr. Barbara Simons, Dr. Vanessa Teague) https://verifiedvoting.org/wp-content/uploads/2020/08/KSU.Kemp_.5.24.17.pdf

217. Rivest, R.L., and P.B. Stark, 2017. When is an Election Verifiable? *IEEE Security & Privacy*, *15*, 48–50. https://www.computer.org/csdl/mags/sp/2017/03/msp2017030048.pdf

218. Open-Source Software Won't Ensure Election Security, 24 August 2017 (with Matt Bishop, Josh Benaloh, Joseph Kiniry, Ron Rivest, Sean Peisert, Joseph Hall, Vanessa Teague) https://lawfareblog.com/open-source-software-wont-ensure-election-security

219. Saltelli, A., and P.B. Stark, 2018. Fixing stats: social and cultural issue, *Nature* Correspondence, 16 January, doi: 10.1038/d41586-018-00647-9, https://www.nature.com/articles/d41586-018-00647-9

220. Expert statement, Support for Security Research, Center for Democracy and Technology, 10 April 2018 (with 57 others) https://cdt.org/files/2018/04/2018-04-09-security-research-expert-statement-final.pdf

221. Stark, P.B., 2018. Before reproducibility must come preproducibility, *Nature*, *557*, 613. doi: 10.1038/d41586-018-05256-0 https://www.nature.com/articles/d41586-018-05256-0, https://rdcu.be/PoBV

222. Letter to Georgia SAFE Commission, 7 January 2019. (with Mustaque Ahamad, Andrew W. Appel, David Bader, Matthew Bernhard, Matt Blaze, Duncan Buell, Richard DeMillo, Larry Diamond, David L. Dill, Michael Fischer, Adam Ghetti, Susan Greenhalgh, Candice Hoke, Harri Hursti, David Jefferson, Douglas W. Jones, Justin Moore, Peter G. Neumann, Ronald L. Rivest, Aviel Rubin, John E. Savage, Barbara Simons, Eugene Spafford)

223. Letter to Georgia Subcommittee on Voting Technology of Government Affairs Committee, 19 February 2019. https://www.stat.berkeley.edu/~stark/Preprints/bmd19.pdf

224. Letter to California Secretary of State Alex Padilla regarding certification of the Los Angeles Voting System for all People (VSAP), 20 January 2020. https://www.stat.berkeley.edu/~stark/Preprints/vsap-sos-20.pdf

225. Letter to Director Chris Krebs, Cybersecurity and Infrastructure Security Agency, Department of Homeland Security, regarding Internet voting and online return of voted ballots (joint with 20 others), 7 May 2020. https://www.stat.berkeley.edu/~stark/Preprints/cisa-covid-20.pdf

226. Letter to California Assemblymember Bill Quirk in support of AB2400, 7 May 2020. https://www.stat.berkeley.edu/~stark/Preprints/ab2400-20.pdf

227. Letter to California Assemblymember Bill Quirk regarding questions about AB2400, 9 May 2020. https://www.stat.berkeley.edu/~stark/Preprints/ab2400-questions-20.pdf

228. A. Saltelli, G. Bammer, I. Bruno, E. Charters, M. Di Fiore, E. Didier, W.N. Espeland, J. Kay, S. Lo Piano, D. Mayo, R. Pielke Jr, T. Portaluri, T.M. Porter, A. Puy, I. Rafols, J.R. Ravetz, E. Reinert, D. Sarewitz, P.B. Stark, A. Stirling, J. van der Sluijs, and P. Vineis, 24 June 2020. Five ways to ensure that models serve society: a manifesto, *Nature*, https://www.nature.com/articles/d41586-020-01812-9

229. Peter Neumann, Eugene Spafford, Richard DeMillo, Andrew Appel, Philip Stark, Duncan Buell, Alex Halderman, David Jefferson, Bruce Schneier, and Harri Hursti, 2020. Supreme Court Brief Of *Amici Curiae* Individual Election Security Experts In Support Of Certiorari https://www.supremecourt.gov/DocketPDF/19/19-1399/148470/20200722191600355_1%20Brief%20of%20Amici%20Curiae%20Individual%20Election%20Security%20Experts%20in%20Support%20of%20Certiorari.pdf

230. Leanne Watt, Richard Painter, and Philip B. Stark, 2020. There is a way to make America's 2020 election results trustworthy—but we have to start now. *NBC News: Think*, https://www.nbcnews.com/think/opinion/there-way-make-america-s-2020-election-results-trustworthy-we-ncna1243163

231. Stark, P.B., A.K. Glazer, and A. Boring, 2020. Review of Uttl and Violo (2020) Small samples, unreasonable generalizations, and outliers: Gender bias in student evaluation of teaching or three unhappy students?, *ScienceOpen*, doi: 10.14293/S2199-1006.1.SOR-EDU.APUTIGR.v1.RHKDLN https://www.scienceopen.com/document/review?vid=a3e3fb73-62ce-47c4-a501-b7373c14fa3b&review=11b242c0-bbb5-4443-b4fc-988d4145eab2

232. Scientists say no credible evidence of computer fraud in the 2020 election outcome, but policymakers must work with experts to improve confidence, Public statement with 59 signatories, 16 November 2020. https://www.mattblaze.org/papers/election2020.pdf

233. Elections Are Partisan Affairs. Election Security Isn't, Public statement with 50 signatories, 17 November 2020. https://www.eff.org/deeplinks/2020/11/elections-are-partisan-affairs-election-security-isnt

234. Stark, P.B., E. Perez, and J.A. Halderman, 2021. Elections should be grounded in Evidence, not Blind Trust, *Barrons*, 4 January 2021 https://www.barrons.com/articles/elections-should-be-grounded-in-evidence-not-blind-trust-51609769710

235. Stark, P.B., and D. Mema, 2021. Letter to Committee on Government Administration and Elections, Connecticut General Assembly, re HB 6575 AN ACT CONCERNING RISK-LIMITING AUDITS FOR ELECTION RESULTS. https://cga.ct.gov/2021/gaedata/tmy/2021HB-06575-R000310-Stark,%20Philip-Open%20Source%20Election%20Technology%20Institute,%20Inc.-TMY.PDF

236. Ahamad, M., D. Buell, R.A. DeMillo, C. Hoke, H. Hursti, D. Jefferson, W. Lee, and P.B. Stark, 2021. Letter to Dr. Shirley N. Weber, Secretary of State of the State of California re Critical New Risks to

the Recall Election. https://coaltionforgoodgovernance.sharefile.com/share/view/s284be5b54760403f9ebafedeea9a1955

## Software

1. Stark, P.B., and R.L. Parker, 1994. BVLS (Bounded-Variable Least Squares), STATLIB (Carnegie-Mellon University ftp server) http://lib.stat.cmu.edu/general/bvls

2. Java Applets for Statistics https://www.stat.berkeley.edu/~stark/Java/Html/index.htm

3. Millman, K., K. Ottoboni, P.B. Stark, and S. van der Walt, 2015. `permute` — a Python package for permutation tests https://github.com/statlab/permute

4. Ottoboni, K., and P.B. Stark, 2018. `cryptorandom` — a Python package for pseudorandom number generation and pseudorandom sampling using cryptographic hash functions https://github.com/statlab/cryptorandom

5. Tools for election audits
   https://www.stat.berkeley.edu/~stark/Vote/auditTools.htm
   https://www.stat.berkeley.edu/~stark/Vote/ballotPollTools.htm
   https://github.com/pbstark/auditTools
   https://github.com/pbstark/DKDHondt14
   https://github.com/pbstark/CORLA18
   https://github.com/pbstark/SHANGRLA

6. Tools to assess suspected lottery fraud
   https://github.com/pbstark/Lotto

7. Miscellaneous software and teaching materials:
   https://www.stat.berkeley.edu/~stark/Code
   https://github.com/pbstark

# Patents

1. McDonald, T., S. Smuin, B. Smuin, and P.B. Stark, 6 December 2012. United States Patent 9,510,638. Securement strap for a sandal.

# Selected Presentations

318. Do pre-analysis plans protect against false discoveries?, Workshop on Pre-Analysis Plans for the Statistical Analysis of Large-Scale and Complex Datasets, British National Centre for Research Methods, Edinburgh, Scotland, UK, 28 October 2021. https://www.stat.berkeley.edu/~stark/Seminars/reproEdinb21.slides.pdf

317. Eat the Weeds with Professor Philip Stark, *Foodie Pharmacology with Dr. Cassandra Quave*, July 2021. https://foodiepharmacology.podbean.com/e/eat-the-weeds-with-prof-philip-stark

316. Today's Electronic Voting Machines, An Examination of the Use and Security of Ballot Marking Devices, Free Speech For People, 21 June 2021. Slides: https://www.stat.berkeley.edu/~stark/Seminars/bmd-p-fsfp-21.slides.pdf Video: https://www.youtube.com/watch?v=aQXYHaHCjRA&t=361s

315. Evidence-Based Elections and the status of the Windham, NH, forensic audit, CCR-L, La Jolla, CA, 9 June 2021. Slides: https://www.stat.berkeley.edu/~stark/Seminars/auditCCRL21.slides.pdf, https://www.stat.berkeley.edu/~stark/Seminars/auditNH.pdf

314. Preproducibility: What may we, with advantage, omit? Dow Chemical, 10 May 2021. Slides: https://www.stat.berkeley.edu/~stark/Seminars/reproDow21.slides.pdf

313. Evidence-Based Elections, New Hampshire Election Integrity Project, 14 April 2021. Slides: https://www.stat.berkeley.edu/~stark/Seminars/auditNH21.slides.pdf

312. Student Evaluations of Teaching, Denison University, 14 April 2021. Slides: https://www.stat.berkeley.edu/~stark/Seminars/setDenison21.htm

311. Invited panelist, NSF Workshop, *Lessons Learned: Navigating a Presidential Election Through a Pandemic*, 25–26 March 2021. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/auditNSF21.slides.pdf`

310. Invited panelist, Free and Fair Elections: Securing the Vote and Preparing for What's Next, Center for Security in Politics, University of California, Berkeley, 10 March 2021. Video: `https://www.youtube.com/watch?v=z5ovPya7P1M`

309. Evaluating the Evaluation of Teaching in Higher Education: What the Data from Student Surveys Do and Don't Tell Us, Berkeley Evaluation and Assessment Research (BEAR) Center, University of California, Berkeley, 9 March 2021. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setUCBED21.htm` Video: `https://berkeley.app.box.com/s/dh4x3w9s3voqm9dqiwrmmeumctl5hzg7`

308. Urban Foraging, Sustainability, Biodiversity, and Food Security, *Wild and Fermented Foods DeCal*, University of California, Berkeley, 1 March 2021.

307. Evidence-based elections, Special Physics/Applied Mathematics Colloquium, University of Colorado, Boulder, CO, 24 February 2021. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/auditCU21.slides.pdf`

306. Evidence-based elections, Department of Statistics, Carnegie-Mellon University, Pittsburgh, PA, 22 February 2021. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/auditCMU21.slides.pdf`

305. Evidence-based elections, Santa Fe Institute, 27 January 2021. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/auditSantaFe21.slides.pdf`

304. Election Integrity, Bruin Republicans at UCLA, University of California, Los Angeles, 18 November 2020.

303. Urban Foraging, Sustainability, Biodiversity, and Food Security, *Wild and Fermented Foods DeCal*, University of California, Berkeley, 16 November 2020. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/forageDecal20-2.slides.pdf`

302. Berkeley Conversations: Election Integrity and Security, Division of Computing, Data Science, and Society, University of California, Berkeley, 26 October 2020. https://bids.berkeley.edu/events/election-integrity-and-security

301. Evidence-Based Elections, *The Influencers Salon*, 10 October 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/auditInfluencers20.slides.pdf

300. Guest lecturer, EECS 34525, *Election Cybersecurity*, University of Michigan, Ann Arbor, MI 5 October 2020.

299. Testing Cannot Tell Whether Ballot-Marking Devices Alter Election Outcomes, Institute for Social Research, Center for Political Studies, University of Michigan, Ann Arbor, MI, 30 September 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/bmd-p-um-20.slides.pdf

298. Evidence-Based Elections, Stanford Biostatistics Workshop, Stanford University, Stanford, CA, 24 September 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/auditStanfordBio20.slides.pdf

297. Evidence-Based Elections, Center for Data Analysis and Risk (CDAR), University of California, Berkeley, 15 September 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/auditCDAR20.slides.pdf

296. Your Prior Can Bite You on the Posterior: Contrasting Bayesian and Frequentist Measures of Uncertainty, JPL Science Visitor and Colloquium Program – Earth Science Seminar, 1 September 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/uqJPL20.slides.html

295. Testing cannot tell whether Ballot-Marking Devices alter election outcomes, Def Con Voting Village, 6–8 August 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/bmd-p-talk-20.slides.pdf

294. Representing Certainties in Uncertainty Quantification: Constraints Versus Priors, Mathematical and Statistical Synergies in Uncertainty

Quantification—Invited Papers Section on Physical and Engineering Sciences, Uncertainty Quantification in Complex Systems Interest Group, Quality and Productivity Section, Joint Statistical Meetings (JSM), 2–6 August 2020. Slides: https://www.stat.berkeley.edu/~stark/Seminars/uqJSM20.slides.html

293. The Future of Food: Our Salvation in Urban Foraging, San Francisco Design Week, 20 June 2020. https://sfdesignweek.org/events/the-future-of-food-our-salvation-in-urban-foraging/

292. Risk-Limiting Audits, Michigan Association of Municipal Clerks, 11 June 2020. https://www.stat.berkeley.edu/~stark/Seminars/auditMI20.slides.pdf

291. Panelist, The Bounty of Biodiversity: Empowering Cultural Connections to Nature through Foraging, 30 May 2020. https://onblend.tealeaves.com/biodiversity-virtual-event/

290. Panelist, How COVID-19 will shape the 2020 election, University of California, Berkeley, 8 May 2020. https://news.berkeley.edu/2020/05/08/how-covid-19-will-shape-the-2020-election/

289. Panelist, The Fight For Election Security, Electronic Frontier Foundation and Free Speech for People, 6 May 2020. https://www.youtube.com/watch?v=mVcTs9H62SE

288. Student Evaluations of Teaching: Incomplete, or Fail? EECS 375, University of California, Berkeley, 24 April 2020. https://www.stat.berkeley.edu/~stark/Seminars/setUCBEECS20.htm

287. Risk-Limiting Audits and Evidence-Based Elections, Joint UC Berkeley – UC Davis Statistics Colloquium, 21 April 2020. https://www.stat.berkeley.edu/~stark/Seminars/auditUCBUCD20.slides.pdf

286. Why is securing elections the hardest problem in IT security? RSA Conference, San Francisco, CA, 26 February 2020. https://www.rsaconference.com/usa/agenda/why-is-securing-elections-the-hardest-problem-in-it-security

285. Evidence-Based Elections: The Role of Risk-Limiting Audits, Election Integrity in the Networked Information Era, Georgetown Law, Washington, DC, 7 February 2020. https://www.georgetowntech.org/electionintegrity https://www.stat.berkeley.edu/~stark/Seminars/auditGLaw20.slides.pdf

284. Copyright, Academic Freedom, and Moral Hazard, Publish or Perish Reframed: Navigating the New Landscape of Scholarly Publishing, UC Berkeley Library, Berkeley, CA, 31 January 2020. https://www.stat.berkeley.edu/~stark/Seminars/reproUCBLib20.slides.pdf

283. Risk-Limiting Audits, MAA Invited Paper Session on "Can Mathematics Help Us Trust Our Elections Again?," Joint Mathematics Meetings, Denver, CO, 15–18 January 2020. https://www.stat.berkeley.edu/~stark/Seminars/auditMAA20.slides.pdf

282. Election Hacking and Security, Kensington Public Library, Kensington, CA, 13 January 2020. https://www.stat.berkeley.edu/~stark/Seminars/auditKensing20.slides.pdf

281. Eat your Weedies: How Wild and Feral Foods can be a Delicious & Nutritious Addition to your Diet, *Seabourn Ovation*, 25 November 2019. https://www.stat.berkeley.edu/~stark/Seminars/forageSeabourn19.slides.pdf (with D. Miller)

280. The Shape of Truth: Perspectives from Science and the Humanities, panelist (with John Campbell, Randy Schekman, Namwali Serpell), Flatiron Institute, New York, NY, 5 November 2019.

279. Practical Countermeasures for Election Hacking, Influencers *Miror*, San Francisco, CA, 18 October 2019. https://www.stat.berkeley.edu/~stark/Seminars/auditInfluencers19.html

278. Seismic Salad: Fresh Food after The Big One, Berkeley Emergency Prep Fair, Berkeley, CA, 12 October 2019.

277. RLAs and my Beefs with BMDs, The Coming 2020 Election Crisis: In Paper We Trust—3rd National Election Integrity Conference, Berkeley, CA, 5–6 October 2019. https://www.stat.berkeley.edu/~stark/Seminars/auditVRTF19.slides.pdf. Video: https://youtu.be/3kICZB1pq0A

276. Trustworthy Elections: Evidence and Dispute Resolution, Voting Village, Def Con, Las Vegas, NV, 8–11 August 2019. https://www.stat.berkeley.edu/~stark/Seminars/auditDefcon19.slides.pdf

275. *P*-values are really quite nifty, Invited panel: "The *P*-Value Controversy: Where Do We Go from Here?," 2019 Joint Statistical Meetings, Denver, Colorado, 29 July 2019. https://www.stat.berkeley.edu/~stark/Seminars/jsm-p-values-19.slides.pdf

274. Growing Food on a Changing Planet: Roles for Biomimicry San Francisco Design Week, San Francisco, CA, 27 June 2019. https://www.stat.berkeley.edu/~stark/Seminars/forageTeaLeaves19.slides.pdf

273. Evidence-Based Elections and Risk-Limiting Audits, University of Melbourne, Melbourne, Australia, 17 April 2019. https://www.stat.berkeley.edu/~stark/Seminars/auditUMelb19.htm

272. Student Evaluations of Teaching Do Not Measure Teaching Effectiveness. What Do They Measure? School of Computing and Information Systems, University of Melbourne, Melbourne, Australia, 16 April 2019. https://www.stat.berkeley.edu/~stark/Seminars/setUMelb19.htm

271. Wild/Feral Food Identification Walk, Society for Conservation Biology, Berkeley Chapter, University of California, Berkeley, 13 March 2019.

270. Preproducibility: What may we, with advantage, omit?, Aquaculture 2019 Workshop on Zebrafish Husbandry, Keynote lecture, New Orleans, LA, 7–11 March 2019, https://www.stat.berkeley.edu/~stark/Seminars/reproZebra19.pdf

269. Protecting the Front Line: County Election Security in the 21st Century, Panel on election and voting technology, Google, Mountain View, CA, 6 March 2019.

268. Predictive Policing and the ETAS Model, National Association of Criminal Defense Lawyers, San Francisco, CA, 11 February 2019. https://www.stat.berkeley.edu/~stark/Seminars/nacdl19.pdf

267. Student Evaluations, Quantifauxcation, and Gender Bias, Information Theory Forum, Stanford University, Stanford, CA, 8 February 2019. https://www.stat.berkeley.edu/~stark/Seminars/setStanford19.htm, Video: https://youtu.be/xo_ECVymy7Y

266. TweetChat on Risk-Limiting Audits, MIT Election Data and Science Lab, 7 February 2019.

265. Student Evaluations, Quantifauxcation, and Gender Bias, The Science of Teaching: Evidence-Based Approaches in Biology Education Division of Biological Sciences Seminar Program, University of California, San Diego, San Diego, CA, 4 February 2019. https://www.stat.berkeley.edu/~stark/Seminars/setUCSD19.htm

264. Risk-Limiting Audits, Making Every Vote Count: A Practical Guide to Risk-Limiting Audits, Washington, DC, 31 January 2019. https://www.stat.berkeley.edu/~stark/Seminars/auditDC19.pdf Video: https://youtu.be/gMbz0_dizoA

263. Classical Statistics in Modern Elections, Conference in Honor of Prof. Yoav Benjamini's 70th Birthday, Jerusalem, Israel, 17–20 December 2018. https://www.stat.berkeley.edu/~stark/Seminars/auditBenja18.htm

262. Simulating a Ballot-Polling Risk-Limiting Audit with Cards and Dice, Multidisciplinary Conference on Election Auditing, MIT, Cambridge, MA, 7–8 December 2018. https://www.stat.berkeley.edu/~stark/Seminars/ballotPollingSimulation.pdf

261. Risk-Limiting Audits and Evidence-Based Elections, Multidisciplinary Conference on Election Auditing, MIT, Cambridge, MA, 7–8 December 2018. https://www.stat.berkeley.edu/~stark/Seminars/auditMIT18.htm

260. The Shape of Truth: Perspectives from Science and the Humanities, panelist (with Randy Schekman and John Campbell), Los Angeles, CA, 28 November 2018.

259. How to Tell if an Election Has Been Hacked, Nerd Nite, Oakland, CA, 26 November 2018. https://www.stat.berkeley.edu/~stark/Seminars/auditNerdNite18.htm

258. Student Evaluations of Teaching: Managing Bias and Increasing Utility, Center for Education Innovation and Learning in the Sciences, University of California, Los Angeles, Los Angeles, CA, 2 November 2018. https://www.stat.berkeley.edu/~stark/Seminars/setUCLA18.htm

257. Student evaluations of teaching do not measure teaching effectiveness. What do they measure?, Stanford-Berkeley Joint Colloquium, Department of Statistics, Stanford University, Stanford, CA, 30 October 2018. https://www.stat.berkeley.edu/~stark/Seminars/setStanford18.htm

256. Will my vote count? Political Science 191, University of California, Berkeley, 23 October 2018.

255. Availability, Safety, Palatability, and Nutrient Density of Wild and Feral Foods in Urban Ecosystems, ESPM 117, University of California, Berkeley, 16 October 2018. https://www.stat.berkeley.edu/~stark/Seminars/forageESPM18.pdf

254. Preproducibility, STEM Carib Conference, University College of the Cayman Islands, Grand Cayman Island, 9–12 October 2018 https://www.stat.berkeley.edu/~stark/Seminars/preproducibilityUCCI18.htm

253. Measuring Gender Bias in Student Evaluations of Teaching, STEM Carib Conference, University College of the Cayman Islands, Grand Cayman Island, 9–12 October 2018 https://www.stat.berkeley.edu/~stark/Seminars/setUCCI18.htm

252. PSHA is naked—and it doesn't work, Workshop: Which Way SPRA?, 14th Conference on Probabilistic Safety Assessment and Management, UCLA, Los Angeles, CA, 16 September 2018. https://www.stat.berkeley.edu/~stark/Seminars/psha-ucla-18.slides.html

251. Resilient Greens: Nutrition, Toxicology, & Availability of Edible Weeds in the East Bay, with D. Miller, T. Carlson, and K.R. de Vasquez, Global Climate Summit, University of California, Davis, 10 September 2018.

250. Statistical Modeling, Machine Learning, and Inference, Machine Learning for Science Workshop, Lawrence Berkeley National Laboratory, Berkeley, CA, 4–6 September 2018. https://www.stat.berkeley.edu/~stark/Seminars/lbl-ml18.slides.html

249. Securing our Elections, Town Hall Meeting with Congressman Mark DeSaulnier and Secretary of State Alex Padilla, Walnut Creek, CA, 13 August 2018. https://desaulnier.house.gov/media-center/press-releases/congressman-desaulnier-announces-town-hall-securing-our-elections

248. Soil to Belly, Health from the Soil Up: A Soil Health to Human Health Learning Lab, Paicines Ranch, Paicines, CA, 9–12 August, 2018.

247. You want flies with that? Farm Biodiversity and Food Safety, Health from the Soil Up: Bridging the Silos of Health and Agriculture, Center for Occupational and Environmental Health, University of California, Berkeley, 9 August 2018. https://www.stat.berkeley.edu/~stark/Seminars/flies18.pdf

246. Lectures on Foundations of Statistics and Inference, Tokyo-Berkeley Data Science Boot-Up Camp, 9–19 July 2018, Graduate School of Mathematical Sciences, University of Tokyo, 9–19 July 2018. (3 lectures) Syllabus: https://github.com/pbstark/basicsKavli18/blob/master/kavliStat18.pdf

245. With Great Power Comes Great Responsibility: Multivariate Permutation Tests and Their Numerical Implementation, International Society for Nonparametric Statistics (ISNPS2018), Salerno, Italy, 11–15 June 2018. https://www.stat.berkeley.edu/~stark/Seminars/prngISNPS18.slides.html

244. Preproducibility, Reproducibility, Replicability: First Things First, Conference on Geodynamics and Big Data, Palau, Sardinia, 9–11 June 2018. https://www.stat.berkeley.edu/~stark/Seminars/reproYuen18.htm

243. Preproducibility, Reproducibility, Replicability: First Things First, All Souls College, University of Oxford, 29 May 2018. lides: https://www.stat.berkeley.edu/~stark/Seminars/reproOX18.htm

242. Separating Signal from Noise: Measuring Gender Bias in Student Evaluations of Teaching, International Conference on Software Engineering, Gothenburg, Sweden, 27 May–3 June 2018. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setICSE18.htm`

241. Where the Wild Foods Are: Everywhere!, Nordic Food Lab, University of Copenhagen, Copenhagen, Denmark, 24 May 2018. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/bosf18.pdf`

240. Wild and Feral Foods in the Mission District—and how to use them, Wildhawk, San Francisco, CA, 17 May 2018.

239. Don't bet on your random number generator, Department of Statistics and Data Science, University of Texas, Austin, TX 4 May 2018.

238. Student evaluations of teaching (mostly) do not measure teaching effectiveness, Simon Fraser University, Burnaby, BC, 26 April 2018. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setSFU18.htm` Video: `https://www.youtube.com/watch?v=5haOjlfJDb8&feature=youtu.be`

237. Public Engagement with Science, Molecular and Cell Biology 15, University of California, Berkeley, CA, 27 February 2018.

236. FoodInno: Wild Food, Statistics 98, University of California, Berkeley, 12 February 2018.

235. Quantifying Uncertainty in Inferences in Physics and Astronomy, Kavli IPMU–Berkeley Symposium "Statistics, Physics and Astronomy," Kavli Institute for the Physics and Mathematics of the Universe, Tokyo, Japan, 11–12 January 2018. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/uqKavli18.htm`

234. Teaching Evaluations (Mostly) Do Not Measure Teaching Effectiveness, American Association of Physics Teachers Winter Meeting, San Diego, CA, 6–9 January 2018. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setAAPT18.htm`

233. Big Data, Society, and Data Science Education, University of Hong Kong, Shenzhen Campus, Shenzhen, China, 29 December 2017.

Slides: `https://www.stat.berkeley.edu/~stark/Seminars/bigDataHKUSZ17.pdf`

232. Big Data and Social Good, Institute for Geodesy and Geophysics, Wuhan, China, 27 December 2017.

231. Big Data, Quantifauxcation, and Cargo-Cult Statistics, Big Data Conference, China University of Geosciences, Wuhan, China, 26 December 2017.

230. *P*-values, Probability, Priors, Rabbits, Quantifauxcation, and Cargo-Cult Statistics, Statistics 159, Reproducible and Collaborative Data Science, University of California, Berkeley, CA, 14 November 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/rabbits157-17.ipynb`

229. Opportunities in applied statistics: an $n = 1$ observational study, Statistics Undergraduate Student Association (SUSA), University of California, Berkeley, CA, 30 October 2017.

228. Don't Bet on Your Random Number Generator, Consortium for Data Analytics in Risk (CDAR) Annual Colloquium, University of California, Berkeley, CA, 27 October 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/prngCDAR17.slides.html`

227. Leave Election Integrity to Chance, *Science @ Cal*, University of California. Berkeley, CA, 21 October 2017.

226. Audits and Evidence-Based Elections, 2nd *Take Back the Vote Conference*, Berkeley, CA, 7–8 October 2017. Video: `https://www.youtube.com/watch?v=pPGTkgpijUU`

225. Wild And Feral Foods: Increasing Nutrition, Food Security, Farm Biodiversity, and Farm Revenue; Decreasing Herbicides, Water Use, and the Carbon Footprint of the Food System, *2nd AgroecoWeb—International Online Congress on Agro-ecology and Permaculture*, Brazil, 4–10 October 2017. Video: `https://vimeo.com/235073616`

224. How Statistics can improve election integrity, PoliSci 191, *The Right to Vote in America*, University of California, Berkeley, 4 October 2017.

223. Wild and Feral Food Identification Walk, ESPM 98, *Berkeley Urban Garden Internship (BUGI)*, University of California, Berkeley, 27 September 2017.

222. Urban Foraging and Gleaning, *FoodInno*, University of California, Berkeley, 16 September 2017.

221. ETAS-trophic failures: fit, classification, and forecasting, *Big Data in Geosciences: From Earthquake Swarms to Consequences of Slab Dynamics*, a conference in honor of Robert Geller, University of Tokyo, Tokyo, Japan, 25–27 May 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/gellerFest17.pdf`

220. Risk-Limiting Audits, *Global Election Technology Summit*, San Francisco, CA, 17 May 2017. `https://www.getsummit.org/`

219. Where the Wild Things Grow, *Berkeley Path Wanderers Association*, Berkeley, CA, 22 April 2017. `http://berkeleypaths.org/events/event/where-the-wild-things-grow-2/`

218. Sometimes a Paper Trail Isn't Worth the Paper It's Written On, Keynote lecture, Workshop on Advances in Secure Electronic Voting, Financial Crypto 2017, Malta, 3–7 April 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/malta17.htm`

217. Don't Bet on Your Random Number Generator, Distinguished Lecture (`http://wwwen.uni.lu/snt/distinguished_lectures`), Center for Security, Reliability, and Trust, University of Luxembourg, Luxembourg, 31 March 2017. Slides: `https://github.com/pbstark/pseudorandom/blob/master/prngLux17.ipynb`

216. Faculty-Student Feedback: End-of-Semester Teaching Evaluations, Dialogues, Center for Teaching and Learning, University of California, Berkeley, 20 March 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setUCBDialogue17.htm`

215. Edible Weeds Tour of South Hayward, Seed Lending Library, Hayward Public Library, Weekes Branch, Hayward, CA, 11 March 2017. `http://www.libraryinsight.com/eventdetails.asp?jx=hzp&lmx=%C7cn%2D%AA%AE&v=3`

214. Risk-limiting Audits and Evidence-based Elections, Santa Clara County Citizens Advisory Committee on Elections, San Jose, CA, 7 March 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/santaClara17.pdf`

213. Causal Inference from Data, Emerging Science for Environmental Health Decisions, Workshop on Advances in Causal Understanding of Human Health Risk-Based Decision Making, National Academy of Sciences, Engineering, and Medicine, Washington, DC, 6–7 March 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/nasCause17.htm`

212. BRII and Brie, Berkeley Research Impact Initiative (BRII), University of California, Berkeley, CA 22 February 2017.

211. Uncertainty Quantification, Conférence Universitaire de Suisse Occidentale, Les Diablerets, Switzerland, 5–8 February 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/lesDiablerets17-1.pdf`, `https://www.stat.berkeley.edu/~stark/Seminars/lesDiablerets17-2.pdf`, `https://www.stat.berkeley.edu/~stark/Seminars/lesDiablerets17-3.pdf`

210. Whose Votes (were) Counted in the Election of 2016?, ISF 198, *The 2016 U.S. Elections in Global Context: A Semester-Long Teach-In*, University of California, Berkeley, 24 January 2017. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/teachIn17.pdf`

209. Invited panelist, "How Blockchain Technology Will and Won't Change the World," University of California, Berkeley, College of Letters and Sciences, hosted by Glynn Capital and Boost VC, San Mateo, CA, 30 November 2016.

208. Teaching Evaluations (Mostly) Do Not Measure Teaching Effectiveness, Distinguished Lecture Series, Department of Computer Science and Engineering, University of California, San Diego, San Diego, CA, 14 November 2016. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setUCSD16.htm`

207. Simple Random Sampling is not that Simple, *Random Processes And Time Series: Theory And Applications, A Conference In Honor Of Murray Rosenblatt*, UC San Diego, San Diego, CA, 21–23 October 2016.

206. Invited panelist, "Productive Ecologies in the Anthropocene: Foraging Systems," *Sixth International Conference on Food Studies*, Berkeley, CA, 12–13 October 2016.

205. Teaching Evaluations (Mostly) Do Not Measure Teaching Effectiveness, Ethics Colloquium Series, Colorado State University, Fort Collins, CO, 3 October 2016. Slides: `https://www.stat.berkeley.edu/~stark/Seminars/setCSU16.htm` Video: `https://echo.colostate.edu/ess/echo/presentation/64309bd5-6afd-4394-b5d3-5e6748f545f1`

204. Simple Random Sampling is not that Simple, Neyman Seminar, Department of Statistics, University of California, Berkeley, Berkeley, CA 21 September 2016.

203. The Aliens Have Landed ... and They Are Delicious, *Visions of the Wild*, Vallejo, CA, 15 September 2016.

202. Simple Random Sampling: Not So Simple, Section of Theoretical Computer Science, IT University of Copenhagen, Copenhagen, Denmark, 27 June 2016.

201. Simple Random Sampling: Not So Simple, Section of Mathematics, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, 24 June 2016.

200. Invited panelist, "Carrot vs. Stick: approaches to encouraging reproducibility," Moore-Sloan Data Science Environment Reproducibility Conference, New York University, New York, 3 May 2016.

199. Guest lecturer, MCB 15 (Public Understanding of Science), University of California, Berkeley, 12 April 2016.

198. Teaching Evaluations: Biased Beyond Measure, Center for Studies in Higher Education, and The Social Science Matrix, University of California, Berkeley, CA 11 April 2016. `https://www.stat.berkeley.edu/~stark/Seminars/setCSHE16.htm` Video: `https://www.youtube.com/watch?v=yhxUxBk-6GE`, `http://uctv.tv/shows/Teaching-Evaluations-Biased-Beyond-Measure-30870`

197. Teaching Evaluations (Mostly) Do Not Measure Teaching Effectiveness, Wharton Statistics Department, University of Pennsylvania, Philadelphia, PA, 17 March 2016. https://www.stat.berkeley.edu/~stark/Seminars/setPenn16.htm

196. Invited Panelist, "The potentials and pitfalls of electronic auditing," Election Verification Network Conference: Securing Elections in the 21st Century, George Washington University, Washington, DC, 10–11 March 2016.

195. Invited Panelist, "Interoperability standards, proprietary codes, and verification/testing," III Arnold Workshop: Reproducibility in Modeling and Code, American Association for the Advancement of Science, Washington, DC, 16–17 January 2016. http://www.aaas.org/event/iii-arnold-workshop-modeling-and-code

194. Teaching Evaluations (Mostly) Do Not Measure Teaching Effectiveness, Department of Applied Mathematics and Statistics, University of California, Santa Cruz, 1 February 2016. https://www.stat.berkeley.edu/~stark/Seminars/setUCSC16.htm

193. A Noob's Guide to Reproducibility and Open Science, Department of Nuclear Engineering, Berkeley Institute for Data Science, and Berkeley Initiative for Transparency in Social Science, University of California, Berkeley, 25 January 2016. https://www.stat.berkeley.edu/~stark/Seminars/reproNE16.htm Video: http://www.ustream.tv/recorded/81987743

192. Chair, Wild Edibles Taste Workshop, 2015 Indigenous Terra Madre Conference, Shillong, Meghalaya, India, 3–7 November, 2015.

191. Invited Panelist, "From Field to Fork, the Stories of Chefs, Communities, and Writers," 2015 Indigenous Terra Madre Conference, Shillong, Meghalaya, India, 3–7 November, 2015. https://www.stat.berkeley.edu/~stark/Seminars/forageITM15.htm

190. Guest lecturer, ESPM 117 (Urban Garden Ecosystems), University of California, Berkeley, 20 October 2015. https://www.stat.berkeley.edu/~stark/Seminars/forageAgroEcol15.htm

189. Invited Panelist, "Statistical Implications of Big Data Applied to Risk Modeling," Consortium for Data Analytics in Risk (CDAR) Symposium, University of California, Berkeley, 16 October 2015. http://cdar.berkeley.edu/events/2015cdarsymposium/

188. Guest lecturer, Statistics 210A (Theoretical Statistics), University of California, Berkeley, 13–15 October 2015. https://github.com/pbstark/Nonpar

187. Risk-Limiting Audits and the Colorado Uniform Voting System Pilot, Colorado Pilot Election Review Committee Meeting, Office of the Colorado Secretary of State, Denver, CO, 9 October 2015. https://www.stat.berkeley.edu/~stark/Seminars/auditCO15.pdf

186. Wild and Feral Food in EBRPD, East Bay Regional Park District Volunteer Meeting, Oakland, CA, 15 September 2015. https://www.stat.berkeley.edu/~stark/Seminars/forageEBRPD15.htm

185. Probability and Statistics for Physical Science and Engineering PhD Students (a 15-hour course), University of Tokyo, 23–26 August 2015. Materials: http://www.github.com/pbstark/PhysEng

184. Statistics for Engineering PhD students (a 30-hour course), University of Padova, Padova, Italy, 29 June–7 July 2015. Materials: http://www.github.com/pbstark/Padova15

183. Pay no attention to the model behind the curtain, Significant Digits: Responsible Use of Quantitative Information, European Commission Joint Research Centre, Brussels, Belgium, 9–10 June 2015. https://www.stat.berkeley.edu/~stark/Seminars/rabbitsBrux15.htm

182. Reaping without Sowing: Wild Food and Urban Foraging, Berkeley Food Institute Seed Grant Forum, Berkeley, CA, 6 May 2015. https://www.stat.berkeley.edu/~stark/Seminars/bfi-15-5-6.htm Video: http://food.berkeley.edu/seed-grant-forum/

181. Invited panelist, Data Science: Supporting new Modes of Research, Annual Meeting of the Association of Research Libraries, Berkeley, CA, 28–30 April, 2015.

180. Teaching evaluations: class act or class action?, National Center for the Study of Collective Bargaining in Higher Education and the Professions, Annual Conference, Hunter College, New York, NY, 19–21 April 2015. https://www.stat.berkeley.edu/~stark/Seminars/setNCSCB15.htm

179. Where the Wild Things Grow, Berkeley Path Wanderers Association, Berkeley, CA, 4 April 2015. http://berkeleypaths.org/events/event/where-the-wild-things-grow/

178. Invited panelist, Brave New Audits: How We Can Implement Risk-Limiting Audits with Today's Machines, Off-the-Shelf Hardware, and Open Source Software, 2015 Election Verification Network Annual meeting, New Orleans, LA, 4–6 March 2015. https://www.stat.berkeley.edu/~stark/Seminars/evn15.htm Video: https://youtu.be/DBcVicxJigs

177. Co-chair, Election Auditing, NIST / U.S. Election Administration Commission Future of Voting Systems Symposium II, Washington, DC, 9–10 February 2015.

176. Teaching evaluations: truthful or truthy?, European Commission Joint Research Centre *Third Lisbon Research Workshop on Economics, Statistics and Econometrics of Education*, Lisbon, Portugal, 23–24 January 2015. http://cemapre.iseg.ulisboa.pt/educonf/3e3/ https://www.stat.berkeley.edu/~stark/Seminars/setLisbon15.htm

175. Bad Numbers, Bad Policy, 5th Impact Assessment Course by the Joint Research Centre and the Secretariat General of the European Commission, Brussels, Belgium, 20–21 January 2015. https://ec.europa.eu/jrc/en/event/training-course/5th-impact-assessment-course https://www.stat.berkeley.edu/~stark/Seminars/fauxBrux15.htm

174. Quantifauxcation, European Commission Joint Research Centre, Ispra, Italy, 19 January 2015. https://www.stat.berkeley.edu/~stark/Seminars/fauxIspra15.htm

173. Preproducibility for Research, Teaching, Collaboration, and Publishing, Replicability and Reproducibility of Discoveries in Animal

Phenotyping, Tel Aviv University, Tel Aviv, Israel, 5–7 January 2015. https://www.stat.berkeley.edu/~stark/Seminars/reproTAU15.htm Video: http://video.tau.ac.il/events/index.php?option=com_k2&view=item&id=5563:preproducibility-for-research-teaching-collaboration-and-publishing&Itemid=552

172. Urban Foraging—Real Street Food, Discover Cal: A Menu for Change, Los Angeles, CA, 18 November 2014. https://www.stat.berkeley.edu/~stark/Seminars/discoverCalLA14.htm

171. Guest lecturer, 6.S897/17.S952: Elections and Voting Technology, MIT, 13 November 2014.

170. Open Geospatial Data Down in the Weeds: Urban Foraging, Food Deserts, Citizen Science, Sustainability, and Reproducibility, Assessing the Socioeconomic Impacts and Value of 'Open' Geospatial Information, The George Washington University, Washington DC, 28–29 October 2014. https://www.stat.berkeley.edu/~stark/Seminars/openGeospatial14.htm

169. Student Evaluations of Teaching, University of San Francisco, 23 October 2014. https://www.stat.berkeley.edu/~stark/Seminars/setUSF14.htm

168. Guest lecturer, CS 76N: Elections and Technology, Stanford University, 14 October 2014.

167. Statistical Evidence and Election Integrity, XXIX International Forum on Statistics, UPAEP, Puebla, Mexico, 29 September–3 October 2014. https://www.stat.berkeley.edu/~stark/Seminars/foro14.pdf

166. Nonparametric Inference, Auditing, and Litigation, Short course at XXIX International Forum on Statistics, UPAEP, Puebla, Mexico, 29 September–3 October 2014. https://github.com/pbstark/MX14

165. Invited participant, Pew Charitable Trusts roundtable: Challenges Related to the Voting Systems Marketplace, Chicago, IL, 8 September 2014.

164. Invited panelist, U.S. Election Assistance Commission roundtable: Expanding the Body of Knowledge of Election Administration–Reflections and Future Direction, 3 September 2014. http://www.eac.gov/eac_grants_expanding_the_body_of_knowledge_of_election_administration_%E2%80%93_reflections_and_future_dire/ Video: http://mediasite.yorkcast.com/webcast/Play/a90f223fa61940cd893b70fab55fe1b51d

163. Reproducibility, Evidence, and the Scientific Method, Late-breaking session on Reproducibility, Joint Statistical Meetings, Boston, MA, 2–7 August 2014. https://www.stat.berkeley.edu/~stark/Seminars/reproJSM14.htm

162. Invited panelist, Big Data & Academic Libraries, International Alliance of Research Universities, 3rd Librarians' Meeting, University of California, Berkeley, CA, 23–24 June 2014.

161. Mini-Minimax Uncertainty Quantification for Emulators, 2nd Conference of the International Society for Nonparametric Statistics, Cadiz, Spain, 11–16 June 2014. https://www.stat.berkeley.edu/~stark/Seminars/emulatorISNPS14.pdf

160. Reproducible and Collaborative Statistical Data Science, Transparency Practices for Empirical Social Science Research, 2014 Summer Institute, University of California, Berkeley, CA, 2–6 June 2014. https://www.stat.berkeley.edu/~stark/Seminars/bitss14.pdf

159. Risk-Limiting Audits for Denmark and Mongolia, Third DemTech Workshop on Danish Elections, Trust, and Technology for the Mongolian General Election Commission, IT University of Copenhagen, Copenhagen, Denmark, 24 May 2014. https://www.stat.berkeley.edu/~stark/Seminars/itu14.pdf

158. How to Lie With Big Data (and/or Big Computations), Panel on Data Deluge or Drought (Quality and Quantity), MPE13+ Workshop on Global Change, DIMACS Special Program: Mathematics of Planet Earth 2013+, University of California, Berkeley, CA, 19–21 May 2014. https://www.stat.berkeley.edu/~stark/Seminars/mpe14.pdf

157. Invited panelist, Relying on Data Science: Reproducible Research and the Role of Policy, DataEDGE conference, UC Berkeley School of Information, Berkeley, CA, 8–9 May 2014.

156. Invited panelist, Some Tools and Solutions, University of Washington / Moore–Sloan First Reproducibility Workshop, eScience Institute, University of Washington, Seattle, WA, 8 May 2014 https://www.stat.berkeley.edu/~stark/Seminars/reproUW14.pdf

155. Some people have all the luck, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, CA, 28 April 2014. (with Skip Garibaldi and Lawrence Mower) http://www.ipam.ucla.edu/programs/PUBLEC2014/ Video: https://www.youtube.com/watch?v=s8cHHWNblA4

154. Invited panelist, Ask a Statistician, SIAM/ASA/GAMM/AGU Conference on Uncertainty Quantification, Savannah, GA, 29 March – 3 April 2014.

153. Invited panelist, The Reliability of Computational Research Findings: Reproducible Research, Uncertainty Quantification, and Verification & Validation, SIAM/ASA/GAMM/AGU Conference on Uncertainty Quantification, Savannah, GA, 29 March – 3 April 2014. https://www.stat.berkeley.edu/~stark/Seminars/reproUQ14.pdf Video: http://client.blueskybroadcast.com/SIAM14/UQ/siam_uq14_MS42_3

152. Invited panelist, New Paradigms for Voting Systems, 2014 Election Verification Network Annual meeting, San Diego, CA, 5–7 March 2014. https://www.stat.berkeley.edu/~stark/Seminars/evn14NewParadigms.pdf Video: https://www.youtube.com/watch?v=bTlHYkiYBZI

151. Invited panelist, End-to-End Verifiable Voting Roundtable, 2014 Election Verification Network Annual meeting, San Diego, CA, 5–7 March 2014. Video: https://www.youtube.com/watch?v=jsGSQV_rFzA

150. Invited panelist, Improving Teaching through uncharted Waters: Peer Observation and other Approaches, Dialogues, a Colloquium Series on Teaching, Center for Teaching and Learning, University of California, Berkeley, 26 February 2014. http://teaching.berkeley.edu/dialogues-colloquium-series-teaching

149. Invited panelist, Unpacking the Voting Technology Debate, 2014 Voting and Elections Annual Summit, Overseas Vote Foundation and U.S. Vote Foundation, George Washington University, Washington, D.C., 30 January 2014. https://www.overseasvotefoundation.org/initiatives-UOCAVAsummit-summit2014-agenda Video: http://www.youtube.com/watch?v=UXqqnOWhsmA&list=PLtRB8fQ0zBR8Nza-G-RGln-HTrkp4UM6F&feature=share&index=1#t=23m30s

148. Risk-Limiting Audits for Party-List Elections. IT University of Copenhagen, Copenhagen, Denmark, 21 November 2013. https://www.stat.berkeley.edu/~stark/Seminars/itu13.pdf

147. Selective Inference and Conditional Tests. Department of Statistics and Operations Research, Tel Aviv University, Tel Aviv, Israel, 28 October 2013.

146. Ontology of Earthquake Probability: Metaphor. Dynamics of Seismicity, Earthquake Clustering and Patterns in Fault Networks, Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC, 9–11 October 2013. https://www.stat.berkeley.edu/~stark/Seminars/samsiSeis13.pdf

145. Invited panelist, Innovations in On-line Learning, Designing a World University, World Academy Forum on Global Higher Education, Berkeley, California, 2–3 October 2013.

144. E2E to Hand-to-Eye: Verifiability, Trust, Audits, Vote ID 2013: The 4th International Conference on e-Voting and Identity, University of Surrey, Guildford, UK 17–19 July 2013. https://www.stat.berkeley.edu/~stark/Seminars/voteID13.pdf

143. Mini-Minimax Uncertainty of Emulators, Center for Security, Reliability, and Trust, University of Luxembourg, Luxembourg, 9 July 2013. https://www.stat.berkeley.edu/~starkstark/Seminars/emulatorLux13.pdf

142. Invited panelist, Extracting Actionable Insight From Dirty Time-Series Data, Berkeley Research Data Science Lectures, University of California, Berkeley, 21 June 2013. Video: http://vcresearch.berkeley.edu/datascience/webcast-data-science-lecture-series-june-21

141. Uncertainty quantification for emulators, Dipartimento di Fisica e Astronomia, Università di Bologna, Bologna, Italy, 5 June 2013. https://www.stat.berkeley.edu/~stark/Seminars/emulatorUniBo13.pdf

140. Leveraging Paper Ballots, Running Elections Efficiently, A Best Practices Convening, Common Cause – Common Cause / NY – Columbia University School of International and Public Affairs, Columbia University, New York, NY, 20 May 2013. https://www.stat.berkeley.edu/~stark/Seminars/ccNY13.pdf

139. Uncertainty quantification for emulators, University of California, Los Angeles, 11 April 2013. https://www.stat.berkeley.edu/~stark/Seminars/emulatorUCLA13.pdf

138. Brittle and Resilient Verifiable Voting Systems, Verifiable Voting Schemes Workshop: from Theory to Practice, Interdisciplinary Centre for Security, Reliability and Trust, University of Luxembourg, Luxembourg 21–22 March 2013. https://www.stat.berkeley.edu/~stark/Seminars/vv13.pdf

137. Now What?, Election Verification Network Annual Conference, The Right to a Secure, Transparent and Accurate Election, Atlanta, Georgia 14–15 March 2013. https://www.stat.berkeley.edu/~stark/Seminars/evn13nowWhat.pdf

136. Machine-Assisted Transitive Audits, Election Verification Network Annual Conference, The Right to a Secure, Transparent and Accurate Election, Atlanta, Georgia 14–15 March 2013.

135. Risk-limiting Audits and Evidence-Based Elections in a Nutshell, Election Verification Network Annual Conference, The Right to a Secure, Transparent and Accurate Election, Atlanta, Georgia 14–15 March 2013. https://www.stat.berkeley.edu/~stark/Seminars/evn13nutshell.pdf

134. Reproducibility in Computational and Experimental Mathematics, ICERM, Brown University, Providence, RI, 10–14 December 2012. http://icerm.brown.edu/tw12-5-rcem

133. Whaddya know? Bayesian and Frequentist approaches to inverse problems, Inverse Problems: Practical Applications and Advanced Analysis,

Schlumberger WesternGeco, Houston, TX, 12–15 November 2012. https://www.stat.berkeley.edu/~stark/Seminars/swg12.pdf

132. Evidence-Based Elections, E-Voting: Risk and Opportunity Conference, Center for Information Technology Policy, Princeton University, Princeton, NJ, 1 November 2012. https://www.stat.berkeley.edu/~stark/Seminars/princeton12.pdf Video: http://youtu.be/1Z6JW1t_sFI

131. Evidence-Based Elections, Berkeley/Stanford Data, Society and Inference Seminar, Stanford University, Stanford, CA 8 October 2012. https://www.stat.berkeley.edu/~stark/Seminars/dataSocietyInference12.pdf

130. Voting Technology Exploratory Meeting, The Pew Charitable Trusts Center on the States, Santa Monica, CA 23–24 August 2012.

129. Lightning Debates, Workshop on Electronic Voting Technology / Workshop on Transparent Elections, (EVT/WOTE '12), USENIX, Bellevue, WA, 6–7 August 2012. Video: https://www.usenix.org/conference/evtwote12/panel-2-title-tbd

128. BRAVO: Ballot-polling Risk-limiting Audits to Verify Outcomes, Workshop on Electronic Voting Technology / Workshop on Transparent Elections, (EVT/WOTE '12), USENIX, Bellevue, WA, 6–7 August 2012. https://www.stat.berkeley.edu/~stark/Seminars/evt12.pdf Video: https://www.usenix.org/conference/evtwote12/s6-paper-title-tbd

127. The Will of the People and the Luck of the Draw: Using Statistics to Limit the Risk of Wrong Electoral Outcomes, Joint Statistical Meetings, San Diego, CA, 29 July 2012. https://www.stat.berkeley.edu/~stark/Seminars/jsm12.pdf

126. Evidence-Based Elections, Risk-Limiting Audits, and Resilient Canvass Frameworks, SecVote 2012 Summer School on Secure Voting, Leibniz-Zentrum für Informatik, Schloss Dagstuhl, Germany, 16 July 2012. https://www.stat.berkeley.edu/~stark/Seminars/dagstuhl12.pdf

125. The Effectiveness of Internet Content Filters, Distinguished Lecture (http://wwwen.uni.lu/snt/distinguished_lectures), Center for Security, Reliability, and Trust, University of Luxembourg, Luxembourg, 13 July 2012. https://www.stat.berkeley.edu/~stark/Seminars/luxembourg12.pdf

124. Evidence-Based Elections, International Association of Clerks, Recorders, Election Officials & Treasurers (IACREOT) annual conference, Albuquerque, NM, 30 June 2012. https://www.stat.berkeley.edu/~stark/Seminars/iacreot12.pdf

123. Confidence Limits, Progress on Statistical Issues in Searches, SLAC National Accelerator Laboratory, Stanford, CA, 4–6 June 2012. https://www.stat.berkeley.edu/~stark/Seminars/slac12.pdf

122. UQQ, UQ: Transition Workshop, Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC, 21–23 May 2012. https://www.stat.berkeley.edu/~stark/Seminars/samsi12.pdf

121. Testing for Poisson Behavior, Seismological Society of America Annual Meeting, San Diego, CA, 17–19 April 2012. https://www.stat.berkeley.edu/~stark/Seminars/ssa12.pdf

120. Get Out The Audit (GOTA), Election Verification Network Annual Conference, Santa Fe, NM, 29–30 March 2012. https://www.stat.berkeley.edu/~stark/Seminars/evnGOTA12.pdf

119. The Long View: Evidence-Based Elections, Election Verification Network Annual Conference, Santa Fe, NM, 29–30 March 2012. https://www.stat.berkeley.edu/~stark/Seminars/evnLongView12.pdf

118. The Will of the People and the Luck of the Draw: Risk-Limiting Audits and Resilient Canvass Frameworks, San Francisco Chapter of the American Statistical Association, Berkeley, CA, 16 February 2012. https://www.stat.berkeley.edu/~stark/Seminars/asa12.pdf

117. Evidence-Based Elections: Colorado's Future?, Colorado Elections Best Practices & Vision Commission, Denver, CO, 14 December 2011. https://www.stat.berkeley.edu/~stark/Seminars/co-11-12-14.pdf Audio: mms://pub.sos.state.co.us/20111214130705B

116. From the Virtual Trenches, *Letters and Sciences Colloquium on Undergraduate Education:* The Virtual University—Challenges and Opportunities, University of California, Berkeley, CA, 16 November 2011. http://ls.berkeley.edu/stories/archive/fall-2011-colloquium-undergraduate-education-0 https://www.stat.berkeley.edu/~stark/Seminars/onlineEd11.pdf Video: http://www.youtube.com/watch?v=40vGDuPSJso

115. Earthquake Clustering and Declustering, Institute de Physique du Globe de Paris, Paris, France, 4 October 2011. https://www.stat.berkeley.edu/~stark/Seminars/ipg11.pdf

114. Fears, Predictions, Hopes & Plans, *Panel on the Future*, Election Integrity: Past, Present, and Future, Caltech/MIT Voting Technology Project, Cambridge, MA, 1 October 2011. https://www.stat.berkeley.edu/~stark/Seminars/mit11.pdf Video: http://techtv.mit.edu/collections/vtp/videos/14802-eippf-2011-3-the-future

113. Risk-limiting Audits: Soup to Nuts, and Beyond, Workshop on Electronic Voting Technology / Workshop on Transparent Elections, (EVT/WOTE '11), USENIX, San Francisco, CA, 9 August 2011. https://www.stat.berkeley.edu/~stark/Seminars/evtRLA11.pdf

112. SOBA: Secrecy-preserving Observable Ballot-level Audit, Workshop on Electronic Voting Technology / Workshop on Transparent Elections, (EVT/WOTE '11), USENIX, San Francisco, CA, 9 August 2011. https://www.stat.berkeley.edu/~stark/Seminars/evtSoba11.pdf

111. The Effectiveness of Internet Content Filtering, Workshop on Free and Open Communication on the Internet (FOCI '11), USENIX, San Francisco, CA, 8 August 2011. https://www.stat.berkeley.edu/~stark/Seminars/foci11.pdf

110. SticiGui, Onsophic, and Statistics W21, Panel on online instruction, Joint Statistical Meetings, Miami Beach, FL, 31 August 2011. https://www.stat.berkeley.edu/~stark/Seminars/jsm11.pdf

109. Risk Limiting Audits, Colorado Secretary of State, Colorado Risk Limiting Audit (CORLA) Kick-off Meeting, Denver, CO, 16 June 2011. https://www.stat.berkeley.edu/~stark/Seminars/co-11-6-16.pdf

108. Simultaneous Confidence Intervals with more Power to Determine Signs, Conference in honor of Erich Lehmann, Rice University, Houston, TX, 12 May 2011. https://www.stat.berkeley.edu/~stark/Seminars/lehmann11.pdf

107. Close enough for government [to] work, Verified Voting Foundation, Palo Alto, CA, 27 April 2011. https://www.stat.berkeley.edu/~stark/Seminars/vv-11-4-27.pdf

106. Close enough for government [to] work: Risk-limiting post-election audits, Berkeley-Stanford Joint Statistics Colloquium, Stanford University, Stanford, CA, 12 April 2011. https://www.stat.berkeley.edu/~stark/Seminars/stanford11.pdf

105. Audits: The After-Math of Elections, Verify early, verify often: creating secure, transparent and accurate elections, Election Verification Network, Chicago, IL, 25–26 March 2011. https://www.stat.berkeley.edu/~stark/Seminars/reed11.pdf

104. Simultaneous Confidence Intervals with more Power to Determine Signs, Department of Mathematics, Reed College, Portland, OR, 10 March 2011. https://www.stat.berkeley.edu/~stark/Seminars/reed11.pdf

103. Close enough for government work: Risk-Limiting Post-Election Audits, Wharton Statistics Department, University of Pennsylvania, Philadelphia, PA, 26 January 2011. https://www.stat.berkeley.edu/~stark/Seminars/penn11.pdf

102. Audits: The After-Math of Election Reform, Conference on Innovative Electoral Reforms and Strategies, Washington, DC, 10–11 December 2010. https://www.stat.berkeley.edu/~stark/Seminars/innovative10.pdf

101. Risk-Limiting Post-Election Audits: Statistics, Policy, and Politics, Department of Statistics, Rice University, Houston, TX, 1 November 2010. https://www.stat.berkeley.edu/~stark/Seminars/rice10.pdf

100. Are Declustered Earthquake Catalogs Poisson?, Department of Statistics, Pennsylvania State University, State College, PA, 14 October 2010. https://www.stat.berkeley.edu/~stark/Seminars/psu10.pdf

99. Super-simple simultaneous single-ballot risk-limiting audits, 2010 Electronic Voting Technology Workshop / Workshop on Trustworthy Elections (EVT/WOTE '10), Washington, DC, 9–10 August 2010. https://www.stat.berkeley.edu/~stark/Seminars/evtwote10.pdf

98. AB 2023 and Risk-Limiting Audits, California Association of Clerks and Election Officials Legislative Committee Meeting, 14 May 2010. https://www.stat.berkeley.edu/~stark/Seminars/caceo-legis10.pdf

97. Justice and inequalities, Department of Statistics and Operations Research, Tel Aviv University, Tel Aviv, Israel, 13 April 2010. https://www.stat.berkeley.edu/~stark/Seminars/tau10.pdf

96. Size Matters: Smaller Batches Yield More Efficient Risk-Limiting Audits, Small-Batch Audit Meeting, Washington, DC, 27–28 March 2010. https://www.stat.berkeley.edu/~stark/Seminars/smallBatch10.pdf

95. Sexy Audits and the Single Ballot, Election Verification Network (EVN) annual conference, Washington, DC, 25–27 March 2010. https://www.stat.berkeley.edu/~stark/Seminars/evn10.pdf

94. Simple, Affordable, Post-Election Audits, Institute for Mathematical Behavioral Sciences, University of California, Irvine, CA, 7 January 2010. https://www.stat.berkeley.edu/~stark/Seminars/uci10.pdf

93. Efficient Post-Election Audits of Multiple Contests: 2009 California Tests, Conference on Empirical Legal Studies, University of Southern California Gould School of Law, Los Angeles, CA, 20–21 November 2009. https://www.stat.berkeley.edu/~stark/Seminars/cels09.pdf

92. Risk-Limiting Audits, Audit Working Meeting, American Statistical Association, Arlington, VA, 23–24 October 2009. https://www.stat.berkeley.edu/~stark/Seminars/asa09.pdf

91. Invited panelist, Uncertainty Quantification and Error Analysis, Scientific Grand Challenges in National Security: the Role of Computing at the Extreme Scale, Washington, DC, 6–8 October 2009.

90. Some Ado about (mostly) Nothing: zero-dominated data, Alameda County Workshop on Avian Mortality at Altamont, Emeryville, CA, 22 September 2009. https://www.stat.berkeley.edu/~stark/Seminars/altamont09.pdf

89. Freedman's Dialogue with the Social Sciences, 2009 Joint Statistical Meetings, Washington, DC, 5 August 2009.

88. Invited panelist, David A. Freedman's Dialogue with the Social Sciences, The Society for Political Methodology 26th Annual Summer Meeting, Institution for Social and Policy Studies, Yale University, New Haven, CT, 23 July 2009.

87. Election Auditing: How Much is Enough?, The Society for Political Methodology 26th Annual Summer Meeting, Keynote lecture, Institution for Social and Policy Studies, Yale University, 23 July 2009. https://www.stat.berkeley.edu/~stark/Seminars/polMeth09.pdf

86. Risk-Limiting Post-Election Audits, Department of Statistics, University of California, Berkeley, CA, 31 March 2009. https://www.stat.berkeley.edu/~stark/Seminars/ucb09.pdf

85. Uncertainty Quantification Qualification, Lawrence Livermore National Laboratory, Livermore, CA, 26 March 2009. https://www.stat.berkeley.edu/~stark/Seminars/llnl09.pdf

84. 2008 Risk-limiting Audits in California, The Pew Charitable Trusts Audit Workshop, Salt Lake City, UT, 23–24 February 2009. https://www.stat.berkeley.edu/~stark/Seminars/pew09.pdf

83. Election Auditing and Nonparametric Confidence Bounds, Department of Mathematics, Reed College, Portland, OR, 20 November 2008. https://www.stat.berkeley.edu/~stark/Seminars/reed08.pdf

82. Risk-Limiting Post-Election Audits, Department of Statistics, Kansas State University, Manhattan, KS, 2 October 2008. https://www.stat.berkeley.edu/~stark/Seminars/ksu08.pdf

81. CAST: Canvass Audits by Sampling and Testing, 2008 American Political Science Association Annual Meeting, Panel 2008MP04292: Catch Me If You Can: Techniques to Detect Electoral Fraud, Boston, MA,

28–31 August 2008. https://www.stat.berkeley.edu/~stark/Seminars/apsa08.pdf

80. Invited panelist, Joint Statistical Meetings session, Statistical Measures Can Help Restore Confidence in U.S. Elections, Denver, CO, 3–7 August 2008.

79. Invited Panel on Post-Election Auditing: The Academic & Advocacy Perspective, California Association of Clerks and Election Officials (CACEO) 100th Anniversary Celebration Conference, Long Beach, CA, 8–11 July 2008.

78. Statistical Audits: Why and How Much?, Invited Panel on Post-Election Auditing: Practical Experience and Best Practices, California Association of Clerks and Election Officials (CACEO) 100th Anniversary Celebration Conference, Long Beach, CA, 8–11 July 2008. https://www.stat.berkeley.edu/~stark/Seminars/caceo08.pdf

77. Invited Panel on Online Learning, UC21st Century, Teaching, Learning and Technology: Past, present and future, University of California, Davis, 20–21 June 2008.

76. SticiGui—What is it?, Department of Statistics, University of California, Los Angeles, CA, 29 May 2008. https://www.stat.berkeley.edu/~stark/Seminars/ucla08.pdf

75. Election Auditing: How Much Is Enough?, Mathematical Sciences Research Institute, Annual Meeting of Academic Sponsors and Steering Committee, Berkeley, CA, 7 March 2008. https://www.stat.berkeley.edu/~stark/Seminars/msri08.pdf

74. Invited panelist, 2007 Post Election Audit Summit, Minneapolis, MN, 25–27 October 2007. https://www.stat.berkeley.edu/~stark/Seminars/peaSummit07.pdf

73. Urning Voter Confidence, Department of Mathematics, Reed College, Portland, OR, 11 October 2007. https://www.stat.berkeley.edu/~stark/Seminars/reed07.pdf

72. Frequentist Methods in Inverse Problems, Sandia CSRI Workshop on Large-Scale Inverse Problems and Quantification of Uncertainty, Santa

Fe, NM, 10–12 September 2007. https://www.stat.berkeley.edu/~stark/Seminars/sandia07.odp

71. How Statistics Helps, 9th US Congress on Computational Mechanics, San Francisco, CA, 22–26 July 2007. https://www.stat.berkeley.edu/~stark/Seminars/compMech07.odp

70. Nonparametrics: nonpareil?, Veterans Administration Hospital, Neuropsychology Brown Bag Lunch, Martinez, CA, 15 May 2007. https://www.stat.berkeley.edu/~stark/Seminars/ebire-5-15-07.pdf

69. The Null Hypothesis: Are Earthquakes Predictable?, Assessment schemes for earthquake prediction, Royal Astronomical Society/Joint Association for Geophysics Discussion Meeting 7–8 November 1996, the Geological Society, London

68. Shaking Down Earthquake Predictions, Department of Statistics, University of California, Davis, 25 May 2006 https://www.stat.berkeley.edu/~stark/Seminars/ucd-5-25-06.pdf

67. Measuring Resolution in Nonlinear and Constrained Inverse Problems, Workshop on Statistical Inverse Problems, Institute for Mathematical Stochastics, Göttingen, Germany, 23–25 March 2006. http://www.num.math.uni-goettingen.de/gk/?Workshops:Workshop_on_Statistical_Inverse_Problems

66. Resolution in Nonlinear and Constrained Inverse Problems, Workshop on Computational and Mathematical Geoscience, Colorado School of Mines, Golden CO, 15–17 June 2005.

65. Quantifying uncertainty in inverse problems, Summer school: Mathematical Geophysics and Uncertainty in Earth Models, Colorado School of Mines, Golden CO, 14–25 June 2004. https://www.stat.berkeley.edu/~stark/Seminars/mines04.pdf

64. Estimating power spectra of galaxy structure: can Statistics help?, Penetrating bars through masks of cosmic dust: the Hubble tuning fork strikes a new note, Pilanesberg National Park, South Africa, 7–12 June 2004. http:www.stat.berkeley.edu/~stark/Seminars/bars04.ppt

63. Quantifying uncertainty in inverse problems, Institute for Pure and Applied Mathematics (IPAM) Conference on Statistical Methods for Inverse Problems, IPAM, Los Angeles, CA, 5–6 November 2003. https://www.stat.berkeley.edu/~stark/Seminars/ipam03.ppt

62. Using what we know: inference with physical constraints, PhyStat 2003: Statistical Problems in Particle Physics, Astrophysics and Cosmology, Stanford Linear Accelerator Center, Stanford, CA, 8–10 September 2003. https://www.stat.berkeley.edu/~stark/Seminars/phyStat03.pdf

61. Statistical Approaches to Inverse Problems. Danish Interdisciplinary Inversion Group Seminars on Inverse Problems: Insight and Algorithms. Niels Bohr Institute, Copenhagen University, Copenhagen, Denmark, 27–29 May 2002. https://www.stat.berkeley.edu/~stark/Seminars/bohr02.ppt

60. Statistical Measures of Uncertainty in Inverse Problems. Institute for Mathematics and its Applications Tutorial on Inverse Problems and the Quantification of Uncertainty, Annual Program Mathematics in the Geosciences, Minneapolis, MN, 19 March 2002. https://www.stat.berkeley.edu/~stark/Seminars/ima02.ppt

59. Data Errors, Model Errors, and Estimation Errors, Frontiers of Geophysical Inversion Workshop, Waterways Experiment Station, U.S. Army Corps of Engineers Engineer Research and Development Center, Vicksburg, MS, 17–19 February 2002. https://www.stat.berkeley.edu/~stark/Seminars/wes02.ppt

58. Strategic Planning and Implementation I: The Challenge of Adapting Organizations and Creating Partnerships to Target New Markets, University Teaching as E-business?, Center for Studies in Higher Education, Berkeley, CA, 26–27 October 2001.

57. Inverse Problems and Data Errors, New Developments in Astrophysical Fluid Dynamics, Chateau de Mons, Caussens, France, 25–29 June 2001.

56. Data Reduction and Inverse Problems in Helioseismology, Workshop Statistics of inverse problems, Institut Henri Poincaré, Paris, France, 28–29 May 2001.

55. Why Statistics is worth the Stigma, Letters and Sciences Faculty Forum, University of California, Berkeley, CA, 23 April 2001. `https://www.stat.berkeley.edu/~stark/Seminars/stigma01.ppt`

54. Inverse Problems in Helioseismology, Second MaPhySto Workshop on Inverse Problems: Inverse problems from a Statistical Perspective, Aalborg, Denmark, 28–31 March 2001.

53. What are the Chances?, NATO Advanced Research Workshop: State of scientific knowledge regarding earthquake occurrence and implications for public policy, Le Dune, Piscinas — Arbus, Sardinia, Italy, 15–19 October 2000.

52. Why Unadjusted Census Results should be Used for Reapportionment and Funding within the State of California, 13th Annual Demographic Workshop, U.S. Bureau of the Census, California State Census Data Center, and the Population Research Laboratory of the University of Southern California, Los Angeles, CA, 15 May 2000.

51. Invited discussant, Workshop of the National Academy of Sciences Panel to Review the 2000 Census, Washington, D.C., 2–3 February 2000.

50. Invited discussant, Panel discussion on the role of sampling in the US Census, San Francisco Bay Area Chapter of the American Statistical Association, 20 December 1999.

49. Lecturer, Mathematical Geophysics Summer School, Stanford University, Stanford, CA, 2–20 August 1999.

48. Less Asymptotic Tomography. 9th SOHO Workshop: Helioseismic Diagnostics of Solar Convection and Activity, Stanford University, Stanford, CA, 12–15 July 1999.

47. Invited panelist, Reinventing Undergraduate Education: Technology Enhanced Learning in the Sciences, Math, and Engineering, University of California, Berkeley, CA, 23 April 1999.

46. Error in Numerical Models Fitted to Data. DSRC/DARPA Study on Numerical Simulation of Physical Systems: The State of the Art, and Opportunities for Further Advances, Kick-Off Meeting, Arlington, VA,

19–20 January 1999. https://www.stat.berkeley.edu/~stark/Seminars/dsrc99.htm

45. Sampling to Adjust the U.S. Census. Miller Institute for Basic Research in Science, University of California, Berkeley, CA, 12 January 1999. https://www.stat.berkeley.edu/~stark/Seminars/mibrs99.htm

44. A Statistician's Perspective on Census Adjustment, Berkeley Breakfast Club, Berkeley, CA, 5 December 1998. https://www.stat.berkeley.edu/~stark/Seminars/bbc98.htm

43. SticiGui: Melts in your Browser, not in your Brain, Joint Berkeley-Stanford Statistics Colloquium, Department of Statistics, Stanford University, Stanford, CA, 27 October 1998. https://www.stat.berkeley.edu/~stark/Seminars/bsc98.htm

42. SticiGui: Statistics Tools for Internet and Classroom Instruction with a Graphical User Interface, 1998 Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, Orlando, FL, 12 August 1998.

41. Presidential Panel on Statistics in Public Policy, 1998 Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, Orlando, FL, 10 August 1998.

40. Misfit Measures and Statistical Inconsistency in Linear Inverse Problems. AMS/IMS/SIAM Joint Summer Research Conferences in the Mathematical Sciences, Mathematical Methods in Inverse Problems for Partial Differential Equations, Mt. Holyoke, MA, 4–9 July 1998. https://www.stat.berkeley.edu/~stark/Seminars/ams-ims-siam-98.pdf

39. Uncertainties for functions from incomplete, erroneous data. NSF/DOE Workshop on Uncertainty in Modeling, National Science Foundation, Arlington, VA, 11–12 June 1998. https://www.stat.berkeley.edu/~stark/Seminars/nsf-doe-98.htm

38. Sampling to adjust the 1990 Census for Undercount. U.S. House of Representatives Subcommittee on the Census, May 1998. https://www.stat.berkeley.edu/~stark/Census/house-5-5-98-pbs.pdf

37. Sounding the Sun: Helioseismology. 1998 American Association for the Advancement of Science (AAAS) Annual Meeting and Science Innovation Exposition, Philadelphia, PA., February 1998. `https://www.stat.berkeley.edu/~stark/Seminars/Aaas/helio.htm`

36. Data Sampling Rate Reduction for the OERSTED geomagnetic Satellite, Department of Geological Sciences, Stanford University, Stanford, CA, 28 July 1997. `https://www.stat.berkeley.edu/~stark/Preprints/Oersted/writeup.htm`

35. Does God play dice with the Earth, and if so, are they loaded? Fourth SIAM Conference on Mathematical and Computational Methods in the Geosciences, Albuquerque, NM, 16 June 1997. `https://www.stat.berkeley.edu/~stark/Seminars/doesgod.htm`

34. Solving Problems for a Large Statistics Lecture Course using a Website UC Berkeley Academic Senate Workshop on Classroom Technology, Berkeley, CA, 11 April 1997. `https://www.stat.berkeley.edu/~stark/Seminars/itpTalk.htm`

33. Deficiencies of the simple theories, Local Helioseismology Workshop, University of Cambridge, Cambridge, England, 1997.

32. CMB's, Royal Astronomical Society Ordinary Meeting, London, England, 1996.

31. The Null Hypothesis, Royal Astronomical Society and Joint Associations for Geophysics discussion meeting on Assessment of Schemes for Earthquake Prediction, London, England, 1996.

30. On the consistency of multiple inference in inverse problems using $l_p$ confidence sets, International Conference on Multiple Comparisons, Tel Aviv, Israel, 1996.

29. Confidence Intervals in Inverse Problems, Conference in Honor of George Backus, Institute for Geophysics and Planetary Physics, La Jolla, CA, 1995.

28. The Need for Wave-Equation Travel-Time Tomography, Institute for Mathematics and Its Applications, Conference on Tomography, Minneapolis, MN, 1995.

27. Inference, Prior Information, and Misfit Measures, Interdisciplinary Inversion Conference on Methodology, Computation and Integrated Applications, University of Aarhus, Aarhus, Denmark, 1995.

26. Optimization and Inference in Travel-Time Seismology, National Research Council Board on Mathematical Sciences Symposium on Mathematical Sciences in Seismology, Washington, DC, 1995.

25. Prior Information and Confidence Intervals in Inverse Problems, International Union of Geodesy and Geophysics Meeting, Boulder, CO, 1995.

24. Something AGAINST Nothing: A Confidence Game, Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, Orlando, FL, 1995.

23. Uncertainties in Travel-Time Seismology, SIAM/GAMM Symposium on Inverse Problems: Geophysical Applications, Fish Camp, CA, 1995.

22. Toward Tubular Tomography, 27th General Assembly of the Int. Assoc. of Seismology and Phys. of the Earth's Inter. (IASPEI), Wellington, New Zealand, 1994.

21. Alternative Data Analysis Techniques, Global Oscillation Network Group annual meeting, Los Angeles, CA, (presented by C. Genovese due to illness), 1994.

20. Mathematical Aspects of Integral Equation Inversion, Global Oscillation Network Group workshop, Sydney, Australia, 1994.

19. Conservative Finite-Sample Confidence Envelopes for Monotone and Unimodal Densities, Mathematisches Forschungsinstitut Oberwolfach meeting on Curves, Images and Massive Computation, Oberwolfach, Germany, 1993.

18. Invited discussant, Joint IMS/ASA/ENAR Meeting, Philadelphia, PA, 1993.

17. Uncertainty of the Quadrupole Component of the Cosmic Microwave Background, Israel Statistical Association Annual Meeting, Tel Aviv, 1993.

16. Brute-Force Minimax Estimation in Geochemistry, Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, San Francisco, CA, 1993.

15. Conservative Numerical Uncertainty Estimates in Inverse Problems, SIAM 40th Anniversary Meeting, Los Angeles, CA, 1992.

14. Minimax Estimation in Geomagnetism, European Geophysical Society Annual Meeting, Wiesbaden, Germany, 1991.

13. Minimax Estimation in Geophysical Inverse Problems: Applications to Seismic Tomography and Geomagnetism, Schmitt Institute for Physics of the Earth, Academy of Sciences of the USSR, Moscow, 1991.

12. Imagining Earth's Interior: Controversies in Seismology and Geomagnetism, Mathematical Sciences Research Institute Workshop on Statistical Methods in Imaging, Berkeley, CA, 1991.

11. Discretization and its Discontents: New Methods in Inverse Theory, Institute for Theoretical Physics program Helioseismology—Probing the Interior of a Star, National Science Foundation Institute for Theoretical Physics, University of California, Santa Barbara, 1990.

10. Inference in Infinite-Dimensional Inverse Problems, Schmitt Institute for Physics of the Earth, Academy of Sciences of the USSR, Moscow, 1990.

9. Inference in Infinite-Dimensions: Discretization and Duality, Israel Statistical Association Annual Meeting, Jerusalem, 1990.

8. Superresolution: What, When and How?, Institute for Theoretical Physics program Helioseismology—Probing the Interior of a Star, National Science Foundation Institute for Theoretical Physics, University of California, Santa Barbara, 1990.

7. Sparsity-Constrained Deconvolution, International Union of Radio Science Meeting, Boulder, CO, 1989.

6. Invited discussant, Statistics, Earth and Space Sciences Meeting of the Bernoulli Society, Leuven, Belgium, 1989.

5. Rigorous Computer Solutions to Infinite-Dimensional Inverse Problems, rcp 264 problemes inverses, Montpellier, France, 1989.

4. Duality and Discretization Error, Conference on Mathematical Geophysics, Blanes, Spain, 1988.

3. Spectral extrapolation with positivity, International Union of Radio Science Meeting, Boulder, CO, 1987.

2. Travel-Time Constraints on Core Structure, Special Session on Geophysics of the Core and Core-Mantle Boundary, American Geophysical Union Spring Meeting, Baltimore, MD, 1986.

1. Smooth Models from tau(p) and X(p) Data, Scripps Industrial Associates Short Course on Inverse Theory, Scripps Institution of Oceanography, La Jolla, CA, 1986.

**Other Invited Seminars**

California State University, Chico (Mathematics 1993)

Colorado School of Mines (Mathematical and Computer Sciences 1997)

Copenhagen University (Niels Bohr Institute for Astronomy, Physics, and Geophysics 1996)

Hebrew University of Jerusalem (Statistics 1993)

IT University of Copenhagen (2013, 2014, 2016)

Kansas State University (Statistics 2008)

Pennsylvania State University (Statistics 2010)

National Solar Observatory (1997)

Naval Postgraduate School (Operations Research, 2001)

Reed College (Mathematics, 2007, 2008, 2011)

Rice University (Statistics, 2010)

Schlumberger-Doll Research (1988, 1990, 1991, 1992)

Southern Methodist University (Statistical Sciences, 1998)

Stanford University (Center for Space Physics and Astrophysics 1992; Mathematics 1997; Geology and Geophysics 1993, 1997; Statistics 1988, 1993, 1995, 2011, 2018; Computer Science 2019)

The Technion (Statistics 1987)

Tel Aviv University (Geology and Geophysics 1988, 1991; Statistics 1991, 2010)

University of Bologna (Physics and Astronomy, 2013)

University of British Columbia (Geophysics and Astronomy 1996)

University of California, Berkeley (Astronomy 1996; Center for Pure and Applied Mathematics 1988; Geology and Geophysics 1988; Materials Science and Mineral Engineering 1988; Physics, 2001; Seismographic Stations, 1991, 1992, 1996; Statistics 1987, 1988(2),1989(2), 1990, 1991, 1992, 1994, 1996(2), 1997, 2006, 2009, 2011)

University of California, Davis (Statistics 1995, 2006; Mathematics 2000)

University of California, Los Angeles (Mathematics 1992; Statistics 2000, 2008, 2013)

University of California, Riverside (Earth Sciences 1996; Statistics 1996)

University of California, San Diego (Institute for Geophysics and Planetary Physics 1985, 1986, 1987, 1988(2), 1990, 1998, 2005; Mathematics 1994)

University of Cambridge (Institute for Astronomy 1992, 1997)

University of Chicago (Statistics 1990)

University of Edinburgh (Earth Sciences, 1998)

University of Luxembourg (Interdisciplinary Centre for Security, Reliability and Trust 2012)

University of Paris, Institute de Physique du Globe de Paris (2011)

University of Pennsylvania (Wharton Statistics Department, 2011, 2016)

University of Texas at Austin (Geological Sciences 1988; Mathematics 1990, 1991; Institute for Geophysics 1990)

Veterans Affairs Northern California Health Care System, Martinez, CA (East Bay Institute for Research and Education, 2007)

Yale University (Geology and Geophysics 1988; Statistics 1988)

## Press

295. 'Weaponizing Uncertainty': Another GOP State 'Audit' of 2020 Results Finds...Nothing Unusual, Brad Friedman, *BradCast*, 4 January 2022, https://bradblog.com/?p=14123

294. AHA News: Foraging for Food Connects You to Nature—But Do Your Homework Before You Eat, Will Pry, *American Heart Association News, USA Today*, 2 December 2021. https://www.usnews.com/news/health-news/articles/2021-12-02/aha-news-foraging-for-food-connects-you-to-nature-but-do-your-homework-before-you-eat

293. New Hampshire showed how to audit an election properly, Sarah Salem, *The Cybersecurity 202, The Washington Post*, 5 October 2021. https://www.washingtonpost.com/politics/2021/10/05/new-hampshire-showed-how-audit-an-election-properly/

292. DHS Cyber Office Wants to See Secret Voting Machine Vulnerability Report, Shannon Vavra and Jose Pagliery, *The Daily Beast*, 28 September 2021. https://www.thedailybeast.com/department-of-homeland-security-cyber-office-wants-to-see-secret-voting-machine-vulnerability-report

291. Fact check: No evidence 'lost votes' or 'ghost votes' affected Arizona's election outcome, Daniel Funke, *USA TODAY*, 15 September 2021. https://www.usatoday.com/story/news/factcheck/2021/09/15/fact-check-arizona-voter-fraud-not-proven-viral-canvassing-report/8262315002/

290. Experts call for rigorous audit to protect California recall, Christina A. Cassidy and Kate Brumback, *Associated Press*, 2 September 2021. https://apnews.com/article/technology-california-4e0e59da8bd5618c653b3e3fab524d2e

289. The Cybersecurity 202: In this Colorado county, election conspiracies led to a real-world leak, Joseph Marks, *The Washington Post*, 26 August 2021. https://www.washingtonpost.com/politics/2021/08/26/cybersecurity-202-this-colorado-county-election-conspiracies-led-real-world-leak/

288. Officials say new voting audits offer trust and transparency in elections, Jordan Wilkie, *Carolina Public Press*, 9 August 2021. https://carolinapublicpress.org/47584/officials-say-new-voting-audits-offer-trust-and-transparency-in-elections/

287. Texas GOP lawmakers want 2020 election audit—but only in big counties that mostly went for Biden, Eva Ruth Moravec *Washington Post*, 22 July 2021, https://www.washingtonpost.com/politics/2021/07/22/texas-gop-forensic-audit-toth-paxton/

286. Activists sue federal agency over voting system guidelines, *Associated Press*, 19 July 2021. https://apnews.com/article/business-technology-government-and-politics-voting-cb9169604edbaf166db394328144c403

285. Windham, NH, Election Status Report, *Right American Media*, 13 June 2021. https://www.rightamericamedia.com/livechannel1?wix-vod-video-id=e0e2a65413ca4decb8b3fb713a9744cf&wix-vod-comp-id=comp-kfqel7ng

284. Mystery Solved!: Professional Public Audit in NH Uncovers Why Hundreds of Votes Were Mistallied. Brad Friedman, *BradCast*, 8 June 2021, https://bradblog.com/?p=13889

283. Trump hails 'patriots' behind 2020 election audit in New Hampshire town, Jeremy Beaman, *Washington Examiner*, 6 May 2021, https://www.washingtonexaminer.com/news/trump-supports-patriots-in-windham-audit

282. What's Happening With Windham's Election Audit? Casey McDermott, *New Hampshire Public Radio*, 5 May 2021, https://www.nhpr.org/post/whats-happening-windhams-election-audit

281. Ashis Ray Speaks to Prof Philip B. Stark on "Evidence-based Elections," *National Herald* (India), 25 April 2021, https://www.youtube.com/watch?v=Q_EX_f3PIpY&t=2s

280. Ralph Nader Radio Hour, Interview on Evidence-Based Elections, 10 April 2021, https://ralphnaderradiohour.com/dont-mess-with-mesh-evidence-based-voting/

279. OAN Report Features Baseless Assertion of Election Fraud by Algorithm, Angelo Fichera and Saranac Hale Spencer, *FactCheck.org*, 11 February 2021. https://www.factcheck.org/2021/02/oan-report-features-baseless-assertion-of-election-fraud-by-algorithm/

278. Election experts push back on ballot-marking device security concerns, Brooke Conrad, *Fox 11 News*, 4 January 2021. https://fox11online.com/news/beyond-the-podium/election-experts-push-back-on-ballot-marking-device-security-concerns

277. Georgia runoffs are impossible to properly audit, experts say, Brooke Conrad, *WWMT*, 17 December 2020. https://wwmt.com/news/nation-world/georgia-runoffs-are-impossible-to-properly-audit-experts-say

276. Two reasons the Texas election case is faulty: flawed legal theory and statistical fallacy, Jeremy W. Peters, David Montgomery, Linda Qiu, and Adam Liptak, *New York Times*, 10 December 2020. https://www.nytimes.com/2020/12/10/technology/texas-election-lawsuit-legality.html

275. University Students on Lottery Hot Streak, CTV News Channel, 26 November 2020. https://www.ctvnews.ca/video?clipId=2086543

274. Ivy League graduates win over $6M in 66 games, *Good Morning America*, 26 November 2020. https://www.goodmorningamerica.com/news/video/ivy-league-graduates-win-6m-66-games-74415889

273. Trump's Pants on Fire claim about votes exceeding voters in swing states, Jon Greenberg, *Politifact*, 23 November 2020. https://www.politifact.com/factchecks/2020/nov/23/donald-trump/no-there-have-not-been-more-votes-people-who-voted/

272. Georgia's Hand Count of 2020 ballots was No Risk-Limiting Audit, Steve Rosenfeld, *Moyers on Democracy*, 22 November 2020. https://billmoyers.com/story/georgias-hand-count-of-2020-ballots-was-no-risk-limiting-audit/

271. Why Georgia's Unscientific Recount 'Horrified' Experts, Timothy Pratt, *The Nation*, 20 November 2020. https://www.thenation.com/article/politics/georgia-recount/.

270. Is Trump right about Georgia vote? Robert Sanders, *Berkeley News*, 13 November 2020. https://news.berkeley.edu/2020/11/13/is-trump-right-about-georgia-vote/

269. Debunking the 'Hammer and Scorecard' election fraud conspiracy theory, *PolitiFact*, 10 November 2020. https://www.politifact.com/factchecks/2020/nov/10/pamela-geller/debunking-hammer-and-scorecard-election-fraud-cons/

268. Georgia to Use New Audit Tool to Assess Vote Count Accuracy—Is It Ready? Steven Rosenfeld, *Voting Booth*, 7 November 2020. https://votingbooth.media/georgia-to-use-new-audit-tool-to-assess-vote-count-accuracy-is-it-ready/

267. Do Hundreds of Counties Have 1.8 Million 'Ghost Voters' in the US? A study published by the activist legal group Judicial Watch used two different types of data to make a comparison. Bethania Palma, *Snopes*, 6 November 2020. https://www.snopes.com/fact-check/ghost-voters-in-29-states/

266. Georgia to conduct its first 'risk limiting audit' before certifying election results, Ben Popkin, *NBC News*, 5 November 2020. https://www.nbcnews.com/politics/2020-election/live-blog/2020-11-05-trump-biden-election-results-n1246510/ncrd1246677#blogHeader

265. KCBS San Francisco Radio News, 1 November 2020. https://omny.fm/shows/kcbsam-on-demand/election-day-is-coming-up-how-are-votes-audited

264. How Safe Is the US Election from Hacking? Jennifer Cohn, *New York Review of Books*, 31 October 2020. https://www.nybooks.com/daily/2020/10/31/how-safe-is-the-us-election-from-hacking/

263. PBS News Hour, 29 October 2020. https://www.pbs.org/newshour/show/how-some-election-officials-are-trying-to-verify-the-vote-more-easily

262. Election security concerns remain as FBI probes Iran, Russia meddling, Douglas Kennedy, *Fox News*, 26 October 2020. https://video.foxnews.com/v/6204789725001#sp=show-clips

261. Rep. Calvert: Attorney General and Secretary of State are using their power to intimidate GOP voters, Juliette Fairley, *Southern California Record*, 19 October 2020. https://socalrecord.com/stories/558066308-rep-calvert-attorney-general-and-secretary-of-state-are-using-their-power-to-intimidate-gop-voters

260. Are the machines that count our mail-in ballots safe? Matthew Rozsa, *Salon*, 16 October 2020. https://www.salon.com/2020/10/16/are-the-machines-that-count-our-mail-in-ballots-safe/

259. Technology central to vote count in a tight election, Shaun Sutner, *TechTarget*, 30 September 2020. https://searchbusinessanalytics.techtarget.com/news/252489904/Technology-central-to-vote-count-in-a-tight-election

258. Election security researchers agree—online voting isn't ready for 'prime time,' Betsy Foresman, *Ed Scoop*, 21 September 2020. https://edscoop.com/online-voting-not-ready-yet-election-security-research/

257. Craigslist founder funds new vote-by-mail study, university dean fears political weaponization, Juliette Fairley, *Southern California Record*, 16 September 2020. https://socalrecord.com/stories/555100372-craigslist-founder-funds-new-vote-by-mail-study-university-dean-fears-political-weaponization

256. Can I eat weeds in toxic soil? Yogahealer Podcast with Cate Stillman, September 2020. https://yogahealer.com/can-i-eat-weeds-in-toxic-soil-with-dr-philip-stark-guest-dr-philip-stark/

255. Civil Grand Jury Releases Scathing Report on LA County Voting Machines, David Goldstein, *CBS Los Angeles*, 22 June 2020. https://losangeles.cbslocal.com/video/4599621-civil-grand-jury-releases-scathing-report-on-la-county-voting-machines/

254. Lafayette Lens: Vote your Voice, Hannah Spitzer, WLTV, 21 May 2020. https://video.wlvt.org/video/lafayette-lens-gsdmf6/

253. Experts say COVID-19 presents threats to democratic process in general election, Rachel Barber, *The Daily Cal*, 10 May 2020. https://www.dailycal.org/2020/05/10/covid-19-presents-threats-to-democratic-process-in-general-election/

252. Eating our campus: Foraging in the face of the coronavirus, Hannah Frances Johansson, *The Daily Cal*, 27 March 2020. https://www.dailycal.org/2020/03/27/eating-our-campus-foraging-in-the-face-of-the-coronavirus/

251. Los Angeles County's risky voting experiment, Kim Zetter, *Politico*, 3 March 2020. https://www.politico.com/news/2020/03/03/los-angeles-county-voting-experiment-119157

250. Will L.A.'s Voting Overhaul be an Industry Disrupter or the Next Election Debacle?, Tierney Sneed, *Talking Points Memo*, 21 February 2020. https://talkingpointsmemo.com/news/will-l-a-s-voting-overhaul-be-an-industry-disrupter-or-the-next-election-debacle

249. 'Perfect storm': Los Angeles County's new voting system is approved for primary despite flaws Rosalina Nieves, *CNN*, 15 February

2020. https://www.cnn.com/2020/02/14/politics/la-county-new-voting-system-primary/index.html

248. Goldstein Investigation: Officials Warn Of 'Vulnerabilities' With E-Voting Machines Ahead Of March 3 Primary *CBS Los Angeles*, 4 February 2020. https://losangeles.cbslocal.com/2020/02/04/goldstein-investigation-officials-warn-of-vulnerabilities-with-e-voting-machines-ahead-of-march-3-primary/

247. Foraged SuperFoods: Professor Philip B. Stark on the Nutritional Power of Weeds, *OnBlend*, 2 February 2020. https://onblend.tealeaves.com/foraged-superfoods/

246. LA's New Voting System Is Still Uncertified. Why Election Security Experts Are Worried, Libby Denkmann, *LAist*, 16 January 2020. https://laist.com/2020/01/16/los-angeles-county-voting-system-uncertified.php

245. Reevaluating teacher evaluations in higher education: Relying on students to rate professors is convenient, cheap, and problematic. Toni Feder, *Physics Today*, *73*, 1, 24, 1 January 2020 https://doi.org/10.1063/PT.3.4386

244. As Georgia rolls out new voting machines for 2020, worries about election security persist, Neena Satija, Amy Gardner, and Joseph Marks, *The Washington Post*, 23 December 2019. https://www.washingtonpost.com/politics/as-georgia-rolls-out-new-voting-machines-for-2020-worries-about-election-security-persist/2019/12/23/c5036d74-2017-11ea-bed5-880264cc91a9_story.html

243. Two experts quit accountability group over claims it has been endorsing untrustworthy machines, Mark Sullivan, *Fast Company*, 13 December 2019. https://www.fastcompany.com/90441559/two-experts-quit-election-accountability-group-over-claims-it-has-been-endorsing-untrustworthy-machines

242. *The Brad Blog*, 13 December 2019. https://bradblog.com/?p=13235

241. Why this expert warns that a voting watchdog has 'lost its way' — and our elections are at risk. Steven Rosenfeld, *AlterNet*, 4 December

2019. https://www.alternet.org/2019/12/why-this-expert-warns-that-a-voting-watchdog-has-lost-its-way-and-our-elections-are-at-risk/

240. Inventor of risk-limiting audits resigns from Verified Voting board, Eric Geller, *Politico*, 22 November 2019.

239. Expensive, Glitchy Voting Machines Expose 2020 Hacking Risks, Kartikay Mehrotra and Margaret Newkirk, *Bloomberg*, 8 November 2019. https://www.bloomberg.com/news/articles/2019-11-08/expensive-glitchy-voting-machines-expose-2020-hacking-risks

238. Why over 130,000 new voting machines could lead to more distrust in U.S. elections, Steven Rosenfeld, *Salon*, 8 October 2019. https://www.salon.com/2019/10/08/why-over-130000-new-voting-machines-could-lead-to-more-distrust-in-u-s-elections_partner/

237. Speaking Out Against Student Evals, Colleen Flaherty, *Inside Higher Ed*, 10 September 2019. https://www.insidehighered.com/news/2019/09/10/sociologists-and-more-dozen-other-professional-groups-speak-out-against-student

236. Probe of missing Georgia votes finds "extreme" irregularities in black districts, Igor Derysh, *Salon.com*, 30 August 2019. https://www.salon.com/2019/08/30/probe-of-missing-georgia-votes-finds-extreme-irregularities-in-black-districts-and/

235. Wild: A State of Mind, *The Botanist*, August 2019. https://www.thebotanist.com/wild-a-state-of-mind/mini-film-series/philip-stark-usa/

234. Vote security on the line in NC Board of Elections meeting, Jordan Wilkie, *Carolina Public Press*, 20 August 2019. https://carolinapublicpress.org/29224/vote-security-on-the-line-in-nc-board-of-elections-meeting/

233. Computer Scientists Make the Case Against an Expensive New Voting System Georgia is preparing to spend $150 million on election technology. Experts worry it will be a security nightmare. Timothy Pratt, *The Atlantic*, 20 July 2019. https://www.theatlantic.com/t

echnology/archive/2019/07/computer-scientists-worry-over-election-security-georgia/593497/

232. Open Your Eyes: A Responsible Guide to Foraging, Giulia Pines, *FoodPrint*, 3 July 2019. https://foodprint.org/blog/sustainable-foraging/

231. The Story of Weeds, WorldWild Podcast, July 2019. https://forager.org.uk/index.php?option=com_content&view=article&id=248

230. Trump floats delaying the 2020 census for citizenship question, David K. Li, *NBC News*, 27 June 2019. https://www.nbcnews.com/politics/politics-news/trump-floats-delaying-2020-census-citizenship-question-n1023316

229. Will Microsoft Save America's Elections?, Jack Lownstein, *Who.What.Why.*, 4 June 2019. https://whowhatwhy.org/2019/06/04/will-microsoft-save-americas-elections/

228. Where the wild things are: This group in Berkeley makes a case for eating weeds, Cirrus Wood, *Nosh: Dishing on the East Bay*, *Berkeleyside*, 20 May 2019. https://www.berkeleyside.com/2019/05/20/where-the-wild-things-are-this-group-in-berkeley-makes-a-case-for-eating-weeds

227. Greens Gone Wild: Food From The Sidewalk, *The Jefferson Exchange*, Jefferson Public Radio, Ashland, OR, 16 May 2019. https://www.ijpr.org/post/greens-gone-wild-food-sidewalk, audio: https://cpa.ds.npr.org/ksor/audio/2019/05/may_16_2019_hr_1a.mp3

226. Feds look at risks of next Georgia voting machines, Mark Niesse, *Atlanta Journal Constitution*, 1 May 2019. https://www.ajc.com/news/state--regional-govt--politics/feds-look-risks-next-georgia-voting-machines/oTJSg41sSlbSEpnawIpTnM/

225. A BFD about BMDs, Tim Starks, *Politico Morning Cybersecurity*, 23 April 2019. https://www.politico.com/newsletters/morning-cybersecurity/2019/04/23/pentagons-swat-team-of-nerds-gets-new-leadership-593693

224. Minor Tweak, Major Impact, 23 April 2019. https://www.protocols.io/podcasts/episode-04-dr-philip-b-stark-university-of-california1

223. Georgia Republicans embrace 'discredited claims' in rush to approve insecure voting machines, Eric Geller, *Politico*, 22 March 2019. https://www.politico.com/story/2019/03/28/georgia-voting-machines-safe-1241033

222. Ripe for the Picking: Wild weeds may provide a new food source, Glenn Jackson, *PLoS EveryONE*, 12 April 2019. https://blogs.plos.org/everyone/2019/04/12/wild-weeds-may-provide-new-food-source/

221. Thousands of Black Votes in Georgia Disappeared and No One Can Explain It, Michael Harriot, *The Root*, 9 February 2019. https://www.theroot.com/exclusive-thousands-of-black-votes-in-georgia-disappea-1832472558

220. Colleges Are Getting Smarter About Student Evaluations. Here's How, Kristen Doerer, *Chronicle of Higher Education*, 13 January 2019. https://bit.ly/2SWY9w2

219. UC-Berkeley Elections Expert Says Georgia's Lt. Governor Contest Is 'In Substantial Doubt,' R. Robin McDonald, *Law.com*, 9 January 2019. https://www.law.com/dailyreportonline/2019/01/08/uc-berkley-elections-expert-says-georgias-lt-governor-contest-is-in-substantial-doubt/

218. A.I. Is Helping Scientists Predict When and Where the Next Big Earthquake Will Be, Thomas Fuller and Cade Metz, *The New York Times*, 26 October 2018. https://www.nytimes.com/2018/10/26/technology/earthquake-predictions-artificial-intelligence.html

217. Mega Millions Frenzy At A Fever Pitch Ahead Of Tuesday Night Drawing, Don Ford, *KPIX CBS Television*, 23 October 2018. https://sanfrancisco.cbslocal.com/2018/10/23/mega-millions-frenzy-at-a-fever-pitch-ahead-of-tuesday-night-drawing/

216. Innovators Look To "Accidental Crops" as a Nutritious, Environmentally Friendly and Free Source of Food, Natalie Parletta, *Ensia*, 28 September 2018. https://ensia.com/articles/wild-greens/

215. Can Urban Soil Offer Edible Weeds Fit for Foraging?, Eden Stiffman, *Civil Eats*, 21 September 2018. https://civileats.com/2018/09/21/can-urban-soil-offer-edible-weeds-fit-for-foraging/

214. Georgia Voters—out of Country, out of Luck?, Sean Steinberg, *WhoWhatWhy*, 11 September 2018. https://whowhatwhy.org/2018/09/11/georgia-voters-out-of-country-out-of-luck/

213. Even Scientists Jump to Conclusions—and That's a Problem, *Cosmos: The Science of Everything*, Paul Biegler, 6 September 2018, https://cosmosmagazine.com/social-sciences/even-scientists-jump-to-conclusions-and-that-s-a-problem

212. Elections Scholar: Kansas Voting System Would Allow Undetectable Tampering, Jennifer Cohn, *TYT*, 6 September 2018. https://tyt.com/stories/4vZLCHuQrYE4uKagy0oyMA/5YIEQxHW5qmWayG0kYCsy2

211. West Virginia is testing a mobile voting app for the midterms. What could go wrong?, Jen Kirby, *Vox*, 17 August 2018. https://www.vox.com/2018/8/17/17661876/west-virginia-voatz-voting-app-election-security

210. Election Security Hot Topic at Walnut Creek Town Hall, Debora Villalon, *KTVU*, 14 August 2018. http://www.ktvu.com/news/election-security-hot-topic-at-congressional-town-hall-in-walnut-creek

209. Weeds growing in poor city areas more nutritious than store-bought produce, Natalie Parletta, *Cosmos: The Science of Everything*, 13 August 2018. https://cosmosmagazine.com/biology/weeds-growing-in-poor-city-areas-more-nutritious-than-store-bought-produce

208. Voting Machine Company Admits Installing Vulnerable Remote-Access Software, Jimmy Falls, *Who.What.Why*, 19 July 2018. https://whowhatwhy.org/2018/07/19/voting-machine-company-admits-installing-vulnerable-remote-access-software/

207. Can the Emmys Be Hacked? One contender tried to find out, Geoff Edgers, *Washington Post*, 2 June 2018. https://www.washingtonpost.com/news/arts-and-entertainment/wp/2018/06/22/can-the-emmys-be-hacked-one-contender-tried-to-find-out/

206. Student Evaluations of Teaching are Not Valid. It is time to stop using SET scores in personnel decisions, John W. Lawrence, *American Association of University Professors*, May–June, 2018. https://www.aaup.org/article/student-evaluations-teaching-are-not-valid

205. County Server On Election Night: Report Investigators traced IP addresses linked to the attack to foreign countries, Sam Levine, *Huffington Post*, 11 May 2018. https://www.huffingtonpost.com/entry/knox-county-election-cyberattack_us_5af5ca21e4b032b10bfa56ee?j6

204. Texas Works To Create A More Secure Electronic Voting System, Ashley Lopez, *NPR Morning Edition*, 10 May 2018. https://www.npr.org/2018/05/10/609979541/texas-works-to-create-a-more-secure-electronic-voting-system

203. Amid Delay In New Lottery Policy, Repeat Winners Keep On Winning, Lisa Creamer and Jeff Kelly Lowenstein, *WBUR*, 27 April 2018. http://www.wbur.org/news/2018/04/27/lottery-frequent-winners-policy-delay

202. Some people repeatedly win the Wisconsin Lottery. Do they play fair? Peter Coutu, *Wisconsin Center for Investigative Journalism*, 18 March 2018. https://www.wisconsinwatch.org/2018/03/some-people-repeatedly-win-the-wisconsin-lottery-do-they-play-fair/

201. Experts Say Electronic Voting Machines Aren't Secure. So Travis County Is Designing Its Own, Ashley Lopez, *KUT Public Radio*, 5 March 2018. http://kut.org/post/experts-say-electronic-voting-machines-arent-secure-so-travis-county-designing-its-own

200. Foraging is Alive and Well in Baltimore. Can it Help Fight Hunger Too?, Jodi Helmer, *Civil Eats*, 22 February 2018. https://civileats.com/2018/02/22/urban-foraging-is-alive-and-well-in-baltimore-can-it-help-fight-hunger-too/

199. Auditor general finds no fault with PA Lottery, but unusual wins remain unexplained, Daniel Simmons-Ritchie, *Penn Live*, 2 February 2018. http://www.pennlive.com/news/2018/02/auditor_general_finds_no_fault.html

198. Vote auditing can ensure integrity of elections, Audrey Malagon, *The Virginian-Pilot*, 20 January 2018. https://pilotonline.com/opinion/columnist/guest/article_cbe465f9-6f22-58c6-a050-42b0ea55cb41.html

197. Berkeley Professor Leads Nation's First Statewide Risk-Limiting Election Audit, *American Statistical Association News*, 20 December 2017. http://www.amstat.org/ASA/News/Berkeley-Professor-Leads-Nations-First-Statewide-Risk-Limiting-Election-Audit.aspx

196. Engineering verifiable elections, *IEEE Spotlight*, 5 December 2017. http://sites.ieee.org/spotlight/when-is-an-election-verifiable/

195. Just how lucky are regular lottery winners? *More or Less*, *BBC*, 3 December 2017. http://www.bbc.co.uk/programmes/w3csvq3h

194. Colorado's First-In-The-Nation Audit Takes The Next Step Toward More Secure Elections, Ann Marie Awad, *All Things Considered*, *National Public Radio*, 22 November 2017. https://www.npr.org/2017/11/22/566039611/colorado-launches-first-in-the-nation-post-election-audits (Originally broadcast on *Colorado Public Radio*, http://www.cpr.org/news/story/colorado-s-first-in-the-nation-audit-takes-the-next-step-toward-more-secure-elections)

193. Auditor General examining unusually frequent lottery wins identified by PennLive, Daniel Simmons-Ritchie, *Penn Live*, 25 September 2017. http://www.pennlive.com/news/2017/09/auditor_general_examining_freq.html

192. Nationwide lottery project, like Post's, finds improbable winnings, Lawrence Mower, *Palm Beach Post*, 22 September 2017. http://www

.mypalmbeachpost.com/news/nationwide-lottery-project-like-post-finds-improbable-winnings/Sj8QrpwbqyT3xs9gBVPJSP/

191. When retailers win lottery prizes with luck that defies belief, could officials be turning a blind eye?, Daniel Simmons-Ritchie, *Penn Live*, 15 September 2017. http://www.pennlive.com/watchdog/2017/09/defying_the_odds_part_3.html

190. These Pennsylvania Lottery players have won more than a 100 times - but how?, Daniel Simmons-Ritchie, *Penn Live*, 14 September 2017. http://www.pennlive.com/watchdog/2017/09/defying_the_odds_part_2.html

189. How did PennLive investigate America's 'luckiest' lottery players?, Daniel Simmons-Ritchie and Jeff Kelly Lowenstein, *Penn Live*, 13 September 2017. http://www.pennlive.com/watchdog/2017/09/defying_the_odds_methodology.html

188. The math behind PennLive's analysis of frequent lottery winners, Daniel Simmons-Ritchie, *Penn Live*, 13 September 2017. http://www.pennlive.com/watchdog/2017/09/defying_the_odds_math.html

187. The nation's 'luckiest' lottery winners may not be as lucky as they seem, Daniel Simmons-Ritchie and Jeff Kelly Lowenstein, *Penn Live*, 13 September 2017. http://www.pennlive.com/watchdog/2017/09/defying_the_odds_part_1.html

186. Risky business: How do restaurants succeed long term?, Megan Favignano, *Columbia Daily Tribune*, 19 August 2017. http://www.columbiatribune.com/news/20170819/risky-business-how-do-restaurants-succeed-long-term

185. In System With Little Oversight, Connecticut's Biggest Lottery Winners Often Pay Huge Price, Matthew Kauffman, Dave Altimari, and Jon William Allsop, *Hartford Courant*, 17 August 2017. http://www.courant.com/news/connecticut/hc-lottery-big-winners-20170817-story.html

184. Gaming the Lottery: Behind the Story, Jeff Kelly Lowenstein and Raymond Joseph, *eNews Channel Africa*, 14 August 2017. http://www.enca.com/south-africa/gaming-the-lottery-behind-the-story

183. Why are doctors and patients still at war over M.E.? How the best treatment for the debilitating condition is one of the most bitterly contested areas in medicine, Jerome Burne, *The Daily Mail*, 14 August 2017. http://www.dailymail.co.uk/news/article-4790904/Why-doctors-patients-war-M-E.html

182. DefCon hackers made short work of voting machines. Now what?, Matt Leonard, *GCN*, 8 August 2017. https://gcn.com/articles/2017/08/08/defcon-voting-hacking.aspx

181. Colorado to require advanced post-election audits, Eric Geller, *Politico*, 17 July 2017. http://www.politico.com/story/2017/07/17/colorado-post-election-audits-cybersecurity-240631

180. Are edible weeds the next food trend? Devika Bansal, *San Jose Mercury News*, 16 July 2017. http://www.mercurynews.com/2017/07/16/is-picking-edible-weeds-off-the-streets-the-next-foodie-trend/

179. Here's how to keep Russian hackers from attacking the 2018 elections, J. Alex Halderman and Justin Talbot-Zorn, *Washington Post*, 21 June 2017. https://www.washingtonpost.com/news/posteverything/wp/2017/06/21/heres-how-to-keep-russian-hackers-from-attacking-the-2018-elections/

178. Do French Fries Kill You? A Lesson in Correlation vs. Causation, Leah Rosenbaum, *Seeker*, 16 June 2017. https://www.seeker.com/health/do-french-fries-kill-you-a-lesson-in-cargo-cult-science

177. White Men Of Academia Have An 'Objectivity' Problem, P.L. Thomas, *Huffington Post*, 9 June 2017. http://www.huffingtonpost.com/entry/more-on-white-men-of-academia-student-and-self-evaluation_us_593a8204e4b0b65670e56963

176. The Voting Technology We Really Need? Paper, Lawrence Norden, *The Atlantic*, 10 May 2017. https://www.theatlantic.com/technology/archive/2017/05/the-voting-technology-we-really-need-paper/524820/

175. There's Probably a Salad's Worth of Greens On Your City Block, Glenn Jackson, *Bon Appetit / Healthy-ish*, 9 May 2017. (urban foraging, food

security, food safety, nutrition) http://www.bonappetit.com/story/urban-foraging-philip-stark

174. Foraging, an educational skill set that could one day be taught in public schools, Jessica Wyant, *The Pioneer*, 1 May 2017. (urban foraging, food security, food safety, nutrition) http://piercepioneernews.com/11293/campus/11293/

173. Berkeley Open Source Food Week promotes foraging, Gasia Mikaelian, *KTVU*, 20 April 2017. (urban foraging, food security, food safety) http://www.ktvu.com/news/249730521-story

172. UC Berkeley professor shares love of edible, nutritious weeds, Rebecca Parr, *East Bay Times*, 24 March 2017. (urban foraging, food security, food safety) http://www.eastbaytimes.com/2017/03/24/hayward-professor-shares-love-of-edible-nutritious-weeds/

171. Women Professors' Salaries Have Gone Up More Than Men's—but the Wage Gap Is Still Widening, Suzannah Weiss, *Glamour*, 23 March 2017. (teaching evaluations, gender bias) http://www.glamour.com/story/women-professors-salaries-have-gone-up-more-than-mensbut-the-wage-gap-is-still-widening

170. Inside the Recount, Steve Friess, *New Republic*, March 2017. (election integrity) https://newrepublic.com/article/140254/inside-story-trump-clinton-stein-presidential-election-recount

169. Ratings Show Students Unfairly Favor Male Professors, Peter Musto, *Voice of America*, 13 February 2017. (teaching evaluations, gender bias) http://learningenglish.voanews.com/a/ratemyprofessors-rating-system-unfair-to-females/3718237.html

168. Voter Fraud Experts: Trump's "Bizarre" Claim Of Illegal Votes Could Lead To Severe Voter Restrictions. Journalists Urged To Call Out "Bogus" Assertion, Joe Strupp, *Media Matters*, 25 January 2017. (election integrity) https://mediamatters.org/blog/2017/01/25/voter-fraud-experts-trump-s-bizarre-claim-illegal-votes-could-lead-severe-voter-restrictions/215119

167. Stein Camp Believes Recount Price Tag Was 'Jacked Up' to Discourage Audit, Oliver Ortega, *Who. What. Why*, 18 January 2017. (election

integrity). http://whowhatwhy.org/2017/01/18/stein-camp-believes-recount-price-tag-jacked-discourage-audit/

166. Team at Rice builds machine to transform the way we vote, Dylan Baddour, *The Houston Chronicle*, 27 December 2016. (election integrity) http://www.houstonchronicle.com/news/houston-texas/houston/article/Team-at-Rice-builds-machine-to-transform-the-way-10821587.php

165. Fact-checking the integrity of the vote in 2016, Jon Greenberg, *PolitiFact*, 17 December 2016. (election integrity) http://www.politifact.com/truth-o-meter/article/2016/dec/17/fact-checking-claims-voter-fraud-2016/

164. *RT America News*, Interview by Ed Schultz, 9 December 2016. (election integrity) https://youtu.be/HUILuSbpKyM

163. Secure American Democracy, Robert Schlesinger, *US News and World Reports*, 9 December 2016. (election integrity) http://www.usnews.com/opinion/articles/2016-12-09/3-reforms-for-americas-vulnerable-democracy-in-light-of-the-2016-election

162. 7 Election Integrity and Cyber-Security Experts Say Stopping Michigan Recount Is a Corrupt Exercise of Power, Steven Rosenfeld, *AlterNet*, 8 December 2016. (election Integrity) http://airwww.alternet.org/7-election-integrity-and-cyber-security-experts-say-stopping-michigan-recount-corrupt-exercise-power

161. The Wisconsin recount may have a surprise in store after all, Stephen Ansolabehere, Barry C. Burden, Kenneth R. Mayer, and Charles Stewart III, *The Washington Post*, 5 December 2016. (election integrity) https://www.washingtonpost.com/news/monkey-cage/wp/2016/12/05/the-wisconsin-recount-may-have-a-surprise-in-store-after-all/

160. Could a Recount Overturn the Election? *The Economist*, 3 December 2016. (election integrity) http://www.economist.com/news/united-states/21711055-recounting-votes-tedious-expensive-and-cathartic-could-recount-overturn

159. *KTVU 2 Fox News*, Interview, 2 December 2016. (election integrity)

158. The Kathleen Dunn Show, *Wisconsin Public Radio*, Interview, 1 December 2016. (election integrity) http://www.wpr.org/listen/1028671

157. *KCBS Radio*, Interview with Doug Sovern, 1 December 2016. (election integrity)

156. What Would It Take to Fix The Voting System and Why Isn't Anybody Doing It?, Jeff Clyburn and Klaus Marre, *Who.What.Why?*, 1 December 2016. (election integrity) http://whowhatwhy.org/2016/12/01/take-fix-voting-system-isnt-anybody/

155. What 6 Top Election Experts Are Saying about the Next Big Step for the 2016 Recount, Steven Rosenfeld, *AlterNet*, 29 November 2016. (election integrity) http://www.alternet.org/election-2016/what-6-top-election-experts-are-saying-about-next-big-step-2016-recount

154. Judge rejects Stein's request for hand recount, Jason Stein, *Milwaukee Journal Sentinel*, 29 November 2016. (election integrity) http://www.jsonline.com/story/news/politics/elections/2016/11/29/steins-recount-headed-court-tuesday/94598740/

153. UC Berkeley professor calls for audit of presidential election votes, Ashley Wong, *The Daily Californian*, 29 November 2016. (election integrity) http://www.dailycal.org/2016/11/28/uc-berkeley-professor-calls-for-audit-of-presidential-election-votes/

152. Security experts join Jill Stein's 'election changing' recount campaign, Jon Swaine, *The Guardian*, 28 November 2016. (election integrity) https://www.theguardian.com/us-news/2016/nov/29/security-experts-join-jill-steins-election-changing-recount-campaign

151. *KTVU 2 Fox News*, Interview, 28 November 2016. (election integrity) http://www.ktvu.com/news/220330952-story

150. US election recount: how it began—and what effect it could have, Jon Swaine and Mona Chalabi, *The Guardian*, 28 November 2016. (election integrity) https://www.theguardian.com/us-news/2016/nov/28/election-recount-jill-stein-hillary-clinton-donald-trump

149. *BBC World Service*, 25 November 2016. Interview by Dotun Adebayo. (election integrity)

148. *KCBS Radio*, 25 November 2016. Interview. (election integrity)

147. *BBC World Service*, 24 November 2016. Interview. (election integrity)

146. US election: Leading statisticians call for vote audit over hacking fears, Harry Cockburn, *The Independent*, 23 November 2016. (election integrity) `http://www.independent.co.uk/news/world/americas/us-election-statisticians-vote-audit-hacking-donald-trump-hillary-clinton-a7434516.html`

145. Hacked or Not, Audit This Election (And All Future Ones), Andrew Greenberg, *Wired*, 23 November 2016. (election integrity) `https://www.wired.com/2016/11/hacked-not-audit-election-rest/`

144. Republicans Cannot Claim a Mandate When Hillary Clinton Has a 2 Million-Vote Lead, John Nichols, *The Nation*, 23 November 2016. (election integrity) `https://www.thenation.com/article/republicans-cannot-claim-a-mandate-when-hillary-clinton-has-a-two-million-vote-lead/`

143. Stop Saying the Election Was Rigged, Andrew Gelman, *Slate*, 22 November 2016. (election integrity) `http://www.slate.com/articles/health_and_science/science/2016/11/reports_claiming_the_election_was_rigged_are_wrong.html//`

142. Electoral Organizations Call For Nationwide Audit, Ethan Harfenist, *Vocativ*, 18 November 2016. (election integrity) `http://www.vocativ.com/377544/election-audit/`

141. Against all Odds, Gavin Off and Adam Bell, *The Charlotte Observer*, 29 September 2016. (lottery fraud) `http://www.charlotteobserver.com/news/special-reports/against-all-odds/`

140. Exercise and therapy cure for ME seriously flawed, Tom Whipple, *The Times of London*, 28 September 2016. (myalgic encephalomyelitis, chronic fatigue syndrome, clinical trials)

139. Livestream interview: Audits in California—How to Improve, *Ballots for Bernie*, 25 September 2016. (election integrity) `https://www.facebook.com/events/536276663233125/`

138. Foraging: Where the wild foods are, Shannon Eblen, *Courier-Post / USA Today*, 21 September 2016. (urban foraging, food security, food safety) `http://www.courierpostonline.com/story/life/2016/09/21/foraging-food-edibles-deptford/90494736/`

137. Bad science misled millions with chronic fatigue syndrome. Here's how we fought back, Julie Rehmeyer, *STAT*, 21 September 2016. (chronic fatigue syndrome, analysis of clinical trials) `https://www.statnews.com/2016/09/21/chronic-fatigue-syndrome-pace-trial/`

136. How to Hack an Election in 7 Minutes, Ben Wofford, *Politico Magazine*, 5 August 2016. (election integrity, election auditing) `http://www.politico.com/magazine/story/2016/08/2016-elections-russia-hack-how-to-hack-an-election-in-seven-minutes-214144`

135. Instead of Pokémon, Try Using Your Smartphone To Catch Tasty Wild Edibles, Jill Neimark, *Good*, 2 August 2016. (urban foraging, wild/feral food) `https://food.good.is/articles/foragers-call-these-apps-the-tinder-for-wild-food`

134. The Bias in Student Course Evaluations, Joey Sprague, *Inside Higher Ed*, 17 June 2016. (teaching evaluations, gender bias) `https://www.insidehighered.com/advice/2016/06/17/removing-bias-student-evaluations-faculty-members-essay`

133. How One Professor Is Trying to Paint a Richer Portrait of Effective Teaching, Emma Pettit, *The Chronicle of Higher Education*, 16 June 2016. (teaching evaluations, gender bias) `http://chronicle.com/article/How-One-Professor-Is-Trying-to/236827`

132. Survival of the Smartest: Berkeley Prof Stocks Up On Skill to Outlast Apocalypse, Krissy Eliot, *California Magazine*, 31 May 2016. (urban foraging, cooking, food, trail running) `http://alumni.berkeley.edu/california-magazine/just-in/2016-05-31/survival-smartest-berkeley-prof-stocks-skill-outlast`

131. MSU Professors Read Mean Reviews, *Detroit Free Press*, 2 May 2016. (teaching evaluations, gender bias) http://www.freep.com/story/news/local/michigan/2016/05/02/msu-professors-read-mean-reviews/83836716/

130. Embracing 'Messy' Science, Colleen Flaherty, *Inside Higher Ed*, 15 March 2016. ($P$-values) https://www.insidehighered.com/news/2016/03/15/american-statistical-association-seeks-usher-new-era-statistical-significance

129. Are College Students Sexist? New Research Says They Grade Female Profs More Harshly, Krissy Eliot, *California Magazine*, 3 February 2016. (gender bias, teaching evaluations) http://alumni.berkeley.edu/california-magazine/just-in/2016-02-03/are-college-students-sexist-new-research-says-they-grade

128. Are student evaluations fair on female teachers?, Alecia Simmonds, *Daily Life*, 3 February 2016. (gender bias, teaching evaluations) http://www.dailylife.com.au/news-and-views/dl-opinion/are-student-evaluations-fair-on-female-teachers-20160202-gmjuw6.html

127. Scientists: Subtle Seismic Activity Hints at Predicting Large Quakes, Steve Herman, *Voice of America*, 28 January 2016. (earthquake prediction) http://www.voanews.com/content/subtle-seismic-activity-hints-predicting-large-quakes/3167842.html

126. New Study Shows College Students Are Overwhelmingly Biased Against Female Professors: Student evaluations aren't just based on the effectiveness of teachers. Noelle Devoe, *Seventeen*, 27 January 2016. (gender bias, teaching evaluations) http://www.seventeen.com/life/school/news/a37577/new-study-shows-college-students-are-overwhelmingly-biased-against-female-professors/

125. Les évaluations des enseignements par les étudiants et les stéréotypes de genre, Anne Boring, *The Conversation*, 26 January 2016. (gender bias, teaching evaluations) https://theconversation.com/les-evaluations-des-enseignements-par-les-etudiants-et-les-stereotypes-de-genre-53590

124. Students Are Kind of Harsh When Evaluating Their Female Professors, Tanya Basu, *New York Magazine*, 26 January 2016. (gender bias, teaching evaluations) http://nymag.com/scienceofus/2016/01/students-give-women-professors-worse-evaluations.html

123. Student Evaluations Of College Professors Are Biased Against Women, Study Finds, Showing How Sexism Warps Our Views Of Competency, Erin Mckelle Fischer, *Bustle*, 26 January 2016. (gender bias, teaching evaluations) http://www.bustle.com/articles/137889-student-evaluations-of-college-professors-are-biased-against-women-study-finds-showing-how-sexism-warps-our

122. New Study Shows That Students Overwhelmingly Prefer Male Professors to Female Ones, but does having a male teacher mean a higher GPA? Kate Dwye, *Teen Vogue*, 26 January 2016. (gender bias, teaching evaluations) http://www.teenvogue.com/story/students-evaluate-male-professors-more-favorably

121. Students Favor Male Professors Regardless of Their Skills and Teaching Style, Madeleine Davies, *Jezebel*, 25 January 2016 (gender bias, teaching evaluations) http://jezebel.com/students-favor-male-professors-regardless-of-their-skil-1754947463

120. Why Female Professors Get Lower Ratings, Anya Kamenetz, *NPR Education*, 25 January 2016. (gender bias, teaching evaluations) http://www.npr.org/sections/ed/2016/01/25/463846130/why-women-professors-get-lower-ratings//

119. The Glaring Flaw In Student Evaluations, Casey Quinlan, *Think Progress*, 14 January 2016. (gender bias, teaching evaluations) http://thinkprogress.org/education/2016/01/14/3739455/gender-bias-professors/

118. Bias Against Female Instructors, Colleen Flaherty, *Inside Higher Ed*, 11 January 2016. (gender bias, teaching evaluations) https://www.insidehighered.com/news/2016/01/11/new-analysis-offers-more-evidence-against-student-evaluations-teaching Reprinted as It's Time to Kill the Student Evaluation: More and more evidence shows bias against female instructors, *Slate*, 14 January 2016. http:/

/www.slate.com/articles/life/inside_higher_ed/2016/01/student_evaluations_show_bias_against_female_instructors.html

117. There's No Easy Fix for Gender Bias in Students' Evaluation of Teachers, Nathan Collins, *Pacific Standard*, 8 January 2016. (gender bias, teaching evaluations) http://www.psmag.com/politics-and-law/kids-will-be-gender-biased-kids

116. Is food foraged in cities safe to eat?, Christina Boyes, *Civil Eats*, 11 November 11 2015. (urban foraging, nutrition, food safety) http://civileats.com/2015/11/11/is-urban-foraging-cities-safe-to-eat-boston/

115. Terra Verde interview, by Jason Mark, *KPFA*, 21 August 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://archives.kpfa.org/data/20150821-Fri1400.mp3

114. Un repas au coin du bitume, Julie Zaugg, *Le Temps*, 8 August 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.letemps.ch/Page/Uuid/e58f7054-3d24-11e5-9458-9f31f164eeae/Un_repas_au_coin_du_bitume

113. A Walk on the Wild (Edibles) Side, Mark Bittman, *The New York Times*, 9 July 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.nytimes.com/2015/07/09/opinion/mark-bittman-a-walk-on-the-wild-edibles-side.html

112. Why Mark Bittman Is Eating Weeds on Oakland's Sidewalks, Yahoo Food Editors, *Yahoo! Food*, 9 July 2015. (urban foraging, nutrition, food equity, food security, sustainability) https://www.yahoo.com/food/why-mark-bittman-is-eating-edible-weeds-on-123662813296.html

111. The Logistics of Urban Food Foraging, Katherine Spiers, *KCET*, 8 July 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.kcet.org/living/food/the-nosh/the-logistics-of-urban-food-foraging.html

110. With apps in hand, foragers find food underfoot, *Rustik Magazine*, 28 June 2015. (urban foraging, nutrition, food equity, food security, sus-

tainability) http://rustikmagazine.com/technology-urban-foraging/

109. Flawed Evaluations. Colleen Flaherty, *Inside Higher Ed*, 10 June 2015. (teaching evaluations) https://www.insidehighered.com/news/2015/06/10/aaup-committee-survey-data-raise-questions-effectiveness-student-teaching

108. Take a walk on the wild (edible) side. Mark Bittman, *California Matters*, 8 June 2015. (urban foraging, nutrition, food equity, food security, sustainability) https://youtu.be/F8BLU3iaLgM

107. California Matters: Mark Bittman's Online Video Series Premieres with 'Take a Walk on the Wild (Edibles) Side'. Lisa Landers, *KQED*, 8 June 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://ww2.kqed.org/bayareabites/2015/06/08/california-matters-mark-bittmans-online-video-series-premieres-with-take-a-walk-on-the-wild-edibles-side/

106. Edible urban weeds—Oakland's sidewalk salads. Paul Belz, *Wild Oakland*, 30 May 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://wildoakland.org/2015/05/edible-urban-weeds-oaklands-sidewalk-salads/

105. Eat Your Weeds: Get outside and forage for your food in the forests and sidewalk cracks of the East Bay. Sascha Bos, *East Bay Express*, 20 May 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.eastbayexpress.com/oakland/eat-your-weeds/Content?oid=4289051

104. Student Evaluations: Feared, Loathed, and Not Going Anywhere. Stacey Patton, *Chronicle of Higher Education*, 19 May 2015. (teaching evaluations) https://chroniclevitae.com/news/1011-student-evaluations-feared-loathed-and-not-going-anywhere

103. Why Not Get Rid of Student Evaluations? Stephen Burt, *Slate*, 15 May 2015. (teaching evaluations) http://www.slate.com/articles/life/education/2015/05/a_defense_of_student_evaluations_they_re_biased_misleading_and_extremely.html

102. Q&A: Philip Stark. Rose Hayden-Smith, *UC Food Observer*, 11 May 2015. (urban foraging, nutrition, food equity, food security, sustainability, ecology) http://ucfoodobserver.com/2015/05/11/qa-philip-stark/

101. Course evaluations get a failing grade in terms of effectiveness. Riley Vetterkind, *The Badger Herald*, 30 April 2015. (teaching evaluations, misuse of statistics, gender bias) https://badgerherald.com/news/2015/04/30/course-evaluations-get-a-failing-grade-in-terms-of-effectiveness/

100. Dandelions Should Be the New Kale. Emiko Jozuka, *Motherboard/Vice*, 27 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://motherboard.vice.com/read/dandelions-should-be-the-new-kale

99. Salad at Your Feet. Nicholas Boer, *Diablo Magazine*, 27 April 2015. http://www.diablomag.com/May-2015/Salad-at-Your-Feet/

98. Weeds are the future of healthy eating. Jason Mark, *Salon.com*, 18 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.salon.com/2015/04/18/weeds_are_the_future_of_fine_dining_partner/

97. Weed Eaters: Accompanying Berkeley's Urban Foragers from Weed Patch to Dining Table. Kristine A. Wong, *California Magazine*, 15 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://alumni.berkeley.edu/california-magazine/just-in/2015-04-15/weed-eaters-accompanying-berkeleys-urban-foragers-weed-patch

96. Up Front with Vylma V, *KPFA Radio*, 9 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) https://kpfa.org/episode/up-front-april-9-2015/ (at 30:02)

95. Bay Area Restaurants Cooking Weeds for Wild Food Week. Don Ford, *KPIX CBS News*, 8 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://sanfrancisco.cbslocal.com/2015/04/08/bay-area-restaurants-cooking-weeds-wild-food-week/

94. Weeds — They're What's for Dinner, Jason Mark, *Earth Island Journal*, 8 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.earthisland.org/journal/index.php/elist/eListRead/weeds_theyre_whats_for_dinner/

93. The app that helps you discover edible weeds. Richard Taylor, *BBC*, 8 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.bbc.com/news/technology-32124855

92. Wild Food Week Highlights Edible Weeds Going to Waste, Tamara Palmer, NBC Bay Area News, 6 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.nbcbayarea.com/news/local/Wild-Food-Week-298812881.html

91. KCBS News, 4 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.contactlenzcommunications.com/sitebuildercontent/sitebuilderfiles/wildweedsreplay.mp3

90. How do you convince people to eat weeds? Aarian Marshall, *The Atlantic / CityLab*, 3 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.citylab.com/work/2015/04/how-do-you-convince-people-to-eat-weeds/389357/

89. Wild Weeds, *Edible East Bay*, 1 April 2015. (Urban foraging, nutrition, food equity, food security, sustainability) http://edibleeastbay.com/newsletter/wild-weeds/

88. San Francisco Bay Restaurants Serving Weeds For Wild Food Week, *Growing Magazine*, 1 April 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.growingmagazine.com/take-control/san-francisco-bay-restaurants-serving-weeds-for-wild-food-week/

87. Top San Francisco Bay Restaurants Serving 'Weeds' All Next Week, *Broadway World*, 31 March 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.broadwayworld.com/bwwfood-wine/article/Top-San-Francisco-Bay-Restaurants-Serving-Weeds-All-Next-Week-20150331

86. Slinging Weeds: Wild Food Week, Luke Tsai, *East Bay Express*, 31 March 2015. (urban foraging, nutrition, food equity, food security,

sustainability) http://www.eastbayexpress.com/WhatTheFork/archives/2015/03/31/slinging-weeds-wild-food-week

85. Wild Food Week: Bay Area dinner series showcases foraged plants, Paolo Lucchesi , *SF Gate*, 26 March 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://insidescoopsf.sfgate.com/blog/2015/03/26/wild-food-week-bay-area-dinner-series-showcases-foraged-plants/

84. Professors tell America's poor to harvest weeds, Rhys Blakely, *The Times of London*, 7 March 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.thetimes.co.uk/tto/news/world/americas/article4375062.ece

83. Let Them Eat Weeds: App Helps People Forage Their Way out of Hunger, Sarah McColl, *TakePart*, 19 February 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://www.takepart.com/article/2015/02/19/foraging-apps-food-insecurity

82. The Food that Grows from Concrete, Olivia Cueva, *KALW*, 12 February 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://kalw.org/post/food-grows-concrete

81. Snacking In-Between Sidewalks: Mapping Abundance of Wild Edibles in the Bay Area's Food Deserts, Angela Johnston, *KQED Bay Area Bites*, 5 February 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://blogs.kqed.org/bayareabites/2015/02/05/snacking-in-between-sidewalks-mapping-abundance-of-wild-edibles-in-the-bay-areas-food-deserts/

80. Can urban foraging actually feed poor people? Nathanael Johnson, *Grist*, 30 January 2015. (urban foraging, nutrition, food equity, food security, sustainability) http://grist.org/food/can-urban-foraging-actually-feed-poor-people/

79. Foragers' Delight: Can Wild Foods Make City Dwellers Healthier? Madeleine Key, *Civil Eats*, 5 December 2014. (urban foraging, nutrition, food equity, food security, sustainability) http://civileats.com/2014/12/05/foragers-delight-can-wild-foods-make-city-dwellers-healthier/

78. What's for Dinner? For These Urban Foragers in Berkeley, The Answer is Weeds, Eric Neumann, *California Magazine*, Winter 2014. (urban foraging, nutrition, food equity, food security, sustainability) http://alumni.berkeley.edu/california-magazine/winter-2014-gender-assumptions/whats-dinner-these-urban-foragers-berkeley-answer

77. 12 things you didn't know about holiday foods, UC Newsroom, 24 November 2014. (urban foraging, nutrition, food equity, food security, sustainability) http://universityofcalifornia.edu/news/12-things-you-didnt-know-about-holiday-foods

76. Weed Eaters: These guys want you to eat weeds—and they'll show you where to find 'em, Alisa Opar, NRDC *onEarth*, 24 November 2014. (urban foraging, nutrition, food equity, food security, sustainability) http://www.onearth.org/earthwire/weed-eaters

75. Foragers find bounty of edibles in urban food deserts, Gretchen Kell, UC Berkeley Media Relations, 17 November 2014. (urban foraging, nutrition, food equity, food security, sustainability) http://newscenter.berkeley.edu/2014/11/17/urban-foraging/

74. How Many Ballots Do You Have To Count To Know Whether An Election Was Rigged? Short answer: Surprisingly few. Rafi Letzter, *Popular Science*, 4 November 2014. (Election integrity, auditing) http://www.popsci.com/article/science/how-many-ballots-do-you-have-count-know-whether-election-was-rigged

73. A New Voting Machine Could Make Sure Every Vote Really Counts. That is, if it ever gets used. Rafi Letzter, *Popular Science*, 4 November 2014. (Election integrity, auditing) http://www.popsci.com/article/technology/new-voting-machine-could-make-sure-every-vote-really-counts

72. Can we trust the Internet with our most basic civic duty? DecodeDC ponders the future of voting, Miranda Green and Andrea Seabrook, *NewsNet5 ABC*, 31 October 2014. (Election integrity) http://www.newsnet5.com/decodedc/podcast/can-we-trust-the-internet-with-our-most-basic-civic-duty

71. Cal professors on the hunt for edible, nutritious East Bay weeds, Carolyn Jones, *The San Francisco Chronicle* and SFGate, 25 October 2014. (urban foraging, nutrition, food equity, food security, sustainability) http://www.sfgate.com/bayarea/article/Cal-professors-on-the-hunt-for-edible-nutritious-5846111.php, http://www.sfchronicle.com/bayarea/article/Cal-professors-on-the-hunt-for-edible-nutritious-5846111.php

70. Course evaluations ineffective, misused, report finds, Mina Corpuz, *The Daily Free Press*, 3 October 2014. (Evaluating teaching, misuse of Statistics) http://dailyfreepress.com/2014/10/03/course-evaluations-ineffective-misused-study-finds/

69. Course evaluations slammed as ineffective: A Berkeley professor said the evaluations aren't a good gauge of a class, Noelle Wells, *The Daily Tar Heel*, 2 October 2014. (Evaluating teaching, misuse of Statistics) http://www.dailytarheel.com/article/2014/10/coures-evaluations-slammed%20as%20ineffective

68. Professor gives low rating to effectiveness of current teaching evaluations, Siera Stalcup, *The Daily Cal*, 30 September 2014. (Evaluating teaching, misuse of Statistics) http://www.dailycal.org/2014/09/29/effectiveness-student-course-evaluations/

67. Student Course Evaluations Get An 'F,' Anya Kamenetz, *NPR Education Blog*, 26 September 2014. (Evaluating teaching, misuse of Statistics) http://www.npr.org/blogs/ed/2014/09/26/345515451/student-course-evaluations-get-an-f

66. 2 scholars flunk course evaluations as measures of teaching quality, Dan Berrett, *Chronicle of Higher Education*, p. A16, 26 September 2014 http://chronicle.texterity.com/chronicle/20140926a?sub_id=2FQNKVDXMnsU#pg16
    Scholars Take Aim at Student Evaluations' 'Air of Objectivity', Dan Berrett, *Chronicle of Higher Education*, 18 September 2014. (Evaluating teaching, misuse of Statistics) http://chronicle.com/article/Scholars-Take-Aim-at-Student/148859/

65. Making sure the votes count: Arapahoe County is pilot site, Ernest Luning, *The Colorado Statesman*, 15 August 2014. Also *Colorado*

*Springs Independent*, 15 August 2014. (Statistical audits, election integrity) http://www.coloradostatesman.com/content/995064-making-sure-votes-count

64. Arapahoe County pioneering use of new vote verification system, John Aguilar, *The Denver Post*, 15 August 2014. (Statistical audits, election integrity) http://www.denverpost.com/news/ci_26339735/arapahoe-county-pioneering-use-new-vote-verification-system

63. Arapahoe Co. begins testing new ballot-counting system, Megan Verlee, *Colorado Public Radio*, 13 August 2014 (air date). (Statistical audits, election integrity) http://www.cpr.org/news/story/arapahoe-co-begins-testing-new-ballot-counting-system

62. Don't blame John Pérez for the state's abhorrent recount rules, Daniel Borenstein, *Contra Costa Times*, 25 July 2014. (Statistical audits, recounts, election integrity) http://www.contracostatimes.com/daniel-borenstein/ci_26211948/daniel-borenstein-dont-blame-john-perez-states-abhorrent

61. California law sought to prevent recount fights, Jim Miller, *The Sacramento Bee*, 1 July 2014. (Risk-limiting audits, recounts, election integrity) http://blogs.sacbee.com/capitolalertlatest/2014/07/a-california-law-on-the.html

60. Lock the Vote, Julie Rehmeyer, *Discover Magazine*, July/August 2014. (STAR-Vote election system, election integrity)

59. Reproducible and Collaborative Statistical Data Science, Sarah Hillenbrand, *Berkeley Science Review*, 11 June 2014. (Reproducibility, education) http://berkeleysciencereview.com/reproducible-collaborative-data-science/

58. Lottery odds: To win, you'd have to be a loser. Lawrence Mower, *Palm Beach Post*, 28 March 2014. (Lottery fraud) http://www.mypalmbeachpost.com/news/news/lottery-odds-to-win-youd-have-to-be-a-loser/nfL57

57. How Might Economics Education Be Improved? Michael O'Hare, Ten Miles Square, *Washington Monthly*, 21 October 2013. (Evaluating

teaching) http://www.washingtonmonthly.com/ten-miles-square/2013/10/how_might_economics_education047441.php

56. From geeky to cool: Statistics is Berkeley's fastest-growing major. Carol Ness, Berkeley NewsCenter, 16 April 2013. (growth in Statistics) http://newscenter.berkeley.edu/2013/04/16/from-geeky-to-cool-statistics-is-berkeleys-fastest-growing-major

55. The Upbeat Stats on Statistics. Carl Bialik, *The Wall Street Journal*, 1 March 2013. (growth in Statistics) http://blogs.wsj.com/numbersguy/the-upbeat-stats-on-statistics-1216

54. As Ohio Faces Vote-Rigging Lawsuit, Are Dems, Liberals, Election Officials Ready to Safeguard Votes? Art Levine, *The Huffington Post*, 2 November 2012. (election integrity) http://www.huffingtonpost.com/art-levine/mia-in-voting-machine-war_b_2054411.html?utm_hp_ref=voting-rights

53. Will the Next Election be Hacked? Michael Agresta, *The Wall Street Journal*, 17 August 2012. (election integrity) http://online.wsj.com/article/SB10000872396390444508504577595280674870186.html

52. Saving throw: securing democracy with stats, spreadsheets, and 10-sided dice: "Risk-limiting audits" use sound math to make sure the right candidate won. Cyrus Farivar, *Ars Technica*, 24 July 2012. (Election auditing) http://arstechnica.com/tech-policy/2012/07/saving-american-elections-with-10-sided-dice-one-stats-profs-quest/

51. New audit method could improve detection of flaws—and fix them. Adam Playford and Pat Beall, *Palm Beach Post*, 8 May 2012. (Election auditing) http://www.palmbeachpost.com/news/new-post-election-audit-method-could-improve-detection-2346480.html

50. Florida law hinders vote audits. Adam Playford and Pat Beall, *Palm Beach Post*, 8 May 2012. (election integrity) http://www.palmbeachpost.com/news/florida-law-hinders-vote-audits-2346483.html

49. Imagining a Census Survey Without a Mandate. Carl Bialik, *The Wall Street Journal*, 30 March 2012. (census) http://blogs.wsj.com/numbersguy/imagining-a-census-survey-without-a-mandate-1129/

48. Are large earthquakes increasing in frequency? Deanna Conners, *EarthSky*, 4 March 2012. (Earthquake clustering) http://earthsky.org/earth/are-large-earthquakes-increasing-in-frequency

47. New Equation for Voting Technology: Auditing > Testing? Doug Chapin, University of Minnesota Program for excellence in Election Administration, 12 January 2012. http://blog.lib.umn.edu/cspg/peea/2012/01/new_equation_for_voting_techno.php

46. Cuyahoga County elections board leads pack in testing, auditing. Laura Johnston, *The Plain Dealer*, 1 January 2012. (risk-limiting audits, election integrity) http://blog.cleveland.com/metro/2012/01/cuyahoga_county_elections_boar_5.html

45. Radio Australia "Connect Asia" program, 21 December 2011. (live appearance re earthquake clustering) http://www.radioaustralia.net.au/connectasia/

44. Geologists wonder if the Northwest is up next for a giant earthquake. Joe Rojas-Burke, *The Oregonian*, 21 December 2011. Syndicated in Middle East North Africa Financial Network. (Earthquake clustering) http://www.oregonlive.com/environment/index.ssf/2011/12/geologists_wonder_if_the_north.html http://www.menafn.com/qn_news_story.asp?storyid=%7B1ee57506-581b-4e99-a8be-41b9f35197e5%7D

43. Mega-quake clusters unlikely: study. Anna Salleh, *ABC*, 20 December 2011. (Earthquake clustering) http://www.abc.net.au/science/articles/2011/12/20/3394245.htm

42. Rest Your Fears: Big Earthquakes Not on the Rise. Stephanie Pappas, LiveScience, 9 December 2011. Syndicated in *MSNBC* and *Fox News* 10 December 2011. (Earthquake clustering) http://www.livescience.com/17400-big-earthquakes-random.html http://www.msnbc.msn.com/id/45616503/ns/technology_and_science-science/#.TueIXGB8-oc http://www.foxnews.com/scitech/2011/12/10/rest-your-fears-big-earthquakes-not-on-rise/

41. San Luis Obispo takes part in pilot program for ballot audits. Bethany Tucker, *KSBY News*, 12 September 2011. (Election audit-

ing) http://www.ksby.com/news/san-luis-obispo-takes-part-in-pilot-program-for-ballot-audits/

40. In This Dating Game, the Best Match Could Be Years Away. Carl Bialik, *The Wall Street Journal*, 16 July 2011. (numerical coincidences) http://online.wsj.com/article/SB10001424052702304521304576447892115939486.html

39. Dozens of personal care products mislabeled as 'organic,' lawsuit says. Joanna Lin, *California Watch*, 20 June 2011. http://californiawatch.org/dailyreport/dozens-personal-care-products-mislabeled-organic-lawsuit-says-10873

38. San Jose siblings two years apart, born on the same day at the same time. Jane J. Lee, *Silicon Valley Mercury News*, 14 June 2011. (numerical coincidences) http://www.mercurynews.com/breaking-news/ci_18273248?nclick_check=1

37. O.C. could see fewer election recounts. Martin Wisckol, *Orange County Register*, 6 May 2011. (Election auditing) http://totalbuzz.ocregister.com/2011/05/06/o-c-could-see-fewer-election-recounts/52659/

36. Consumer Reports Cops to Chrysler Data Gaps. Eric Mayne, WardsAuto.com, 2 March 2011. http://wardsauto.com/ar/consumer_reports_chrysler_110302/

35. Experts shouldn't be needed to call outcome of election. *Albany Times Sun Union*, 1 January 2011. (Election auditing) http://www.timesunion.com/opinion/article/Experts-shouldn-t-be-needed-to-call-outcome-of-930928.php

34. Equation: Calculating Ballot Bungles is all about the P-Value. Julie Rehmeyer, *Wired*, November 2010, p.56. (Election auditing) http://www.wired.com/magazine/2010/11/st_equation_votes/

33. Fifty million to one: Mother defies odds to give birth on 10.10.10 after two others were born on 09.09.09 and 08.08.08. *Daily Mail*, 15 October 2010. (numerical coincidences) http://www.dailymail.co.uk/news/article-1320840/Fifty-million-Mother-defies-odds-birth-10-10-10-born-09-09-09-08-08-08.html?ito=feeds-newsxml

32. Mom's babies born on 8-8-08, 9-9-09, 10-10-10. Elizabeth Weise, *USA TODAY*, 14 October 2010. (numerical coincidences) http://www.usatoday.com/yourlife/parenting-family/babies/2010-10-14-Birthday14_ST_N.htm

31. UC Berkeley Professor's Auditing System Aims to Count Votes More Accurately. Claire Perlman, *Daily Californian*, 28 April 2010. (Election auditing) http://www.dailycal.org/article/109295/uc_berkeley_professor_s_auditing_system_aims_to_co

30. California Assembly committee endorses UC Berkeley statistician's election auditing method. Robert Sanders, Media Relations, *UCBerkeleyNews*, 26 April 2010. (Election auditing) http://www.berkeley.edu/news/media/releases/2010/04/26_canvass.shtml

29. Ready or Not. Cosma Shalizi, *American Scientist*, March 2010. (Earthquake prediction) http://www.americanscientist.org/bookshelf/pub/ready-or-not

28. Judge upholds November election of Novato Sanitary District board. Brent Ainsworth, *The Marin Independent Journal*, 8 March 2010. (Contested election) http://www.marinij.com/marinnews/ci_14636416

27. Novato Sanitary election fight rolls on. Jim Welte, *The Marin Independent Journal*, 23 February 2010. (Contested election) http://www.marinij.com/marinnews/ci_14456925

26. Novato Sanitary board race tightens. Jim Welte, *The Marin Independent Journal*, 12 November 2009. (Contested election) http://www.marinij.com/election/ci_13773039

25. AIDS Vaccine Trial Shows Only Slight Protection. Donald G. McNeil Jr., *New York Times*, 21 October 2009. (epidemiology) http://www.nytimes.com/2009/10/21/health/research/21vaccine.html?_r=1

24. China To Require Filtering Software On PCs. Thomas Claburn, *Information Week*, 8 June 2009. (Internet content filtering) http://www.informationweek.com/news/internet/policy/showArticle.jhtml?articleID=217800108&section=All+Stories

23. KQED-FM Forum program on the Census, 6 March 2009. (live appearance re census)

22. Census, partisan wrangling go hand-in-hand. Tyche Hendricks, *Scripps News*, 23 February 2009. (census) `http://www.scrippsnews.com/node/41139`

21. Why the census is always political. Tyche Hendricks, *San Francisco Chronicle*, 22 February 2009. (census) `http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2009/02/22/MNPB161PBV.DTL`

20. He's Out for the Count. Mark Hosenball, *NEWSWEEK*, 14 February 2009, Magazine issue dated 23 February 2009. (census) `http://www.newsweek.com/id/184802`

19. Measure B court challenge heads to San Francisco. Karen de Sá, *Mercury News*, 1 December 2008. (election integrity) `http://www.mercurynews.com/politics/ci_11113510`

18. New Election Audit Targets Close Races. Laura Snider, *Daily Camera*, 26 November 2008. (risk-limiting audits, election integrity) `http://www.dailycamera.com/news/2008/nov/26/new-election-audit-targets-close-races/`

17. Counting Continues for Elections Department. *Redwood Times*, 19 November 2008. (risk-limiting audits, election integrity) `http://www.redwoodtimes.com/local/ci_11023304`

16. Checking It Twice. Julie J. Rehmeyer, *Science News*, 19 January 2008. (Election auditing) `http://www.sciencenews.org/view/generic/id/9292/title/Math_Trek__Checking_It_Twice`

15. *Reelz Channel Dailies* "Is it Real?" Reelz Channel, 15 June 2007. (gambling odds, probability)

14. Internet is 99 per cent porn free. Iain Thomson, *vnunet.com*, 15 November 2006. (Internet content filtering) `http://www.vnunet.com/vnunet/news/2168636/internet-per-cent-porn-free`

13. Internet Content Filters Fail to Block Sexually Explicit Material. Thomas Claburn, *Information Week*, 14 November 2006. (Internet

content filtering) http://www.informationweek.com/news/showArticle.jhtml?articleID=194300677&section=All+Stories

12. 1 percent of Web sites deemed pornographic. Maryclaire Dale, *Associated Press*, 14 November 2006. (Internet content filtering) http://www.msnbc.msn.com/id/15721799/

11. Only 1 percent of Web pages have porn? Declan McCullagh, *News.com*, 14 November 2006. (Internet content filtering) http://www.news.com/8301-10784_3-6135662-7.html

10. U.S., Google Set to Face Off in Court. Michael Liedtke, *Associated Press*, 14 March 2006. (Internet content filtering) http://www.sfgate.com/cgi-bin/article.cgi?file=/n/a/2006/03/13/financial/f133050S47.DTL&type=printable

9. Google privacy issue enters court. *Al Jazeera*, 14 March 2006. (Internet content filtering) http://english.aljazeera.net/archive/2006/03/2008410131655473737.html

8. In Case About Google's Secrets, Yours Are Safe. Adam Liptak, *New York Times*, 26 January 2006. (Internet content filtering) http://www.nytimes.com/2006/01/26/technology/in-case-about-googles-secrets-yours-are-safe.html

7. Google Resists U.S. Subpoena of Search Data. Katie Hafner and Matt Richtel, *New York Times*, 20 January 2006. (Internet content filtering) http://www.nytimes.com/2006/01/20/technology/20google.html?pagewanted=1

6. Feds take porn fight to Google. Declan McCullagh and Elinor Mills, *CNET News*, 19 January 2006. (Internet content filtering) https://www.cnet.com/news/feds-take-porn-fight-to-google/

5. *AFC NewSource* story on airline security [Airings: The Osgood File (CBS Radio Network), 29 July 2003, 18 February 2003; KRON-TV (San Francisco), 3 February 2003]. (statistical auditing, security) http://www.acfnewsource.org/science/random_security.html

4. *The Fred Ebert Show* program on probability and statistics. KIRO 710, Seattle, WA, 27 October 2003. (live appearance re the Monty Hall problem, Statistics, Probability)

3. *ABC 7 News* story on census adjustment, 30 November 1998. (recorded appearance re census)

2. KQED-FM Forum program on the 2000 Census, San Francisco, CA, 17 July 1998. (live appearance re census) `http://www.kqed.org/radio/programs/forum/`

1. How deep is an earthquake? *Science News*, 2 March 1985. (Deep earthquakes)

## Teaching and Advising

### Courses

BerkeleyX 2.1x* `https://www.edx.org/course/uc-berkeleyx/uc-berkeleyx-stat2-1x-introduction-594`, an Introductory Statistics MOOC (52,661 students enrolled in first offering; 15.5% completion rate. As of 21 October 2015, this was one of the 50 most popular MOOCs of all time)

BerkeleyX 2.2x* `https://www.edx.org/course/uc-berkeleyx/uc-berkeleyx-stat2-2x-introduction-685`, an Introductory Statistics MOOC (20,871 students enrolled in first offering; 17% completion rate)

BerkeleyX 2.3x* `https://www.edx.org/course/uc-berkeleyx/uc-berkeleyx-stat2-3x-introduction-825`, an Introductory Statistics MOOC (22,443 students enrolled in first offering; 12% completion rate)

Introduction to Statistics (Statistics 2)

Introduction to Probability and Statistics (Statistics 20)

Introductory Probability and Statistics for Business (Statistics 21, N21*, W21*)

Introduction to Probability and Statistics for Scientists and Engineers (Statistics 25)

Societal Risks and the Law* (Statistics C79)

Freshman Seminar on Statistics (Statistics 39)

Statistical Inferences for Social and Life Scientists (Statistics 131A)

Concepts of Probability (Statistics 134)

Concepts of Statistics (Statistics 135)

Linear Modeling: Theory and Applications (Statistics 151A)

Nonparametric Inference and Sensitivity Auditing with Applications to Social Good* (Statistics 157)

Reproducible and Collaborative Statistical Data Science* (Statistics 157, now 159/259). Video review: `http://youtu.be/Bq71Pqdukeo`

Probability and Statistics for Physical Science and Engineering PhD Students*

Statistics for Engineering PhD students*

Introduction to Probability and Statistics at an Advanced Level (Statistics 200A)

Theoretical Statistics (Statistics 210B)

Statistical Models: Theory and Applications (Statistics 215A, Statistics 215B)

Not enough Statistics for Journalists* (Journalism 219)

Statistics Masters Program Capstone* (Statistics 222)

Nonparametric and Robust Methods (Statistics 240)

Topics in Probability and Statistics (Statistics 260)

Statistical Consulting (Statistics 272)

* Course I created or co-created.

**Former Graduate Students and Postdocs**

Imola K. Fodor, Roche

Johann Gagnon-Bartsch, University of Michigan

Christopher R. Genovese, Carnegie Mellon University

Niklaus W. Hengartner, Los Alamos National Laboratory

Janne Huttunen, University of Auckland and University of Kuopio

Bradley Luen, Indiana University

Tian Luo, U.S. Bureau of Labor Statistics

Dmitry I. Nikolayev, Schmidt Institute for Physics of the Earth

Kellie Ottoboni, Pinterest

R. Jay Pulliam, University of Texas at Austin

Karthik Ram, University of California, Berkeley

Jeffery Regier, University of Michigan

Chad M. Schafer, Carnegie Mellon University

Daniel Turek, University of California, Berkeley

Vincent S. Yates, Yammer

**Graduate Committees**

1. Alameida, Jose, Mathematics. Ph.D. qualifying examination, 2008
2. Atz, Milos, Nuclear Engineering. Ph.D. qualifying examination, 2018
3. Bach, Andre, Physics. Ph.D. qualifying examination, 2011
4. Bar-Yossef, Ziv, Computer Science. Ph.D. qualifying examination, 2001; dissertation committee, "The Complexity of Massive Data Set Computations," 2002

5. Bein, Ed, Biostatistics. MA examination, 2002

6. Berny, Axel Dominique, EECS. Ph.D. qualifying examination, 2004; dissertation committee, "Analysis and Design of Wideband LC VCOs," 2006

7. Bertelli, E., IEOR. Ph.D. qualifying examination, 2018

8. Bloniarz, Adam, Statistics. Ph.D. qualifying examination, 2014

9. Bodik, Peter, Computer Science. Ph.D. qualifying examination, 2007; dissertation committee, "Automating Datacenter Operations Using Machine Learning," 2010

10. Bowman, John Penfield, IEOR. Ph.D. qualifying examination, 2003

11. Bunn, Emory Freeman, Physics. Ph.D. qualifying examination, 1994; dissertation committee, "Statistical Analysis of Cosmic Microwave Background Anisotropy," 1995

12. Burleigh, Kaylan, Astronomy. Ph.D. qualifying examination, 2016, 2017; dissertation committee, "A Monte Carlo Method for Identifying Imaging Systematics in Galaxy Surveys," 2018

13. Burstein, Richard David II, Mathematics. Ph.D. qualifying examination, 2004; dissertation committee, "Hadamard Subfactors of Bisch-Haagerup Type," 2008

14. Buttrey, Samuel Edward, Statistics. Ph.D. qualifying examination, 1994; dissertation committee, "Nearest-Neighbor Classification with Categorical Variables," 1996

15. Calef, Brandoch Hugh, Applied Mathematics. Ph.D. qualifying examination, 1997; dissertation committee, "Optimal Sampling of the Discrete Fourier Transform," 2002

16. Charman, Andrew Emile, Physics. Ph.D. qualifying examination, 2003; dissertation committee, "Random Aspects of Beam Physics and Laser-Plasma Interactions," 2006

17. Chen, Raymond Lei, EECS. Ph.D. qualifying examination, 1993; dissertation committee, "A Qualitative Modeling Framework of Semiconductor Manufacturing Processes: Self-Learning Fuzzy Inference System and the Statistical Analysis of Categorical Data," 1994

18. Chien, George, EECS. Ph.D. qualifying examination, 1998

19. Davis, William, Earth and Planetary Sciences. Ph.D. qualifying examination, 2019

20. Fernandez, Arturo, Statistics. Ph.D. qualifying examination, 2017

21. Feldman, Arnold R., EECS. Ph.D. qualifying examination, 1995; dissertation committee, "High-Speed, Low-Power Sigma-Delta Modulators for RF Baseband Channel Applications," 1997

22. Fodor, Imola K., Statistics. Ph.D. qualifying examination, 1997; chair, dissertation committee, "Spectrum Estimation in Helioseismology," 1999

23. Fong, Keng Leong, EECS. Ph.D. qualifying examination, 1996; dissertation committee, "Design and Optimization Techniques for Monolithic RF Downconversion Mixers," 1997

24. Gagnon-Bartsch, Johann, Statistics. Ph.D. qualifying examination, 2009; co-chair, dissertation committee "Removing Unwanted Variation from Microarray Data with Negative Controls," 2012

25. Gawiser, Eric Joseph, Physics. Ph.D. qualifying examination, 1998

26. Genovese, Christopher Ralph, Statistics. Ph.D. qualifying examination, 1992; chair, dissertation committee, "Statistical Problems in Helioseismology," 1994

27. Glazer, Amanda, Statistics. Ph.D. qualifying examination, 2021.

28. Goldman, Megan, Biostatistics. Chair, Ph.D. qualifying examination, 2009

29. Gung, Yuan-Cheng, Geophysics. Dissertation committee, "Q Tomography of the Earth Mantle," 2003

30. Hansen, Bendek, Statistics. Chair, MA thesis committee, "Minimax Expected Length Confidence Intervals," 2000

31. Hansen, Mark Henry, Statistics. Chair, Ph.D. qualifying examination, 1992

32. Hengartner, Niklaus Walther, Statistics. Co-chair, dissertation committee, "Topics in Density Estimation," 1993

33. Higgins, Mike, Statistics. Ph.D. qualifying examination, 2009, 2010

34. Huang, Hsiang-Ping, Mathematics. Ph.D. qualifying examination, 1996

35. Huang, Jianhua, Statistics. Ph.D. qualifying examination, 1994; dissertation committee, "Topics in Extended Linear Modeling," 1997

36. Huang, Yuanlin, Civil Engineering. Ph.D. qualifying examination, 1993, 1994

37. Jiang, Xuesong, EECS. Ph.D. qualifying examination, 2001

38. Jones, David Morgan, Mathematics. Ph.D. qualifying examination, 1994; dissertation committee, "On Modular Galois Representations in Characteristic 3," 1998

39. Katsis, Dimitrios, EECS. Ph.D. qualifying examination, 2005

40. Kiesling, Max Karl, Civil Engineering. Ph.D. qualifying examination, 1994

41. Kuusela, Mikael Johan, Statistics, École Polytechnique Fédérale de Lausanne, dissertation committee, "Uncertainty quantification in unfolding elementary particle spectra at the Large Hadron Collider," 2016

42. Lara, Jose Daniel, Energy and Resources Group. Ph.D. qualifying examination, 2018

43. Li, Bo, Statistics. Ph.D. qualifying examination, 2004

44. Li, Wenyu, Mechanical Engineering. Ph.D. qualifying examination, 2017

45. Loscutoff, Peter, Physics. Ph.D. qualifying examination, 2011; dissertation committee, "Search for resonant $WZ \to \ell\nu\ell\ell$ production using $13fb^{?1}$ in $\sqrt{s} = 8TeV$ $pp$ collisions with the ATLAS detector," 2013

46. Luen, Bradley, Statistics. Ph.D. qualifying examination, 2006; Chair, dissertation committee, "Earthquake Prediction: Simple Methods for Complex Phenomena," 2010

47. Luo, Tian, Statistics. MA thesis chair, "Nonparametric estimation of business survival with an application to restaurant startups," 2014

48. Madar, Vered, Statistics and Operations Research, Tel Aviv University. MA thesis committee, "Non-equivariant confidence intervals," 2002; Ph.D. committee, "Simultaneous Confidence Intervals for Multiple Parameters with More Power to Determine the Sign," 2007

49. Maurer, Tessa, Civil and Environmental Engineering. Ph.D. qualifying examination, 2018

50. Megnin, Charles Henri, Geophysics. Ph.D. qualifying examination, 1996; dissertation committee, "The Shear Velocity Structure of the Mantle from the Inversion of Time-Domain Waveform Data," 1999

51. Mieler, Michael William, Civil Engineering. Ph.D. qualifying examination, 2011

52. Millman, Kenneth Jarrod, Biostatistics. MA thesis committee, "permute—a Python package for permutation tests and confidence sets," 2015

53. Miratrix, Luke W., Statistics. Chair, Ph.D. qualifying examination, 2010

54. Mohanty, Sudatta, Civil Engineering. Ph.D. qualifying examination, 2017

55. Murmann, Boris, EECS. Ph.D. qualifying examination, 2002; dissertation committee, "Digital Calibration for Low-Power High-Performance A/D Conversion," 2003

56. Oreluk, James, Mechanical Engineering. Ph.D. qualifying examination, 2017; dissertation committee, "Role of Experimental Data in Validating and Quantifying Uncertainties in Complex Physical Systems," 2019

57. Ottoboni, Kellie, Statistics. Ph.D. qualifying examination, 2017; chair, dissertation committee, "Classical Nonparametric Hypothesis Tests with Applications in Social Good," 2019

58. Ou, Jeffrey Jiajiunn, EECS. Ph.D. qualifying examination, 1995

59. Petkov, Vladimir Plamenov, EECS. Ph.D. qualifying examination, 2003

60. Poobuapheun, Nuntachai, EECS. Ph.D. qualifying examination, 2005; dissertation committee, "LNA and Mixer Designs for Multi-Band Receiver Front-Ends," 2009

61. Puente, Suzette, Statistics. M.A. committee, 2013

62. Pulliam, R. Jay, Geophysics. Ph.D. dissertation committee, "Imaging Earth's Interior: Tomographic Inversion of Mantle P-Wave Velocity Structure," 1991

63. Qian, Kun, EECS. Ph.D. qualifying examination, 2009; dissertation committee, "Variability Modeling and Statistical Parameter Extraction for CMOS Devices," 2015

64. Regier, Jeffery, Statistics. Chair, M.A. committee, 2013; dissertation committee, "Topics in large-scale statistical inference," 2016

65. Rein, Steven Richard, Statistics. Chair, Ph.D. qualifying examination, 1990

66. Rossi, Jim, Journalism. M.A. thesis committee, "Reverse-engineering the Echo Chamber," 2017

67. Schafer, Chad Michael, Statistics. Ph.D. qualifying examination, 2001; chair, dissertation committee, "Constructing Confidence Regions of Optimal Expected Size: Theory and Application to Cosmic Microwave Inference," 2004

68. Son, Sang Won, EECS. Ph.D. qualifying examination, 2000; dissertation committee, "High Dynamic Range CMOS Mixer Design," 2002

69. Spertus, Jacob, Statistics. Ph.D. qualifying examination, 2021.

70. Stern, Aaron James, Computational Biology. Ph.D. qualifying examination, 2017.

71. Su, Heng-Yi, Earth and Planetary Science. Ph.D. qualifying examination, 2021.

72. Suzuki, Toru, Demography. Ph.D. qualifying examination, 1995; dissertation committee, "Projection of Households in Japan with a Dynamic Macro-Simulation Model," 1999

73. Tee, Luns, EECS. Ph.D. qualifying examination, 2001

74. Tenorio, Luis-Francisco, Mathematics. Ph.D. dissertation committee, "Asymptotic Dynamics of Locally Oblique Solitary Wave Solutions of the KP Equation," 1992

75. Thompson, Neil, Statistics. M.A. committee, 2012

76. To, Albert Chi Fu, Statistics. M.A. committee, 2005

77. Wagner, Tim Allen, CS. Ph.D. qualifying examination, 1995; dissertation committee, "Practical Algorithms for Incremental Software Development Environments," 1997

78. Waudby-Smith, Ian, Statistics, Carnegie Mellon University. Ph.D. qualifying examination, 2021.

79. Wang, Jason, Astronomy. Ph.D. qualifying examination, 2017; dissertation committee, "Footage of Other Worlds: Unveiling the Dynamical Architecture of Young Exoplanetary Systems," 2018

80. Wicks, Charles Wesley Jr., Geophysics. Ph.D. qualifying examination, 1990; dissertation committee, "An Investigation of Mantle Discontinuities Beneath the Southwest Pacific," 1994

81. Wilhelm, Matthieu, Université de Neuchâtel, Statistics. Ph.D. dissertation committee, "Random sampling with repulsion," 2017

82. Yao, Shijing, EECS. Ph.D. qualifying examination, 2015

83. Yates, Vincent, Statistics. Chair, M.A. committee, 2012

84. Ying, Jun, Naval Architecture. D. Eng. qualifying examination, 1995; dissertation committee, "Development and Verification of Computer Simulation Models for Evaluation of Siting Strategies and Evacuation Procedures for Mobile Drilling Units in Hurricanes," 1996

85. Zhang, Xiaoyan, Statistics. Ph.D. qualifying examination, 1997

86. Zagheni, Emilio, Demography. Ph.D. qualifying examination, 2008

87. Zamora, Joel Barajas, UC Santa Cruz, EE. Ph.D. dissertation defense, 2015; dissertation committee, "Online Display Advertising Causal Attribution and Evaluation," 2015

**First-year PhD advising**

2014–15 Thanh-Nhan (Andrew) Do

2014–15 Kellie Ottoboni

2016–17 Jake Soloff

2020-21 Emily Flanagan

**Current PhD advisees**

2018– Amanda Glazer

2018– Jacob Spertus

**Undergraduate Research and Honors Thesis Advisees**

2020 Sophie Chan (CalTech), Ran (Doris) Hsieh, Emily Hsiao, James Li, Hubert Luo, Teng Ma, William Ma, Francie McQuarrie, Jiazhong (Frank) Mei, Adalie Palma, Avi Sen, Stella Wan, Catherine Wang, Zihui Wang, Gracie Yao, Steven Ye, Wentao Zhan

2019 Shivin Devgon, Emily Hsiao, James Li, Hubert Luo, Teng Ma, William Ma, Francie McQuarrie, Jiazhong (Frank) Mei, Adalie Palma, Avi Sen, Stella Wan, Catherine Wang, Zihui Wang, Gracie Yao, Steven Ye, Wentao Zhan

2018 Omar Buenrostro, Alan Chuang, Christopher Fan, Jin Kweon, James Li, Hubert Luo, William Ma, Jiazhong (Frank) Mei, Arun Ramamurthy, Avi Sen, Neil Sharma, Karen Tu, Yimeng Wang, Zihui (Lucy) Wang, Steven Ye, Saam Zahedian, Wentao Zhan

2015 Fang Cai, Catherine Darin (U. Pennsylvania)

2014 Hriday Kemburu, He Ma, Rachel Redberg

2010–2011 Katherine McLaughlin

2010 Aaron Taylor, Hua Yang

2009 Joshua M. Levin

2008 Jonathan Ong

2007 Gerold Ng

2003–2004 Feng Tang

1993–1996 Dendy Harjanto

1988–1993 10 others

## Service

### Professional Societies and Government Agencies

2021
- Auditor, State of New Hampshire SB43 Forensic Election Audit `https://www.doj.nh.gov/sb43/index.htm`
- Advisory Board, U.S. Election Assistance Commission; member, Special Committee on VVSG Lifecycle.
- Risk-Limiting Audit Regulations Working Group, California Secretary of State

- Program committee, 2022 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'22, held in conjunction with the 2022 Conference on Financial Cryptography and Data Security, FC'22)
- Governance Committee, Association of Foragers
- Editorial Board, *ScienceOpen*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)

2020
- Advisory Board, U.S. Election Assistance Commission; member, Cybersecurity Subcommittee
- Risk-Limiting Audit Regulations Working Group, California Secretary of State
- Governance Committee, Association of Foragers
- Editorial Board, *ScienceOpen*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)
- Program committee, 2021 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'21, held in conjunction with the 2021 Conference on Financial Cryptography and Data Security, FC'21)
- Program committee, 2020 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'20, held in conjunction with the 2020 Conference on Financial Cryptography and Data Security, FC'20)
- Program committee, Fifth International Joint Conference on Electronic Voting (E-Vote-ID 2020)
- Referee, *Journal of the Academy of Business Education*
- Consultant, U.S. Department of Justice, Civil Division

2019
- Advisory Board, U.S. Election Assistance Commission
- Risk-Limiting Audit Regulations Working Group, California Secretary of State

- Editorial Board, *ScienceOpen*
- Article editor, *Proceedings of the National Academy of Sciences*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)
- Program committee, 2019 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'19, held in conjunction with the 2019 Conference on Financial Cryptography and Data Security, FC'19)
- Program committee, Fourth International Joint Conference on Electronic Voting (E-Vote-ID 2019)
- Referee, *Harvard Data Science Review*
- Referee, *PeerJ*
- Reviewer, Peder Sather Institute
- Reviewer, Helmholtz Association of German Research Centres

2018
- Advisory Board, U.S. Election Assistance Commission
- Consultant, Colorado Secretary of State
- Reviewer, National Academies of Sciences, Engineering, and Medicine, Policy and Global Affairs Division
- Editorial Board, *ScienceOpen*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)
- Organizing Committee, Election Audit Summit, Caltech/MIT Voting Technology Project, December 2018. `https://electionlab.mit.edu/election-audit-summit`
- Program committee, 2018 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'18, held in conjunction with the 2018 Conference on Financial Cryptography and Data Security, FC'18)
- Program committee, 2019 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'19, held in conjunction with the

2019 Conference on Financial Cryptography and Data Security, FC'19)

- Program committee, Fourth International Joint Conference on Electronic Voting (E-Vote-ID 2019)
- Referee, *Geophysical Research Letters*
- Referee, *Proceedings of the National Academy of Sciences*
- Referee, *PeerJ*

2017
- Advisory Board, U.S. Election Assistance Commission
- Consultant, Colorado Secretary of State
- Founding Steering Committee and Editorial Board, USENIX Journal of Voting Technology
- Editorial Board, *ScienceOpen*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)
- Program committee, 2018 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'18, held in conjunction with the 2018 Conference on Financial Cryptography and Data Security, FC'18)
- Program committee, 2017 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'17, held in conjunction with the 2017 Conference on Financial Cryptography and Data Security, FC'17)
- Chair, Mini-symposium on Open Data and Reproducibility, *2017 International Scientific Computing with Python (SciPy) Conference*, Austin, TX.
- Referee, *Proceedings of the National Academy of Sciences*

2016
- Advisory Board, U.S. Election Assistance Commission
- Consultant, Colorado Secretary of State
- Travis County Texas Elections Division STAR-Vote System Brain Trust

- Founding Steering Committee and Editorial Board, USENIX Journal of Voting Technology
- Associate editor, SIAM/ASA Journal of Uncertainty Quantification
- Editorial Board, *ScienceOpen*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)
- Program committee, 2016 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'16, held in conjunction with the 2016 Conference on Financial Cryptography and Data Security, FC'16)
- Program committee, 2017 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'17, held in conjunction with the 2017 Conference on Financial Cryptography and Data Security, FC'17)
- Program committee, 12th International Joint Conference on Electronic Voting (E-Vote-ID 2016), Bregenz, Austria
- Session co-organizer, "Productive Ecologies in the Anthropocene: Foraging Systems," Sixth International Conference on Food Studies, Berkeley, CA

2015
- Consultant, Colorado Secretary of State
- Travis County Texas Elections Division STAR-Vote System Brain Trust
- Founding Steering Committee and Editorial Board, USENIX Journal of Voting Technology
- Associate editor, SIAM/ASA Journal of Uncertainty Quantification
- Editorial Board, *ScienceOpen*
- Chair for Auditability, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)

- Program committee, VoteID 2015: The 5th International Conference on e-Voting and Identity, Bern, Switzerland. `http://www.voteid15.org/`
- Program committee, 2015 European Symposium on Research in Computer Security (ESORICS 2015), Vienna, Austria. `http://esorics2015.sba-research.org/`
- Program committee, 2016 Workshop on Advances in Secure Electronic Voting Schemes (VOTING'16, held in conjunction with the 2016 Conference on Financial Cryptography and Data Security, FC'16)
- Session organizer, Teaching Computational Thinking and Practice, 2015 SIAM Conference on Computational Science and Engineering (CSE15)
- Organizer, Berkeley Institute for Data Sciences and Moore/Sloan Data Science Environments 2015 Conference on Reproducibility
- Referee, *PeerJ*

2014
- Consultant, Colorado Secretary of State
- Travis County Texas Elections Division STAR-Vote System Brain Trust
- Founding Steering Committee and Editorial Board, USENIX Journal of Election Technology and Systems (JETS)
- Associate editor, SIAM/ASA Journal of Uncertainty Quantification
- Editorial Board, *ScienceOpen*
- Member, IEEE/NIST Voting System Standards Committee (VSSC) Working Group For Voting Methods Mathematical Models (C/VSSC/1622.X_WG)
- Organizing committee co-chair, 2014 SIAM/ASA Conference on Uncertainty Quantification, Savannah, GA
- Program committee, VoteID 2015: The 5th International Conference on e-Voting and Identity, Bern, Switzerland. `http://www.voteid15.org/`

- Program committee, 2015 European Symposium on Research in Computer Security (ESORICS 2015), Vienna, Austria. `http://esorics2015.sba-research.org/`
- Session organizer, late-breaking session on Reproducibility, 2014 Joint Statistical Meetings, Boston, MA
- Session organizer and chair, 2014 Conference of the International Society for Nonparametric Statistics, Cadiz, Spain
- Session organizer, Teaching Computational Thinking and Practice, 2015 SIAM Conference on Computational Science and Engineering (CSE15)
- Referee, *PLoS One*

2013
- Consultant, California Secretary of State
- Consultant, Colorado Secretary of State
- Consultant, U.S. Department of Justice, Civil Division
- Travis County Texas Elections Division STAR-Vote System Brain Trust
- Founding Steering Committee and Editorial Board, USENIX Journal of Election Technology and Systems (JETS)
- Associate editor, SIAM/ASA Journal of Uncertainty Quantification
- Organizing committee co-chair, 2014 SIAM/ASA Conference on Uncertainty Quantification, Savannah, GA
- Session organizer, Conference of the International Society for Nonparametric Statistics, Cadiz, Spain

2012
- Consultant, California Secretary of State
- Consultant, Colorado Secretary of State
- Consultant, U.S. Department of Justice
- Travis County Texas Elections Division STAR-Vote System Brain Trust
- Founding Steering Committee, USENIX Journal of Election Technology and Systems (JETS)

- Reviewer, National Science Foundation
- Program committee, 2012 Electronic Voting Technology / Workshop on Transparent Elections (EVT/WOTE '12), USENIX Security Symposium, Bellevue, WA
- Session organizer, 2012 Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, San Diego, CA
- Session organizer, 1st Conference of the International Society for NonParametric Statistics, Chalkidiki, Greece
- Organizing committee co-chair, 2014 SIAM/ASA Conference on Uncertainty Quantification, Savannah, GA
- Program committee, 2012 SIAM/ASA/SAMSI/USACM Conference on Uncertainty Quantification, Raleigh, NC
- Session organizer, Election Verification Network (EVN) annual conference, Santa Fe, NM

2011
- Consultant and Expert Witness, U.S. Department of Justice, Civil Division (for U.S. Department of Housing and Urban Development)
- Program committee, 2012 SIAM/ASA/SAMSI/USACM Conference on Uncertainty Quantification, Raleigh, NC
- Consultant, California Secretary of State
- Consultant, Colorado Secretary of State
- Session organizer, Election Verification Network (EVN) annual conference, Chicago, IL

2010
- Consultant and Expert Witness, U.S. Department of Justice, Civil Division (for Department of Housing and Urban Development)
- Consultant, State of Illinois
- Consultant, California Attorney General (for California Highway Patrol)
- Consultant, New York State Senate
- Reviewer, Department of Defense Strategic Environmental Research and Development Program

– Session organizer, Election Verification Network (EVN) annual conference, Washington, DC

2009 – Consultant, California Secretary of State

2008 – Consultant, California Secretary of State

2007 – California Secretary of State Post-Election Audit Standards Working Group `http://www.sos.ca.gov/elections/elections_peas.htm`

2006 – Consultant and Expert Witness, U.S. Department of Justice, Civil Division

2005 – Consultant, U.S. Department of Justice, Civil Division
– Consultant, U.S. Department of Veterans Affairs Medical Center
– Consultant, Habeas Corpus Resource Center

2004 – Reviewer, National Science Foundation
– Consultant, U.S. Department of Justice, Civil Division
– Consultant, U.S. Attorney's Office
– Consultant, U.S. Department of Veterans Affairs Medical Center

2003 – Reviewer, National Science Foundation
– Referee, National Sciences and Engineering Research Council of Canada
– Consultant, U.S. Department of Veterans Affairs Medical Center

2002 – Consultant, U.S. Department of Agriculture
– Consultant, U.S. Department of Justice, Civil Division

2001 – Consultant, U.S. Department of Justice, Civil Division
– Co-organizer, Institute for Mathematics and Its Applications Annual Program *Mathematics in the Geosciences* and workshop on Inverse Problems and the Quantification of Uncertainty

2000 – Invited discussant, National Academy of Science Committee on National Statistics workshop on dual-system estimation for the 2000 Census

– Consultant, U.S. Department of Justice, Civil Division

1998 – Witness, U.S. House of Representatives Subcommittee on the Census.

– Panelist, National Science Foundation

1997 – Session organizer, International Statistical Institute and Bernoulli Society Meeting, Istanbul, Turkey

1996–present – Global Oscillation Network Group (GONG) Data Users Committee (Chair, 1996–1998)

– Reviewer for United States Geological Survey

1996–1999 – Consultant, National Security Agency

1995 – Institute of Mathematical Statistics Program Chair, Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, Orlando, FL

1994–1996 – Consultant to Federal Trade Commission

1993 – Session organizer and chair, IMS/ASA/ENAR meeting, Philadelphia, PA

– Session organizer and chair, Joint Statistical Meetings of the American Statistical Association, International Biometric Society, and Institute of Mathematical Statistics, San Francisco, CA

1992 – Faculty sponsor, Department of Energy TRAC program

1990–1994 – Bernoulli Society Committee on Statistics in the Physical Sciences

1991–present – Reviewer for National Aeronautics and Space Administration (Space Physics Division)

1991 – Local organizer and session chair, Mathematical Sciences Research Institute Workshop on Statistical Methods in Imaging, Berkeley, CA

1989 – Session organizer and chair, Bernoulli Society Satellite Meeting, Leuven, Belgium

1989–present – Reviewer for National Science Foundation (Atmospheric Sciences; Infrastructure; International Programs; Mathematical Sciences; Methodology, Measurement, and Statistics; Solar-Terrestrial Program; Statistics and Probability)

### Foundations, Non-Profit Corporations, and Industry

2020– – Strategic Board of Advisors, Open Source Election Technology (OSET) Institute

– Board of Advisors, Herbicide-Free Campus

2013–2019 – Board of Directors, Verified Voting Foundation

2011–2013 – Board of Advisors, Verified Voting Foundation

2010–2011 – Technical Advisory Board, Clear Ballot Group

2007 – Advisory Board, Facebar, Inc.

2000–2001 – Technical Advisory Board, Cogit.com

2000–2002 – National Advisory Board, eTextbooksOnline.com

– Technical Advisory Board, Atomic Dog Publishing

### Editorial and Referee Service

*Editorial Service*

2014–present – Faculty Review Board, Berkeley Scientific Journal

2013–present – Editorial Board, ScienceOpen

2013–2016 – Associate Editor, SIAM/ASA Journal on Uncertainty Quantification

2012–2018 – Founding Steering Committee and Editorial Board, USENIX Journal of Election Technology and Systems (JETS)

2011–present – Editor, Frontiers in Statistics and Probability (Springer)

2008 – Guest Editor, Inverse Problems

1998–1999 – Editor, Statistical Science

1997–2000 – Editorial Board, Inverse Problems

1994–1998 – Associate Editor, Journal of Geophysical Research

*Referee Service*

1. American Association for the Advancement of Science
2. American Mathematical Monthly
3. Annales Geophysicae
4. Annals of the Institute of Statistical Mathematics
5. Annals of Statistics
6. Arabian Journal for Science and Engineering
7. Astrophysical Journal
8. Bulletin of the Seismological Society of America
9. Cambridge University Press
10. Chapman-Hall
11. Computational Statistics and Data Analysis
12. Electronic Journal of Statistics
13. Foods
14. Geophysical Journal International
15. Geophysical Research Letters
16. Geophysics
17. Geophysical & Astrophysical Fluid Dynamics
18. HarperCollins

19. Harvard Data Science Review
20. IEEE Journal on Acoustics, Speech and Signal Processing
21. IEEE Journal on Information Theory
22. Inverse Problems
23. Inverse Problems and Imaging
24. Journal of the Academy of Business Education
25. Journal of the American Statistical Association
26. Journal of Computational Physics
27. Journal of Economic Literature
28. Journal of Geophysical Research
29. Jurimetrics
30. Nature
31. Nature Climate Change
32. PeerJ
33. Political Analysis
34. Physics of the Earth and Planetary Interiors
35. PLoS One
36. Proceedings of the National Academy of Sciences
37. Science
38. SIAM Review
39. Simon and Schuster
40. Springer-Verlag
41. Statistics, Politics, and Policy

42. Statistical Science

43. Tectonophysics

**University Service**

2021–2022
- Steering Committee, STEM Excellence through Equity & Diversity (SEED) Scholars Program
- Executive Committee and Advisory Board, Peder Sather Center for Advanced Study
- Advisory Board, Berkeley Institute for Data Science (BIDS)
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2020–2021
- Associate Dean, Division of Mathematical and Physical Sciences
- Interim Regional Associate Dean, College of Chemistry and Division of Mathematical and Physical Sciences (ChaMPS)
- Steering Committee, STEM Excellence through Equity & Diversity (SEED) Scholars Program
- Executive Committee and Advisory Board, Peder Sather Center for Advanced Study
- Advisory Board, Berkeley Institute for Data Science (BIDS)
- Scientific Advisory Board, European Union H2020 Project Moving Towards Adaptive Governance in Complexity: Informing Nexus Security (MAGIC), Universitat Autònoma de Barcelona (Spain) and University of Bergen (Norway)
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2019–2020
- Associate Dean, Division of Mathematical and Physical Sciences
- Interim Regional Associate Dean, College of Chemistry and Division of Mathematical and Physical Sciences (ChaMPS)

- Steering Committee, STEM Excellence through Equity & Diversity (SEED) Scholars Program
- Executive Committee and Advisory Board, Peder Sather Center for Advanced Study
- UC Berkeley Signature Initiatives working group for Inclusive Intelligence
- University of California Systemwide Task Force on Herbicides / Safer Chemicals
- Advisory Board, Berkeley Institute for Data Science (BIDS)
- Scientific Advisory Board, European Union H2020 Project Moving Towards Adaptive Governance in Complexity: Informing Nexus Security (MAGIC), Universitat Autònoma de Barcelona (Spain) and University of Bergen (Norway)
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2018–2019
- Associate Dean, Division of Mathematical and Physical Sciences
- UC Berkeley Signature Initiatives working group for Inclusive Intelligence
- Campus Experience Working Group, Undergraduate Student Diversity Project, UC Berkeley
- University of California Systemwide Task Force on Herbicides / Safer Chemicals
- Advisory Board, Berkeley Institute for Data Science (BIDS)
- Scientific Advisory Board, European Union H2020 Project Moving Towards Adaptive Governance in Complexity: Informing Nexus Security (MAGIC), Universitat Autònoma de Barcelona (Spain) and University of Bergen (Norway)
- Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University

– Member, Berkeley Science Network `http://bsn.berkeley.edu`

– Schmidt Science Fellows Program review committee

2017–2018
– Associate Dean, Division of Mathematical and Physical Sciences

– Chancellor's Strategic Planning Committee on Enrollment Growth

– Interdepartmental Committee on the Formation of the Division of Data Sciences

– Director, Statistical Computing Facility

– *Ad hoc* Data Sciences Divisional committee on undergraduate degree programs

– Advisory Board, Berkeley Institute for Data Science (BIDS)

– Academic Program Review Committee, Academic Senate representative, Department of Agricultural and Resource Economics

– Scientific Advisory Board, European Union H2020 Project Moving Towards Adaptive Governance in Complexity: Informing Nexus Security (MAGIC), Universitat Autònoma de Barcelona (Spain) and University of Bergen (Norway)

– Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)

– Faculty Advisory Committee, Athletic Study Center

– Faculty Athletic Fellow

– Program Advisory Committee, Doctor of Business Administration Program, Lincoln University

– Member, Berkeley Science Network `http://bsn.berkeley.edu`

2016–2017
– Associate Dean, Division of Mathematical and Physical Sciences

– Director, Statistical Computing Facility

– Advisory Board, Berkeley Institute for Data Science (BIDS)

– Scientific Advisory Board, European Union H2020 Project Moving Towards Adaptive Governance in Complexity: Informing Nexus Security (MAGIC), Universitat Autònoma de Barcelona (Spain) and University of Bergen (Norway)

- Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)
- Faculty Advisory Committee, Athletic Study Center
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2015–2016
- Associate Dean, Division of Mathematical and Physical Sciences
- Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)
- Faculty Advisory Committee, Athletic Study Center
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2014–2015
- Chair, Department of Statistics
- Director, Statistical Computing Facility
- Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)
- Campus Working Group on Course Curriculum and Design
- Faculty Advisory Committee, Athletic Study Center
- Engineering Science Advisory Committee, College of Engineering
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2013–2014
- Chair, Department of Statistics
- Director, Statistical Computing Facility

- Commission on the Future of the UC Berkeley Library `http://academic-senate.berkeley.edu/issues/commission-future-uc-berkeley-library`
  Charge: `http://evcp.berkeley.edu/sites/default/files/Library%20Commission%2009.21.2012.pdf`
  Final Report: `http://evcp.berkeley.edu/news/commission-future-uc-berkeley-library-report`
- Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)
- Campus Working Group on Course Curriculum and Design
- Faculty Advisory Committee, Athletic Study Center
- Engineering Science Advisory Committee, College of Engineering
- Search Committee, Director of IT for College of Letters and Sciences
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- External Review Committee, Department of Applied Mathematics and Statistics, Colorado School of Mines
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2012–2013
- Chair, Department of Statistics
- Director, Statistical Computing Facility
- Commission on the Future of the UC Berkeley Library
- Faculty Advisory Committee, Berkeley Resource Center for Online Education (BRCOE)
- Engineering Science Advisory Committee, College of Engineering
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University
- Member, Berkeley Science Network `http://bsn.berkeley.edu`

2011–2012
- Acting Department Chair, Department of Statistics, July–August

- Vice Chair, Department of Statistics
- Academic Senate Alternate Representative to University of California Systemwide Assembly
- Academic Senate Committee on Academic Planning and Resource Allocation (CAPRA)
- Campus Committee on Classroom Policy and Management (CCCPM)
- Business Resumption Coordination Group (BRCG)
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University

2010–2011
- Academic Senate Committee on Academic Planning and Resource Allocation (CAPRA)
- Campus Committee on Classroom Policy and Management (CCCPM)
- Course Note-Taking Taskforce (`http://campuspol.chance.berkeley.edu/policies/coursenotes.pdf`)
- *Ad hoc* tenure/promotion committee
- Faculty Athletic Fellow
- Program Advisory Committee, Doctor of Business Administration Program, Lincoln University

2009–2010
- Academic Senate Committee on Computing and Communications (COMP)
- Faculty Athletic Fellow

2008–2009
- Faculty Athletic Fellow

2007–2008
- Undergraduate Student Learning Initiative Faculty Advisory Committee
- Faculty Athletic Fellow

2006–2007
- Faculty Athletic Fellow

2005–2006
- Faculty Athletic Fellow

2004–2005
- Chair, Educational Technology Committee
- e-Berkeley Steering Committee
- e-Berkeley Committee of Chairs
- e-Berkeley Implementation Task Force
- CourseWeb Steering Committee
- Faculty Athletic Fellow

2003–2004
- Chair, Educational Technology Committee
- e-Berkeley Steering Committee
- e-Berkeley Implementation Task Force
- Student Systems Policy Committee
- CourseWeb Steering Committee

2002–2003
- Faculty Assistant in Educational Technology (to Vice Provost for Undergraduate Education)
- Chair, Educational Technology Committee
- Provost's Academic Council
- e-Berkeley Steering Committee
- e-Berkeley Implementation Task Force
- Campus Committee on Classroom Policy and Management (CC-CPM)
- Student Systems Policy Committee
- e-Berkeley Symposium Program Committee
- Faculty Search Committee, Graduate School of Education
- CourseWeb Steering Committee

2001–2002
- Faculty Assistant in Educational Technology (to Vice Provost for Undergraduate Education)
- Chair, Educational Technology Committee
- Provost's Academic Council
- e-Berkeley Steering Committee
- e-Berkeley Implementation Task Force

– Campus Committee on Classroom Policy and Management (CCCPM)

– Academic Senate Committee on Academic Planning and Resource Allocation (CAPRA)

– CITRIS II Program Committee

– TeleBEARS and BearFacts Committees (combined into Student Systems Policy Committee as of 3/2002)

– e-Berkeley Portal Working Group

– Faculty search committee, Graduate School of Education

2000–2001 – Space Allocation and Capital Improvements (SACI)

– Academic Senate Committee on Academic Planning and Resource Allocation (CAPRA)

– CAPRA Subcommittee on Expanded Enrollment

– CAPRA Subcommittee on changes to Academic Coordinator title

– *Ad hoc* hiring/tenure committee

1999–2000 – Space Allocation and Capital Improvements (SACI)

– Academic Senate Library Committee (LIBR)

– Academic Senate Committee on Academic Planning and Resource Allocation (CAPRA), Physical Planning Subcommittee, *ex officio* representative from Library Committee

– Academic Effects Study Committee, Molecular Engineering Building

– *Ad hoc* tenure/promotion committee

– SACI subcommittee to audit space in Barrows Hall

1998–1999 – Space Allocation and Capital Improvements (SACI)

– Electronic Dissertations Project

– Planning Space for the Physical Sciences Libraries

1997–1998 – *Ad hoc* tenure/promotion committee

1996 – Review of College of Science, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

1994–1999 – University review committee for Department of Agricultural and Resource Economics, University of California, Berkeley

1993–1995 – Physical Sciences Division committee for Graduate Affirmative Action and Retention

– Physical Sciences Division committee for Science and Mathematics Academic Re-Training (SMART)

## Contracts and Grants

1. PI, NASA Grant NAG 5-883, "Constructing Core Fields Consistent with Geomagnetic Data and Geophysical Constraints," 1987–1990.

2. Project Director and PI, NSF Grant DMS-8810192, "Inference in Curved-Ray Tomography: Solid Earth Structure," 1989–1992.

3. PI, NSF Grant INT-9205103, "Long and Medium-Term Research: Inference in Seismological Investigations of Subducting Lithosphere," 1992–1994.

4. PI, NSF Grant DMS-930006P, "Estimating the Sun's Internal Angular Velocity from Free-Oscillation Frequency Splittings," 1993–1994.

5. PI, NSF Presidential Young Investigator Award DMS-8957573, 1989–1995.

6. Co-I, NASA Grant NAG5-2438, "The Analysis of Cobe DMR Sky Maps," 1993–1994. PI: J. Silk

7. PI, NASA Grant NAGW-2515, "New Methods for Inversion and Analysis of Solar Free-Oscillation Data," 1991–1995.

8. PI, NSF Grant DMS-9404276, "New Methods for Inference From COBE Data," 1994–1997.

9. PI, NSF Grant AST-9504410, "Function Estimation and Inference in Helioseismology," 1995–1998.

10. PI, LLNL/IGPP Grant 97-AP028, "Helioseismology with Solar Luminosity Constraints," 1996–1997.

11. Co-I, NASA Grant NAG5-3941, "Development of data analysis, compression and visualization tools for large data sets in astrophysics and cosmology," 1997–1998. PI: J. Silk

12. PI, NASA Grant NRA-96-09-OSS-034SOHO, "Modern Statistical Methods for Helioseismic Spectrum Estimation," 1997–1998.

13. PI, NASA Grant NAG 5-3919, "Data Sampling Rate Reduction for the Oersted Satellite," 1997–1998.

14. PI, UC Berkeley Classroom Technologies Grant, "Statistics *Statim*," 1997–1998.

15. Co-I, NSF Grant DMS-9872979,"*KDI: Computational Challenges in Cosmology*," 1998–2000. PI: A. Jaffe.

16. Co-I, NSF Grant IIS-98-17353, "*Re-Inventing Scholarly Information Dissemination and Use*," 4/1/1999–3/31/2004. PI: R. Wilensky and D. Forsythe.

17. PI, Hewlett Packard Company Grant 89293, "Applied Mobile Technology Solutions in Learning Environments," 3/19/2003–8/31/2004. Status report:
`https://www.stat.berkeley.edu/~stark/Grants/hp89293.htm`

18. PI, Hewlett Packard Company Grant 14928, "Applied Mobile Technology Solutions in Learning Environments—2004 Extension Grant," 4/1/2004–6/30/2005.

19. PI, LLNL Grant B565605, "Uncertainty in Complex Simulations," 4/3/2007–9/30/2007.

20. PI, LLNL Grant B585264, "Uncertainty Quantification with Applications to Climate Modeling," 11/3/2009–9/30/2010.

21. PI, Genentech Inc. Grant 008485, "Measuring Glucose with NIR," 2/24/2010–10/31/2010.

22. Co-I, NSF Grant DUE-1060487, "S-STEM Berkeley Science Network Scholarship Program," 3/1/2011–2/28/2015. PI: M. Richards.

23. PI, State of Colorado U.S. Election Assistance Commission subaward UC01, 2010 Pre-Election Logic and Accuracy Testing and Post-Election Audit Initiative, 5/23/2011–4/23/2013.

24. PI, State of California Election Assistance Commission subaward 10I10066, Post Election Risk-Limiting Audit Pilot Program, 9/13/2011–4/23/2013.

25. PI, Bill and Melinda Gates Foundation Grant OPP1077697, "An Introductory Statistics MOOC With Field-Tested Online Assessments," 12/20/2012–7/31/2013.

26. Co-I, UC Berkeley MOOCLab Grant, "Forum Usage in Statistics MOOCs: Disentangling Correlation from Causation," 10/2013–8/2014. PI: M. Hearst.

27. Co-I, Berkeley Institute for Data Science, grant from the Gordon and Betty Moore Foundation and the Sloan Foundation. 12/2013–12/2018. PI: S. Perlmutter.

28. PI, UC Berkeley Food Institute Grant, "Reaping without Sowing: Urban Foraging, Sustainability, Nutrition, and Social Welfare," 2/2014–8/2015.

29. Co-I, NSF, DGE–1450053, "NRT-DESE Data Science for the 21st Century (DS421)," 2015–2020. PI: D. Ackerley.

30. PI, UC Berkeley Food Institute Grant, "Wild Food: Investigating and Reducing Barriers to the Consumption of Foraged Foods," 5/2015–12/2015.

31. PI, State Street Bank and Trust Company Grant, "Industry Partners Program: Consortium for Data Analytics in Risk (CDAR); and Berkeley Institute for Data Science (BIDS) at UC Berkeley," 2/2015–6/2018.

32. PI, Dascena subaward from NIH, "SBIR: A Computational Approach to Early Sepsis Detection," 4/2017–6/2017.

33. PI, Peder Sather Grant, "Mainstreaming Sensitivity Analysis and Uncertainty Auditing," 7/2017–6/2018.

34. Co-I, NSF Grant DMS–1745640, "(RTG): Advancing Machine Learning–Causality and Interpretability," 2018–2023.

35. Co-I, NSF Grant SES–1757307, "Multidisciplinary Conference on Election Auditing: Cambridge, Massachusetts," 2018–2020.

## Consulting and Expert Witness Experience

Association of University of New Brunswick Teachers, Fredericton, New Brunswick, Canada: teaching evaluations and academic employment discrimination

Baker & McKenzie LLP, New York, NY: sampling and uncertainty quantification (client Nuclear Electric Insurance Limited, NEIL)

Austin Community College, Austin, TX: teaching evaluations

Bartlit Beck Herman Palenchar & Scott LLP, Denver, CO: intellectual property litigation (client Tessera)

Bingham McCutchen LLP, Los Angeles, CA: sampling in litigation

Boies Schiller Flexner LLP, San Francisco, CA: sampling and inference in litigation (client Apple Inc.)

Bramson, Plutzik, Mahler & Birkhaeuser LLP, Walnut Creek, CA: consumer class action litigation

Bruce P. Brown Law, Atlanta, GA: election integrity litigation (client Donna Curling et al.)

Brinks, Hofer, Gilson & Lione, Chicago, IL: intellectual property litigation (clients R.J. Reynolds, Actavis)

Calfee, Halter & Griswold LLP, Cleveland, OH: tort litigation (client FirstEnergy Corp)

California-American Water Company: utilities regulation, census and survey data

Capital One: economic modeling and credit risk management; intellectual property litigation; credit loss forecasting

Carey and Carey, Palo Alto, CA: equal protection, civil litigation

CIBC: economic modeling and credit risk management

Cisco Systems: predicting email spool fill

City of Santa Rosa, CA: water treatment monitoring

Coalition for Good Governance, Boulder, CO: election integrity

Cogit.com, San Francisco, CA: Technical advisory board; data mining, targeted web advertising

Constantine, Cannon, San Francisco, CA, and New York, NY: *Qui Tam* litigation (three cases)

Contra Costa County Public Defender, Richmond, CA: equal protection, due process, medical treatment for defendants found incompetent to stand trial

Council of Europe, Venice Commission, Venice, Italy: election integrity, electoral fraud

Crosby, Heafey, Roach, & May, Oakland, CA: insurance litigation (client Farmer's Insurance)

Croskery Law Offices, Cincinnati, OH: employment discrimination litigation

DLA Piper, Atlanta, GA, and Washington, DC: sampling in litigation.

East Bay Municipal Utilities District, Oakland, CA: water treatment monitoring

EEG Systems Laboratory, San Francisco, CA: inverse problems for electrical activity of the brain

Emery Celli Brinckerhoff & Abady LLP, Washington, DC: election recounts (client Jill Stein)

eTextbooksOnline.com, New York, NY: National Advisory board

Farella Braun + Martel LLP, San Francisco, CA: sampling and estimation in litigation

Federal Trade Commission, San Francisco, CA: sampling in litigation

Florida Education Association, Tallahassee, FL: teaching evaluations in academic employment decisions

Folger, Levin & Kahn, LLP, San Francisco, CA: sampling and risk management in litigation (client California Self-Insurers' Security Fund)

Fried, Frank, Harris, Shriver & Jacobsen LLP, New York, NY: sampling and estimation in securities litigation (clients Citigroup Global Markets Inc.; Goldman, Sachs & Co.; UBS Securities LLC)

Fuller-Austin Joint Defense Group: modeling in litigation

Georgia Department of Law, Atlanta, GA: lottery winnings (client Georgia Lottery Corporation)

Gibson, Dunn & Crutcher, New York, NY: sampling and estimation in litigation (client AIG / Lavastone Capital)

GMAC Financial Services: economic modeling and credit risk management

Habeas Corpus Resource Center, San Francisco, CA: bias in jury selection

Howard, Rice, Nemerovski, Canady, Falk, & Rabkin, San Francisco, CA: sampling in litigation; inference from retail sales data (clients K-Mart Corp., R.J. Reynolds)

Howrey LLP, East Palo Alto, CA: sampling in litigation (client Apple Inc.)

HSBC: economic modeling and credit risk management

Jones Day, Columbus, OH: sampling and estimation in litigation (client Cardinal Health)

Kaiser Permanente Northern California, Redwood City, CA: clinical trials in oncology

Kelley Jasons McGuire & Spinelli, LLP: insurance litigation (client St. Paul Fire & Marine Insurance Company)

Keller Grover LLP, San Francisco, CA: *Qui Tam* litigation

Kemnitzer, Barron & Krieg, LLP, San Francisco, CA: sampling in consumer class action litigation

Kipling Law Group, Seattle, WA: sampling in litigation (client AT&T Wireless)

KLA Instruments Corporation, San Jose, CA: calibration of algorithms to detect IC mask flaws

Kramer, Levin, Naftalis, & Frankel, New York, NY: sampling in litigation

Latham & Watkins, LLP, Menlo Park, CA, and San Francisco, CA: sampling in consumer class action litigation (clients Apple Inc., Silver Spring Networks)

Law Offices of Gorman & Miller, San Jose, CA: trade secret litigation

Law Offices of Ilson W. New, San Francisco, CA: natural resource legislation (client California Abalone Association)

Law Offices of Ramirez, Tollner, Stebbins, Bahrick, & Sasseen, San Jose, CA: trade secret litigation

Law Offices of Welebir & McCune, Woodside, CA: product liability litigation

Law Offices of Wells, Pinckney & McHugh, Austin, TX: employment discrimination arbitration

Law Offices of Wolkin & Timpane, San Francisco, CA: insurance litigation (client CIGNA)

Law Offices of Scott K. Zimmerman, Brentwood, CA: product liability litigation

Life Chiropractic College West, Hayward, CA: experimental design

Littler Mendelson, P.C., Dallas, TX, Los Angeles, CA, and San Francisco, CA: sampling in employment wage and hour class action litigation

Los Angeles Superior Court, Central District: sampling in employment wage and hour litigation

Manatt, Phelps & Phillips LLP, San Francisco, CA: utilities regulation (client California-American Water Company)

Mayer, Brown, Rowe & Maw, Chicago, IL: intellectual property litigation (client Capital One)

Mayer Brown LLP, New York, NY: mortgage-backed securities litigation (clients Bank of New York Mellon, Citibank N.A.)

Memorial University Faculty Association (MUNFA), St. Johns, NL, Canada: teaching evaluations in academic employment decisions

Meyers Nave, Oakland, CA: election dispute litigation (client Novato Sanitary District)

Monaghan Safar Ducham PLLC, Burlington, VT: employment discrimination

Morgan, Lewis & Bockius LLP, Los Angeles, CA: sampling in litigation

Morrison & Foerster, San Francisco, CA: product liability class action litigation, causal inference in litigation (clients American Cemwood, Iovate Health Sciences)

Munger, Tolles & Olson, LLP, San Francisco, CA and Los Angeles, CA: consumer class action litigation, intellectual property litigation, sampling (clients Verizon Wireless, Philip Morris, Tessera)

Murphy & McGonigle, Washington, DC: risk management and credit loss forecasting (client Capital One)

National Security Agency: adaptive filtering, combining expert opinions, digital communications, information retrieval, estimation

National Solar Observatory, Tucson, AZ: spectrum estimation

Albert A. Natoli, P.C., New York, NY: surveys in consumer class action litigation

New Hampshire Department of Justice, New Hampshire Secretary of State, and Town of Windham, New Hampshire: election auditing

Nichols Kaster PLLP, Minneapolis, MN: sampling and damage estimation in consumer class action litigation

Norton Rose Fulbright US LLP, Houston, TX: construction defect litigation (client M.J. Dean Construction, Inc.)

Nossaman LLP, San Francisco, CA: utilities regulation (client California-American Water Company)

Office of the Attorney General, State of California, Oakland, CA: sampling in litigation (client California Highway Patrol)

Ontario Confederation of University Faculty Associations (OCUFA) and Ryerson Faculty Association, Toronto, ON: teaching evaluations in academic employment decisions

Oracle: sampling and risk analysis

Orrick, Herrington & Sutcliffe LLP, Los Angeles and Sacramento, CA: sampling in litigation

Pacific Gas & Electric Co., San Francisco, CA: statistics and causal inference in litigation

Paul, Hastings, Janofsky & Walker LLP, Washington, DC: intellectual property litigation (client Capital One)

Phillips & Cohen LLP, San Francisco, CA: statistical inference in *Qui Tam* litigation

Porter & Hedges, LLP, Houston, TX: sampling in litigation

Schlumberger-Doll Research, Ridgefield, CT: inverse problems, signal processing

Robins Kaplan LLP: *Qui Tam* litigation

Shearman & Sterling, Washington, DC: survival analysis in litigation

Skadden, Arps, Slate, Meagher & Flom LLP, San Francisco, CA: case-control studies in litigation

Spector Roseman Kodroff & Willis, P.C., Philadelphia, PA: *Qui Tam* litigation

Spriggs & Hollingsworth, Washington, DC: environmental litigation

State of Illinois, Monroe County State's Attorney, Waterloo, IL: evidence in capital prosecution

St. Paul Fire and Marine Insurance Company, Baltimore, MD: projecting tort liability

Susman Godfrey, LLP, Los Angeles, CA

Travis County, TX: design of auditable voting systems

United Faculty of Florida, Tallahassee, FL: teaching evaluations in academic employment decisions

University of Southern California School of Law, Los Angeles, CA: teaching evaluations

U.S. Attorney's Office, Northern District of California: ethnic bias in grand jury selection

U.S. Department of Agriculture, Washington, D.C.: fairness in lending, import restrictions and risk assessment

U.S. Department of Commerce, Bureau of the Census, Washington, D.C.: estimation and modeling

U.S. Department of Housing and Urban Development, Washington, D.C.: disparate impact of hurricane Katrina relief program

U.S. Department of Justice, Civil Division, Federal Programs Branch, Washington, D.C.: sampling the Internet and testing Internet content filters; USDA import restrictions on cattle and beef; disparate racial impact in HUD disaster relief; fairness in lending; prevalence of "sexting" among young adults

U.S. Department of Justice, Civil Division, San Francisco, CA: Election fraud.

U.S. Department of Veterans Affairs Medical Center, Martinez, CA: speech and non-speech hearing segregation in aging

U.S. House of Representatives, Washington, D.C.: sampling to adjust the U.S. Census

Weintraub Genshlea Chediak Law Corporation, Sacramento, CA: wage and hour class action litigation (client Tai Wah, Inc.)

Wiegel Law Group, San Francisco, CA: sampling in class action litigation (client Trinity Management Services)

Wilkinson Walsh, Washington, DC: sampling and extrapolation (client Bayer)

Willoughby, Stuart & Bening, San Jose, CA: insurance litigation

Winston & Strawn LLP, Chicago, IL: consumer class action litigation

Zimmerman Reed, Scottsdale, AZ: consumer class action litigation

## Testimony (incomplete prior to 2003)

54. **December 2020.** Vicky Maldonado and Justin Carter, Individually and on behalf of themselves and all others similarly situated, v. Apple Inc, Applecare Services Company, Inc., and Apple CSC, Inc. (US District Court, Northern District of California, San Francisco Division, Case 3:16-cv-04067-WHO) Deposition.

53. **November 2020.** University Faculty of Florida and University of Florida, (American Arbitration Association before Arbitrator Mark Lurie, Grievance No. 0625-000121) Arbitration.

52. **September 2020.** Donna Curling, et al., v. Brad Raffensperger, et al., (U.S. District Court, Northern District of Georgia, Atlanta Division, Case 1:17-cv-2989-AT) Trial.

51. **August 2020.** Pacific Life & Annuity Company and Pacific Life Insurance Company v. The Bank of New York Mellon (U.S. District Court, Southern District of New York, Case 17-CV-1388-KPF) Deposition.

50. **January 2020.** Coordination proceeding Special Title [Rule 1550(b)] Essure Product Cases, (Superior Court of California, County of Alameda, Case JCCP 4887) Deposition.

49. **May 2019.** A. Bolde v. Navistar, Inc., Vaso Express, Inc., A. Karapetyan, and Does 1–100, (Superior Court of California, County of Los Angeles, Department 2, Case BC6743) Deposition.

48. **April 2019.** Testimony before the U.S. Election Assistance Commission regarding the Voluntary Voting Systems Guidelines (VVSG), version 2.0. Salt Lake City, UT. Public testimony. `https://www.eac.gov/media/video-player-us-eac-public-hearing-042319/`

47. **December 2018.** Phoenix Light SF Ltd., in its own right and the right of Blue Heron Funding V Ltd., Blue Heron Funding VI Ltd., Blue Heron Funding VII Ltd., Kleros Preferred Funding V PLC, Silver Elms CDO PLC, Silver Elms CDO II Ltd., C-BASS CBO XVII Ltd., C-BASS CBO XIV Ltd. and each of Blue Heron Funding V Ltd., Blue Heron Funding VI Ltd., Blue Heron Funding VII Ltd., Kleros Preferred Funding V PLC, Silver Elms CDO PLC, Silver Elms CDO II Ltd., C-BASS CBO XVII Ltd. and C-BASS CBO XIV Ltd., in their

own right, *vs.* The Bank of New York Mellon. (U.S. District Court, Southern District of New York, Case 14-CV-10104 (VEC)) Deposition.

46. **November 2018.** United States of America and State of New York, *ex rel.* Edward Lacey, *vs.* Visiting Nurse Service of New York. (U.S. District Court, Southern District of New York, Case 14-CV-5739 (AJN)) Deposition.

45. **August 2018.** Delores James *vs.* University of Florida (Grievances # 0817-00108 and 1117-00109) Arbitration.

44. **July 2018.** Testimony to the State of California Little Hoover Commission. Video: `http://www.lhc.ca.gov/report/voting-equipment-security`. Written testimony : `https://www.stat.berkeley.edu/~stark/Preprints/lhs18.pdf`

43. **July 2018.** United States of America, *ex rel.* Stephen A. Krahling and Joan A. Wlochowski, *vs.* Merck & Co., Inc. (U.S. District Court, Eastern District of Pennsylvania, Case 10-4374 (CDJ)) and *In Re*: Merck Mumps Vaccine Antitrust Litigation (Master File No. 12-3555 (CDJ)) Deposition.

42. **April 2018.** Ryerson University *vs.* The Ryerson Faculty Association re FCS & Related Issues (2018 CanLII 58446) Arbitration.

41. **August 2017.** Application of California-American Water Company (U210W) for Authorization to Modify Conservation and Rationing Rules, Rate Design, and Other Related Issues for the Monterey District (Public Utility Commission of the State of California, Application 15-07-019) Hearing.

40. **July 2017.** United States, the States of California, Delaware, Florida, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the

Commonwealths Of Massachusetts and Virginia, and The District Of Columbia, *ex rel.* John Hendrix, *vs.* J-M Manufacturing Company, Inc., d/b/a JM Eagle, a Delaware corporation, and Formosa Plastics Corporation, U.S.A., a Delaware corporation (U.S. District Court, Central District of California, Case ED CV 06-00055-GW) Deposition.

39. **March 2017.** The People of the State of California *vs.* Keegan Lee Czirban, Richard Allen, Filoberto Pablo Alvidrez, Jaqwayne Bryant, Dale Gabriel Burnell, Juan Pablo Cardona aka Juan Luna-Cardona, Miguel Colina, Emmanuel Cordova, Ramon Duenas, Connie Renee Fields, Anisa Sakari Fortenberry, Louie Frank Gamboa, Cynthia Marie Harrell, Briana Hawkins, Jeremiah James Johnson, Kieth Carl Knutson, Mark Alex Mallory, Brian McMahon, David Moore, Marquise Lamar Owens, Mitkayem Dean Robinson, Patrice Sanders, and Seth Rui Sears. (Superior Court of the State of California, County of Contra Costa, 05-151662-4 and associated cases) Trial.

38. **March 2017.** Kelly Brunarski and Yvette Harmon *vs.* Miami University. (U.S. District Court, Southern District of Ohio, Western Division, 1:16-cv-0311) Deposition.

37. **January 2017.** The Western and Southern Life Insurance Company, et al. *vs.* The Bank of New York Mellon. (Court Of Common Pleas, Hamilton County, Ohio, A1302490) Trial.

36. **December 2016.** Fixed Income Shares: Series M, Lvs II LLC, PCM Fund, Inc., PIMCO Absolute Return Strategy II Master Fund LDC, PIMCO Absolutereturnstrategy III Master Fund LDC, PIMCO Absolute Return Strategy III Overlay Master Fund Ltd., PIMCO Absolute Return Strategy IV Master Fund LDC, PIMCO Absolute Return Strategy V Master Fund LDC, PIMCO Bermuda Trust: PIMCO Bermuda Foreign Low Duration Fund, PIMCO Bermuda Trust: PIMCO Bermuda U.S. Low Duration Fund, PIMCO Cayman Spc Limited, PIMCO Cayman Japan Coreplus Segregated Portfolio, PIMCO Cayman Trust: PIMCO Cayman Global Advantage Bond

Fund, PIMCO Cayman Trust: PIMCO Cayman Global Aggregate Ex-Japan (Yen-Hedged) Bond Fund II, PIMCO Cayman Trust: PIMCO Cayman Global Aggregate Exjapan (Yen-Hedged) Income Fund, PIMCO Cayman Trust: PIMCO Cayman Global Aggregate Ex-Japan Bond Fund, PIMCO Cayman Trust: PIMCO Cayman Global Bond (Nzdhedged) Fund, PIMCO Dynamic Credit Income Fund, PIMCO ETF Trust, PIMCO Total Return Active Exchange-Traded Fund, PIMCO Funds: Global Investors Series PLC, Diversified Income Fund, PIMCO Funds: Global Investors Series PLC, Global Bond Fund, PIMCO Funds: Global Investors Series PLC, Global Investment Grade Credit Fund, PIMCO Funds: Global Investors Series PLC, Income Fund, PIMCO Funds: Global Investors Series PLC, PIMCO Credit Absolute Return Fund, PIMCO Funds: Global Investors Series PLC, Unconstrained Bond Fund, PIMCO Funds: PIMCO Commodities Plus Strategy Fund, PIMCO Funds: PIMCO Commodity Real Return Strategy Fund, PIMCO Funds: PIMCO Credit Absolute Return Fund, PIMCO Funds: PIMCO Diversified Income Fund, PIMCO Funds: PIMCO Floating Income Fund, PIMCO Funds: PIMCO Foreign Bond Fund (Unhedged), PIMCO Funds: PIMCO Global Advantage Strategy Bond Fund, PIMCO Funds: PIMCO Global Bond Fund (Unhedged), PIMCO Funds: PIMCO Income Fund, PIMCO Funds: PIMCO International Stocksplus AR Strategy Fund (U.S. Dollarhedged), PIMCO Funds: PIMCO Investment Grade Corporate Bond Fund, PIMCO Funds: PIMCO Low Duration Fund, PIMCO Funds: PIMCO Low Duration Fund II, PIMCO Funds: PIMCO Low Duration Fund III, PIMCO Funds: PIMCO Real Return Fund, PIMCO Funds: PIMCO Short-Term Fund, PIMCO Funds: PIMCO Total Return Fund, PIMCO Funds: PIMCO Unconstrained Bond Fund, PIMCO Funds: PIMCO Worldwide Fundamental Advantage AR Strategy Fund, PIMCO Funds, Private Account Portfolio Series Emerging Markets Portfolio, PIMCO Funds: Private Account Portfolio Series International Portfolio, PIMCO Funds: Private Account Portfolio Series Mortgage Portfolio, PIMCO Funds: Private Account Portfolio Series Short-Term Portfolio, PIMCO Funds: Private Account Portfolio Series U.S. Government Sector Portfolio, PIMCO Multi-Sector Strategy Fund Ltd., PIMCO Offshore Funds - PIMCO Absolute Return Strategy IV Efund, PIMCO Variable Insurance Trust: PIMCO Global Advantage Strategy Bond Portfolio, PIMCO

Variable Insurance Trust: PIMCO Global Bond Portfolio (Unhedged), PIMCO Variable Insurance Trust: PIMCO Low Duration Portfolio, CREF Bond Market Account, CREF Social Choice Account, TIAA Global Public Investments, MBS LLC, TIAA-CREF Bond Fund, TIAA-CREF Bond Plus Fund, TIAA-CREF Life Insurance Company, Prudential Bank & Trust, FSB, Prudential Retirement Insurance and Annuity Company, The Gibraltar Life Insurance Company, Ltd., The Prudential Series Fund, LIICA RE II, Inc., Monumental Life Insurance Company Modified Separate Account, Transamerica Life Insurance Company, Transamerica Premier Life Insurance Company, Kore Advisors LP, and Sealink Funding Limited *vs.* Citibank N.A. (U.S. District Court, Southern District of New York, 14-cv-09373-JMF) Deposition.

35. **November 2016.** Jill Stein, Petitioner, *vs.* Wisconsin Elections Commission and Members of the Wisconsin Elections Commission, each and only in his or her official capacity: Mark L. Thomsen, Ann S. Jacobs, Beverly Gill, Julie M. Glancey, Steve King, and Don M. Millis, Respondents. (State of Wisconsin Circuit Court, Dane County, Judge Valerie Bailey-Rihn) Trial.

34. **October 2016.** Citizens Oversight, Inc., a Delaware non-profit corporation; and Raymond Lutz, an individual, *vs.* Michael Vu, San Diego Registrar of Voters; Helen N. Robbins-Meyer, San Diego County Chief Administrative Officer; County of San Diego, a public entity; and Does 10–10, Defendants. (Superior Court of California, County of San Diego–Central Division, 37-2016-00020273-CL-MC-CTL) Trial.

33. **July 2016**. Loc Vu-Quoc *vs.* University of Florida. (American Arbitration Association Case no. 01-15-0006-1052). Arbitration.

32. **July 2016**. Memorial University of Newfoundland Faculty Association *vs.* Memorial University of Newfoundland (Arbitration I15-07) Arbitration.

31. **June 2016**. Gasia Thomas, et al., *vs.* First Energy Corporation, et al. (Court Of Common Pleas, Cuyahoga County, Ohio, 13-CV-798520) Deposition.

30. **May 2016**. The Western and Southern Life Insurance Company, et al., *vs.* The Bank of New York Mellon. (Court Of Common Pleas, Hamilton County, Ohio, A1302490) Deposition.

29. **February 2016**. Palms Place, LLC, a Nevada limited liability company, *vs.* Kittrell Garlock & Associates, Architects, AIA, LTD. d/b/a KGA Architecture, a Nevada professional corporation; M.J. Dean Construction, LLC, a Nevada limited liability company; Does I through X; Roe Corporations I through X; and Roe LLC I through X, Defendants.

    M.J. Dean Construction, Inc., a Nevada corporation, Counterclaimant, *vs.* Palms Place, LLC, a Nevada limited liability company, Does I-X, Roe Corporations I-X, Boe Bonding Companies I-X, Loe Lenders I–X and Toe Tenants I-X, Counterdefendants.

    Kittrell Garlock & Associates, Architects, AIA, Ltd. d/b/a KGA Architecture, a Nevada professional corporation, Counterclaimant, *vs.* Palms Place, LLC, a Nevada limited liability company, and Toes I–XV, Counterdefendants.

    M.J. Dean Construction, Inc., a Nevada corporation, Third-Party Plaintiff, *vs.* Embassy Glass, Inc., a Nevada corporation; Zetian Systems, Inc., a Nevada corporation; Bombard Mechanical, LLC, a Limited Liability Company; Century Steel, Inc., a Nevada corporation; Pacific Custom Pools, Inc., a Nevada corporation; Superior Tile & Mechanical, Inc., a Nevada corporation; Mesa Mechanical, LLC, a Limited Liability Company; Dean Roofing Co., a Nevada Corporation; Does 1 through 50; Roe Corporations 1 through 50, Third-Party Defendants.

    Palms Place, LLC, a Nevada limited liability company, Cross-Claimant, *vs.* Embassy Glass, Inc., a Nevada corporation; Zetian Systems, Inc., a Nevada corporation; Does 1 through 50; Roe Corporations 1 through 50, Cross-Defendants. (Nevada District Court, Clark County, Nevada, A-11-645150-C) Deposition.

28. **September 2015**. Lavastone Capitol LLC *vs.* Coventry First LLC, LST I LLC, LST II LLC, LST Holdings LTD., Montgomery Capital, Inc., Alan Buerger, Reid Buerger, Constance Buerger, and Krista Lake. (U.S. District Court, Southern District of New York, 14-CV-07139 JSR) Trial.

27. **May 2015**. Lavastone Capitol LLC *vs.* Coventry First LLC, LST I LLC, LST II LLC, LST Holdings LTD., Montgomery Capital, Inc., Alan Buerger, Reid Buerger, Constance Buerger, and Krista Lake. (U.S. District Court, Southern District of New York, 14-CV-07139 JSR) Deposition.

26. **April 2015**. Testimony before the California State Assembly Committee on Elections and Redistricting. Legislative hearing. `https://www.stat.berkeley.edu/~stark/Preprints/ab44-assembly-2015-4-15.htm`

25. **July 2014**. New Jersey Carpenters Health Fund, New Jersey Carpenters Vacation Fund, and Boilermaker Blacksmith National Pension Trust, on Behalf of Themselves and All Others Similarly Situated, *vs.* Residential Capital, LLC; Residential Funding, LLC; Residential Accredit Loans, Inc.; Bruce J. Paradis; Kenneth M. Duncan; Davee L. Olson; Ralph T. Flees; Lisa R. Lundsten; James G. Jones; David M. Bricker; James N. Young; Residential Funding Securities Corporation d/b/a GMAC RFC Securities; Goldman, Sachs & Co.; RBS Securities, Inc. f/k/a Greenwich Capital Markets, Inc. d/b/a RBS Greenwich Capital; Deutsche Bank Securities, Inc.; Citigroup Global Markets, Inc.; Credit Suisse Securities (USA) LLC; Bank of America Corporation as successor-in-interest to Merrill Lynch, Pierce, Fenner & Smith, Inc.; UBS Securities LLC; JPMorgan Chase & Co., Inc. as successor-in-interest to Bear, Stearns & Co., Inc.; and Morgan Stanley & Co., Inc. (U.S. District Court, Southern District of New York, Case 08-CV-8781 HB) Deposition.

24. **October 2013**. United States, the States of California, Delaware,

Florida, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths Of Massachusetts and Virginia, and The District Of Columbia Ex Rel. John Hendrix, Plaintiffs, *vs.* J-M Manufacturing Company, Inc., d/b/a JM Eagle, a Delaware corporation, and Formosa Plastics Corporation, U.S.A., a Delaware corporation (U.S. District Court, Central District of California, Case ED CV 06-00055-GW) Trial.

23. **September 2013**. Tessera, Inc. *vs.* Advanced Micro Devices, Inc., a Delaware corporation; Spansion, LLC, a Delaware limited liability corporation; Spansion, Inc., a Delaware corporation; Spansion Technology, Inc., a Delaware corporation; Advanced Semiconductor Engineering, Inc., a Republic of China corporation; ASE (U.S.), Inc., a California corporation; ChipMOS Technologies, Inc., a Republic of China corporation; ChipMOS U.S.A., Inc., a California corporation; Siliconware Precision Industries Co., Ltd., a Republic of China corporation; Siliconware USA, Inc., a California corporation; STMicroelectronics N.V., a Netherlands corporation; STMicroelectronics, Inc., a Delaware corporation; STATS ChipPAC, Inc., a Delaware corporation; STATS ChipPAC (BVI), Inc., a British Virgin Islands company; STATS ChipPAC, Ltd., a Singapore company (U.S. District Court, Northern District of California, Case C 05-04063 CW) Deposition.

22. **July 2013**. United States, the States Of California, Delaware, Florida, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths Of Massachusetts And Virginia, and The District Of Columbia Ex Rel. John Hendrix, Plaintiffs, *vs.* J-M Manufacturing Company, Inc., d/b/a JM Eagle, a Delaware corporation, and Formosa Plastics Corporation, U.S.A., a Delaware corporation (U.S. District Court, Central District of California, Case ED CV 06-00055-GW) Deposition.

21. **June 2013**. Free Speech Coalition, Inc., American Society Of Media Photographers, Inc.; Michael Barone; David Conners a/k/a Dave Cummings; Thomas Hymes; Townsend Enterprises, Inc. d/b/a Sinclair Institute; C1R Distribution, LLC d/b/a Channel 1 Releasing;

Barbara Alper; Carol Queen; Barbara Nitke; David Steinberg; Marie L. Levine a/k/a Nina Hartley; Dave Levingston; Betty Dodson; Carlin Ross *vs.* Eric H. Holder, Jr., Attorney General of the United States (U.S. District Court, Eastern District of Pennsylvania, Case 2:09–4607 MMB) Trial.

20. **October 2011**. Jonathan Buckheit *vs.* Tony Dennis, Dean Devlugt, Town of Atherton, County of San Mateo, Anthony Kockler and Jerry Carlson (U.S. District Court, Northern District of California, Case CV09-5000 JCS) Deposition.

19. **June 2010**. Testimony before California State Senate Committee on Elections, Reapportionment and Constitutional Amendments. Legislative hearing. `https://www.stat.berkeley.edu/~stark/Preprints/ab2023-senate-15-6-10.htm`

18. **April 2010**. Testimony before California State Assembly Committee on Elections and Redistricting. Legislative hearing. `https://www.stat.berkeley.edu/~stark/Preprints/ab2023-assembly-20-4-10.htm`

17. **March 2010**. Suzan Sharpley and Robert Abeling *vs.* William Long; Novato Sanitary District; Elaine Ginnold, Marin County Registrar of Voters; Does 1–10. (State of California Superior Court, County of Marin, Case CIV 096368) Trial.

16. **January 2010**. Kastanos et al. *vs.* Central Concrete Supply Co., Inc. (State of California Superior Court, County of Alameda, Lead Case No. HG 07-319366) Trial.

15. **June 2009**. Star Scientific, Inc., *vs.* R.J. Reynolds Tobacco Company, et al. (U.S. District Court, Maryland District, Northern Division, Case Nos. MJG-01 1504 and MJG-02 2504) Trial.

14. **May 2009**. Star Scientific, Inc., *vs.* R.J. Reynolds Tobacco Company, et al. (U.S. District Court, Maryland District, Northern Division, Case Nos. MJG-01 1504 and MJG-02 2504) Deposition.

13. **July 2008**. Coordination Proceeding Special Title (Rule 1550(b)) Cellphone Termination Fee Cases (State of California Superior Court, County of Alameda, Case 4332) Deposition.

12. **April 2008**. Coordination Proceeding Special Title (Rule 1550(b)) Cellphone Termination Fee Cases (State of California Superior Court, County of Alameda, Case 4332) Deposition.

11. **August 2007**. Self-Insurers' Security Fund *vs.* Gallagher Bassett Services, Inc. (U.S. District Court, Northern District of California, Case No. C 06-02828 JSW) Deposition.

10. **March 2007**. Peter Wachtell *vs.* Capital One Financial Corporation and Capital One Services, Inc. (U.S. District Court, District of Idaho, Case No. CIV03-267-S-MHW) Deposition.

9. **November 2006**. Coordination Proceeding Special Title (Rule 1550(b)) Cellphone Termination Fee Cases (State of California Superior Court, County of Alameda, Case 4332) Deposition.

8. **November 2006**. ACLU *vs.* Gonzales (U.S. District Court, Eastern District of Pennsylvania, Civil Action No. 98-5591) Trial.

7. **August 2006**. ACLU *vs.* Gonzales (U.S. District Court, Eastern District of Pennsylvania, Civil Action No. 98-5591) Deposition.

6. **December 2004**. Star Scientific, Inc., *vs.* R.J. Reynolds Tobacco Company, et al. (U.S. District Court, Maryland District, Northern

Division, Case Nos. MJG-01 1504 and MJG-02 2504) Trial.

5. **December 2003**. Richison et al. *vs.* American Cemwood Corporation (State of California Superior Court, San Joaquin County, Case No. 005532) Trial.

4. **December 2003**. Pacific Gas and Electric Co. *vs.* City and County of San Francisco (U.S. District Court, Northern District of California, Case No. C99-2071 VRW) Deposition.

3. **May 2003**. Richison et al. *vs.* American Cemwood Corporation (State of California Superior Court, San Joaquin County, Case No. 005532) Deposition.

2. **May 1998**. Testimony before the U.S. House of Representatives Subcommittee on the Census. Legislative hearing.

1. **1997**. Testimony before the State of California Senate Committee on Natural Resources. Legislative hearing.

`https://www.stat.berkeley.edu/~stark/bio.pdf`
Last modified January 10, 2022.

# APPENDIX 2

# Curling et al. v Raffensperger

In [1]:
```
import numpy as np
import scipy as sp
import pandas as pd
```

# Audit data

In [2]:
```
fn = './audit-report-November-3-2020-General-Election-2020-11-19.csv'
```

In [3]:
```
aud = pd.read_csv(fn, skiprows=17)
aud.describe()
```

Out[3]:

| | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote |
|---|---|---|---|---|---|---|
| **count** | 41881.00000 | 41881.000000 | 41881.000000 | 41881.000000 | 41881.000000 | 41881.000000 |
| **mean** | 58.80607 | 59.099377 | 1.494401 | 0.216948 | 0.071226 | 3.165015 |
| **std** | 193.27427 | 185.183528 | 4.403863 | 1.346462 | 0.484540 | 7.358273 |
| **min** | 0.00000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| **25%** | 5.00000 | 10.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| **50%** | 13.00000 | 20.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| **75%** | 34.00000 | 40.000000 | 1.000000 | 0.000000 | 0.000000 | 1.000000 |
| **max** | 7550.00000 | 7078.000000 | 109.000000 | 134.000000 | 28.000000 | 50.000000 |

In [4]:
```
aud.head()
```

Out[4]:

| | Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | C |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | APPLING | 01 | Absentee By Mail | 23 | 1 | 0 | 0 | 0 | 1 | |
| **1** | APPLING | 02 | Absentee By Mail | 22 | 3 | 0 | 0 | 0 | 0 | |
| **2** | APPLING | 03 | Absentee By Mail | 19 | 5 | 0 | 0 | 0 | 1 | |
| **3** | APPLING | 04 | Absentee By Mail | 21 | 4 | 0 | 0 | 0 | 0 | |
| **4** | APPLING | 05 | Absentee By Mail | 24 | 1 | 0 | 0 | 0 | 0 | |

In [5]:

```
subset = ['Jurisdiction Name','Donald J. Trump', 'Joseph R. Biden', 'Jo Jorgense
          'Invalid Write-In', 'Valid Write-iin', 'Blank/Undervote', 'Overvote']
print(f'''duplicated data within counties {np.sum(aud.duplicated(subset=subset,
```

```
duplicated data within counties 16807
```

In [6]:

```
# first FULTON in spreadsheet is line 18582. Last is 20,497
print(sum(aud['Jurisdiction Name'] == 'FULTON'), 20497-18582+1)
```

```
1916 1916
```

In [7]:

```
fulton = aud[aud['Jurisdiction Name'] == 'FULTON']
cands = ['Donald J. Trump', 'Joseph R. Biden', 'Jo Jorgensen', \
         'Invalid Write-In', 'Valid Write-iin', 'Blank/Undervote', 'Overvote']


def filter_by_values(domain : pd.DataFrame, votes : list) -> pd.Series:
    filt = domain[cands[0]] == votes[0]
    for j in range(1,len(votes)):
        if votes[j] is not None:
            filt = filt & (domain[cands[j]] == votes[j])
    return filt
```

In [8]:

```
# possibly missing
miss_vals = {}
miss_vals['f_ab_s_3_b_48']          = [4, 93, 2, 0, 0, 0, 0]          # marked "
miss_vals['f_ab_s_2_b_52']          = [6, 92, 0, 0, 0, 0, 0]          # #128 p1
miss_vals['f_s_3_b_12_13_14']       = [12, 83, 1, 0, 0, 0, 0]         # not mark
                                                                      # shows mu
miss_vals['f_s_3_b_239']            = [13, 87, 0, 0, 0, 0, 0]         # not mark
miss_vals['f_s_1_b_80_81_82_83_84'] = [118, 329, 3, None, None, 2, 1] # two writ
miss_vals['f_ab_s_3_b_260']         = [30, 66, 0, 0, 0, 0, 0]         # mode not
miss_vals['f_ed_ap01A_1']           = [84, 62, 6, None, None, 1, 0]   # two writ
miss_vals['f_ab_s_3_b_179_180_181'] = [85, 224, 5, None, None, 2, 0]  # one writ
miss_vals['f_ab_s_2_b_239']         = [4, 42, 0, 0, 0, 0, 0]
miss_vals['f_adv_chastain_b_12']    = [613, 605, 24, None, None, 4, 0]# 7 writei
miss_vals['f_adv_chastain_b_114']   = [613, 605, 24, None, None, 4, 0]# also has
                                                                      # 605 is o
```

In [9]:

```
for label, vote in miss_vals.items():
    print(f'\nsheet: {label} {vote=}')
    display(fulton[filter_by_values(fulton, vote)])
```

```
sheet: f_ab_s_3_b_48 vote=[4, 93, 2, 0, 0, 0, 0]
```

| | Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Under |
|---|---|---|---|---|---|---|---|---|---|
| **19457** | FULTON | Absentee Scanner 3 Ballot 162 | Absentee By Mail | 4 | 93 | 2 | 0 | 0 | |

```
sheet: f_ab_s_2_b_52 vote=[6, 92, 0, 0, 0, 0, 0]
```

| | Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | V Wr |
|---|---|---|---|---|---|---|---|---|
| **19304** | FULTON | AbsenteeScanner2Batch400 | Absentee By Mail | 6 | 92 | 0 | 0 | |

```
sheet: f_s_3_b_12_13_14 vote=[12, 83, 1, 0, 0, 0, 0]
```

| | Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | V Wr |
|---|---|---|---|---|---|---|---|---|
| **19577** | FULTON | AbsenteeScanner3Batch253 | Absentee By Mail | 12 | 83 | 1 | 0 | |

```
sheet: f_s_3_b_239 vote=[13, 87, 0, 0, 0, 0, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_s_1_b_80_81_82_83_84 vote=[118, 329, 3, None, None, 2, 1]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_ab_s_3_b_260 vote=[30, 66, 0, 0, 0, 0, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_ed_ap01A_1 vote=[84, 62, 6, None, None, 1, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_ab_s_3_b_179_180_181 vote=[85, 224, 5, None, None, 2, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_ab_s_2_b_239 vote=[4, 42, 0, 0, 0, 0, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_adv_chastain_b_12 vote=[613, 605, 24, None, None, 4, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

```
sheet: f_adv_chastain_b_114 vote=[613, 605, 24, None, None, 4, 0]
```

| Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervote | Overv |
|---|---|---|---|---|---|---|---|---|---|

In [10]:

```
for c in cands:
```

```
    print(f'{c}: {np.sum(fulton[c])}')
```

```
Donald J. Trump: 137620
Joseph R. Biden: 381179
Jo Jorgensen: 6494
Invalid Write-In: 836
Valid Write-iin: 375
Blank/Undervote: 1439
Overvote: 92
```

In [11]:

```
tots = np.zeros(len(cands))
for s, v in miss_vals.items():
    for i in range(len(cands)):
        tots[i] += (v[i] if v[i] is not None else 0)

print(f'{[int(t) for t in tots]} {np.sum(tots[0:3]) :0.0f} {np.sum(tots) :0.0f}'
```

```
[1582, 2288, 65, 0, 0, 13, 1] 3935 3949
```

## Compare with original result

In [12]:

```
orig_N = 524659  # per audit report
aud_N = 525293   # per audit report
miss_N = int(np.sum(tots[0:3])) # batch sheets not present in the spreadsheet
overall_miss = aud_N+miss_N - orig_N
print(f'{aud_N-orig_N=} {overall_miss=} ' +\
      f'original error: {100*(aud_N-orig_N)/orig_N :0.2f}% overall error:  {100*
```

```
aud_N-orig_N=634 overall_miss=4569 original error: 0.12% overall error:  0.87%
```

# Original scan versus machine recount

In [13]:

```
orig_fn = './orig.csv'
recount_fn = './recount.csv'
```

In [14]:

```
orig = pd.read_csv(orig_fn, header=1)
recount = pd.read_csv(recount_fn, header=1)
```

In [15]:

```
orig.head()
```

Out[15]:

| | County | Registered Voters | Election Day Votes | Advanced Voting Votes | Absentee by Mail Votes | Provisional Votes | Total Votes | Election Day Votes.1 | Advanced Voting Votes.1 | Ab |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 01A | 3694 | 41 | 145 | 56 | 5 | 247 | 160 | 1662 | |
| **1** | 01B | 4327 | 79 | 159 | 62 | 1 | 301 | 242 | 1842 | |
| **2** | 01C | 1908 | 21 | 20 | 8 | 0 | 49 | 180 | 372 | |
| **3** | 01D | 754 | 7 | 13 | 13 | 1 | 34 | 24 | 284 | |
| **4** | 01E | 3720 | 40 | 167 | 79 | 1 | 287 | 101 | 1559 | |

In [16]:
```
recount.head()
```

Out[16]:

| | County | Registered Voters | Election Day Votes | Advanced Voting Votes | Absentee by Mail Votes | Provisional Votes | Total Votes | Election Day Votes.1 | Advanced Voting Votes.1 | Ab |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 01A | 3694 | 41 | 147 | 55 | 4 | 247 | 160 | 1669 | |
| **1** | 01B | 4327 | 79 | 161 | 61 | 1 | 302 | 242 | 1847 | |
| **2** | 01C | 1908 | 21 | 20 | 8 | 0 | 49 | 180 | 374 | |
| **3** | 01D | 754 | 7 | 13 | 13 | 0 | 33 | 24 | 284 | |
| **4** | 01E | 3720 | 35 | 168 | 80 | 1 | 284 | 93 | 1556 | |

In [17]:
```
orig[orig['County'] ==  'RW01']
```

Out[17]:

| | County | Registered Voters | Election Day Votes | Advanced Voting Votes | Absentee by Mail Votes | Provisional Votes | Total Votes | Election Day Votes.1 | Advanced Voting Votes.1 |
|---|---|---|---|---|---|---|---|---|---|
| **268** | RW01 | 5010 | 193 | 1455 | 619 | 9 | 2276 | 88 | 1003 |

In [18]:
```
recount[recount['County'] ==  'RW01']
```

Out[18]:

| | County | Registered Voters | Election Day Votes | Advanced Voting Votes | Absentee by Mail Votes | Provisional Votes | Total Votes | Election Day Votes.1 | Advanced Voting Votes.1 |
|---|---|---|---|---|---|---|---|---|---|
| **268** | RW01 | 5010 | 162 | 1487 | 619 | 5 | 2273 | 73 | 1015 |

In [19]:
```
fulton[fulton['Batch Name'].str.contains('RW01', case=False)]
```

Out[19]:

| | Jurisdiction Name | Batch Name | Batch Type | Donald J. Trump | Joseph R. Biden | Jo Jorgensen | Invalid Write-In | Valid Write-iin | Blank/Undervot |
|---|---|---|---|---|---|---|---|---|---|
| **20164** | FULTON | rw01 | Election Day | 31 | 15 | 2 | 0 | 0 | |
| **20165** | FULTON | RW01 | Election Day | 22 | 18 | 4 | 0 | 0 | |
| **20166** | FULTON | RW01-3 | Election Day | 190 | 55 | 5 | 0 | 0 | |

In [20]:
```
fulton[fulton['Batch Name'].str.contains('RW01', case=False)].agg(sum)
```

Out[20]:
```
Jurisdiction Name                        FULTONFULTONFULTON
Batch Name                                 rw01RW01  RW01-3
Batch Type           Election DayElection DayElection Day
Donald J. Trump                                        243
Joseph R. Biden                                         88
```

```
Jo Jorgensen                                    11
Invalid Write-In                                 0
Valid Write-iin                                  0
Blank/Undervote                                  0
Overvote                                         0
dtype: object
```

# Version information

In [21]:

```
packs = ['np','sp','pd']
for p in packs:
    print(f'{p} {eval(p+".__version__")}')
```

```
np 1.21.2
sp 1.7.3
pd 1.3.5
```

# APPENDIX 3

## Audit Board Batch Sheet

Absentee Scanner 3 Batch 49

TABLE 118

County Fulton

Batch Name Scanner 3(48)

Batch Type: ▫ Absentee ▫ Advance ▫ Election Day ▫ Provisional ▫ Other

Was the container sealed when received by the audit board? ▫ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 4 |
| Joseph R. Biden | 93 |
| Jo Jorgensen | 2 |
| Overvote | |
| Blank/Undervote | |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | |
| Duplicated | |
| Undetermined | |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit board? ▫ Yes

[redacted]

D i n t
nt i
_____ i /o

# Audit Board Batch Sheet

Absentee Scanner #128
Batch 52

County Fulton

Batch Name Sc#2 (52)

Batch Type: ☑ Absentee ☐ Advance ☐ Election Day ☐ Provisional ☐ Other

Was the container sealed when received by the audit board? ☐ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 6 |
| Joseph R. Biden | 92 |
| Jo Jorgensen | 0 |
| Overvote | 0 |
| Blank/Undervote | 0 |

10+10+10+10+10+10+10+10+10+2

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | 0 |
| Duplicated | 0 |
| Undetermined | 0 |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit board? ☐ Yes

[redacted]

**Check In/Out Station**

- ☐ Recorded batch return on Ballot Container Inventory Sheet
- ☐ Delivered Vote Review Panel ballots (if any)
- ☐ Entered tallies into Arlo

_____ Initials of check in/out station member

## Audit Board Batch Sheet

County FULTON

Batch Name SCANNER 3 (12) (13) + (14)

Batch Type: ▫ Absentee ▫ Advance ▫ Election Day ▫ Provisional ▫ Other

Was the container sealed when received by the audit board? ▫ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 12 |
| Joseph R. Biden | 83 |
| Jo Jorgensen | 1 |
| Overvote | |
| Blank/Undervote | |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | |
| Duplicated | |
| Undetermined | |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit board? ▫ Yes

[redacted]

## Audit Board Batch Sheet

County Fulton Co.

Batch Name 239 SCAN 3

Batch Type: ▫ Absentee ▫ Advance ▫ Election Day ▫ Provisional ▫ Other

Was the container sealed when received by the audit board? ▫ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 13 |
| Joseph R. Biden | 87 |
| Jo Jorgensen | |
| Overvote | |
| Blank/Undervote | |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | |
| Duplicated | |
| Undetermined | |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

[redacted]

▫ Recorded batch return on Ballot Container Inventory Sheet
▫ Delivered Vote Review Panel ballots (if any)
▫ Entered tallies into Arlo
_____ Initials of check in/out station member

Scanner 1 Batch 80-84
5

## Audit Board Batch Sheet

County Fulton

Batch Name SC#1 (80) 81-82-83-84

Batch Type: ▫ Absentee ▫ Advance ▫ Election Day ▫ Provisional ▫ Other

Was the container sealed when received by the audit board? ▫ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 118 |
| Joseph R. Biden | 329 |
| Jo Jorgensen | 3 |
| Overvote | 1 |
| Blank/Undervote | 2 |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | 2 |
| Duplicated | 0 |
| Undetermined | 0 |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit board? ▫ Yes

[redacted]

_____ Initials of check in/out station member

## Audit Board Batch Sheet

County Fulton County

Batch Name Scanner3(2(6)

Batch Type: ☑ Absentee ☐ Advance ☐ Election Day ☐ Provisional ☐ Other

Was the container sealed when received by the audit board? ☐ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 30 |
| Joseph R. Biden | 66 |
| Jo Jorgensen | |
| Overvote | |
| Blank/Undervote | |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | |
| Duplicated | |
| Undetermined | |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

[redacted]

**Check In/Out Station**

- ☐ Recorded batch return on Ballot Container Inventory Sheet
- ☐ Delivered Vote Review Panel ballots (if any)
- ☐ Entered tallies into Arlo

_____ Initials of check in/out station member

# Audit Board Batch Sheet

70

County FULTON

Batch Name APOIA - 1

Batch Type: ▫ Absentee ▫ Advance X Election Day ▫ Provisional ▫ Other

Was the container sealed when received by the audit board? ▫ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 84 |
| Joseph R. Biden | 62 |
| Jo Jorgensen | 6 |
| Overvote | 0 |
| Blank/Undervote | 1 |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | 2 |
| Duplicated | 0 |
| Undetermined | 0 |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

[redacted]

**Check In/Out Station**

- ▫ Recorded batch return on Ballot Container Inventory Sheet
- ▫ Delivered Vote Review Panel ballots (if any)
- ▫ Entered tallies into Arlo

_____ Initials of check in/out station member

## Audit Board Batch Sheet

County Fulton

Batch Name SC #3 #179 to 181

Batch Type: ☑ Absentee ☐ Advance ☐ Election Day ☐ Provisional ☐ Other

Was the container sealed when received by the audit board? ☐ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 75 + 10 = 85 |
| Joseph R. Biden | 100 + 100 + 24 = 224 |
| Jo Jorgensen | 5 |
| Overvote | 0 |
| Blank/Undervote | 2 |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | 1 |
| Duplicated | 0 |
| Undetermined | 0 |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

[redacted]

**Check In/Out Station**

- ☐ Recorded batch return on Ballot Container Inventory Sheet
- ☐ Delivered Vote Review Panel ballots (if any)
- ☐ Entered tallies into Arlo

_____ Initials of check in/out station member

## Audit Board Batch Sheet

County FULTON

Batch Name SCANNER 2

239

Batch Type: ▫ Absentee ▫ Advance ▫ Election Day ▫ Provisional ▫ Other

Was the container sealed when received by the audit board? ▫ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 4 |
| Joseph R. Biden | 42 |
| Jo Jorgensen | |
| Overvote | |
| Blank/Undervote | |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | |
| Duplicated | |
| Undetermined | |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit board? ▫ Yes

[redacted]

Check in/Out Station

- ▫ Recorded batch return on Ballot Container Inventory Sheet
- ▫ Delivered Vote Review Panel ballots (if any)

Entered tallies into Arlo

_____ Initials of check in/out station member

#123

## Audit Board Batch Sheet

County FULTON

Batch Name [redacted] 1 Chastain

Batch Type: ☐ Absentee ☑ Advance ☐ Election Day ☐ Provisional ☐ Other

Was the container sealed when received by the audit board? ☐ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | 613 |
| Joseph R. Biden | 605 |
| Jo Jorgensen | 24 |
| Overvote | 0 |
| Blank/Undervote | 4 |

**Number of Ballots sent to the Vote Review Panel (if any)**

| | |
|---|---|
| Write-In | 7 |
| Duplicated | 0 |
| Undetermined | 0 |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit board? ☐ Yes

[redacted]

☐ Delivered Vote Review Panel ballots (if any)

☐ Entered tallies into Arlo

_____ Initials of check in/out station member

# Audit Board Batch Sheet

County Fulton

Batch Name Chastain

Batch Type: ☐ Absentee ☒ Advance ☐ Election Day ☐ Provisional ☐ Other

Was the container sealed when received by the audit board? ☐ Yes

| Candidates | Enter Stack Totals |
|---|---|
| Donald J. Trump | |
| Joseph R. Biden | |
| Jo Jorgensen | |
| Overvote | 0 ✓ |
| Blank/Undervote | |

Number of Ballots sent to the Vote Review Panel (if any)

| | |
|---|---|
| Write-In | |
| Duplicated | 0 ✓ |
| Undetermined | 0 ✓ |

When work is completed, return all ballots (except Vote Review Panel ballots) to the ballot container and seal container.

Was the container resealed by the audit [illegible]

[redacted]

- ☐ Delivered Vote Review Panel ballots (if any)
- ☐ Entered tallies into Arlo

_____ Initials of check in/out station member

# APPENDIX 4

STATE OF GEORGIA
OFFICE OF THE GOVERNOR
ATLANTA 30334-0090

Brian P. Kemp
GOVERNOR

November 17, 2021

***VIA ELECTRONIC MAIL***

Ms. Rebecca N. Sullivan, Acting Chair
200 Piedmont Avenue SE
Suite 1804, West Tower
Atlanta, Georgia 30334

Ms. Sara Tindall Ghazal
4880 Lower Roswell Rd
Suite 165-328
Marietta, Georgia 30068

Mr. Matthew Mashburn
P.O. Box 451
Cartersville, Georgia 30120

Ms. Anh Le
P.O. Box 4008
Decatur, Georgia 3003

Dear Members of the State Election Board,

I write to refer the following matter to the Board for its review and consideration. As you know, I called on Georgians with information about inconsistencies or complaints regarding the 2020 election to notify the proper state authorities. To date, the complaint outlined below is the only instance where a complainant has referred an issue to my office *and* provided all requested information for me and my staff to fully evaluate its veracity.

On September 3, 2021, Mr. Joseph Rossi, a retired executive from Houston County, Georgia, contacted my office. Mr. Rossi presented an analysis of the 2020 Risk-Limiting Audit Report ("RLA Report") data, noting 36 inconsistencies reported by Fulton County.[1] The analysis was created by him and attorney Jack James who volunteered their own time, without compensation, to review thousands of ballot images, audit tally sheets, and other data to double-check the work of the county. Their dedication to this immense task is commendable.

The 36 inconsistencies noted by Mr. Rossi are factual in nature, pose no underlying theories outside of the reported data, and could not be explained by my office after a thorough review detailed below. The purpose of this letter is to convey these inconsistencies to the Board and request them to be explained or corrected.

To be clear, this letter does not purport to dispute or contest the outcome of the 2020 election, but rather to highlight apparent inconsistencies discovered in the RLA Report data.

[1] Specifically, Mr. Rossi analyzed the document titled "Detailed Audit Report with Results from all Batch Sheets (Excel)" which is published on the Secretary of State website.

Mr. Rossi requested my office review his findings and take whatever action may be appropriate to address his concerns. Mr. Rossi never alleged the outcome of the election was in question or asked me to act beyond my constitutional or statutory powers as Governor – the authority to oversee elections in Georgia lies with the State Election Board and the Secretary of State.

To determine whether it was appropriate to refer Mr. Rossi's claims to you, my office tested the veracity of his work by independently repeating the research Mr. Rossi conducted on each of his 36 claims. My office analyzed each of Mr. Rossi's 36 claims against the RLA Report data. This process was extensive, required a manual review of thousands of ballot images and audit data, and took weeks to complete.

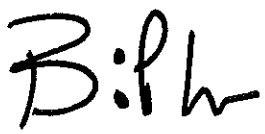
Based on that analysis, as evidenced in the attached report, I believe a referral to the Board is warranted.

The data that exists in public view on the Secretary of State's website of the RLA Report does not inspire confidence. It is sloppy, inconsistent, and presents questions about what processes were used by Fulton County to arrive at the result. Though reasons for, or explanations of, Mr. Rossi's concerns may exist, they are not apparent in the RLA Report data. In reviewing this matter, I believe the Board should consider the following actions:

1. Direct investigators to review Mr. Rossi's findings, just as my office has, and order corrective action as needed to address any verified errors.
2. Determine whether any changes should be made to the RLA Report. If so, the Board should determine whether such changes adversely impact the integrity of the RLA Report as originally reported.
3. Review the audit methodology used in counties across Georgia and create a prescriptive and uniform set of rules that ensure one process is followed by all counties that result in a clear presentation of data.

As you know, I chaired this Board for nine years. During that time, we tackled many tough issues to ensure the integrity of Georgia's elections and make it easy to vote and hard to cheat. It is the responsibility of this Board to safeguard the confidence I and all my fellow Georgians must have in our elections. This is one issue where I believe this Board must act swiftly, and I urge you to do so in this case.

Sincerely,



Brian P. Kemp

CC:

Brad Raffensperger,
*Georgia Secretary of State*

STATE OF GEORGIA

OFFICE OF THE GOVERNOR

ATLANTA 30334-0900

# REVIEW OF INCONSISTENCIES IN THE DATA SUPPORTING THE RISK LIMITING AUDIT REPORT

November 17, 2021

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## OVERVIEW

The following inconsistencies were initially discovered by Joe Rossi through comparisons of the Fulton County vote counts included in the document titled "Detailed Audit Report with Results from all Batch Sheets (Excel)" ("Detailed Audit Report") and the ballot images obtained by the Atlanta Journal-Constitution Open Records Request ("Ballot Images"). Mr. Rossi's analysis ("Rossi Count") and the review conducted by the Office of the Governor ("Internal Count") were performed by manually counting the Ballot Images for Fulton County. The Ballot Images only include absentee ballots.

Ballot Images obtained by the Atlanta Journal-Constitution Open Records Request are available at the link below:

> https://theatlantajournalconstitution.sharefile.com/share/view/s3c2d5cda4b5a42a88b6a76990379d181/fo8028b0-c150-45f5-911d-f9959144930e

The Detailed Audit Report (audit-report-November-3-2020-General-Election-2020-11-19) is available at the link below:

> https://sos.ga.gov/index.php/elections/2020_general_election_risk-limiting_audit

Within the Detailed Audit Report and Mr. Rossi's analysis, ballot scanners were referred to as Scanners 1 through 5. The Atlanta Journal-Constitution referred to the same scanners as Tabulator 5150 (Scanner 1), Tabulator 5160 (Scanner 2), Tabulator 5162 (Scanner 3), Tabulator 5164 (Scanner 4), and Tabulator 0729 (Scanner 5).

References to "Row XXXXX" refer to the row number listed on the Detailed Audit Report.

As used in the batch entries in the Detailed Audit Report, "I W/I" means "Invalid Write-In Vote", "V W/U" means "Valid Write-In Vote", and "B/U" means "Blank Vote or Undervote".

**INCONSISTENCY 1: MISIDENTIFIED AND DUPLICATED BATCH ENTRY**

The batch entries on Row 19492 and Row 19493 are each identified as "AbsenteeScanner3Batch111" yet report different vote counts. **One of these entries appears to be misidentified**.

Additionally, Row 18786, identified as "AbsenteeScanner1Batch111," reports an identical vote count as Row 19493. One of these entries appears to be duplicated.

Detailed Audit Report:

Row 19492: AbsenteeScanner3Batch111

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 8 | 90 | 0 | 0 | 0 | 0 | 0 |

Row 19493: AbsenteeScanner3Batch111

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 4 | 95 | 1 | 0 | 0 | 0 | 0 |

Row 18786: AbsenteeScanner1Batch111

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 8 | 90 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 3 (Tabulator 05162), Batch 111

- Count not provided by Mr. Rossi.

Absentee Scanner 1 (Tabulator 05150), Batch 111

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 9 | 90 | 0 | 2 |

---

Internal Count:

Absentee Scanner 3 (Tabulator 05162), Batch 111

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 5 | 94 | 1 | 0 |

Absentee Scanner 1 (Tabulator 05150), Batch 111

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 9 | 90 | 0 | 2 |

**INCONSISTENCY 2: DUPLICATED BATCH ENTRY**

The batch entry on Row 18840, identified as "AbsenteeScanner1Batch18," reports an identical vote count as the batch entry on Row 20288, identified as "Scanner 1/18." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 18840: AbsenteeScanner1Batch18

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 26 | 72 | 1 | 0 | 0 | 0 | 0 |

Row 20288: Scanner 1/18

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 26 | 72 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 1 (Tabulator 05150), Batch 18

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 26 | 72 | 0 | 0 |

---

Internal Count: Absentee Scanner 1 (Tabulator 05150), Batch 18

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 26 | 72 | 1 | 0 |

**INCONSISTENCY 3: DUPLICATED BATCH ENTRY**

The batch entry on Row 18911, identified as "AbsenteeScanner1Batch 25," nearly matches the same vote count reported by the batch entry on Row 20296, identified as "Scanner 1 /25." The lone exception being that Row 20296 reports an additional valid write-in vote. **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 18911: AbsenteeScanner1Batch 25

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 21 | 77 | 0 | 0 | 0 | 1 | 0 |

Row 20296: Scanner 1 /25

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 21 | 77 | 0 | 0 | 1 | 1 | 0 |

---

Rossi Count: Absentee Scanner 1 (Tabulator 05150), Batch 25

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 21 | 77 | 0 | 2 |

---

Internal Count: Absentee Scanner 1 (Tabulator 05150), Batch 25

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 21 | 77 | 0 | 2 |

**INCONSISTENCY 4: BATCH ENTRIES REFLECTING 100% VOTE COUNTS FOR ONE CANDIDATE**

The batch entry on Row 19120, identified as "AbsenteeScanner2Batch19," reports all 100 votes for Biden.
The batch entry on Row 19131, identified as "AbsenteeScanner2Batch20," reports all 100 votes for Biden.
The batch entry on Row 19142, identified as "AbsenteeScanner2Batch21," reports all 150 votes for Biden.

**The Ballot Images corresponding to Batches 19, 20, and 21, of Absentee Scanner 2 (Tabulator 05160) do not reflect unanimous vote counts for one candidate**.

Detailed Audit Report:

Row 19120: AbsenteeScanner2Batch19

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 100 | 0 | 0 | 0 | 0 | 0 |

Row 19131: AbsenteeScanner2Batch20

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 100 | 0 | 0 | 0 | 0 | 0 |

Row 19142: AbsenteeScanner2Batch21

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 150 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 2 (Tabulator 05160), Batch 19

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 10 | 87 | 1 | 1 |

Absentee Scanner 2 (Tabulator 05160), Batch 20

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 25 | 74 | 1 | 0 |

Absentee Scanner 2 (Tabulator 05160), Batch 21

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 8 | 97 | 1 | 0 |

---

*Internal Count provided on next page.*

Internal Count:

Absentee Scanner 2 (Tabulator 05160), Batch 19

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 10 | 87 | 2 | 0 |

Absentee Scanner 2 (Tabulator 05160), Batch 20

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 25 | 74 | 1 | 0 |

Absentee Scanner 2 (Tabulator 05160), Batch 21

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 8 | 97 | 1 | 0 |

**INCONSISTENCY 5: BATCH ENTRY REFLECTING 100% VOTE COUNT FOR ONE CANDIDATE**

The batch entry on Row 19153, identified as "AbsenteeScanner2Batch22," reports all 200 votes for Biden.

**The Ballot Images corresponding to Batch 22 of Absentee Scanner 2 (Tabulator 05160) do not reflect a unanimous vote count for one candidate**.

Detailed Audit Report: Row 19153: AbsenteeScanner2Batch22

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 200 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 2 (Tabulator 05160), Batch 22

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 12 | 85 | 3 | 0 |

---

Internal Count: Absentee Scanner 2 (Tabulator 05160), Batch 22

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 12 | 85 | 2 | 1 |

**INCONSISTENCY 6: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19165 is identified as "AbsenteeScanner2Batch237." The batch entry on Row 20308 is identified as "scanner2/237." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Detailed Audit Report:

Row 19165: AbsenteeScanner2Batch237

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 25 | 74 | 0 | 0 | 0 | 0 | 0 |

Row 20308: scanner2/237

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 3 | 95 | 0 | 0 | 1 | 1 | 2 |

---

Rossi Count: Absentee Scanner 2 (Tabulator 05160), Batch 237

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 4 | 93 | 2 | 0 |

---

Internal Count: Absentee Scanner 2 (Tabulator 05160), Batch 237

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 4 | 93 | 2 | 0 |

**INCONSISTENCY 7: DUPLICATED BATCH ENTRY**

The batch entry on Row 19166, identified as "AbsenteeScanner2Batch238," reports an identical vote count as the batch entry on Row 19587, identified as "AbsenteeScanner3Batch238." One of these entries appears to be duplicated.

Detailed Audit Report:

Row 19166: AbsenteeScanner2Batch238

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 22 | 59 | 0 | 0 | 0 | 0 | 0 |

Row 19587: AbsenteeScanner3Batch238

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 22 | 59 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 2 (Tabulator 05160), Batch 238

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 25 | 74 | 0 | 0 |

Absentee Scanner 3 (Tabulator 05162), Batch 238

- No count was provided by Mr. Rossi.

---

Internal Count:

Absentee Scanner 2 (Tabulator 05160), Batch 238

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 25 | 74 | 0 | 0 |

Absentee Scanner 3 (Tabulator 05162), Batch 238

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 57 | 1 | 0 |

**INCONSISTENCY 8: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19167 is identified as "AbsenteeScanner2Batch240." The batch entry on Row 19168 is identified as "AbsenteeScanner2Batch 240." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Detailed Audit Report:

Row 19167: AbsenteeScanner2Batch240

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 10 | 90 | 0 | 0 | 0 | 0 | 0 |

Row 19168: AbsenteeScanner2Batch 240

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 31 | 62 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 2 (Tabulator 05160), Batch 240

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 31 | 62 | 1 | 2 |

---

Internal Count: Absentee Scanner 2 (Tabulator 05160), Batch 240

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 31 | 62 | 1 | 2 |

**INCONSISTENCY 9: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19169 is identified as "AbsenteeScanner2Batch241." The batch entry on Row 19170 is identified as "AbsenteeScanner2Batch 241." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Detailed Audit Report:

Row 19169: AbsenteeScanner2Batch241

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 34 | 63 | 0 | 0 | 0 | 1 | 0 |

Row 19170: AbsenteeScanner2Batch 241

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 11 | 88 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 2 (Tabulator 05160), Batch 241

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 11 | 88 | 1 | 2 |

---

Internal Count: Absentee Scanner 2 (Tabulator 05160), Batch 241

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 11 | 88 | 1 | 2 |

**INCONSISTENCY 10: DUPLICATED BATCH ENTRIES**

The vote count reported by the batch entry on Row 19172, identified as "AbsenteeScanner2Batch243," does not match the vote count of the corresponding Ballot Images. The vote count reported by the batch entry on Row 19174, identified as "AbsenteeScanner2Batch244-249" (which appears to report the vote counts of six separate batches), also does not match the vote count of the corresponding Ballot Images.

However, when the corresponding Ballot Images of Row 19172 are considered in addition to the corresponding Ballot Images of Row 19174, the aggregate vote count of the Ballot Images matches the vote count reported by Row 19174 in the Detailed Audit Report. **Accordingly, Row 19172 appears to be misidentified.**

Additionally, Row 19173, identified as "AbsenteeScanner2batch244-249," nearly matches the same vote count reported by the batch entry on Row 19174. **The entry appears to be duplicated**. Of note, Row 19173 reports "Election Day" ballots, as opposed to "Absentee By Mail" ballots.

Detailed Audit Report:

Row 19172: AbsenteeScanner2Batch243

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 7 | 90 | 1 | 0 | 0 | 1 | 0 |

Row 19173: AbsenteeScanner2batch244-249

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 110 | 556 | 7 | 0 | 0 | 2 | 1 |

Row 19174: AbsenteeScanner2Batch244-249

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 110 | 556 | 7 | 0 | 3 | 2 | 1 |

---

Rossi Count: Absentee Scanner 2 (Tabulator 05160), Batches 244-249

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 110 | 564 | 7 | 8 |

---

Internal Count: Absentee Scanner 2 (Tabulator 05160), Batches 243 and 244-249

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| **243** | **21** | **73** | **2** | **2** |
| 244 | 9 | 88 | 1 | 1 |
| 245 | 21 | 79 | 0 | 0 |
| 246 | 4 | 93 | 1 | 0 |
| 247 | 9 | 93 | 0 | 1 |
| 248 | 34 | 60 | 1 | 2 |
| 249 | 12 | 80 | 2 | 0 |
| Totals | 110 | 566 | 7 | 6 |

**INCONSISTENCY 11: MISIDENTIFIED AND DUPLICATED BATCH ENTRY**

The batch entry on Row 19219 is identified as "AbsenteeScanner2Batch297." The batch entry on Row 19220 is identified as "AbsenteeScanner2Batch 297." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Additionally, Row 18951, identified as "AbsenteeScanner1Batch297," reflects an identical vote count as Row 19219. **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19219: AbsenteeScanner2Batch297

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 42 | 56 | 1 | 0 | 0 | 0 | 0 |

Row 19220: AbsenteeScanner2Batch 297

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 27 | 71 | 0 | 0 | 0 | 0 | 0 |

Row 18951: AbsenteeScanner1Batch297

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 42 | 56 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 2 (Tabulator 05160), Batch 297

- Count not provided by Mr. Rossi.

Absentee Scanner 1 (Tabulator 05150), Batch 297

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 42 | 56 | 1 | 0 |

---

Internal Count:

Absentee Scanner 2 (Tabulator 05160), Batch 297

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 27 | 71 | 1 | 0 |

Absentee Scanner 1 (Tabulator 05150), Batch 297

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 42 | 56 | 1 | 1 |

**INCONSISTENCY 12: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19323 is identified as "AbsenteeScanner2Batch400." The batch entry on 20252 is identified as "sc 2- 400." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Detailed Audit Report:

Row 19323: AbsenteeScanner2Batch400

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 6 | 92 | 0 | 0 | 0 | 0 | 0 |

Row 20252: sc 2- 400

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 36 | 60 | 1 | 0 | 0 | 3 | 0 |

---

Rossi Count: Absentee Scanner 2 (Tabulator 05160), Batch 400

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 36 | 60 | 0 | 0 |

---

Internal Count: Absentee Scanner 2 (Tabulator 05160), Batch 400

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 36 | 60 | 1 | 3 |

**INCONSISTENCY 13: DUPLICATED BATCH ENTRY**

The batch entry on Row 19482, identified as "AbsenteeScanner3Batch1," reports an identical vote count as the batch entry on Row 20317, identified as "Scanner 3/1." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19482: AbsenteeScanner3Batch1

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 42 | 55 | 2 | 0 | 0 | 0 | 1 |

Row 20317: Scanner 3/1

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 42 | 55 | 2 | 0 | 0 | 0 | 1 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 1

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 44 | 55 | 2 | 0 |

---

*Internal Count provided on the next page*.

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 1

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 44 | 55 | 2 | 0 |

**INCONSISTENCY 14: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19524 is identified as "Absentee Scanner 3 Batch 158." The batch entry on Row 20332 is identified as "scanner 3 /158." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Detailed Audit Report:

Row 19524: Absentee Scanner 3 Batch 158

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 30 | 68 | 1 | 0 | 0 | 1 | 0 |

Row 20332: scanner 3 /158

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 3 | 99 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 158

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 30 | 68 | 2 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 158

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 30 | 68 | 1 | 1 |

**INCONSISTENCY 15: DUPLICATED BATCH ENTRIES**

The batch entry on Row 19535, identified as "AbsenteeScanner3Batch174- 178," reports an identical vote count as the batch entry on Row 19537, identified as "AbsenteeScanner3BatchBatch 177." The batch entry on Row 19356, identified as "AbsenteeScanner3Batch175-176," nearly matches the vote counts reported in Row 19535 and Row 19537 with the lone exception being that Row 19536 reports two additional blank/undervotes. **One or more of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19535: AbsenteeScanner3Batch174- 178

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 96 | 392 | 0 | 0 | 0 | 0 | 0 |

Row 19536: AbsenteeScanner3Batch175-176

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 96 | 392 | 0 | 0 | 0 | 2 | 0 |

Row 19537: AbsenteeScanner3Batch177

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 96 | 392 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 3 (Tabulator 05162) Batches 174-178

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 96 | 392 | 6 | 1 |

Absentee Scanner 3 (Tabulator 05162), Batches 175-176

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 57 | 137 | 1 | 0 |

Absentee Scanner 3 (Tabulator 05162), Batch 177

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 9 | 89 | 1 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batches 174-178

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| 174 | 22 | 75 | 1 | 1 |
| 175 | 26 | 67 | 0 | 1 |
| 176 | 31 | 70 | 0 | 0 |
| 177 | 9 | 89 | 0 | 1 |
| 178 | 8 | 91 | 2 | 1 |
| Totals | 96 | 392 | 3 | 4 |

**INCONSISTENCY 16: DUPLICATED BATCH ENTRY**

The batch entry on Row 19538, identified as "AbsenteeScanner3Batch18," reports an identical vote count as the batch entry on Row 20336, identified as "scanner 3/18." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19538: AbsenteeScanner3Batch18

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 1 | 79 | 0 | 0 | 0 | 0 | 0 |

Row 20336: scanner 3/18

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 1 | 79 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 18

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 2 | 78 | 0 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 18

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 2 | 77 | 0 | 1 |

**INCONSISTENCY 17: DUPLICATED BATCH ENTRY**

The batch entry on Row 19560, identified as "AbsenteeScanner3Batch21," reports an identical vote count as the batch entry on Row 20344, identified as "scanner 3/21." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19560: AbsenteeScanner3Batch21

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 24 | 74 | 0 | 0 | 0 | 0 | 0 |

Row 20344: scanner 3/21

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 24 | 74 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 21

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 25 | 75 | 0 | 2 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 21

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 25 | 73 | 0 | 2 |

**INCONSISTENCY 18: DUPLICATED BATCH ENTRY**

The batch entry on Row 19563, identified as "AbsenteeScanner3Batch212," reports an identical vote count as the batch entry on Row 20345, identified as "SCANNER- 3/212." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19563: AbsenteeScanner3Batch212

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 11 | 86 | 1 | 0 | 0 | 0 | 0 |

Row 20345: SCANNER- 3/212

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 11 | 86 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 212

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 11 | 86 | 1 | 1 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 212

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 11 | 86 | 1 | 1 |

**INCONSISTENCY 19: DUPLICATED BATCH ENTRY**

The batch entry on Row 19589, identified as "AbsenteeScanner3Batch24," reports an identical vote count as the batch entry on Row 20349, identified as "scanner 3/24." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19589: AbsenteeScanner3Batch24

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 5 | 92 | 0 | 0 | 0 | 0 | 0 |

Row 20349: scanner 3/24

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 5 | 92 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 24

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 5 | 92 | 0 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 24

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 5 | 92 | 0 | 0 |

**INCONSISTENCY 20: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19625 is identified as "AbsenteeScanner3Batch3." The batch entry on Row 19626 is identified as "AbsenteeScanner3 Batch3." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Detailed Audit Report:

Row 19625: AbsenteeScanner3Batch3

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 2 | 85 | 2 | 0 | 0 | 0 | 0 |

Row 19626: AbsenteeScanner3 Batch3

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 24 | 56 | 1 | 0 | 0 | 1 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 3

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 4 | 84 | 2 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 3

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 3 | 84 | 2 | 1 |

**INCONSISTENCY 21: MISIDENTIFIED OR DUPLICATED BATCH ENTRY**

The batch entry on Row 19647 is identified as "AbsenteeScanner3Batch 320." The batch entry on Row 20353 is identified as "scanner 3/320." Though the entries report different vote counts, the difference is slight with Row 19647 reporting five additional votes for Trump and five less votes for Biden. **One of these entries appears to be misidentified or duplicated**.

Detailed Audit Report:

Row 19647: AbsenteeScanner3Batch 320

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 35 | 64 | 0 | 0 | 0 | 0 | 0 |

Row 20353: scanner 3/320

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 30 | 69 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 320

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 30 | 70 | 0 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 320

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 30 | 70 | 0 | 0 |

**INCONSISTENCY 22: MISIDENTIFIED BATCH ENTRIES**

The batch entry on Row 19659, identified as "AbsenteeScanner3Batch339-346," appears to report the vote counts of eight separate batches. The batch entry on Row 20264 is identified as "sc 3 (339)," a batch that would appear to be included in the vote count of Row 19659. The batch entry on Row 20265 is identified as "sc 3 (340)," a batch that would appear to be included in the vote count of Row 19659.

**When considering the corresponding Ballot Images, Row 20264 and Row 20265 appear to be misidentified**.

Detailed Audit Report:

Row 19659: AbsenteeScanner3Batch339-346

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 143 | 625 | 10 | 0 | 0 | 3 | 0 |

Row 20264: sc 3 (339)

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 76 | 214 | 6 | 0 | 0 | 1 | 0 |

Row 20265: sc 3 (340)

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 6 | 72 | 1 | 0 | 0 | 2 | 0 |

---

Rossi Count:

Absentee Scanner 3 (Tabulator 05162), Batches 339-346

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 146 | 619 | 10 | 0 |

Absentee Scanner 3 (Tabulator 05162), Batch 339

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 34 | 64 | 1 | 0 |

Absentee Scanner 3 (Tabulator 05162), Batch 340

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 4 | 95 | 0 | 0 |

---

*Internal Count provided on next page.*

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batches 339-346

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| **339** | **34** | **64** | **1** | **1** |
| **340** | **4** | **96** | **0** | **0** |
| 341 | 5 | 94 | 1 | 0 |
| 342 | 19 | 82 | 0 | 0 |
| 343 | 6 | 69 | 2 | 2 |
| 344 | 45 | 54 | 1 | 2 |
| 345 | 16 | 79 | 4 | 1 |
| 346 | 16 | 83 | 1 | 0 |
| Totals | 145 | 621 | 10 | 6 |

**INCONSISTENCY 23: DUPLICATED BATCH ENTRY**

The batch entry on Row 19676, identified as "AbsenteeScanner3Batch 368," nearly matches the same vote count reported by the batch entry on Row 19677, identified as "Absentee Scanner 3 Batch 368." The lone exception being that Row 19677 reports an additional vote for Jorgensen. **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19676: AbsenteeScanner3Batch 368

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 4 | 93 | 0 | 0 | 1 | 0 | 0 |

Row 19677: Absentee Scanner 3 Batch 368

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 4 | 93 | 1 | 0 | 1 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 368

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 4 | 93 | 0 | 1 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 368

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 3 | 92 | 0 | 3 |

**INCONSISTENCY 24: MISIDENTIFIED BATCH ENTRY OR DUPLICATED BATCH ENTRY**

The batch entry on Row 19678 is identified as "AbsenteeScanner3Batch369." The batch entry on Row 19679 is identified as "Absentee Scanner 3 Batch 369." Though the entries report different vote counts, the difference is slight with Row 19678 reporting four additional votes for Trump and Row 19679 reporting one additional vote for Jorgensen. **One of these entries appears to be misidentified or duplicated**.

Detailed Audit Report:

Row 19678: AbsenteeScanner3Batch369

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 12 | 88 | 0 | 0 | 0 | 0 | 0 |

Row 19679: Absentee Scanner 3 Batch 369

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 8 | 88 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 369

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 8 | 88 | 1 | 0 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 369

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 8 | 88 | 0 | 2 |

**INCONSISTENCY 25: MISIDENTIFIED BATCH ENTRY AND MISALLOCATION OF VOTES**

The batch entry on Row 19744 is identified as "AbsenteeScanner3Batch89." The batch entry on Row 19745 is identified as "Absentee Scanner 3 Batch 89." Each of these entries report different vote counts. **One of these entries appears to be misidentified**.

Additionally, the batch entry on Row 19745 reports 76 votes for Trump, 22 votes for Biden, 1 vote for Jorgensen, and 2 overvotes. The Ballot Images corresponding to Batch 89 of Absentee Scanner 3 (Tabulator 05162) show 22 votes for Trump, 76 votes for Biden, 1 vote for Jorgensen, and 2 other votes. **It appears that the votes for Trump and Biden were misallocated**.

Detailed Audit Report:

Row 19744: AbsenteeScanner3Batch89

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 27 | 71 | 2 | 0 | 0 | 0 | 0 |

Row 19745: Absentee Scanner 3 Batch 89

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 76 | 22 | 1 | 0 | 0 | 0 | 2 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 89

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 22 | 76 | 1 | 2 |

---

Internal Count: Absentee Scanner 3 (Tabulator 05162), Batch 89

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 22 | 76 | 1 | 2 |

**INCONSISTENCY 26: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19748, identified as "Absentee Scanner 3 Batch 91-97," appears to report the vote counts of seven separate batches. The batch entry on Row 19747 is identified as "AbsenteeScanner3Batch91," a batch that would appear to be included in the vote count of Row 19748.

**When considering the corresponding Ballot Images, Row 19747 appears to be misidentified**.

Detailed Audit Report:

Row 19748: Absentee Scanner 3 Batch 91-97

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 128 | 558 | 6 | 0 | 0 | 1 | 0 |

Row 19747: AbsenteeScanner3Batch91

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 2 | 98 | 1 | 0 | 0 | 1 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 01562), Batches 91-97

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 128 | 561 | 6 | 1 |

---

Internal Count: Absentee Scanner 3 (Tabulator 01562), Batches 91-97

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| **91** | **28** | **70** | **2** | **0** |
| 92 | 2 | 97 | 2 | 0 |
| 93 | 5 | 90 | 2 | 0 |
| 94 | 36 | 64 | 0 | 0 |
| 95 | 3 | 96 | 0 | 0 |
| 96 | 24 | 77 | 0 | 1 |
| 97 | 30 | 66 | 2 | 3 |
| Totals | 128 | 560 | 6 | 4 |

**INCONSISTENCY 27: BATCH ENTRY REFLECTING 100% VOTE COUNT FOR ONE CANDIDATE**

The batch entry on Row 19810, identified as "AbsenteeScanner4Batch36," reports all 100 votes for Biden. The batch entry on Row 19811, identified as "AbsenteeScanner4Batch37," reports all 100 votes for Biden.

**The Ballot Images corresponding to Batches 36 and 37 of Absentee Scanner 4 (Tabulator 05164) do not reflect unanimous vote counts for one candidate**.

Detailed Audit Report:

Row 19810: AbsenteeScanner4Batch36

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 100 | 0 | 0 | 0 | 0 | 0 |

Row 19811: AbsenteeScanner4Batch37

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 100 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 4 (Tabulator 05164), Batch 36

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 78 | 4 | 0 |

Absentee Scanner 4 (Tabulator 05164), Batch 37

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 40 | 60 | 0 | 0 |

---

Internal Count:

Absentee Scanner 4 (Tabulator 05164), Batch 36

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 78 | 2 | 2 |

Absentee Scanner 4 (Tabulator 05164), Batch 37

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 40 | 60 | 0 | 0 |

**INCONSISTENCY 28: DUPLICATED BATCH ENTRY**

The batch entry on Row 19814, identified as "AbsenteeScanner4Batch40," reports an identical vote count as the batch entry on Row 19815, identified as "AbsenteeScanner 4Batch40." **One of these entries appears to be duplicated**.

Detailed Audit Report:

Row 19814: AbsenteeScanner4Batch40

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 2 | 95 | 0 | 0 | 0 | 0 | 0 |

Row 19815: AbsenteeScanner 4Batch40

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 2 | 95 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

- No count was provided by Mr. Rossi.

---

Internal Count: Absentee Scanner (Tabulator 05164), Batch 40

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 2 | 97 | 0 | 0 |

**INCONSISTENCY 29: MISIDENTIFIED AND DUPLICATED BATCH ENTRY**

The batch entry on Row 19862, identified as "AbsenteeScanner4Batch99-108," appears to report the vote counts of ten separate batches. The batch entry on Row 19753 is identified as "AbsenteeScanner4Batch 107," a batch that would appear to be included in the vote count of Row 19862.

**When considering the corresponding Ballot Images, Row 19747 appears to be misidentified**.

Additionally, the batch entry on Row 19862 reports an identical vote count as the batch entry on Row 20006, identified as "Etris Community Ctr." **Despite the distinct identifications, one of the entries appears to be duplicated**.

Of note, the batch type of Row 20006 is also identified as "Advance" ballots as opposed to "Absentee By Mail" ballots. **These ballots could not be reviewed as only Absentee By Mail ballot images were provided in the related open records request**.

Detailed Audit Report:

Row 19862: AbsenteeScanner4Batch99-108

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 166 | 745 | 12 | 0 | 0 | 15 | 0 |

Row 19753: AbsenteeScanner4Batch107

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 8 | 90 | 1 | 0 | 0 | 0 | 0 |

Row 20006: Etris Community Ctr.

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 166 | 745 | 12 | 0 | 0 | 15 | 0 |

---

Rossi Count: Absentee Scanner 4 (Tabulator 05164), Batches 99-108

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 166 | 747 | 22 | 7 |

---

*Internal Count provided on next page.*

Internal Count: Absentee Scanner 4 (Tabulator 05164), Batches 99-108

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| 99 | 16 | 74 | 3 | 4 |
| 100 | 9 | 84 | 2 | 2 |
| 101 | 43 | 51 | 3 | 0 |
| 102 | 17 | 75 | 3 | 2 |
| 103 | 43 | 52 | 1 | 0 |
| 104 | 12 | 83 | 2 | 2 |
| 105 | 8 | 87 | 2 | 1 |
| 106 | 7 | 67 | 2 | 0 |
| **107** | **3** | **93** | **3** | **0** |
| 108 | 8 | 81 | 1 | 2 |
| Totals | 166 | 747 | 22 | 13 |

**INCONSISTENCY 30: MISIDENTIFIED OR DUPLICATED BATCH ENTRY**

The batch entry on Row 19873, identified as "AbsenteeScanner5Batch15-20,21,24.25," appears to report the vote counts of nine separate batches. The batch entry on Row 19874 is identified as "AbsenteeScanner5Batch17 -Military." **Row 19874 appears to be misidentified or a duplicated report of the vote count reported in Row 19873**.

Detailed Audit Report:

Row 19873: AbsenteeScanner5Batch15-20,21,24.25

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 149 | 752 | 14 | 0 | 4 | 2 | 1 |

Row 19874: AbsenteeScanner5Batch17-Military

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 7 | 17 | 0 | 0 | 0 | 0 | 0 |

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Rossi Count:

- No count was provided by Mr. Rossi.

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Internal Count: Absentee Scanner 5 (Tabulator 00729), Batches 15-20, 21, 24, 25

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| 15 | 27 | 72 | 2 | 0 |
| 16 | 5 | 93 | 0 | 1 |
| **17** | **11** | **85** | **3** | **0** |
| 18 | 23 | 73 | 2 | 1 |
| 19 | 28 | 64 | 4 | 3 |
| 20 | 28 | 71 | 0 | 1 |
| 21 | 5 | 105 | 0 | 0 |
| 24 | 21 | 76 | 0 | 1 |
| 25 | 23 | 92 | 4 | 0 |
| Totals | 171 | 731 | 15 | 7 |

**INCONSISTENCY 31: BATCH ENTRIES REFLECTING 100% VOTE COUNTS FOR ONE CANDIDATE**

The batch entry on Row 19875, identified as "AbsenteeScanner5Batch1 – Military," reports all 950 votes for Biden. The batch entry on Row 19879, identified as "AbsenteeScanner5Batch2-Military," reports all 130 votes for Trump.

**The Ballot Images corresponding to Batches 1 and 2 of Absentee Scanner 5 (Tabulator 00729) do not reflect unanimous vote counts for one candidate**.

Row 19875: AbsenteeScanner5Batch1 – Military

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 950 | 0 | 0 | 0 | 0 | 0 |

Row 19876: AbsenteeScanner5Batch2-Military

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 130 | 0 | 0 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 5 (Tabulator 00729), Batch 1

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 6 | 92 | 2 | 0 |

Absentee Scanner 5 (Tabulator 00729), Batch 2

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 5 | 94 | 0 | 1 |

---

Internal Count:

Absentee Scanner 5 (Tabulator 00729), Batch 1

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 6 | 92 | 1 | 1 |

Absentee Scanner 5 (Tabulator 00729), Batch 2

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 5 | 94 | 0 | 1 |

**INCONSISTENCY 32: MISIDENTIFIED BATCH ENTRIES AND DUPLICATED BATCH ENTRIES**

The batch entry on Row 20385, identified as "scanner 5/55-67-71-75," appears to report the vote counts of 4 separate batches. The batch entry on Row 19895 is identified as "AbsenteeScanner5Batch55," a batch that would appear to be included in the vote count of Row 20385. The batch entry on Row 19902 is identified as "AbsenteeScanner5Batch67," a batch that would appear to be included in the vote count of Row 20385.

**When considering the corresponding Ballot Images, Row 19895 appears to be duplicated (as its vote count was included in the vote count of Row 20385) and Row 19902 appears to be misidentified**.

Detailed Audit Report:

Row 20385: scanner 5/55-67-71-75

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 74 | 217 | 2 | 3 | 0 | 2 | 0 |

Row 19895: AbsenteeScanner5Batch55

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 10 | 72 | 2 | 0 | 0 | 0 | 0 |

Row 19902: AbsenteeScanner5Batch67

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 2 | 94 | 1 | 0 | 0 | 0 | 0 |

---

Rossi Count:

Absentee Scanner 5 (Tabulator 00729), Batches 55, 67, 71, 55

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 97 | 277 | 5 | 6 |

Absentee Scanner 5 (Tabulator 00729), Batch 55

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 10 | 73 | 2 | 1 |

Absentee Scanner 5 (Tabulator 00729), Batch 67

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 18 | 77 | 1 | 3 |

---

Internal Count: Absentee Scanner 5 (Tabulator 00729), Batches 55, 67, 71, 75

| Batch | Trump | Biden | Jorgensen | Other |
|---|---|---|---|---|
| **55** | **10** | **73** | **2** | **1** |
| **67** | **18** | **77** | **1** | **3** |
| 71 | 28 | 70 | 1 | 1 |
| 75 | 41 | 57 | 1 | 1 |
| Totals | 71 | 277 | 5 | 6 |

**INCONSISTENCY 33: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 19909 is identified as "AbsenteeScanner5Batch92." The batch entry on Row 19910 is identified as "AbsenteeScanner5Batch92Military." Each of these entries reports different vote counts. **One of these entries appears to be misidentified**.

**Additionally, the Ballot Images corresponding to Batch 92 of Absentee Scanner 5 (Tabulator 00729) do not correlate to the vote counts reported by Row 19909 or Row 19910**.

Detailed Audit Report:

Row 19909: AbsenteeScanner5Batch92

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 45 | 46 | 1 | 0 | 0 | 0 | 0 |

Row 19910: AbsenteeScanner5Batch92Military

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 37 | 178 | 2 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 5 (Tabulator 00729), Batch 92

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 92 | 2 | 0 |

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Internal Count: Absentee Scanner 5 (Tabulator 00729), Batch 92

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 92 | 2 | 0 |

**INCONSISTENCY 34: MISIDENTIFIED AND DUPLICATED BATCH ENTRY**

The batch entry on Row 19911, identified as "AbsenteeScanner5Batch95," reports an identical vote count as the batch entry on Row 20397, identified as "scanner 5/94." **Despite the distinct identifications, one of the entries appears to be duplicated**.

Additionally, the Ballot Images corresponding to Batches 94 and 95 of Absentee Scanner 5 (Tabulator 00729) do not correlate to the vote counts reported by Row 19911 and 20397. **These entries also appear to be misidentified**.

Detailed Audit Report:

Row 19911: AbsenteeScanner5Batch95

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 19 | 102 | 1 | 0 | 0 | 1 | 0 |

Row 20397: scanner 5/94

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 19 | 102 | 1 | 0 | 0 | 1 | 0 |

---

Rossi Count:

Absentee Scanner 5 (Tabulator 00729), Batch 95

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 27 | 42 | 3 | 1 |

Absentee Scanner 5 (Tabulator 00729), Batch 94

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 16 | 60 | 0 | 0 |

---

Internal Count:

Absentee Scanner 5 (Tabulator 00729), Batch 95

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 27 | 42 | 3 | 1 |

Absentee Scanner 5 (Tabulator 00729), Batch 94

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 16 | 60 | 1 | 1 |

**INCONSISTENCY 35: MISIDENTIFIED BATCH ENTRY**

The batch entry on Row 20277 is identified as "SCAN 1-97." The batch entry on Row 20303 is identified as "scanner 1/97." Each of these entries report different vote counts. Additionally, the Ballot Images corresponding to Batch 97 of Absentee Scanner 1 do not correlate to either Row 20277 or Row 20303. **These entries appear to be misidentified**.

Detailed Audit Report:

Row 20277: SCAN 1-97

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 31 | 74 | 3 | 0 | 0 | 0 | 0 |

Row 20303: scanner 1/97

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 43 | 45 | 1 | 0 | 0 | 0 | 0 |

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Rossi Count: Absentee Scanner 1 (Tabulator 05150), Batch 97

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 41 | 55 | 1 | 0 |

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Internal Count: Absentee Scanner 1 (Tabulator 05150), Batch 97

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 41 | 55 | 1 | 0 |

**INCONSISTENCY 36: APPARENT MISALLOCATION OF VOTES**

The batch entry on Row 20361, identified as "scanner 3/66," reports zero votes for Trump, 77 votes for Biden, 23 votes for Jorgensen, and zero other votes. The Ballot Images corresponding to Batch 66 of Absentee Scanner 3 (Tabulator 05162) show 23 votes for Trump, 77 votes for Biden, and zero other votes. **It appears that 23 votes in Row 20361 were misallocated from Trump to Jorgensen**.

Detailed Audit Report:

Row 20361: scanner 3/66

| Trump | Biden | Jorgensen | I W/I | V W/I | B/U | O |
|---|---|---|---|---|---|---|
| 0 | 77 | 23 | 0 | 0 | 0 | 0 |

---

Rossi Count: Absentee Scanner 3 (Tabulator 05162), Batch 66

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 77 | 0 | 0 |

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Internal Count: Absentee Scanner 3 (Tabulator (05162), Batch 66

| Trump | Biden | Jorgensen | Other |
|---|---|---|---|
| 23 | 77 | 0 | 0 |