

1 of 4 DOCUMENTS

Copyright (c) 2005 The John Marshall Law School  
The John Marshall Journal of Computer & Information Law

Spring, 2005

*23 J. Marshall J. Computer & Info. L. 509***LENGTH:** 13109 words**ARTICLE:** E-VOTING: A TALE OF LOST VOTES**NAME:** Lillie Coney+

**BIO:** + Lillie Coney is an Associate Director of the Electronic Privacy Information Center ("EPIC"). Ms. Coney serves as the coordinator of the National Committee on Voting Integrity, which was created in 2003 in response to concerns about the reliability of electronic voting systems. It is a non-partisan organization made up of leading technical experts, lawyers, journalists and citizens. She is the former Public Policy Coordinator for the Association of Computing Machinery, the nation's leading professional association for computer scientists. She served as special assistant to Rep. Sheila Jackson Lee (D-Tex.). She has a B.A. and an M.P.A. from Lamar University. See <http://www.epic.org> (detailing more information on EPIC).

**SUMMARY:**

... In order for the United States to avoid another Constitutional crisis due to the failure of voting technology it must address the weaknesses of paperless direct recording electronic ("DRE") voting machines. ... However, by far the most obvious debunking of the "HAVA will help us" notion was revealed by the Carteret County, North Carolina November 2, 2004 election, where over 4,000 votes were not recorded by the Unilect Corporation's Patriot voting system, a paperless direct DRE voting machine used in that county. ... The delegates adopted a resolution on voting systems that moved away from wholehearted support of paperless DRE voting machines to the support of principles that all voting technology should meet. ... " The sad truth is that the voter is the last one to know about problems associated with voting technology. ... The new election would open the door for every registered voter to vote in the race including those who did not initially vote on November 2, 2004. ... If steps are taken to undermine the secret ballot, i.e., by linking a voter's identity to his vote, then, by extension, the integrity of the election itself is compromised because this opens the door to the potential for coercive tactics to influence how individuals vote. ... The overwhelming majority of voters have no obvious problems with DRE voting technology based on exit interview comments. ...

**TEXT:**

[\*509]

## I. INTRODUCTION

In order for the United States to avoid another Constitutional crisis due to the failure of voting technology it must address the weaknesses of paperless direct recording electronic ("DRE") voting machines. n1 Many policymakers hold the belief that the Help America Vote Act ("HAVA") would save the nation from the threat of another election-sponsored Constitutional crisis because it would, among other objectives, replace outdated voting machines with new electronic voting technology. n2 This belief was disproved a number of times during the 2002 and 2004 primary and general election seasons. n3 However, by far the most obvious debunking of the "HAVA will help us"

notion was revealed by the Carteret County, North Carolina November 2, 2004 election, where over 4,000 votes were not recorded by the Unilect Corporation's Patriot voting system, a paperless direct DRE voting machine used in that county. n4 The problem with the Unilect Patriot voting system led to a protracted contest of the results of that state's Agriculture Commissioner's election. That election between incumbent Britt Cobb and challenger Steve Troxler did not end until February 4, 2005, a little over three months after the November 2, 2004 election. n5 [\*510] HAVA's stated goal was to prevent another Florida 2000 Presidential election, which held the nation in limbo regarding who would be the next President of the United States, due to a number of factors, including faulty voting machines. n6 It is important to note that some lawmakers felt that the success of HAVA was dependent upon funding by Congress. n7 Unfortunately, HAVA was not able to deliver on that promise for two reasons: first, sufficient funding; and second, lack of voting equipment standards. n8

This article will explore one aspect of HAVA: the introduction of paperless voting technology for use in public elections and its unintended consequences. The reform of our nation's election system should not end with the passage of HAVA; it requires a good faith effort on the part of policymakers to aggressively fund the measure. n9 If our value of free democratic elections is worth the blood, sweat and tears of our troops abroad surely it is worth \$ 5 billion annually at home to support voter registration, education and participation in federal public elections.

## II. HISTORY OF PUBLIC ELECTIONS AND E-VOTING TECHNOLOGY

Computers and public elections began their pairing in the 1960s after IBM's pre-scored punchcard was adapted and sold by the Harris Votomatic Company. n10 The voting system was first used in primaries conducted in Fulton and DeKalb Counties in the State of Georgia. n11 Other jurisdictions quickly followed this modern means of collecting and tabulating voter choices. The punch card fundamentally changed how votes were cast and counted in public elections. The punch card, once removed from the voting machine, completely disassociated the voters' intent from the ballot that would ultimately be counted. The tabulation of punch card ballots is an automated centralized process. Ballot cards are typically taken to a facility and read by an automated card reader, and then the information is transferred to a computer storage device where the tabulations are done.

[\*511] However, it soon became apparent that the Votomatic punch card voting system had flaws associated with the tiny pieces of paper called "chad" that were detached from the pre-scored punch cards during the voting process itself. n12 During the counting process, which used automated sorting technology and computers to tabulate results, bits of chad would become detached. n13 This could be the result of an incomplete action by voters, failure of the voting machine or the counting process itself. n14 Additional problems identified with the technology included machine failures, punch card jams, and errors resulting from tabulation software. n15

Election officials embraced punchcard technology and did not bother to point out problems with the technology to unsuspecting voters. n16 This approach worked for election administration and thus problems were overlooked until November 7, 2000, when the terms "hanging chad," "pregnant chad" and "dimpled chad" became part of the American voting lexicon. The notion of equal opportunity disenfranchisement n17 did not set well with voters. The aftermath of the Florida 2000 Presidential election, one of the closest political elections in Presidential history, was decided by a margin of 537 votes. Many questions were raised about our nation's election system. One point became clear about the punchcard technology: those most likely to not have their votes counted were low-income, non-native English speakers, physically disabled, or elderly voters. n18 The culprit that stole most votes cast on this voting system were unintended overvotes or undervotes, i.e. casting too many votes or not casting any vote in an election. The incidence of under or over votes may have been a factor of ballot design, voter choice, or voter confusion. n19 The dexterity and level of vision needed to load a ballot into the voting machine and cast votes may have been complicated by the poor design of ballots such as was the case with the infamous Miami-Dade butterfly ballot. n20 In addition, the design of the punchcard obscured the voted ballot itself thereby preventing the voter from identifying errors they could [\*512] correct. n21 Language minority voters were far more likely not to call attention to their confusion over the votes reflected on their ballot or to request another ballot. n22 One additional problem associated with punchcard voting systems was the impact that poor voting machine condition played on the ability of votes to be recorded and captured as

intended by voters. In one case election workers in a Florida precinct during the 2000 election identified that certain punchcard voting machines were not recording any votes during the pre-election test, but the machines were placed in use anyway. n23

#### A. How Did We Get Here?

In reply to the crisis of the Presidential election of 2000, the federal government attempted to clarify and codify the protection of certain voting guarantees in the United States for the 2004 election. Though, the enactment and implementation of HAVA was, in many ways, too little too late. n24 HAVA established, for the first time in U.S. history, a role for the federal government to play in the conduct of public elections held to fill federal elected offices. The establishment of the U.S. Election Assistance Commission ("EAC") in the statute did not translate into expedited action on the part of policymakers to appoint the leadership for the EAC. The four Commissioners; two Democrats: Gracia Hillman and Ray Martinez; and two Republicans: DeForest B. Soaries and Paul DeGregorio; who were selected to serve, as the first EAC Commission were not sworn into office until December 12, 2003. n25 The EAC Commissioners received only \$ 1.2 million in funding for Fiscal year 2004 and did not move into their own offices until April 1, 2004, seven months prior to the first Presidential election following the 2000 election experience. n26 The new law included a directive to states to create statewide voter registration databases, and new identification requirements for first-time registered voters. n27 To accomplish these objectives, the law provided over \$ 3 billion n28 [\*513] in federal funds to be allocated to states under the guidance of the EAC. n29 However, the EAC lacked the time and funding resources necessary to ensure that the goals of election reform outlined in HAVA were accomplished. n30 EAC's late start did not allow it the time that was necessary to develop federal standards that would guide the states in the use of the funds made available. In particular, the Technical Guidelines Development Committee ("TGDC"), a technical advisory body to the EAC charged with the development of voluntary standards n31 for voting technology met for the first time on July 9, 2004. n32

Many states responded to HAVA by submitting plans to replace older voting systems with DRE voting machines. However, in the absence of stringent testing requirements, and disagreement over the type of voter verification required, several serious security flaws within these systems were revealed, putting the integrity of America's election process in jeopardy. n33

Computer scientists became the de facto lobby against the broad adoption of paperless voting systems with the launch of a massive petition drive in the spring of 2003. n34 The chief concerns were that "many electronic voting systems had been evaluated by independent, generally-recognized experts, and had been found to have been poorly designed; [and] developed using inferior software engineering processes." n35

Many state election administrators dismissed the concerns of the computer scientists as being the views of people who did not understand the election process. They contended the DRE voting systems were safe for voting because they met state election requirements. n36 Major voting rights and civil rights organizations initially sided with election administrators and the voting equipment manufactures in accepting the technology as being infinitely superior to paper-based voting systems. The [\*514] Leadership Conference on Civil Rights ("LCCR"), n37 the League of Women Voters ("LWV"), n38 and the American Civil Liberties Union n39 each found positives in the adoption of paperless DRE voting systems.

Over the course of the 2004 election season, many of these groups rethought their support of paperless DRE voting systems. The LCCR was the most successful at bridging the communication divide between civil rights groups and computer scientists. The LCCR was open to a dialogue when approached by the National Committee for Voting Integrity ("NCVI"). The NCVI is an organization comprised of experts on voting issues from across the country who are interested in promoting constructive dialogue among computer scientists, elections administrators, policymakers, the media and the public on the best methods for achieving a voter verified balloting systems. These efforts lead to the development of a report produced by the Brennan Center with the assistance of computer technologists, many of whom are members of NCVI. n40 The NCVI lead several efforts to foster communication and mutual understanding on key

issues regarding voting machine security and the need to promote voter participation.

The LWV has an international reputation on the issue of voting and civic participation. The national headquarters' decision to endorse the adoption of DRE voting systems was amended by 800 members of the organization who participated in their 46th Biennial Convention held in June of 2004 in Washington DC. n41 The delegates adopted a resolution on voting systems that moved away from wholehearted support of paperless DRE voting machines to the support of principles that all voting technology should meet. n42

[\*515]

#### B. The Proposition of E-voting in a Healthy Democracy

All voting technology used for the purpose of selecting elected officials or deciding public referendum should be reliable in its ability to accurately record voter choices, retain those choices and make them available for tabulation and/or recount purposes. Election administrators must successfully meet the challenge of creating in practice: reliable, secure, accessible, transparent, accurate and auditable public elections. These goals must be reached in an election environment that supports voter privacy and ballot secrecy. The standards that govern the adoption of voting technology should also measure how well it provides access to voters with disabilities or language minorities to facilitate an independent voting and ballot verification experience.

The notion of equal opportunity disenfranchisement does not set well with voters. n43 The aftermath of the Florida 2000 Presidential election, which is the reasoning behind the push to change technology, revealed that those most likely to not have their votes count were low-income, non-native English speakers, physically disabled, or elderly voters. n44 The use of E-voting technology has introduced a level of randomness in potential disenfranchisement that means voters in Napa Valley and Orange County California have experienced not having their votes counted in last year's state primary elections. n45 The initial reports that appeared the day after the primary election offered positive comment on the performance of voting technology and minimized problems. n46

The selection of voting machine technology is not under the discretion of individual voters but under the control of local and state elections administration officials. HAVA provides funds, which are heavily subsidized by federal grants awarded by the newly formed EAC. n47

The function of reviewing voting technology and development of standards was assigned to a TGDC, under the leadership of the Director of the National Institute of Standards and Technology ("NIST"). n48 They will also provide the rigorist testing and certification process for laboratories that will certify voting machines. Unfortunately, two factors [\*516] worked against their success in 2004: funding and lack of appointments. Congress did not fund NIST to do standards work on e-voting technology and in fact cut the Computer Science Research Laboratory Division, the function area that would have done the work, by four percent from fiscal year 2004. n49 The second problem is a lack of appointment of the TGDC, which has only four technology slots of the fourteen positions available on the committee.

#### C. A Case of an Oops on Election Day 2004: Carteret County, North Carolina

The post election strategy for November 2, 2004 for some elections administrators and voting equipment manufacturers seems to be to declare success despite equipment failures in multiple polling locations in several states where DRE paperless voting technology was used. n50 Post election articles that appeared in publications and news broadcast around the nation proclaimed success with the use of touch screen voting technology, but in the fine print a caveat in the words "snafus," or "glitches" which is offered as an acknowledgement of the pre-election warnings of many computer technologists regarding vulnerabilities posed by the current DRE electronic voting equipment designs. n51

With the overwhelming majority of voters having no obvious problems with the technology this strategy made good business sense but reflected poor democratic values. The exit interview comments abound in the telling of the tale

of electronic voting equipment's performance on Election Day: "great," "very easy," and "fast." n52 The sad truth is that the voter is the last one to know about problems associated with voting technology. The controversy over the Florida 2000 Presidential election may have come as a shock to the average voter, but it was a well known problem among elections administrators and equipment manufacturers - that not all votes were accurately recorded or counted in the typical local, state, or national election.

In 2004, 4,438 voters in one precinct in Carteret County North Carolina discovered days after the November 2, 2004 election that none of their votes were counted. Carteret County election officials believed that their Unilect Patriot voting system could store more electronic ballots [\*517] than it could. n53 They were told that each voting machine was capable of storing 10,500 votes, but the limit was set to record only 3,005 votes. n54 Anticipating the larger capacity, which would have been sufficient for the election, officials only used one unit. n55 This problem left one statewide race in limbo, the agriculture commissioner and the state superintendent contest under question. n56

This saga begins with a total of 7,537 people having cast ballots on the voting technology used in the affected precinct location and only 3,005 votes being reported. n57 The margin in the statewide contest for president surpassed 4,400 votes, but two North Carolina statewide contests had candidates that would not concede. On November 4, 2004 almost 75,000 provisional ballots remained uncounted and the final county would not be done for another week. n58 The count in the agriculture commissioner's race showed Democratic incumbent Britt Cobb leading his Republican challenger Steve Troxler by 1,538 votes. n59 However, Steve Troxler, a tobacco farmer, claimed victory that morning relying on an Associated Press article that reported him as the winner. n60 Before the guests at his victory party had all departed, the lead he had been given by the Associated Press had dwindled and the wire service reported the race as undecided. n61

A report on November 5th offered more details on the voting equipment manufacturer and the machine that gave the state of North Carolina its election headache. The problem that Carteret County experienced came as a consequence of an overstatement by the vendor representative about the memory capacity of the voting machine. The misrepresentation of the Patriot voting system's memory capability meant that election administrators were working under false assumptions regarding the number of ballots that could be retained by each voting unit. n62

Candidates requesting a recount included state agriculture commissioner Britt Cobb, who sent a letter on Wednesday, November 10, 2004 stating that if the margin of Steve Troxler's lead in the race for agriculture commissioner was within the margin allowed by the state, he would [\*518] like a statewide audit of the election results. n63 North Carolina Statutes 163-179.1 and 163-192.1, do not allow for an automatic recount. n64 However, second place candidates may request a recount if the margin separating the top two candidates for a public office is one percent or less of the total votes cast for that office, and in the case of statewide races the margin is 0.5 percent of votes cast or 10,000 votes, whichever is less. n65 The deadline for candidates to request a recount request for the November 2, 2004 election was noon on November 11, 2004. n66

In an editorial published on November 13, the issue of a revote had emerged as a possibility to resolve the impasse over the lost votes and the outcome of the races affected. n67 To avoid this outcome a suggestion was offered to avoid this action, which recommended that the candidate trailing after the recount should concede the race. The recount was conducted by November 18, and none of the races' outcomes changed, only the margins of victory. n68 Other problems emerged when a disk storing votes was broken, preventing a recount for one South Gastonia precinct. The Board of Elections resubmitted the reported results from the election without a recount. The state also learned that poll workers left 120 provisional ballots at a Cleveland County fire station, which were discarded the next day by firefighters. These ballots were now in the landfill. n69

The North Carolina Board of Elections was faced with attempting to resolve the problem of 4,438 lost votes in one Carteret County precinct. Poll registration procedures required each voter to sign a poll book prior to voting. As a result, all of those who had come to that polling location to cast ballots on Election Day are known. n70

November 20 was greeted by an editorial suggesting that the only way to resolve the impasse was a new election. In addition, more details were revealed about the cause of the lost votes. The problem with the voting machines used in Carteret County was related to the company's software engineer who set the machine to register too few votes, and once that capacity had been reached, the machine would have flashed a memory [\*519] full message potentially hundreds of times on Election Day. n71 Unfortunately, even if the election workers had noticed the memory full message the manual did not explain what to do. n72

By November 30, the margin separating the two candidates for state agriculture commissioner was less than 2,300 votes. n73 In response to the election crisis, the state legislature had created a thirteen member special committee to review the issue of electronic voting machines and issue a report by 2006. n74 The board certified the results of most November 2, 2004 races on November 23, 2004, but declined to make a final determination in the races for agriculture commissioner and state superintendent. n75 Candidates in both races filed formal complaints over the election in Carteret County. The unofficial recount gave Republican Troxler a 2,287 lead over incumbent Democrat Cobb in the agriculture commissioner's race. There was a 8,535 vote margin separating the candidates for state superintendent. n76

The two solutions offered involved a revote, either for the entire state or just for Carteret County, with another suggestion that only the 4,438 voters in the affected precinct should be allowed to vote. This was the option favored by the Republican candidate in the race for state agriculture commissioner. n77 The Board of Election had to face the real possibility that a statewide revote would not draw the voter participation that the Presidential election did on November 2, 2004. They had to consider the consequences of discarding 3.3 million votes in selected races because 4,438 voters were lost in one precinct. n78 Would it be legal to open the vote only to those voters who lost their votes, or would a county or statewide revote be needed? These were some of the many questions the board had to answer. n79

The North Carolina Board of Elections voted on November 30 by a margin of four-to-one with the chair abstaining to hold a January 11, 2005 election for the state agriculture commissioner's race only in Carteret County. n80 The new election would open the door for every registered voter to vote in the race including those who did not initially vote [\*520] on November 2, 2004. The voters in the new election would be expected to cast their ballots on the same Unilect voting system used on November 2, 2004, which resulted in the election impasse. n81

In the shadow of all of the controversy surrounding the election's outcome were the lawyers on both sides of the affected race due to the loss of 4,438 votes in one precinct in one county in North Carolina. The chances for a law suit were high but the board attempted to remedy the situation. There were arguments for a statewide race because of the additional lost provisional ballots in Cleveland County, but they were rejected by a majority of board members. n82

The campaign for the revote in Carteret County for the state agriculture commissioner seat began on December 2, 2004. The focus shifted to the 20,000 registered voters in Carteret County who could expect to get the personal campaign treatment of a life time, or a nightmare that would jade forever about the political process. By December 7, the State Republican effort had garnered the support of Senator Elizabeth Dole and others to come to the aid of Steve Troxler while Democrat Britt Cobb contemplated suing to stop the election. n83

On December 9, Britt Cobb made public his decision to file a legal challenge to the new election for Carteret County citing "legal defects" in the state board's approach to resolving the election impasse. n84 By that date election officials had determined that only 18,500 voters would be eligible to participate in the new election instead of the initially reported 24,000. In the complaint filed by Cobb he charged that the new election would not allow for absentee voting or military personnel overseas to participate as required by state law. n85 He argued that state law required a statewide special election to decide the outcome of the race. n86 This suggestion was considered too costly by his opponent because the race would probably draw few voters but cost the state \$ 3.5 million. n87

On December 17th Wake County Superior Court Judge Henry Hight ruled that the special election planned for Carteret County to decide the agriculture commissioner's race was "arbitrary and capricious, contrary to law and affected by error of law." n88 The new election would violate the [\*521] minimum mandatory seventy-five-day

inactive period between elections, prohibit absentee voting and exclude military personnel overseas. Troxler's appeal stated that only the people whose votes were not counted should be allowed to vote.

The State Board of Elections voted three-to-two to have a statewide election to decide the contest between the two top contenders for state agriculture commissioner. n89 The board's vote to conduct a new statewide election was along party lines. The Republican candidate denounced the decision and said that he would appeal. The board rules require a four-to-one vote for new elections, but the board bypassed that requirement by amending an earlier vote that approved an election in only Carteret County, which did meet the requirement.

The desperation of the contestants in this race rose to a new level as ballot secrecy and voter privacy were both challenged in the pursuit of the victory. Candidate Troxler sought to prove that he had in fact won the election on November 2, 2004 by gathering notarized statements from voters who did vote on election regarding their selections in his race. n90

#### D. The Secret Ballot

Federal and state courts and legislatures have historically taken measures to protect the right of voters to vote their conscience without fear of retaliation. United States law requires that "all votes for Representatives in Congress must be by written or printed ballot, or voting machine, the use of which has been duly authorized by the State law; and all votes received or recorded contrary to this section shall be of no effect." n91 The statute defines "ballot" in election provisions to mean a "method which will insure, so far as possible, secrecy and integrity of popular vote," and interprets the Congressional requirement that elections be conducted by written or printed ballots or by machine to include the notion that ballots must be secret. n92

As further support for the requirement of secret ballots, the statute cites *Johnson v. Clark*, 25 F. Supp. 285 (D.C. Tex. 1938). In *Johnson*, the District Court for the Northern District of Texas emphasized the "secrecy and integrity" of votes. "The word 'ballot,' in an election provision, means a method which will insure, so far as is possible, the secrecy and integrity of the popular vote." *Id.* at 286. Other courts have also found that the concept of secrecy and privacy is inherent in the meaning of ballots. [\*522] Other courts have ruled that this case clearly refers to ballot secrecy. In *Brisbin v. Cleary*, n93 the Supreme Court of Minnesota interpreted voting by ballot to mean:

a mode of designating an elector's choice of a person for an office by the deposit of a ticket, bearing the name of such person, in a receptacle provided for the purpose, in such a way as to secure to the elector the privilege of complete and inviolable secrecy in regard to the person voted for. This privilege of secrecy may properly be regarded as the distinguishing feature of ballot voting, as compared with open voting, as, for instance, voting viva voce. The object of the privilege is the independence of the voter. n94

The U.S. Supreme Court has also recognized in dicta that the right to vote privately via secret ballots is an essential component of meaningful participation in the democratic process. In *Buckley v. Valeo*, n95 the Court argued that "secrecy, like privacy, is not per se criminal. On the contrary, secrecy and privacy as to political preferences and convictions are fundamental in a free society. For example, one of the great political reforms was the advent of the secret ballot as a universal practice." n96 In *Burson v. Freeman*, n97 the Court found that "the very purpose of the secret ballot is to protect the individual's right to cast a vote without explaining to anyone for whom, or for what reason, the vote is cast." n98

In *McIntyre v. Ohio*, n99 the U.S. Supreme Court outlined the importance of the development of the secret ballot as a means of ensuring the integrity of elections.

In sum, an examination of the history of election regulation in this country reveals a persistent battle against two evils: voter intimidation and election fraud. After an unsuccessful experiment with an unofficial ballot system, all fifty States, together with numerous other Western democracies, settled on the same solution: a secret ballot secured in part by a restricted zone around the voting compartments. We find that this widespread and time-tested consensus demonstrates that some restricted zone is necessary in order to serve the States' compelling interests in preventing voter intimidation and election fraud.

Thus, the concept of voting cannot be separated from the concept of privacy for the latter gives meaning to the former. Any legislation that would impact the voting process must always honor this marriage of privacy [\*523] and integrity as central components of voting ballots. If steps are taken to undermine the secret ballot, i.e., by linking a voter's identity to his vote, then, by extension, the integrity of the election itself is compromised because this opens the door to the potential for coercive tactics to influence how individuals vote. n100

All of this was forgotten on January 5, 2005 when it was reported in a Star News Editorial that Troxler wanted to canvass Carteret County voters to get them to sign affidavits attesting to who they attempted to vote for in the agriculture race. n101 Troxler's campaign to get affidavits involved volunteers going door-to-door with notaries who were prepared to get signed documents from voters attesting to their vote for agriculture commissioner. He invited voters to visit one of his campaign headquarters where notaries were waiting to sign forms. Troxler hoped to gather enough signatures to convince a judge that he won the November 2, 2004 race and consequently a new vote was not necessary and a waste of state funds. n102 The notaries were paid \$ 20 an hour, which begs the question about their independence in this unprecedented process.

On Monday, January 10, 2005 Troxler's lawyers entered a North Carolina court with 1,352 affidavits from voters who had signed the poll book on the day of the November 2, 2004 attesting that they voted for him in the state agriculture race. n103 Cobb's attorney and a lawyer with the North Carolina Board of Elections contended that it was over two months since the time of the election and the reliance on voter's memories was not the solution. n104 Troxler's lawyers countered that the review was not legal because it required four out of five Board of Election votes, which were not obtained. n105

On Wednesday, January 12, 2005 Superior Court Judge James Spensor voided the decision to hold a new statewide election on January 11 to fill the position of state agriculture commissioner. n106 The judge ruled that the Election Board could legally order a new election and chastised the board for its partisan split on the issue. Further, the judge stated that the board had the power to address machine errors, like the one that led to the impasse. n107

[\*524] Both political camps dug deep trenches. The call to rise above the fray to address fairness in the interest of the voters and the rights of each candidate has been lost in the fog of political battle. The relationships of the board members pre and post November 2, 2004 should be a study in social conflict within an election administration body engendered and stoked by partisan political cinders.

February 2005 opened with another meeting of the North Carolina Board of Elections to ponder what to do about their election dilemma. n108 The board's choices were limited because the state's election law did not address a situation such as this, where the partisan division of the board lead to deadlock, leaving them with few options that would not be challenged in court. n109

On February 3, 2005, the disputed election was finally settled when incumbent agriculture commissioner Britt Cobb decided to end his challenge to keep his seat by making his decision public at the Election Board meeting. n110 Commissioner Cobb stated that he reached his decision because he did not want to see the election decided by affidavits. n111 Steve Troxler was certified the winner at that same meeting. He was sworn to be North Carolina's next state Agriculture Commissioner on February 8, 2005. n112

### III. WHAT ARE THE PROBLEMS RELATED TO PAPERLESS DRE VOTING SYSTEMS?

The overwhelming majority of voters have no obvious problems with DRE voting technology based on exit interview comments. Voters' comments regarding their experience with DRE voting machines are reported as being "great," "very easy," and "fast." n113 This is a direct result of how the computer-human interface is designed, even if there are major problems if the program design does not specifically act to notify users there is no recourse to avoiding the problem that Carteret County and North Carolina faced.

Out of the 3.3 million votes cast only 2,287 votes separated the top two contenders for the office of State Agriculture Commission. There were over 4,000 voters who visited the polling location on Election Day and for some reason none of them knew that their vote was not being recorded on the Unilect Patriot voting system.

[\*525] Transparency is the missing component to the successful integration of technology and public elections. Transparency is a key component of a functioning healthy democracy. It can be translated into public policy decisions that allow citizens, policymakers, and the media to assure themselves that a local, state or federal government agency is functioning as intended. In this context, the process of providing transparency is referred to as "open government." Open government can be accomplished in a number of ways, which may include: public meetings, public rulemaking notices, reasonable public comment periods, access to rulemaking proceedings, official reports, and open records laws. The application of technology intended to provide a government service should not be excluded from open government objectives. In addition to the methods described, the adoption of technology may require additional opportunities for public comment that facilitate the participation of those members of the public with relevant skills and training.

Unfortunately, what the voters saw or experienced in that county or any county during the Election Day 2004 is not recorded anywhere. There is need for a mechanism that will allow voters to comment on their positive and negative election experiences. An important solution to this problem is routine audits of election results. Post-election evaluation of the results is fundamental to election integrity. For audits to be credible, the same vendor that supplied the voting system being audited should not perform the audit. It is important to know when election systems perform as expected, and when they do not. For this reason, independent, verifiable, and transparent audits of election results should be routine. n114 California, Colorado, Connecticut, Hawaii, Illinois, Minnesota, New Mexico, New York, North Carolina, Washington, and West Virginia all have laws addressing election audits. n115

Audits should include a representative hand count of ballots or ballot images; documentation of the chain of custody of all voting technology; and a chain of custody on all unmarked, and marked ballots. States are well within their prerogative to determine how the results of audits will be treated, however, they should be strongly encouraged to incorporate audits into every aspect of election administration, and make the results public. States should be encouraged to engage the technology community in the decision-making process to help meet the unique needs of state or local governments to routinely audit their elections.

Today it is not enough that vendors assure states that paperless voting systems retain vote information, those systems must be proven to do so. The record of systems failures that resulted in lost votes cannot be [\*526] ignored. Ballots lost from electronic voting systems used in North Carolina and Florida in 2004 attest to the need for more rigorous voting technology standards. n116 There is also a need to ensure routine access to ballot images for recount and election audit purposes.

#### A. What May Lay Ahead for Paperless E-voting?

The fact that hundreds, or thousands of votes could be lost due to technical, voter n117 or election-worker error n118 should be unacceptable in a participatory democracy. Every voter should be assured that his or her vote will be included in the elections process and in the event of mechanical failure, power outage, malicious activity, or other threats, that there is permanent record of his or her intent that would be retained and used as the final determinant of an election.

We know that machines fail and that computer are not without error. n119 For this reason the election reform

advocates, lawyers, policymakers, the media, and the public, need protection from poorly designed [\*527] and implemented voting technology. Much of the underlying technology for voting machines is based on personal computer technology. So some of the same concerns regarding said technology are inherent in computerized voting machines. n120

The sanctity of elections in our nation is degenerating into a public relations campaign based on the premise that if newspapers, local and state broadcast news sources can be primed to make positive news reports the night of an election and the day following elections then there are no problems with the election. Now for the reality check: it takes two or more days following an election for details about "glitches" to surface. The "glitches" reported in newspaper accounts the day after the recent primary election upon closer inspection include, but are not limited to, malfunctions in booting up machines, system server card failure that resulted in hours of delay in getting final vote totals, problems in programming smart cards used by voters to cast their ballot, and power fluctuations that caused mechanical malfunctions in electronic voting machines.

The short-term solution for polling locations using paperless voting technology should be to see a paper record option until voting technology standards can be developed that address design flaws in voting technology. Last year's primary and general use of paperless DRE voting systems may have resulted in many voters being disenfranchised, but we will never know the number because no records were kept of those turned away. The ACLU of San Diego and Imperial Counties California sought a panel of experts, community leaders, and county elections administrators to investigate problems experienced on Election Day. n121

Will boards of election and election administrators find an equitable solution to settling election disputes that are created by failures in voting technology? These options may need to be creative in order to satisfy the needs of voters and of candidates to be assured of fairness and impartial decisions in the face of the type of problems described in this paper. One approach might involve splitting service of the office in dispute between the top two contenders with the only question being who will serve the first half of the designated term - which could be settled by a coin toss.

[\*528]

#### IV. RECOMMENDATIONS:

Federal and state courts and legislatures have historically taken measures to protect the right of voters to vote their conscience without fear of retaliation. United States law requires that "All votes for Representatives in Congress must be by written or printed ballot, or voting machine, the use of which has been duly authorized by the State law; and all votes received or recorded contrary to this section shall be of no effect." n122 The statute defines "ballot" in election provisions to mean a "method which will insure, so far as possible, secrecy and integrity of popular vote," and interprets the Congressional requirement that elections be conducted by written or printed ballots or by machine to include the notion that ballots must be secret. n123

The privacy of voters who cast ballots by absentee methods or during early voting are just as important as votes cast on Election Day. More must be done to address the need to minimize and wherever possible eliminate the threat to absentee voter privacy. It would be beneficial if states follow the example of those states that require a double envelope and only include mailing information on the exterior envelope. References to party affiliation and other election related information should be placed on the interior envelope. Internal election administration procedures should as soon as it is practical, separate the returned voted ballot from the exterior envelopes. The importance of assuring that all ballots are cast in secret and remain secret cannot be overstressed. Now it is time that further steps be taken to protect voters from identity theft, coercion, misinformation, harassment, and threats by protecting the privacy of voter at every stage of the process from registration to the casting of ballots. In addition, we should charge ourselves, this generation, to settle the debate between the Antifederalists' and the Federalists' approach to democracy in our administration of public elections.

##### A. Recommendation #1: Improve Voting Technology

## 1. Develop Tough National E-Voting Standards and Security Protocols

Dr. Michael Shamos said, "The system that we have for testing and certifying voting equipment in this country is not only broken, but is virtually non-existent." n124 For this reason, the top priority of the U.S. Election [\*529] Assistance Commission should be the adoption of tough voting technology standards and the certification of excellent computer testing laboratory facilities, which should not exclude federal, education, or commercial testing facilities to ensure that voting technology in fact meets or exceeds the higher standard. The need to greatly improve the standards for voting technology and a reliable certification process to assure voters, policymakers, and the media that the standards are being enforced is imperative. The list of government-certified laboratories should not, under any circumstance, be limited to those listed under the Federal Election Commission 2002 standards. There is an urgent need to expand the certification process for approving voting technology. The U.S. Election Assistance Commission should not exclude from the list non-profits, government laboratories, or those run by academic institutions.

## 2. Improve Voting Technology Standards

The standards for voting technology should include:

### . Voter-Verifiable Audit Capacity

- . Registration of all voting software, and firmware in NIST's reference library
- . Establishment of a national system for reporting voting technology problems
- . Requiring Background Checks of Key Voting Technology Vendor Staff
- . Security Clearance for development and technical staff
- . Certification and training of support and technical staff

It is nearly impossible to safeguard the administration of elections if the polling locations are understaffed or poll workers receive inadequate training. The need for better working conditions, training, and resources to assist the millions of volunteers and government employees who contribute to the administration of elections is just as important as the technology used.

[\*530]

## B. Recommendation #2: Improve Election Administration Increase the pool of Election Day workers

- . Training programs for clients to foster independence from the vendor for routine maintenance and upgrades
  - . Severing all support functions from contracting agreements with vendors
  - . Increase Integrity in the Administration of Elections

For decades, the work of election administrators has been hidden from public view. This is a direct result of the low

priority with which it has been historically viewed. Election administration is rarely discussed and Election Day for the majority of voters occurs only once every four years, while in reality elections occur one or more times a year within many states. Unlike other democracies the citizens of this country select a wide array of public offices through direct popular election. For this reason, the challenge of fitting multiple races onto the ballot format provided has led to complications and confusion for voters. Many items are added to the ballot during Presidential election years, which will only impact the state or a locality within the state because of the large numbers of voters who will participate in that election. The length and complexity of the Presidential ballot is also faulted for the many problems associated with voter errors.

The first step should be to join the efforts of academics and election officials to develop academic programs to provide education in the specific skills needed to administer elections in the United States.

### C. Recommendation #3: Simplify Ballots and Support Professionalism In Election Administration

#### . Federal-only election ballots to shorten the ballot

- . Election Administration must be raised to the level of a profession
- . Aggressive local, state and federal election administration civil service reform
- . Restrict public partisan political activity
- . Develop a code of professional conduct
- . Oath of Office should include a statement to conduct fair and impartial elections
- . Barring the acceptance of gifts or gratuities from vendors
- . State registration of all vendors and lobbying activity
- . Transparency in voting equipment purchase decisions and contracting
- . Develop core curriculum standards for training election administrators
- . Masters Degree and Professional Boards for State Election Administrators and Key Staff

[\*531]

The academic community can take a leading role in developing the core curriculum for the academic training of local and state election officials. Currently there is no generally accepted degree program that will address all of the skills needed by Election Administrators. The need for training in statistics, management, marketing, political science, federal and state constitutional law, computer science, psychology, sociology and human resource management are only a few of the areas that should be considered when developing a core curriculum for election administration. The level of training should be suited to the role that the person intends to fill. Election administration staff may find it suitable to have a two-year degree. A deputy chief election official should have an undergraduate degree from a four year institution, which the county chief elections official should have the equivalent of a Masters Degree, while a State Election Administrator should have a doctorate.

In addition to tougher voting technology standards and an excellent certification process to test the validity of voting systems being offered for use in public elections, it is also important that the dependent relationship between vendors and election administrators be severed. Fair and impartial judges are essential to settling matters under

contention. It should not be necessary to remind election administrators that to fulfill their public trust requires that they refrain from active public partisan participation in contest that they in their official capacity will conduct. This limit on partisan participation in elections conducted with states and localities must be universal.

#### D. Recommendation #4: Promote Accountability

The adoption of better e-voting security and standards must begin with transparency and accountability. Transparency is needed in a process that uses proprietary products to conduct public elections. Transparency is needed at this time because of the questions raised by voting rights activist regarding the security and reliability of voting technology.

. Open the election system process to public view from testing to tabulation of results

. Public access to operations manuals and pre-testing and certification of voting equipment

. Open observation of testing, preparation and tabulation to directly viewing screens and processes

. Access to all log files and internal operations of e-voting technology

. National Statistical Election Day Reporting System to record problems and statistical data on election participation rates and results from the polling location to county and state [\*532]

#### E. Recommendation #5: Safeguard Voter Privacy

Federal and state courts and legislatures have historically taken measures to protect the right of voters to vote their conscience without fear of retaliation. United States law requires that "All votes for Representatives in Congress must be by written or printed ballot, or voting machine, the use of which has been duly authorized by the State law; and all votes received or recorded contrary to this section shall be of no effect." n125 The statute defines "ballot" in election provisions to mean a "method which will insure, so far as possible, secrecy and integrity of popular vote," and interprets the Congressional requirement that elections be conducted by written or printed ballots or by machine to include the notion that ballots must be secret.

The idea of secret ballot assured by the rules that conduct the process of counting all ballots, whether they are cast as absentee, early voting or on Election Day. Further, the idea of secrecy must extend to voter registration records as well. Too often this election year, public access to voter registration information has led to challenges to the right of voters to cast an absentee ballot or a ballot on Election Day.

## V. CONCLUSION

Thomas Jefferson wrote that, "The first principle of republicanism is that the lex majoris parties [the will of the society] is the fundamental law of every society of individuals of equal rights ... . To consider the will of the society enounced by the majority of a single vote as sacred as if unanimous is the first of all lessons in importance, yet the last which is thoroughly learnt."

The United States is a society of equal rights. On Election Day, this nation must function as a society of equal rights, where a single vote is treated as important as the majority of votes cast.

#### **Legal Topics:**

For related research and practice materials, see the following legal topics:

Civil Rights Law Voting Rights Voting Rights Act Improper Tabulation Civil Rights Law Voting Rights Voting Rights

ActInterferenceCopyright LawCivil Infringement ActionsInfringement OnlineGeneral Overview

**FOOTNOTES:**

n1. Editorial, A Constitutional Crisis, St. Louis Post-Dispatch B2 ( Dec. 10, 2000).

n2. Sandra Sobieraj, Bush Signs Voting-system Revamp, Desert News A02 (Oct. 29, 2002).

n3. Dan Gillmor, Without Paper Trail, Election Could Be Chaotic, San Jose Mercury News 1 (Mar. 17, 2004).

n4. Associated Press, Voting Problems Delay Results in Some North Carolina Races, The Courier-Journal 2A (Nov. 5, 2004).

n5. Mark Binker, Cobb Concedes Victory to Troxler, News & Record A1 (Feb. 5, 2005).

n6. CalTech-MIT/Voting Technology Project, Voting - What is What Could Be, <http://www.vote.caltech.edu/reports/2001> (July 2001).

n7. Jim Davis and Alcee Hastings, Help America Vote Act's Success Depends on Funding, The Tampa Tribune 17 (Nov. 2, 2002).

n8. U.S. Election Assistance Commission, Annual Report Fiscal Year 2003, [http://www.eac.gov/annualreport 2003.htm](http://www.eac.gov/annualreport%202003.htm) (Apr. 2004).

n9. Id.

n10. Douglas W. Jones, A Brief Illustrated History of Voting, <http://www.cs.uiowa.edu/jones/voting/pictures/> (accessed Dec. 13, 2004).

n11. Douglas W. Jones, Punched Cards for Voting, <http://www.cs.uiowa.edu/jones/voting/pictures/#punchcard> (accessed Dec. 13, 2004).

n12. Id.

n13. Denes Husty, New Voting Machines 'Virtually Fool-proof', *The News-Press* 1H (May 1, 2002).

n14. Jones, *supra* n. 11.

n15. Art Garland, A Cheap Way to Count Votes, *Idaho Falls Post Register* A8 (Nov. 19, 2000); Mitch Betts, NBS Votes to Improve Ballot Security, *Computerworld* 15 (Apr. 6, 1987).

n16. Sheila Wissner, Recount Trial Moving to Day 2, *The Tennessean* 1A (Dec. 3, 2000).

n17. Jamin Raskin, Suffrage Suffers in the Land of Rights, *Los Angeles Times* B11 (Mar. 15, 2004).

n18. Kim North, NAACP Freedom Fund Dinner Voting Rights, *Detroit Free Press* 1C.

n19. Susie Davidson, Curse of the Winged Ballot: Florida Recount Results Finally Released, *The Jewish Advocate* 14.

n20. Editorials, Ballot Science, *The Dallas Morning News* 3J (Nov. 19, 2000).

n21. Jones, *supra* n. 11.

n22. Asian American Legal Defense and Education Fund, *Asian American Access to Democracy in the 2003 Election in NYC*, 7 (May 2004).

n23. Andrea Robinson, *Machines Didn't Pass Polling Test but all Were in Use on Election Day*, *The Miami Herald* 1A (Dec. 22, 2000).

n24. U.S. Election Assistance Commission, *Fiscal Year 2004 Annual Report*, 3, <http://www.eac.gov/docs/EAC%20Annual%20Report%20FY04.pdf> (Jan. 2005).

n25. U.S. Election Assistance Commission, *Fiscal Year 2003 Annual Report*, 1, [http://www.eac.gov/annualreport 2003.htm](http://www.eac.gov/annualreport%2003.htm) (Apr. 2004).

n26. U.S. Election Assistance Commission, *Fiscal Year 2004 Annual Report*, 7, <http://www.eac.gov/docs/EAC%20Annual%20Report%20FY04.pdf> (Jan. 2005).

n27. *The Help America Vote Act of 2002*, 42 *U.S.C. 15301* (2002) et seq. [hereinafter "HAVA"].

n28. U.S. Election Assistance Commission, *Fiscal Year 2004 Annual Report*, 7, <http://www.eac.gov/docs/EAC%20Annual%20Report%20FY04.pdf> (Jan. 2005).

n29. *Id.* at 4.

n30. *Id.* at 8.

n31. HAVA.

n32. U.S. Election Assistance Commission, Fiscal Year 2004 Annual Report, 25, <http://www.eac.gov/docs/EAC%20Annual%20Report%20FY04.pdf> (Jan. 2005).

n33. Eric A. Fisher, Election Reform and Electronic Voting Systems (DREs): Analysis of Security Issues, 11-12, <http://www.epic.org/privacy/voting/crsreport.pdf> (Nov. 4, 2003).

n34. Scott Shane, Scientists Say 'Nay' to Computerized Voting, Baltimore Sun 1A (July 27, 2003).

n35. USACM Technology Policy Weblog, ACM Recommends Integrity, Security, Usability in E-voting, <http://www.acm.org/usacm/weblog/index.php?p=73#statement> (Sept. 28, 2004).

n36. Robert Redding, Jr., Vote System Ready to go, Washington Times B01 (Nov. 1, 2004).

n37. See Voting Rights, Statement of Principles on Electronic Voting, <http://www.civilrights.org/issues/voting/details.cfm?id=18922> (Feb. 17, 2004) (addressing security concerns with DREs).

n38. Kay J. Maxwell, How to Make Sure That Your Vote Counts, New York Times 26 (Dec. 15, 2003).

n39. American Civil Liberties Union, Trial Begins Today in ACLU's Historic Challenge to Ohio's "Hanging Chad" Punch Cards, <http://www.aclu.org/VotingRights/VotingRights.cfm?ID=16156&c=32> (July 26, 2004).

n40. Ltr. from Wade Henderson, Exec. Director, Leadership Conference on Civil Rights, and Deborah Goldberg, Democracy Program Director, Brennan Center for Justice, to Chief Election Official,

Recommendations of the Brennan Center for Justice and Leadership Conference on Civil Rights for Improving the Reliability of Direct Recording Electronic Voting Systems, [http://www.civilrights.org/issues/voting/lccr\\_brennan\\_letter.pdf](http://www.civilrights.org/issues/voting/lccr_brennan_letter.pdf) (June 29, 2004).

n41. League of Women Voters, Convention 2004: Engaging Members, [http://www.lwv.org/ELibrary/nv/2004/voter\\_1004\\_4.pdf](http://www.lwv.org/ELibrary/nv/2004/voter_1004_4.pdf) (Oct. 2004).

n42. Id.

n43. Raskin, *supra* n. 17.

n44. Kim North, NAACP Freedom Fund Dinner Voting Rights, *Detroit Free Press* 1C (Apr. 30, 2001).

n45. Kim Zetter, Lost E-Votes Could Flip Napa Race, <http://www.wired.com/news/politics/0,1283,62655,00.html> (Last updated Mar. 14, 2004); Anna Oberthur, Calif. senators want decertification of e-vote systems, [http://www.usatoday.com/tech/news/techpolicy/2004-03-12-calif-vs-evote\\_x.htm](http://www.usatoday.com/tech/news/techpolicy/2004-03-12-calif-vs-evote_x.htm) (Mar. 12, 2004).

n46. Declan McCullagh, E-voting smooth on Super Tuesday, [http://news.com.com/2100-1028-3-5168670.html?tag=nefd\\_top](http://news.com.com/2100-1028-3-5168670.html?tag=nefd_top) (Mar. 2, 2004).

n47. HAVA *supra* n. 31.

n48. Voting Fact Sheet, Fact Sheet on NIST Voting Activities, <http://vote.nist.gov/faq.html> (accessed Mar. 13, 2004).

n49. Web site of Congressman Chris Van Hollan, Van Hollan opposes funding cuts in NIST and NOAA, [http://www.house.gov/apps/list/speech/md08\\_vanhollen/funding\\_cuts.html](http://www.house.gov/apps/list/speech/md08_vanhollen/funding_cuts.html) (July 23, 2003).

n50. Kirk Ladendorf, Election machines get e-vote of confidence, Austin American-Statesman C1 (Nov. 4, 2004).

n51. National Committee for Voting Integrity, Testomony, <http://votingintegrity.org/testimony/EACHearing5504.html> (May 5, 2004).

n52. Raymond McCaffrey and Cameron W. Barr, Debut of New Technology Gets Mostly High Marks, The Washington Post B04 (Mar. 3, 2004).

n53. Associated Press, Voting problems delay results in some North Carolina races, The Courier-Journal 2A (Nov. 5, 2004).

n54. Id.

n55. Id.

n56. Id.

n57. Id.

n58. Kristin Collins, 3 Top Jobs Await Winner, The News & Observer B1 (Nov. 4, 2004).

n59. Id.

n60. Id.

n61. Id.

n62. Associated Press, Voting problems delay results in some North Carolina races, *The Courier-Journal* 2A (Nov. 5, 2004).

n63. Barbara Barrett, At least two races head for recounts, *The News & Observer* (Raleigh, N.C.) A1 (Nov. 11, 2004).

n64. *N.C. Gen. Stat. 163-182* et seq.

n65. National Association of Secretaries of State, Recount Provisions - Part I, [http://www.electionline.org/site/docs/html/recount\\_provisions\\_part\\_1.htm](http://www.electionline.org/site/docs/html/recount_provisions_part_1.htm) (accessed Mar. 13, 2004).

n66. Barrett, *supra* n. 63.

n67. Editorial, Missing Votes Trigger New Election Threat, *News & Record* (Greensboro, N.C.) A8 (Nov. 13, 2004).

n68. Carrie Levin and Mark Johnson, Recounts Change no Race, *Charlotte Observer* 1B (Nov. 18, 2004).

n69. Id.

n70. Id.

n71. Editorial, Election Rerun, The News & Observer (Raleigh, N.C.) A20 (Nov. 20, 2004).

n72. Id.

n73. Editorial, We Must Redouble Efforts to Remove Glitches from Electronic Voting System, The Asheville Citizen-Times A6 (Nov. 30, 2004).

n74. Id.

n75. State certifies most races, The News & Observer (Raleigh, N.C.) B4 (Nov. 24, 2004).

n76. Id.

n77. Lynn Bonner, Troxler poses plan to recall 'lost' voters, The News & Observer (Nov. 24, 2004).

n78. Id.

n79. Id.

n80. Sharif Durhams, Another Vote in Carteret, Charlotte Observer 1A (Dec. 1, 2004).

n81. Id.

n82. Id.

n83. Sharif Durhams, GOP Leaders to Help Troxler in Bid for Post, Charlotte Observer 3B (Dec. 7, 2004).

n84. Lynn Bonner, Cobb takes fight to court, The News & Observer (Raleigh, N.C.) B1 (Dec. 10, 2004).

n85. Id.

n86. Id.

n87. Id.

n88. State News in Brief, Judge: Carteret special election illegal, The Myrtel Beach Sun-News 4 (Dec. 18, 2004).

n89. Lynn Bonner, Agriculture secretary revote irks Republicans, The News & Observer (Raleigh, N.C.) A1 (Dec. 30, 2004).

n90. Editorial, Troxler Gets Goofy, Star News (Wilmington, N.C.) 10A (Jan. 5, 2005).

n91. 2 *U.S.C.* 9 (2003).

n92. *State v. Keating*, 53 *Mont.* 371 (1917).

n93. 26 *Minn.* 107 (1879).

n94. *Id.* at 108-09.

n95. 424 *U.S.* 1 (1976).

n96. *Id.* at 237 (Burger, C.J., dissenting).

n97. 504 *U.S.* 191, 206 (1992).

n98. *Id.* at 206 (quoting *Rogers v. Lodge*, 458 *U.S.* 613, 647 n.30 (1982) (Stevens, J., dissenting)).

n99. 514 *U.S.* 334 (1995).

n100. *Id.* at 443.

n101. Editorial, Troxler Gets Goofy, *Star News* (Wilmington, N.C.) 10A (Jan. 5, 2005).

n102. Lynn Bonner, Troxler's volunteer army ferrets out Carteret votes, *The News Observer* (Raleigh N.C.) 4B (Jan. 9, 2005).

n103. Sharif Durhams, Affidavits Employed in Ag-Race Challenge, *Charlotte Observer* (Jan. 11, 2005).

n104. Id.

n105. Id.

n106. Lynn Bonner, Judge cancels new election for agriculture commissioner, *The News & Observer* (Raleigh, N.C.) B1 (Jan. 13, 2005).

n107. Id.

n108. Editorial, In Cobb's Hands, *The News & Observer* A14 (Feb. 2, 2005).

n109. Id.

n110. Ariel Hart, National Briefing South: North Carolina: Election Challenge is Dropped, *New York Times* 14 (Feb. 5, 2005).

n111. Id.

n112. Brief, *The Sun News* 4 (Feb. 8, 2005).

n113. Raymond McCaffrey and Cameron W. Barr, Debut of New Technology Gets Mostly High Marks, *The Washington Post* B04 (Mar. 3, 2004).

n114. David Dill, Testimony, Election Assistance Commission, July 28, 2005.

n115. Pam Smith and Bob Kibrick, Manual Audit Requirements, <http://verifiedvoting.org/article.php?id=5816> (Sept. 22, 2005).

n116. Voters Unite, Myth Breakers: Facts About Electronic Elections, <http://www.votersunite.org/MB2.pdf> (accessed June 15, 2005).

"Electronic Voting Machines Lose Ballots Carteret County, North Carolina. November, 2004. Unilect Patriot DRE A memory limitation on the DRE caused 4,438 votes to be permanently lost. Unilect claimed their paperless voting machines would store 10,500 votes, but they only store 3,005. After the first 3,005 voters, the machines accepted - but did not store - the ballots of 4,438 people in the 2004 Presidential election. Jack Gerbel, president and owner of Dublin-Calif.-based UniLect, told The Associated Press that there is no way to retrieve the missing data. Since the agriculture commissioner's race was decided by a 2,287-vote margin, there was no way to determine the winner. The State Board of Elections ordered a new election,<sup>10</sup> but that decision is being challenged in the court.

Palm Beach County, Florida. November 2004. Sequoia DRE Battery failure causes DREs to lose about 37 votes. Nine voting machines ran out of battery power and nearly 40 votes may have been lost... . The nine machines at a Boynton Beach precinct weren't plugged in properly, and their batteries wore down around 9:30 a.m., said Marty Rogol spokesman for Palm Beach County Supervisor of Elections Theresa LePore. Poll clerk Joyce Gold said 37 votes appeared to be missing after she compared the computer records to the sign-in sheet. Elections officials won't know exactly how many votes were lost until after polls close." Id.

n117. Article, Philadelphia Inquirer Montco discovers quirks in use of voting machines, <http://www.philly.com/mlid/philly/news/local/8278676.htm?1c> (Mar. 26, 2004). "A test of the equipment that drew complaints found it works properly but could trip up voters." Id.

n118. Article, Poll workers Fired, The Ledger-Enquirer (Columbus, Ohio) [http://nl.newsbank.com/nlsearch/we/Archives?s site=ledgerenquirer&p multi=CL - &p product=CL& p theme=realcities&p action=search&p maxdocs=200&p text search0=Poll%20AND%20 worker%20AND%20fired;&s dispstring=Poll%20worker%20fired;%20AND%20date\(last%20180%20days\)&p field date0=YMD date&p params date0=date:B,E&p text date0=180 qzD&p perpage=10&p sort=YMD date:D&xcal useweights=no](http://nl.newsbank.com/nlsearch/we/Archives?s site=ledgerenquirer&p multi=CL - &p product=CL& p theme=realcities&p action=search&p maxdocs=200&p text search0=Poll%20AND%20 worker%20AND%20fired;&s dispstring=Poll%20worker%20fired;%20AND%20date(last%20180%20days)&p field date0=YMD date&p params date0=date:B,E&p text date0=180 qzD&p perpage=10&p sort=YMD date:D&xcal useweights=no) (accessed June 25, 2005).

n119. Ltr. from Barbara Simons, Ph.D. and Eugene H. Spafford, Ph.D, Co-Chairs U.S. ACM Public Policy

Committee (Association for Computing Machinery), to the Orange County Board of Supervisors (April 29, 2003) <http://www.acm.org/usacm/Letters/OrangeCounty.htm> (accessed June 25, 2005).

n120. Peter G. Neumann, Illustrative Risks to the Public in the Use of Computer Systems and Related Technology, <http://www.csl.sri.com/users/neumann/illustrative.html#24> (last updated Sept. 13, 2005).

n121. Guy Ashley, Voting Machines Criticized, *Contra Costa Times* (March 26, 2004), <http://www.contracostatimes.com/mld/cctimes/news/local/states/california/counties/alameda county/cities/neighborhoods/piedmont/8282953.htm>.

n122. 2 *U.S.C.* 9 (2003).

n123. *Hardy v. Beaver City*, 41 *Utah* 80 (1912).

n124. Congressman William Clay, pg. 121, question to Dr. Michael Shamos, Official Hearing Serial No. 108-258, Subcommittee, House Government Reform Committee, Hearing The Science of Voting Machine Technology: Accuracy, Reliability, and Security (July 20, 2004); Michael Shamos, Testimony, Subcommittee on Environment Technology and Standards, House Science Committee, "Testing and Certification for Voting Equipment: How Can These Processes Be Improved?", available at <http://www.house.gov/science/hearings/ets04/jun24/shamos.pdf>.

"I am here today to offer my opinion that the system we have for testing and certifying voting equipment in this country is not only broken, but is virtually nonexistent. It must be re-created from scratch or we will never restore public confidence in elections. I believe that the process of designing, implementing, manufacturing, certifying, selling, acquiring, storing, using, testing and even discarding voting machines must be transparent from cradle to grave, and must adhere to strict performance and security guidelines that should be uniform for federal elections throughout the United States." *Id.*

n125. 2 *U.S.C.* 9 (2003).