Although the Florida debacle during the 2000 Presidential election, which nearly precipitated a constitutional crisis, happened over six years ago, its reverberations continue to be felt. Since that time there has been an explosion of research and literature on voting. In particular, researchers have focused intense scrutiny on voting technology and Internet voting. While election administrators hailed new voting technology as a savior for error prone, old voting machinery, and many looked on Internet voting as the future; it soon appeared that it raised serious new issues.

This bibliography consists of annotated references to books, reports, periodical articles, and cases examining the brave new world of electronic voting machines and Internet voting. This bibliography limits itself to post-2000 material. It does not include newspaper articles, popular magazines, or materials unobtainable from either the Internet or major research libraries. Due to the substantial body of literature on this subject, the bibliography is not comprehensive. Omissions do not necessarily reflect a qualitative judgment about the material omitted.

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The authors of this report highlight the need for electronic transaction standards (ETS) for election systems. They begin by looking at the current state of standards in election administration. While voluntary standards regarding voting machines exist, there are no standards for electronic data exchange. The lack of standards on data exchange has led to limited competition and proprietary systems that do not talk to systems from a different vendor. The authors then examine, but make no endorsement of, two current attempts to develop ETS by The Organization for the Advancement of Structured Information Standards (OASIS) and the Institute of Electrical and Electronics Engineers (IEEE). The authors look at three specific areas of election systems that the lack of ETS affects and then conclude with recommendations on the roles the Election Assistance Commission (EAC), National Institute of Standards and Technology (NIST), and Congress should take regarding ETS.

R. Michael Alvarez & Thad E. Hall, Point, Click, and Vote: The Future of Internet Voting (2004).

With the ubiquitous presence of the Internet in every day life, increasing attention has been paid to using the Internet for voting. In the first chapter, the authors of this book provide an overview of the issues surrounding Internet voting and their position on Internet voting. In the second chapter, the authors examine studies and critiques of Internet voting. Unlike the recommendations in those studies, they believe Internet voting should be implemented now in a controlled, limited manner among certain classes of voters where it is needed. They think that demand will inspire the development of technology for Internet voting rather than advances in technology allowing Internet voting to be gradually phased-in. The third chapter looks at how Internet voting could eliminate problems with transparency, voter error, uniformity, and access; but the authors acknowledge that the issue of the digital divide would have to be addressed first. Chapter four discusses Internet voting within the larger framework of the use of the Internet in our current political process. The authors argue in favor of using Internet voting for an iterative, deliberative democracy rather
than a direct online democracy. Chapter five explores the issue of security and Internet voting. The authors find that risks inherent in Internet voting are not that different from risks inherent in the current electronic voting machines. They assert that risk mitigation methods exist and that market forces and government intervention will lead to improvements in online security. The sixth chapter identifies voting methods in current use that can be analogized to Internet voting, such as voting by mail, absentee voting, and early voting. The seventh chapter analyzes recent tests of Internet voting and the conclusions that can be drawn from these attempts. Finally, chapter eight discusses reforms needed to make Internet voting viable.


After the 2000 presidential election, the California Institute of Technology and the Massachusetts Institute of Technology launched the Project on Voting Technology. In this report, they first examine what went wrong. Regarding voting equipment, they find that two percent of the ballots in the presidential election were not counted and five percent of the ballots did not register a Senate or gubernatorial vote. This residual vote varied depending on the voting equipment used. In Part II of the report, they look at current voting technology and identify its strengths and weaknesses. They find that precinct optical scanning machines had fewer residual votes (undervotes and overvotes not counted). They speculate that older direct recording electronic devices (DREs) may have higher residual vote rates due to confusion with the interfaces and see great potential in the newer DREs. In addition to lost votes, they discuss the cost, accountability, management, accessibility, and security of the different voting technologies. In Part III of the report, they look at the future of voting technology. They propose a framework for developing future voting equipment, focusing on separating out the processes of recording a vote from casting the vote. Their framework also envisions standard voting machine specifications, open source software for vote casting, digital signatures, and cryptography. They recommend the establishment of a national program to encourage development of better voting systems and a program for field-testing all voting equipment. They believe the federal government should implement a standards commission and develop a clearinghouse of information on voting systems.

R. Michael Alvarez, Counting Ballots and the 2000 Election: What Went Wrong?, in Rethinking the Vote: The Politics and
PROSPECTS OF AMERICAN ELECTION REFORM 34-50 (Ann N. Crigler et al. eds., 2004).

In this chapter of *Rethinking the Vote: The Politics and Prospects of American Election Reform*, the authors look at the 2000 election and then specifically analyze the election administration in California during the 2000 election. They begin with the results of the Caltech/MIT Voting Technology Project’s report on the 2000 election that found that punch-card machines and direct recording electronic devices (DREs) had the highest residual vote rates. They then move on to examining California’s uncounted ballots. More counties in California used punch-card machines than in the United States as a whole. California counties using punch-card systems had higher residual vote rates than optical scanning or DRE touch screen systems. Precinct-count optical scanning devices performed better than central-count optical scanning devices. California counties using punch-card systems had greater non-white populations. California counties using precinct-count optical scanning devices had greater non-white populations than those using central-count optical scanning devices. The authors speculate that the data may implicate equal protection violations or violations of the Voting Rights Act.


This report looks at the relationship between changing voting technologies and residual votes over time. The authors examine election data over the 1988, 1992, 1996, and 2000 presidential elections. They find that manually counted paper ballots had the lowest residual vote count, followed by lever machines and optical scanners. Punch-card systems and direct recording electronic devices (DREs) had higher rates of residual votes. They acknowledge that other factors such as literacy rates, education levels, election administration funding, and county populations might explain the higher residual vote rate. They speculate that DREs had higher residual vote rates because there may be problems with interface design, there may be a technology curve, and there may be a voter learning curve. In addition, DREs may need more administrative attention because they may be harder to maintain, less reliable, and less user-friendly. The authors state that future improvements to electronic voting machines may lead to improvements in the rate of ballots counted.

This report provides the results of testing of Diebold machines in a small area of Maryland. The testing of the machines was done in three different ways: (1) expert review, (2) close-up observation, and (3) field-testing. The expert review involved five faculty and staff members of the Human-Computer Interaction Laboratory at the University of Maryland. Each member reported on his or her individual use of the machines. The close-up observation testing involved watching individuals use the machines. The individuals were asked to talk through the process so that researchers could better understand what a user thought and saw with respect to the machines. The third method, field-testing, is used to get a better cross-section of society. In this instance however, the voters involved tended to be from higher socio-economic areas that did not have a significant minority or non-English speaking group. The researchers found both strengths and weaknesses in the study. Strengths were connected to general ease of use. Weaknesses involved directions for use, interface, and to some extent, reliability (one machine used failed early in the process).


This study compares the residual vote rate from the 2000 presidential election of the five different voting systems: direct recording electronic devices (DREs), optical scanning machines, paper ballots, lever machines, and punch-card machines. The authors find that DRE, lever, optical scanning, and paper ballots all had lower residual vote rates than punch-card machines. They find that optical scanning machines and DREs perform best but that DREs have a poorer performance in smaller counties and optical scanning devices seem slightly more prone to performance problems. In contradiction to the Caltech/MIT study, Voting: What It Is, What It Could Be, the authors do not find evidence that DREs are more difficult for poorly educated voters to use. Because of limitations on the data available to researchers, and because of county-specific characteristics, the authors assert that it is premature to make conclusions regarding the performance of DREs, optical scanning machines, lever machines, and paper ballots. They recommend moving away from punch-card systems to DREs or optical scanning devices; implementing uniform reporting standards on residual votes, voter education, and election administration resources in each county and precinct; more research into usability studies
to discover which features in voting machines cause the residual votes; and more study on voting systems and their individual features.


This report is designed to help election officials balance factors of security, accessibility, usability, and cost when deciding which voting technologies to purchase. The report evaluates six voting system types: (1) direct recoding electronic devices (DREs), (2) DREs with voter-verifiable paper trails (DREs with VVPT), (3) precinct-count optical scan systems (PCOS), (4) ballot marking devices (BMD), (5) vote-by-mail systems, and (6) vote-by-phone systems. In the chapter on security, the report ultimately finds that DREs, DREs with VVPT, and PCOS all have serious security vulnerabilities that can be reduced by relatively easy and inexpensive remedial measures, which the report lists, but that few jurisdictions have thus far applied these measures. In the chapter on accessibility, the report provides a series of questions that election officials should pose when evaluating voting systems and sets out a general assessment of the advantages and limitations the different voting technologies offer in regard to these questions. In the chapter on usability, the report reviews current research on usability, compiles a set of usability principles that should be invoked when evaluating voting systems, and makes recommendations regarding ballot design and system instructions. In the final chapter, which discusses cost, the report looks at five voting systems and reports general and jurisdiction-dependent factors that contribute to a voting system’s long and short-term cost.

CALIFORNIA SECRETARY OF STATE’S AD HOC TOUCH SCREEN TASK FORCE, REPORT TO THE SECRETARY OF STATE (July 1, 2003), http://www.ss.ca.gov/elections/taskforce_report_entire.pdf.

In response to controversy over direct recording electronic devices (DREs), the California Secretary of State created the Ad Hoc Touch Screen Task Force. The Task Force identified four issues: security issues surrounding DREs, administrative security issues regarding tests and processes, voter confidence, and the usefulness and necessity of voter verification. The Task Force also looked at federal and state laws regarding accessibility and language requirements; the time frame in which any recommendations must be implemented in order to be ready for the 2004 election; inconvenience to the voters; the complexity of election administra-
tion; printer issues; the marketplace; and cost. Among other things, the task force recommended that: federal, state, and local testing and certification procedures be strengthened; there be a permanent paper record for each election, whether a voter-verified paper audit trail (VVPAT) or a print-out once all ballots are cast; VVPATs be allowed but not required as an option for local election officials to select; and state or federal funds be provided to pay the cost of upgrading systems to meet any new recommendations that are implemented.


In this report, an overview of Internet voting and the common issues associated with it are addressed. The report indicates voters seek greater security than that which was available at the time of Internet voting’s creation. Additionally, the digital divide is referenced along with the advantages Internet voting will provide to those with higher income and better education. The report states that additional fraud protection would be needed for secure Internet voting and that improperly addressed security issues will undermine voter confidence. A brief overview of types of Internet voting, available technology, equal access and retaining ballot secrecy are provided in the report. Additionally, the report references recent uses of the Internet in elections in Arizona and Alaska.


This report examines the questions and issues surrounding the use of technology in the electoral process. The report begins by looking at the electoral system, its decentralized nature, its parts, and its scope and complexity. Next it looks at the role public confidence in elections plays in our democracy. The third part of the report identifies different voting technologies while the fourth part discusses the security and usability issues that have arisen with the new voting systems. The authors acknowledge the different perspectives of election officials and computer scientist skeptics on security, but do not see them as irreconcilable. The authors pose sixteen security questions and eighteen usability questions that should be asked when looking at voting technology. Part five of the report discusses the increased costs, complexity, and broadening of the poll worker’s responsibilities with newer voting technology. The authors pose eleven questions regarding these issues. Part six of the report looks at research and data that
should be collected in order to evaluate and audit voting machine performance, testing and certification processes, funding, the role of private actors in the electoral processes, and how these issues relate to public confidence in elections. The committee concludes that new voting technologies have enormous potential but that more work needs to be done to improve current voting systems. They believe that all stakeholders have relevant contributions to make.

_**COMPUWARE, DIRECT RECORDING ELECTRONIC (DRE) TECHNICAL SECURITY ASSESSMENT REPORT (Nov. 21, 2003),**_ http://www.sos.state.oh.us/sos/hava/compuware112103.pdf.

When Ohio went to purchase new voting machines in conjunction with the Help America Vote Act of 2002 (HAVA), the Secretary of State commissioned Compuware to examine the security of direct recording electronic devices (DREs) from four vendors: the Diebold AccuVote-TS R6, the ES&S iVotronic, the Hart InterCivic eSlate 3000, and the Sequoia AVC Edge. Compuware tested source code, operating systems, and hardware. In their code review they looked for compliance with standard programming practices, security features and error handling logic, database security, and documentation. Compuware found serious security risks with each vendor’s products. The report includes recommendations to mitigate each risk. Furthermore, Compuware found general vulnerabilities to the election process and recommended that the Secretary of State develop IT and security standards and plans beyond those of the Federal Election Commission, create a Security Director position, implement statewide security standards, create a formal security training program for counties, require vendors to achieve Software Engineering Institute CMM Level 3, and conduct independent testing of voting systems as new versions of DRE software and hardware are released.


The bi-partisan Commission on Federal Election Reform, co-chaired by former President Jimmy Carter and former Secretary of State Jim Baker, was created to identify ways to rebuild voter confidence in the election system. The report makes eighty-seven specific recommendations that fall under five pillars. Those related to voting technology consist of: (1) fully implementing and funding the Help America Vote Act (HAVA); (2) adding to HAVA a requirement that all voting machines possess a voter-verifiable paper audit trail and be fully accessible to the disabled; (3) researching and developing new technology to make voting systems more transparent and
secure; (4) developing procedures concerning the ballot of record, whether paper or electronic; (5) publicly testing all voting machines before, during, and after the election; (6) requiring independent certification of voting machine source code; (7) putting source code in an escrow for future review by experts; (8) verifying on delivery that software on a machine matches the software that was certified; (9) restricting access to voting equipment and documenting chain-of-custody and any changes made; (10) developing backup plans in case of equipment failure; (11) researching and experimenting more with Internet voting; and (12) changing the make-up of the Election Assistance Commission (EAC) and increasing its independence and authority in order to implement the above listed reforms. The report also features an appendix on the estimated costs of implementing the reforms that were recommended.


This White Paper provides an overview of the arguments both for and against Internet voting. The current political and social climates, with respect to Internet voting, are considered. Pros and cons of such technology and the policy and technological changes needed and currently underway are discussed. An overview of the current, traditional voting method is provided. The report then gets into detail on how the system would be changed with Internet voting. The report references various types of Internet voting ranging from Internet voting at a polling place to remote voting from any computer. The report lays out arguments in favor of Internet voting, including convenience, the fact that voters would be better informed, the idea that the voting and counting process would be streamlined and more efficient, and the potential for providing greater access to the polls. The drawbacks to Internet voting are also laid out. These include security issues, lack of Internet access by all voters ("digital divide"), the erosion of the community event of voting, lack of a paper trail, and other distrust issues related to Internet voting. A discussion of necessary standards for Internet voting is provided, as is an analysis of current state effort in Internet or other online voting efforts. The report concludes with a look to what may be done in the future, including biometrics, the current development of Internet appliances, and the use of smartcards.

Electionline.org is a non-partisan website, administered by the Election Reform Information Project that deals with election reform. Electionline.org compiled the data used in this briefing, the fifteenth in a series of briefings, from press reports, field reports from organizations, and first-person observations from Electionline.org staffers. The report gives a snapshot of the problems that were reported during the 2006 election. In addition to breaking down problems by state, the report categorizes the problems as man versus machine (human error causing problems with voting machines), machine versus man (machine incidents), and unknown. Among the problems noted were vote flipping, blank ballots, missing ballot activator cards, ballots jamming, machines not starting, programming errors, and machines breaking down.


With the negative publicity surrounding voting machine performance and security after the 2000 election, companies that produce and maintain voting machines have come under increased scrutiny. This Electionline.org report examines campaign finance reports and lobbying expenses of some of the largest voting machine companies and looks at the procurement process of states in an effort to identify the influence these companies might have on the political process. Electionline.org finds that the industry does engage in lobbying and donates to campaigns but there is no industry-wide practice favoring one political party over another. The report suggests potential responses to perceived or potential bias and influence could be to prohibit contributions or limit participation in securing contracts to companies that do not make political contributions. The report notes that vendors have formed the Election Technology Council, a group to handle public relations for direct recording election devices (DREs), develop a code of ethics for voting machine companies, and make recommendations on standards and certification. The report also looks at the voting system procurement process in the states and finds that while vendors attempt to influence contracts by touting local economic ties, it is unclear whether this has the intended influence on the procurement process.

In 2005, electionline.org, a non-partisan website administered by the Election Reform Information Project, conducted a survey of state election officials to find out the procedures governing recounts and audits. The resulting report, the twelfth in a series of briefings, addresses recount and audit procedures focusing on voter-verifiable paper audit trails (VVPATs) and the role they play in audits and recounts. Electionline.org finds twenty-five states require either a VVPAT or paper ballots. Of those twenty-five, fifteen states specifically require that in recounts, VVPAT, not the electronic record, will be used. Two states specifically require that the electronic record, not the VVPAT will be used. The report notes that some election officials oppose the VVPAT for recounts because of time and that some advocates for the disabled feel the VVPATs are not accessible. The report also notes an alternative being developed – the voter verified audio audit transcript trail (VVAATT). As far as audits go, twelve states require audits of election machines. Eleven states now require that VVPATs be used in the audits.


Since 2000, Electionline.org, a non-partisan website administered by the Election Reform Information Project, has issued an annual report examining election reform across the United States. The latest report identifies changes not only since the last report but also compares data from 2006 to 2000. The section on voting machines begins by noting that although punch-card and lever voting machines have largely been abandoned, security concerns and uncertainty on standards caused delays and confusion. In 2000, direct recording electronic devices (DREs) were widely hailed as the solution to the problems with old machines; however, concerns about their security, reliability, and accuracy have led to a new push for voter-verified paper audit trails (VVPAT). Twenty-five states now have laws requiring paper trails or paper ballots. Of those twenty-five, sixteen identify the VVPAT as the official record of vote for a recount, while two identify electronic ballots as the official record of vote for a recount. Twelve states use paper trails for post-election audits. In response to the concerns about paperless electronic voting machines, companies are producing hybrid systems that are electronic but print out a paper ballot. The report breaks down the voting systems used and VVPAT requirements for all fifty states and D.C. in 2000 and 2006. Annual reports for the previous years of 2004, 2002, and 2001 can be found at: http://electionline.org/Publications/tabid/86/Default.aspx.

In this briefing, the sixth in a series of briefings from electionline.org and the Election Reform Information Project, an overview is provided of state activities aimed at achieving the goals of the Help America Vote Act (HAVA). The report provides general information as to what states are doing in light of HAVA. It also gives a brief state-by-state summary of how HAVA funds will be spent. The report indicates that in those jurisdictions where funds will be spent to procure new voting machines, those machines will be direct recording electronic (DRE) or optical scan. The report also indicates that HAVA funds cannot be used to update machines in only select areas within a state while leaving antiquated machines elsewhere within the state. A brief discussion is also provided of fears associated with the installation and use of electronic voting machines.


This briefing is the seventh in a series of briefings from electionline.org and the Election Reform Information Project. In this briefing voting security is covered. A great deal of attention is given to addressing the voter-verified paper audit trail (VVPAT) as well as other means of securing voting systems. The report covers security measures currently in effect in various states as well as those being considered at the time of the report. Digital recording electronic (DRE) systems and their lack of VVPATs are discussed as well as the positions of those who advocate for and against VVPATs. Software upgrades are discussed as well as difficulties in having last minute upgrades properly approved. An overview of the current voting systems companies is provided, as well as a state-by-state summary of voting systems in use and their security status.


This book is a compilation of chapters by various authors. The focus of the book is electronic voting generally in the world. It does not focus wholly on a particular country. Coverage is provided for Australia, Estonia, Finland, Germany, Sweden, Switzerland, Western Europe (generally), the United Kingdom, and the United States. Chapters focusing specifically on
the United States are: chapter 4—Electronic Voting in the United States: At the Leading Edge or Lagging Behind, chapter 13—Support for Online Voting in the United States, and chapter 14—Digital Democracy Comes of Age: Internet Voting and the 2000 Arizona Democratic Primary. Frederic I. Solop, author of chapter 4, is a professor at the University of Northern Arizona. Prof. Solop discusses the introduction of the Internet generally in the United States and the swift move to use it in politics and government. He provides a discussion of how the Internet was used in the 2000 Presidential election. The author identifies the first use of Internet elections in the United States (the United States being the first in the world to employ such a method) in the private sector. He provides information on the election laws of the United States and how they affected the events of 2000 and subsequent election reform discussions. His chapter concludes with a brief discussion of Internet voting viability. In chapter 13, written by Ramona S. McNeal and Caroline J. Tolbert, a discussion of the evolution of e-voting in the U.S. and how it has been used is provided. Additionally, information is provided from a study done by Kent State University’s Computer Assisted Telephone Interviewing lab related to Internet voting and online voter registration. Written and tabular results are provided. Lastly, chapter 14, again by Frederic I. Solop, focuses on the 2000 Arizona Democratic Primary. In this chapter he discusses digital democracy indicating that it refers to “the integration of Internet technologies into the functions of government and the apparatus of democracy.” He then provides a look at the Arizona Primary including discussions of types of voters and their demographics and attitudes. Other chapters within this title will be useful to anyone interested in electronic voting. Some chapters are general in scope and others are country specific to those nations mentioned above.


These 2002 standards, developed by the Federal Election Commission and later adopted by the Election Assistance Committee, were the precursor for the Voluntary Voting System Guidelines listed later in this bibliography. They replaced the 1990 standards, providing new and expanded coverage of paper-based and electronic voting systems. The standards are divided into two volumes. Volume one consists of nine sections dealing with performance standards, such as hardware, software, functional capabilities, telecommunications, security, quality assurance, configuration management, and qualification tests for electronic components of voting systems. Volume one also contains three appendices featuring a glossary, references, and a section on usability design. Volume two consists of seven sections dealing with the testing and qualification process, such as the
technical data package vendors need to submit, functionality testing, hardware testing, software testing, system level integration testing, and testing for vendor practices regarding configuration management and quality assurance. Volume two also contains three appendices providing a recommended outline for a qualification test plan, a recommended outline for a qualification report, and the design criteria used for the testing process.


This is a guide from the Federal Election Commission's Office on Election Administration. Its purpose is directed toward "voting system developers" and is intended to help them create usable systems. The guide is also directed at those officials who are procuring voting systems to help them make better choices in selecting user-friendly systems. The guide focuses on two aspects of "user-centered" systems: usability and accessibility. A detailed definition of each is provided. Additionally, user-centered design, human factors, and human factors engineering are defined. The design process is covered with not just voters, but election officials being identified as users. Systems should meet requirements for tabulation and recordation of votes and keep in mind the users of that function as well as voters. User research needs to be done via interviews, identifying tasks, and by comparing use to other systems in place among others. Some requirements for a user-centered system are identified as well as the development of the necessary interface. Evaluating the design throughout the creation of the system is recommended and components of usability testing are given. Voting system standards are identified and design audits are discussed.


This document provides guidance to makers of electronic voting equipment on how to perform a usability test. The document defines a usability test as "an established technique for evaluating the quality of human interaction with various system components, including equipment, documents, architectural elements, environmental factors and other people." The usability tests are intended to identify stumbling blocks in the system prior to its implementation. The document recommends that the tests be conducted earlier in the development process, rather than when it is too late to make significant changes to the system. The document lays out specific ways in which tests can be conducted and provides guidance on when,
where, and how such test should be done. Objectives are laid out and a manner in which findings should be reported is indicated.


In 2002, the Manhattan Borough President's Office and the Center for Independence of the Disabled in New York sponsored a voting technology fair in order to allow people with disabilities to test the accessibility of new voting technology. Seven companies participated in the fair. One hundred thirty individuals took an anonymous survey evaluating the machines. This report incorporates observations, comments, and interviews of people and voting machine manufacturers regarding five disability categories (wheelchair access, dexterity and arm range access, visual impairment access, hearing impairment access, and cognitive and neurological impairment access) and the performance of the participating voting machines in those categories. It also issues general recommendations on important accessibility features.


In this book, the authors look at the impact of political culture on the choice of voting systems used in different jurisdictions. They define political culture as how people view politics and the role of government in society. In the first chapter, they give an overview of the Bush v. Gore controversy. In the second chapter, the authors explore three subcultures: (1) moralistic, where government and politics are expected to promote the public welfare; (2) individualistic, where government and politics are viewed as having a minimal role restricted to some social and economic roles; and (3) traditionalistic, where hierarchy is respected and elites govern to improve society. They associate the North, Northwest, and Pacific Coast states with the moralistic subculture, Midwestern and Southwestern states with the individualistic subculture, and the Southern states with the traditionalistic culture. After examining election data, they find moralistic states use paper ballots (paper and optical scan) more than other systems, traditionalist states use direct recording electronic devices (DREs) more often than other systems, and mechanical lever machines are used more often in individualistic states. Since the type of voting machine used may have an impact on the number of votes counted, the authors assert that more study is needed on the impact of political culture. They argue that
implementing a uniform voting system, such as optical scanning machines, in order to address equal protection concerns regarding the use of different voting machines, would not work because political culture may also play a role in the administration of an election, and therefore, in error rates. A better role for the federal government would be to support election administration in the states.


This report, prepared for Congress by the Congressional Research Service, covers concerns related to digital recording electronic devices (DREs) and proposes remedies. Background information is provided on the history of voting and the various voting mechanisms in use in the United States. A detailed discussion of the DRE security issues is provided along with a summary of various studies done on the issue (e.g., Caltech/MIT, California Task Force, Hopkins). Mr. Fischer describes the types of threats possible to the voting system, the technical vulnerabilities (computer codes, connecting to other systems and auditing), and “social vulnerabilities.” He addresses the goals in defending such attacks and responding to problems discovered within a DRE system. He outlines ways to address the security issues ranging from using current standards and improving standards and certification procedures to using open source coding. He discusses the voter verified paper trail and an electronic version of it called the Votometer. Additionally, he provides a discussion of using cryptography to encrypt votes. The report also identifies action that could be considered by the states, the Election Assistance Commission, and Congress.


This report, prepared for Congress by the Congressional Research Service, provides a summary of voting technologies in place just after the 2000 presidential election. A discussion of ballot design is given, as is a discussion regarding the identification of voting errors: (1) overvotes, (2) undervotes, and (3) unintended votes. A brief description of various voting systems is provided. A discussion of remote voting based on newer technologies is given. Additionally, issues related to counting the vote are covered. Ballot secrecy issues are also discussed.
This report, prepared for Congress by the Congressional Research Service, details the legislation introduced in the 108th Congress to address concerns related to electronic voting. While not requiring specific machines, the Help America Vote Act (HAVA) in some ways "promotes" the use of digital recording electronic devices (DREs) to achieve its ends. The report identifies controversies over the security of DREs and references legislation introduced to address these concerns. Additionally, the report covers legislation that was introduced to address the voter verified paper trail (VVPT) issues. The bills cover pre-vote casting verification by all voters, including those with disabilities, and the necessary systems to achieve this. For systems unable to produce VVPTs as potentially required, legislation is discussed that would provide for an interim system. Legislation related to recounts is discussed, as well as the potential for the use of open-source software in the electronic systems used. Other legislation introduced addresses system testing and security, certification of voter registration lists (a HAVA related issue), and legislation that would require states to have voting systems certified by the Election Assistance Commission (something not required under HAVA at the writing of this report). Cost of new legislation requirements are also discussed briefly in the report.

After the Florida 2000 election, the United States Commission on Civil Rights conducted an investigation into voting irregularities and issued this report. Chapter eight of this report focuses on voting machines. The commission found that voters in poorer counties with large minority populations had higher ballot spoilage rates, and that these ballot spoilage rates were related to the voting technology used. Those voters using precinct-based optical scanning devices had lower residual vote rates. The report recommended, among other things, that Florida enact legislation requiring the use of electronic precinct-counting voting machines to reduce ballot spoilage, and that such legislation prohibit the dismantling of ballot error notifications to the voter. The report also recommended that Florida create a system to annually analyze residual vote rates of voting systems and consider decertifying systems that have higher residual vote rates than a set uniform ballot spoilage rate.

In response to the debate surrounding new electronic voting technology, the authors conducted this study to survey registered voters on how they felt about direct recording electronic devices (DREs) and optical scanning machines. The survey found that voters are comfortable with the new voting technologies and that slightly more of them are comfortable with the DREs than the optical scanning machines. Comfort for the new technologies was highest among Generation Y voters and lowest for voters fifty-nine and older. African-American voters were more comfortable with the newer technologies than white voters. Follow up questions were asked concerning the potential for fraud, greater accuracy, ease of use for disabled voters, and unintentional machine failures. Many voters, particularly older voters, did not have an opinion on these questions, causing the authors of the survey to hypothesize that this reflects uncertainty, unfamiliarity, or ambivalence about their use. Most voters believed the electronic voting machines made voting easier for those with disabilities. Younger voters were more likely to agree that electronic voting systems are more accurate but also that there is greater potential for fraud and machine glitches. Independents believed the machines were more accurate than Democrats or Republicans.


The founder of Black Box Voting, a non-profit, non-partisan group dedicated to ensuring that elections are accurate and fair, Bev Harris has written numerous articles on electronic voting. In this book, she provides extensive examples of voting machine errors and their impact on the elections involved. She looks at the case of Senator Chuck Hagel and his undisclosed interests in the company that owns the voting machines used to count the votes in his own election. She provides a brief overview of historical election-rigging methods and then discusses the security problems with electronic voting machines and the new ways they can be exploited to rig an election. She examines the voting machine industry, its lobbying efforts, and some flaws with the certification system. She investigates the parent companies, owners, and key personnel of the major voting machine manufacturers and reports some disturbing finds. She tells the story of finding Diebold source code posted on an FTP site and its connection with uncertified software on Georgia election machines. She includes comments from programmers who examined this code. The files on this FTP site were
later used by Aviel Rubin and the other authors of the John Hopkins/Rice University report. She discusses the role and the reluctance of the press in monitoring issues like the security flaws in electronic voting machines. She advocates auditing of elections and machines, background checks of personnel, transparent vote counting, and new procedural safeguards. She identifies ways for ordinary people to get involved in the issue and critiques the new voting industry organization, the Information Technology Association of America (ITAA).


In this chapter of *Rethinking the Vote: The Politics and Prospects of American Election Reform*, the author looks at the effect of *Bush v. Gore* on subsequent electoral equal protection challenges. He begins by reviewing previous Supreme Court precedent on voting issues. Then he looks at *Bush v. Gore* and the question of whether or not the Court intended the equal protection holding to apply to subsequent voting issues. He finds that regardless of whether the Court will retreat from applying this new expansion of the equal protection doctrine to other voting situations, lawsuits will be filed and lower courts will grapple with the *Bush v. Gore* holding. He believes that social science research, such as that on residual votes, will be needed to provide empirical evidence for these lawsuits. He also sees unintended consequences of this new emphasis on social science research in the courts and the voting reform efforts, such as chilling experimentation with new voting systems.


This study examined the usability of six representative voting systems using a demographically diverse group of people, skewed slightly older, with a variety of computer experience. Each system was tested using ballot formats with features a voter might typically come across. The researchers focused on the voters' comfort and confidence in the system; how well they understood the ballot; the ease of changing votes, correcting mistakes, and writing in votes; and whether they felt the need to ask for help. The researchers hypothesized that the most computer savvy, highly educated, young, white, male, partisan, experienced voters would rate the electronic
voting machines more highly. Generally, they found that the electronic voting machines were all rated highly and that touch screen devices ranked highest on the confidence questions. The authors detailed their findings for the machines tested in each type of voting system (optical scan, touch screens, wheels and buttons, and membrane button full-screen system) and ultimately found that their results did not support their hypothesis. They did find that age, sex, education, race, and computer experience did correspond to feeling the need to ask for help. The authors conclude that individual features of voting machines can impact usability; they identify highly rated features that could improve electronic voting; and they identify groups of voters likely to need additional help when voting.


This report is a copy of Mr. Hite’s (Director, Information Technology Architecture and Systems) prepared statement for the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, Committee on Government Reform, House of Representatives. In this statement Mr. Hite summarizes the seven reports produced by his office on election related topics after the 2000 election. The seven reports encompass the following topics: (1) constitutional framework for election administration, (2) “voting assistance” for voters in the military and overseas, (3) the likelihood of not properly counting votes of minority and disadvantaged voters, (4) voting accessibility for those with disabilities, (5) the status of “voting equipment standards developed by the federal election commission,” (6) various challenges to elections across the nation, and (7) a “framework for evaluating election administration reform proposals.” Mr. Hite’s statement also discusses the two main electronic voting systems—direct recording electronic devices (DREs) and optical scanners. He provides descriptions of the voting methods in each system and identifies some of the concerns and benefits related to the systems. He also addresses greater issues related to the election process and not specific to electronic voting (e.g. language diversity of voters, size and complexity of voting regions). He presents various ways to evaluate electronic voting systems outside the issues relating to security (e.g. ease of use, accuracy, cost, efficiency). Mr. Hite asserts the need for clearly defined standards against which the system can be measured and indicates the necessity of making available the proper testing, maintenance and training.
This report, sponsored by the National Science Foundation, looks at the feasibility of different forms of Internet voting. The report groups Internet voting into three categories: (1) poll site voting, (2) kiosk voting, and (3) remote voting. A description of each type of voting is provided. Generally, poll site Internet voting was seen as the most feasible in the relatively near future. The report identifies a list of what the authors term "critical research areas" to be looked at before the use of Internet voting. The report identifies most issues related to Internet voting as connected to security, convenience and cost. The report identifies the current (at the time of the report) voting systems in use and the criteria needed for developing a voting system. Additionally, the report identifies the vulnerabilities with Internet voting. These include, among others, security, reliability, certification issues, source code, "platform compatibility," and secrecy. A discussion is also presented on whether Internet voting will increase or in any way affect voter participation and access. The changes that may be needed or inevitably come about with Internet voting are covered. Potential legal issues and issues related to voter registration are addressed. The report concludes with the findings of the study on feasibility. Generally, poll site Internet voting is possible in the near future, the risks related to remote voting require "substantial technical and social science issues [be] addressed," and the risks associated with Internet-based initial voter registration are too great for implementation any time soon. A December 17, 1999 White House Memorandum directed to the heads of the executive department and agencies on Electronic Government is included in appendix A, and appendix C contains a glossary. Other appendices contain related reading materials, participants and names of IPI Board members.
a voter-verified audit trail; risk of cyber attacks such as viruses, denial of service attacks, spoofing, and automated vote buying; the potential for large-scale voter disenfranchisement, vote switching, and privacy violations if an attack does happen; the ease of such an attack; and the inability to fix these vulnerabilities with current technologies.


This report from the California Internet Voting Task Force addresses the introduction of Internet voting to California. The report was developed through the input of over two-dozen experts in the fields of elections, voter participation and data security. A phase-in approach to Internet voting is recommended in the report. The compilers indicate such an action would enhance user confidence in the technology. The report covers election equipment, its approval and the approval of Internet voting systems. Reasons why Internet voting could not immediately replace the current system are also discussed. Among these are the need to be able to digitally identify voters, voter registration security, inability (without the first item) to have digital signatures on initiatives and referendum, and the fact that not all voters have access to and the ability to use a computer. A model for Internet voting is presented and a suggested phase-in of Internet voting is provided. The phase-in consists of four stages: (1) Internet voting at voter's own polling places, (2) Internet voting at any polling place, (3) remote Internet voting at specified kiosks, and (4) remote Internet voting from anywhere. The report indicates the various security risks involved with this system and presents system requirements for each stage. Two appendices are attached. Appendix A is the technical report to accompany the written findings. Appendix B is a two question statewide survey: (1) Do you favor or oppose Internet voting?; and (2) Do you have access to the Internet and/or e-mail?


In chapter eighteen of this book, the authors describe the Open Voting Consortium model election system, focusing on how it addresses privacy concerns. They begin with a look at how and where voter anonymity can be compromised and then examine the Open Voting Consortium PC-based
open source voting machine with an accessible voter-verified paper trail. They argue that open source code is necessary in order to eliminate threats to voter privacy. Their model includes privacy protecting details such as: (1) randomizing ballot-IDs, (2) using bar codes where voting patterns cannot be visually recognized, (3) encrypting and requiring digital signatures for voting tokens, (4) changing the way electronic ballot images are stored on the electronic voting machines, (5) designing machines with regular and reading impaired interfaces, (6) designing ballots with multiple languages, (7) privacy folders, (8) headphones for ballot validation stations, (9) shuffling ballots, (10) totaling the votes at the precinct, and (11) establishing chain-of-custody procedures for ballots.


In this study, the author examines newer voting technology after the Help America Vote Act of 2002 (HAVA) and its impact on residual votes in the 2002 gubernatorial elections. He begins by looking at the causes of residual votes. He notes that most counties buying new voting equipment in 2000, bought direct recording electronic devices (DREs). He finds that precinct-count optical scanners and touch screen DREs have lower residual vote counts than other voting systems; punch card ballots have higher residual vote counts; central-count optical scanning systems are on par with paper ballots and lever machines; and older full-face DREs were worse than all but punch cards. He also finds that while residual votes are higher in counties with more African-American, Hispanic, or elderly voters; education, income, and population did not seem to impact residual votes.


This leading report, on electronic voting security, was produced through work done at the Johns Hopkins University Information Security Institute. The authors provide an overview of the reasons for moving to electronic voting systems and then provide a specific analysis of the AccuVote-TS version 4 tree from Diebold, a digital recording electronic (DRE) system. Significant flaws were found in this electronic voting system. Among the flaws are a voters ability to program his or her own smartcard to tamper with the vote, the potential for interfering with communications to and from the voting systems, lack of proper “cryptographic techniques,” and the lack of paper trails of voting records. A system overview is provided which details setting the systems up, how they
are used in an election setting and a discussion of the coding used in the systems. The authors identify numerous ways that smartcard technology can be used by "an adversary" to change votes, vote more than once, and override administrator functions within the system. Additionally, the report identifies ways in which the memory system in the terminals can be accessed and affected, as well as the initial "ballot definition," which is used to portray the ballot and provide specific election choices to the voter. Potential problems with the "ballot definition" are seen whether the information is already on the voting machine and access is made to such systems prior to the election or if the "ballot definition" information is transmitted over a network connection. The authors provide a discussion of other security flaws such as someone using a computer to act as a legitimate voting terminal in order to affect voting information and the improper use of available cryptographic measures. Additionally, the authors see ways in which individual voters can be identified and linked to their specific votes. A discussion of the coding process and lack of attention to known flaws is presented. The authors identify some ways of providing some level of security by suggesting the use of open source coding and some sort of paper trail.


This report by the National Institute of Standards and Technology was mandated under the Help America Vote Act of 2002 (HAVA). The report focuses on the user interaction with the voting machine not on voting system accuracy or security. The authors analyze potential usability and accessibility problems in voting products. They review current usability and accessibility requirements and standards, both related and unrelated to voting systems, as well as governmental and nongovernmental. They also examine existing usability and accessibility research, both basic and as applied to voting systems. The report asserts that studies specific to voting systems are few, informal, and lack statistical validity and reliability. The report provides ten recommendations: (1) to develop measurable, performance-based voting system standards; (2) provide user-related functional requirements for voting machines in the standards; (3) avoid setting out detailed product design specifications or very general specifications for usability in the standards; (4) encourage and build applied research on voting systems to support the standards; (5) promulgate detailed design specifications for accessibility; (6) provide ballot design guidelines based on visual design research; (7) develop guidelines for facility and equipment layout; (8) promote a user-centric design process for vendors; (9) create a
uniform set of procedures to test the accessibility of voting machines; and
(10) create a process to test usability of voting machines. After the
recommendations, the authors outline short and long-term steps needed to
implement the recommendations. The appendices of the report include
suggestions on developing test procedures and protocols.

ALLAN J. LICHTMAN, REPORT ON THE RACIAL IMPACT OF THE REJECTION
OF BALLOTS CAST IN THE 2000 PRESIDENTIAL ELECTION IN THE STATE OF
FLORIDA (June 2001),

This study, requested by the United States Commission on Civil
Rights, used county and precinct-level data from Miami-Dade, Duval, and
Palm Beach Florida counties from the 2000 election. The author finds that
in the Florida 2000 election, African-Americans faced statistically
significant ballot rejection rates. He states that the rejection rates were not
related to the educational level and that one minimal factor was the type of
voting technology used. African-American voters from counties that used
punch-cards and centrally-counting optical scanning systems had the
highest rejection rates. The author concludes that accepted ballot rates for
African-American voters could be improved through the use of precinct-
counting optical scanning systems, but that technology alone will not
change racial disparities in ballot rejection.

THE NATIONAL COMMISSION ON FEDERAL ELECTION REFORM, TO ASSURE
PRIDE AND CONFIDENCE IN THE ELECTORAL PROCESS (Aug. 2001),

The National Commission on Federal Election Reform, chaired by
former Presidents Ford and Carter, was formed in response to the 2000
election. The commission examined election reform and issued a final
report in 2001. Many recommendations in this report were incorporated
into the Help America Vote Act of 2002. Chapter five of the report deals
with voting equipment. Regarding voting equipment, the commission
recommended that each state set a voting system performance benchmark
regarding residual votes and that the federal government create uniform
voting system standards and resources for applying those standards.

OFFICE FOR CIVIL RIGHTS EVALUATION, U.S. COMM’N ON CIVIL RIGHTS,
ELECTION REFORM: AN ANALYSIS OF PROPOSALS AND THE
COMMISSION’S RECOMMENDATIONS FOR IMPROVING AMERICA’S
ELECTION SYSTEMS (Nov. 2001),
In this report, the Office for Civil Rights Evaluation begins by looking at existing laws, such as the Voting Rights Act of 1965 and the National Voter Registration Act of 1993, and reviewing their enforcement mechanisms. The second chapter analyzes proposed and recently enacted federal legislation (including the legislation that eventually became the Help America Vote Act of 2002). Chapter three looks at recommendations made by a number of governmental and nongovernmental organizations. The final chapter presents the Commission's eighteen recommendations. Among those related to technology are: (1) national standards, (2) federal funding for reform, (3) uniform tracking and reporting of election data, and (4) election checklists.


The authors of this chapter begin by reviewing Congressional authority to implement election reform. Next they look at the history of federal election reform efforts. Finally, they examine reforms that the federal government needs to establish. They classify these reforms in four areas: (1) collecting and disseminating information about voting issues; (2) researching and testing voting machines; (3) updating and creating new standards on voting systems and election administration; and (4) providing permanent federal funding assistance to states to improve election machinery and administration.


This is another independent report requested by the State of Maryland on the security vulnerabilities of direct recording electronic devices (DREs). They performed a Red Team exercise, a simulation of an actual event where team members experiment with attack scenarios, and, consistent with other reports, found serious security risks with the Diebold AccuVote-TS voting system. They focused on vulnerabilities with the smart cards, terminals, server security, and upload procedures. In their report, they also responded to the studies of this system by Aviel D. Rubin and SAIC. They agreed with many of the technical conclusions of Rubin and also with the mitigating recommendations of SAIC.
AVIEL D. RUBIN, BRAVE NEW BALLOT (2006).

After activist Bev Harris discovered Diebold's election machine source code on an open FTP site, Rubin and a group of computer scientists began analyzing it. In this book, Rubin tells the story of the report and the aftermath. He chronicles the media coverage and the criticisms of the report, including those from unexpected quarters. He discusses his experiences testifying before congressional committees, government commissions, and courts. He also discusses his frustrations with the inability to effect immediate and meaningful change. While much of the controversy was going on, Rubin served on the technical advisory board of a company, VoteHere, billed by some as one of Diebold's rival election machine manufacturers, and in the book he discusses this conflict of interest and how it impacted his credibility. He also explains reactions to the subsequent security reports on Diebold's machines: the SAIC, Risk Assessment Report Diebold AccuVote-TS Voting System and Processes; the Compuware, Direct Recording Electronic (DRE) Technical Security Assessment Report; and the RABA Technology's Innovative Solution Cell (RiSC), Trusted Agent Report Diebold AccuVote-TS Voting System.

ROY G. SALTMAN, AUDITABILITY OF NON-BALLOT, POLL-SITE VOTING SYSTEMS (Rev. Aug. 24, 2003),

The author of this report discusses the vulnerabilities of ballot-counting voting systems and direct recording electronic devices (DREs). He proposes better ways to improve voter confidence in the election system than requiring hard-copy ballots from DREs. His recommendations focus on design changes in DREs and the administration of the voting system.


In this book, Mr. Saltman discusses the 2000 Presidential election, provides a history of voting and voting movements in the United States, and concludes with a discussion of life after the 2000 election. The book chapters include: (1) The 2000 Presidential Election in Florida: The Family Secret Exposed; (2) From the Revolution to the Civil War: Consent of the Governed and the Election Clause; (3) The Late Nineteenth Century: Struggling with Corruption and Fraud; (4) The Late Nineteenth and Early Twentieth Century: Mechanization and Political Reforms; (5) The Middle and Late Twentieth Century: Movements for Equality, Enfranchisement, and Voting Facilitation; (6) The Middle and Late Twentieth Century:
Election Administration and Computing Technology; and (7) The Great Awakening after Florida, through July 2005. The last chapter is the most relevant to the coverage of this bibliography. In this chapter the author covers the different types of voting technologies and their residual rates. He defines this as "a measure of human performance in using voting systems." Mr. Saltman references the numerous studies on voting technology undertaken since the 2000 election. These include the Caltech/MIT Voting Technology Project, the U.C. Berkley study and various state and city studies. He discusses reasons for high residual rates and the differing rates based on socio-economic status. He discusses cases brought against the punch-card systems and provides a discussion of the Help America Vote Act (HAVA).

Mr. Saltman addresses digital electronic recording (DRE) systems and the security issues that are voiced regarding such systems. He identifies issues raised after the 2000 election and those raised later as more DRE systems were being acquired. He also briefly covers Internet voting. A discussion of the 2004 election and actions taken after that election with respect to voting systems is provided. The author concludes the chapter with recommendation for administrative and legislative action and identifies subjects he indicates are in need of further examination. The book provides an in depth reference list and an index.

SECURE ELECTRONIC VOTING (Dimitris A. Gritzalis ed., 2003).

This book is a compilation work. Each chapter is differently authored and multiple areas related to electronic voting are covered. The individual authors are: Danilo Bruschi, Mike Burmester, Lorrie Faith Cranor, David Chaum, Ivan Damgard, Ed Gerck, Dimitris Gritzalis, Jens Groth, Spyros Ikonomopoulos, Douglas Jones, Maria Karyda, Sokratis Katsikas, Aggelos Kiayias, Raphael Kies, Costas Lambrinoudakis, Emmanouil Magkos, Fernando Mendez, Rebecca Mercuri, Liliam Mitrou, Peter Neumann, Rene Peralta, Guisi Poletti, Gerald Quirchmayr, Emila Rosti, Gorm Salomonsen, Roy Saltman, Alexander Treschsel, Vassilis Tsoumas and Moti Yung. As the preface indicates, the book is separated into three parts. The first part looks at the current status of electronic voting. The intent of this part is to introduce the reader to the emerging area of electronic voting and to provide an analysis of the general requirements necessary for electronic voting systems. Part two focuses on the trends in electronic voting. One chapter covers the main electronic voting systems, the security issues presented by these systems, and ways the security issues can be reduced. The use of a homomorphic encryption model is discussed and a later chapter covers this model in more detail and discusses a voting system based on the model. Part three of the book deals with the capabilities and limitations of electronic voting systems. Within this section digital
recording electronic (DRE) systems are discussed, as well as the use of a plug-in to help with voter privacy issues and the need for multi-disciplinary involvement in the development of electronic voting systems. Additionally, security and auditing issues related to electronic voting are covered as well as remote Internet voting. The materials provided include statistical and tabular study information as well as descriptive explanations in the various areas.


SAIC prepared this report on Diebold direct recording electronic devices (DREs) for the State of Maryland. This is one of several independent reports on the security of DREs. The Risk Assessment examined the voting system's software, hardware, and processes. They identify several serious high-risk vulnerabilities and propose mitigation strategies. They also respond to a critique of the system made by Aviel D. Rubin in another independent report on the security of DREs.


In this paper, the author responds to criticisms of direct recording electronic devices (DREs) and critiques the voter verified paper trail as a valid solution to DRE security concerns. The author asserts that although there are security vulnerabilities in DRE machines, they are not insurmountable and that some vulnerability should be an accepted risk. He looks generally at paper ballots and finds that they also suffer from serious security vulnerabilities. He finds them ineffective as a solution to DRE security concerns not only because of their inherent security flaws, but also because if the machine cannot be trusted than the paper trail from the machine cannot be trusted either. He also finds that there are concerns with anonymity and privacy of votes with a paper trail, that an added printing device is another mechanical component that can fail, that a papertrail can create a conflict between multiple ballots, that paper trails are not readily accessible to disabled voters, and that they decrease voter confidence. His proposed alternatives to voter-verified paper trails include: (1) making code open source and auditing it; (2) auditing and parallel testing voting machines; (3) forcing venders to design and produce quality voting machines; (4) implementing chain of custody procedures; (5) properly training poll workers; (6) creating procedures for dealing with voting
machine irregularities; (7) developing comprehensive voting system standards; and (8) separating candidate and party names from the voting software.


This report for the House Democrats was the first analysis of income and racial disparities and undervotes in the 2000 election that looked at the issue on a national level. The report examined voting results from forty congressional districts in twenty states and concluded voters in low-income, majority-minority districts were more likely to have their votes not counted than those in high-income, low-minority districts. Furthermore, the report found that the use of precinct-level optical scanning devices and direct recording electronic devices (DREs) reduced the number of uncounted votes across the board, but made a significant difference in lowering the number of uncounted votes in low-income, majority-minority districts.


This report looks at what impact the switch to direct recording electronic devices (DREs) had on the residual vote in Georgia. Prior to 2002, Georgia used a patchwork of different voting machines. Studies of the previous performance of those machines showed punch-card and mechanical lever machines had higher residual vote rates, while paper and optical-scanning machines had the lowest. After the switch to DREs in 2002, there was an overall reduction in the residual vote rate, with the greatest reduction in residual vote rates in counties with more African Americans, rural counties, low-income counties, and counties with a less educated population. This result challenges current assumptions regarding DREs and the digital divide. The author finds that the greatest gains in votes counted came from the replacement of lever machines not punch-card machines, which is at odds with the country as a whole. The author cautions that other factors, such as intense vendor support and poll worker training, may be partially responsible for the great decline in residual votes.

In response to claims that the 2004 election was stolen by the manipulation of electronic voting machines, the Caltech/MIT Voting Technology Project posted a rebuttal based on a statistical examination of exit polls and states using direct recording electronic devices (DREs). After a state level analysis of exit polls, and an examination of discrepancies between exit polls and official returns in states using DREs, no statistically significant bias was detected.


After new raw exit poll data came to light, the author revisits the perception that the 2004 election was stolen by the manipulations of direct recording electronic devices (DREs) and reaffirms and expands the conclusion that there was no statistically significant link between exit poll data and voting technology. The author asserts exit polls are not designed to independently audit DREs.


The author of this document attempts to dispel common myths regarding direct recording electronic devices (DREs). She begins by discussing the Help America Vote Act of 2002 (HAVA), noting that HAVA does not require wholesale replacement of a state's voting equipment, nor does it require DREs. She then examines electronic voting problems, such as vote-flipping, miscounts, and machine failures, in the 2004 elections. The author discusses the inadequacy of voting system certification requirements at both the state and federal level. She looks at pre-election testing, pointing out weaknesses in current testing procedures. She finds that electronic voting makes elections more complicated and examines the cost and maintenance challenges of DREs. She identifies alternatives to the paperless DREs such as: (1) voter-verified paper audit trails (VVPAT), (2) precinct-count optical scan machines, (3) computerized ballot-marking devices, (4) the Voting-on-Paper Assistive Device (Vote-Pad), (5) open voting consortium software, and (6) hybrid DREs with integrated printing.

In this report, the authors detail the results of the Committee analysis of electronic voting readiness for the 2006 election. The report covers the current state of state's preparedness level with respect to the following issues: (1) Help America Vote Act (HAVA) requirements; (2) state legislative action related to voter verified paper trails (VVPTs); (3) system vulnerabilities and security issues; (4) vendor actions, lack of readiness and provision of faulty equipment; (5) education and availability of poll workers familiar with the new system; and (6) voter readiness for electronic voting systems. Additionally, the report discusses the following issues that have emerged while jurisdictions prepared for the 2006 elections: (1) awareness of significant cost implications past the equipment acquisition stage; (2) jurisdiction-vendor relationships and the deterioration of these relationships; (3) current certification systems may not be appropriate; (4) vendor involvement outside of the sale of the equipment (testing authorities are paid by vendors for certification); (5) testing does not address specific jurisdictional needs; (6) knowledge of electronic voting systems and their use vary greatly among voting jurisdictions; and (7) influence of advocacy groups. Recommendations are provided in the report, including the need for jurisdictions to have back-up systems available in the event a system fails, the idea that jurisdictions should work together to negotiate with the relatively small number of vendors, issues related to use and problems with the systems should be shared among voting jurisdictions, and systems should have parallel testing performed during an election where feasible.


Originally created to help with the November 2004 election, the EAC compiled this tool kit from recommendations given by election administrators, advocates, and academics at public hearings and a working group of election administrators. Sections specifically dealing with electronic voting systems include ten key steps for introducing a new voting system, voting system vendor management and contract issues, election technology and equipment, post-election audits, tips for preventing lever machine issues, tips for preventing punch-card machine issues, tips preventing optical scanning machine issues, and tips for preventing direct recording electronic devices (DRE) issues. The document online provides links to examples and resources mentioned.

This manual sets out the procedures for voting machine manufacturers to follow in order to fulfill the requirements of the United States Election Assistance Commission Voting System Testing and Certification Program. The manual is divided into chapters covering: (1) registration requirements and procedures, (2) circumstances requiring submission of systems for testing and certification, (3) required steps for voting system testing and review, (4) steps that must be taken to receive certification and post-certification responsibilities, (5) procedures to follow when certification is denied, (6) procedures to follow when certification is revoked for a system, (7) requirements of the quality monitoring process, (8) procedures to follow when requesting clarification or interpretation of the guidelines, and (9) policies and procedures for the release of protected commercial trade secrets and personal information.


The Help America Vote Act of 2002 (HAVA) established the U.S. Election Assistance Commission (EAC) to, among other things, adopt voluntary system guidelines and provide for the testing and certification of voting system technology. The EAC originally adopted the 2002 voting system standards created by the Federal Election Commission and began working on new guidelines in 2004. Volume one of these new guidelines consists of nine sections providing new requirements for usability, accessibility, functionality, software distribution, a software library, software validation, wireless communications, and a voter verified paper audit trail. Volume one possesses four appendices consisting of: (1) a glossary of terms; (2) a list of related standards and documents; (3) a discussion of independent verification systems; and (4) accessibility recommendations regarding color, contrast, and text size.


Volume two of the voting system guidelines required by the Help America Vote Act of 2002 (HAVA), revises the process for national certification of voting systems and the procedures required for usability and accessibility testing performed by independent accredited voting system test labs. Volume two consists of seven sections detailing the purpose of guidelines, Technical Data Package required from vendors when they submit a system for certification, functionality testing requirements, and requirements for vendor quality assurance and management practices.
Volume two contains three appendices providing requirements for the National Certification Test Plan, scope and content of the National Certification Test Plan, and the principles used to design the certification testing process.


This United States General Accounting Office (GAO) report, requested by the ranking minority leader in the House of Representatives, examines election data from the 2000 presidential election in order to determine the extent uncounted votes depended on voting technology used. Like other studies, the GAO found that counties with higher minority populations had a higher residual vote rate. Also, counties that used punch-card machines also had a higher percentage of votes uncounted. However, in contrast to some previous studies, the GAO found that counties using punch-card machines did not generally have higher minority, less educated, lower-income populations. The GAO found that although voting technology and demographics did impact uncounted vote percentages, the biggest factor was in which state the county was. They speculate that differences among the states such as voter education, straight party ballots, number of candidates, provisional ballots cast, absentee and early voting ballots, may account for this.


In this report, the United States Government Accountability Office (GAO) begins the substantive portion of the report with background information on optical scan systems and direct recording electronic systems (DREs) and the Help America Vote Act (HAVA). The report then summarizes security concerns and next moves on to reviewing recommended practices to resolve those concerns. Appendix II of the report provides more detail on specific publications that issue guidelines on voting system security and appendix III summarizes general guidance on information systems security. The report goes on to identify U.S. Election Assistance Commission (EAC), National Institute of Standards and Technology (NIST), and Technical Guidelines Development Committee (TGDC), and nongovernmental initiatives to improve security. The GAO concludes the report with recommendations for the EAC to define tasks,
procedures, and time frames for voting system standards, voting system certification, the National Software Reference Library for voting system software, sharing information on voting system problems, and creating and distributing recommended practices.


This report examines problems associated with direct recording electronic devices (DREs) and optical scanning voting systems used in the 2006 mid-term election. The three organizations collected the data from surveys, reports from voters, and reports from the media. The reports were sorted into the following categories: (1) total reports, (2) poll opening delays caused by machine problems, (3) machine problems at poll closings, (4) vote flipping and lost votes, (5) Voter-Verified Paper Audit Trail (VVPAT) problems, (6) machine malfunctions, (7) scanning problems, (8) usability problems, (9) inaccessibility, (10) long lines and voters leaving without voting attributable to machine problems, and (11) machine result retrieval malfunctions. Within each category, there was a breakdown by machine: (1) DREs, (2) scanners, and (3) electronic Ballot Markers (EBM). The report finds that problems with DREs were much more common than problems with the other voting systems. The authors admit the source material is not complete or a representative sampling, but nonetheless draw the conclusion that the reports indicate widespread problems with electronic voting and cast doubts on election results.


This issue brief from the Century Foundation provides an overview of the digital recording electronic (DRE) machines used by many polling places. Ms. Wang also covers the Help America Vote Act (HAVA) and summarizes some of the requirements that need to be implemented by January 1, 2006. Among these requirements are: (1) the notification of overvotes and the ability to correct a ballot before final casting, (2) making balloting available in alternative languages, and (3) some form of permanent paper record for audit purposes. The author identifies advantages of DREs, including being fully accessible by disabled voters, fewer spoiled ballots and the ability to have ballots available in an unlimited number of different languages. She also points out the security issues, including
source code problems; the inability of those counting the votes to independently verify that what the computer has recorded is what the voters intended; and electronic vote transmission problems. Ms. Wang discusses methods of limiting problems with the electronic system; one being a voter verified paper trail (VVPT). She presents the arguments of those for and against such a requirement and provides a section on using open source code for the systems.


In this thesis, the author finds that computerized voting machines threaten our democracy. She begins with an overview of voting technology systems, past and present, focusing on direct recording electronic systems (DREs). She then examines issues of security and accuracy surrounding the use of DREs, looking at the lack of ability to audit them, hardware and software problems, susceptibility to large scale manipulation, and DRE problems in the 2004 election. She also identifies the problems associated with private companies becoming more and more involved in the electoral process as the complexity of voting machines increases. Finally she looks at reforms and alternatives to DREs such as hybrid DREs that produce paper ballots, voter-verified paper audit trails (VVPATs), precinct-count optical scanning machines, open source code, improved federal election standards, and public ownership of elections. She concludes reforms are needed because our democracy demands accountability and reliability in our elections.

PERIODICALS


This article discusses Internet voting and whether it will lead to better representation of the U.S. population. The authors show how technologies have consistently been embraced in the political arena. The latest among these is the use of the Internet in political campaigns and its introduction as a potential voting mechanism. Most of the article focuses on survey and statistical materials used to show the effect of Internet voting on political representation. Additionally, the authors speak to Internet voting's potential violation of the Voting Rights Act of 1965. Because Internet voting is not prevalent, the authors derived information from a
comparison of those who currently vote with those who would vote if Internet voting were an option. They discuss the digital divide and how this would affect many people's ability to take advantage of Internet voting. They also state that Internet voting would benefit those who already have Internet access at home and that this group tends to be white and have higher incomes. The authors also discuss whether voter registration reforms in the past have improved the representation of various groups in the population. They look at the Motor Voter and Vote-by-Mail reforms and determine that neither led to a significant increase in voter registration. Analogizing those results, looking at the digital divide among potential voters, and examining a study of the 2000 Arizona Democratic Primary, the authors do not see Internet voting as increasing representation for those "behind the digital divide." The authors see Internet voting resulting in "minorities, the unemployed and the elderly losing further political power." They conclude that an increase in voter participation can be a negative if that increase is in an "already over-represented group."


This article was written in response to Geralyn M. Miller's article, *Methodology, Statistics, and Voting Error: An Exploration of 2000 Presidential Election Data in Two States*, 33 POL'Y STUD. J. 1 (2005). The authors take issue with Miller's data collection and research design, questioning the results leading to her finding that punch-card technology in at least two states did not produce more residual votes than other voting technology. The authors assert that errors and omissions in state reported data impedes research into voting technology performance and that there were omissions and errors in the data Miller collected. They also assert that single cross-sectional studies of individual states are statistically too small.


This article looks at the relationship between changing voting technologies and residual votes over time. The authors examine election data over the 1988, 1992, 1996, and 2000 elections for president, U.S. Senate, and governor. They find paper ballots, whether optically scanned or hand counted, generally have the lowest number of residual votes. In presidential races, punch-card systems performed the worst, while in senate and gubernatorial races, mechanical lever machines performed the worst followed by punch-card systems. The authors perform a panel analysis rather than cross-sectional study of residual votes and find substantial
The authors assert that our current election system is inequitable and that voting equipment and election administration substantially impact the number of residual votes.


In her article, the author discusses the benefits proponents of Internet voting put forth, as well as concerns of the opposition. She addresses the history of voting in the United States and the founders establishing the United States as a "republic rather than a democracy." On this point she elaborates the negatives in the potential combination of Internet voting and initiatives and referendums. The author discusses how such a combination may lead to direct democracy with voters potentially replacing the legislative process. Additionally, she presents that lobbying efforts would increase and lead to interference with voting and that the amount of information brought to the voter from all directions would be too overwhelming. The author provides suggestions for the use of Internet voting, while restricting ways to enact ballot measures and "to protect our representative democracy." These protections include, among others, once a year voting and increasing the required number of votes necessary to pass initiatives and referendums.


The authors of this article review county-level data on voting systems used in 2000 and the residual vote rates in the 2000 presidential election. They find counties using Votomatic-style punch-card voting machines had higher residual vote rates for all races, but had particularly high rates for minorities. The authors argue that minorities face a double threat for residual votes because they tend to be less educated, which leads to higher residual votes, and they tend to live in counties using punch-card systems, which also leads to higher residual vote rates. The authors assert that when counties change voting systems there is a dramatic decrease in the residual vote rate. They review Supreme Court precedent on voting rights and analogize cases on redistricting and literacy tests to the disparate ballot invalidation caused by punch-card voting technology. They conclude that the higher residual rates caused by punch-card voting systems violate the one person, one vote principle.

The author of this note asserts that the *Bush v. Gore* decision departed from equal protection precedence and that the *Bush v. Gore* holding suggests differences in voting technology within a state may violate equal protection law. The author begins by examining equal protection precedent in relation to voting and finds that prior to *Bush*, equal protection claims needed to be discriminatory toward certain groups or classes, discriminatory intent was needed, and that no constitutional violation exists if the state has sufficient justification for the unequal treatment. The author argues that under *Bush*, the need for unequal treatment of a group or classification of people is eliminated; no discriminatory intent is required; and absent compelling justifications, unequal treatment will not survive an elevated standard of review. Thus, the author concludes that using different voting systems with different residual vote rates intrastate violates equal protection principles under *Bush v. Gore*. The author then rebuts potential counter-arguments that states might make in response to suits on voting systems, arguing there is no distinction between the Florida policy on recount standards and a state policy permitting local voting machine purchases, disparate treatment is enough to violate equal protection, rational justifications such as cost and the need to experiment will not satisfy the elevated scrutiny required by *Bush*, and that election reform in progress will not make such cases immediately moot.


The author begins this article with an analysis of the risks associated with the five types of voting equipment: (1) paper ballots, (2) lever machines, (3) punch cards, (4) optical scanners, and (5) direct recording electronic devices (DREs). After concluding that DREs pose the greatest danger for fraud and error, he discusses evidence of error and fraud from the 2004 election and recommends improvements such as: (1) cryptography, (2) paper trails, (3) audits of vote counts, (4) publicly documented vote counts, (5) increased security measures, (6) transparent and higher certification standards, and (7) open source software.


In this article, the director of electionline.org, a non-partisan clearing-house of election reform information, looks at the 2004 election. He begins by noting that while there were problems, they were relatively minor. He then looks at some of the reported problems from around the country, some of the mixed responses to the problems, and the administrative versus
technical issues that arose. He concludes that the administration of elections will join technological concerns as a significant issue in election reform.

Erwin Chemerinsky, *Fairness at the Ballot Box*, TRIAL, Apr. 2004, at 32.

In this short article Mr. Chemerinsky summarizes the five most common voting systems in use: (1) paper ballots, (2) punch-card machines, (3) optical scanning systems, (4) DREs (touch screen), and (5) lever machines. He identifies punch-card machines as the worst of the group. He provides an overview of legal challenges to these machines. He also overviews Voting Rights Act challenges in areas where different machines are used within the same state, resulting in disparate treatment of voters’ ballots. He states that there is evidence to conclude that punch-card machines “discriminate against minority voters.”


The author, in this article, provides an overview of Arkansas’ work toward compliance with the Help America Vote Act (HAVA) in time for the 2006 elections. Mr. Cihak provides descriptions of various studies that were done on voting in the United States after the problematic 2000 national election: (1) Caltech/MIT, (2) U.C. Berkley, (3) National Task Force on Election Reform, and (4) National Commission on Election Reform. The author gives an overview of HAVA and then gives a detailed summary of Arkansas responses to various HAVA requirements. He then identifies issues that arose with respect to Arkansas’ attempt to be in compliance with HAVA by the 2006 primary. The Arkansas vendor for equipment was Election Systems & Software. Mr. Cihak identified the various problems encountered by the counties implementing electronic equipment and their dealings with the vendor. He identifies what he considers the biggest issue for Arkansas, as “administrability,” which is defined as “‘having a voting system in place that will actually work as intended, given the limited funds and human resources available to the local jurisdictions that must implement the technology.’ ”


In Carteret County North Carolina, over half the votes cast in the 2004 election, 4,438, were not counted due to the mistaken belief that an electronic voting machine could store more ballots than it actually could. This error resulted in a disputed election that was not resolved until much
legal wrangling and time had passed. The author uses this example to illustrate the problems arising from the inadequate implementation of the Help America Vote Act (HAVA) and paperless voting technology. She recommends the development of tough, national e-voting standards, better election administration, simplified ballots, greater accountability, and better safeguards for voter privacy.


The author identifies two groups of people with respect to the Internet and a democratic society. The first, she indicates, follow the “mobilization theory,” which embodies the idea that the Internet will lead to voters participating more frequently in the governance process. The second group she calls “reinforcement theorists.” This group sees new technology as affecting the political process, but not drastically changing the face of politics in the near term. Ms. Garrett discusses the use of the Internet in campaigns and its similarity to traditional campaigning activities. The author addresses the ideas of Dick Morris (see annotation below) regarding the ways he indicates that the Internet will “revolutionize democracy.” She argues that relying on the Internet may make more information available, but it may not always be credible or balanced information. She also does not agree with Mr. Morris’ idea that use of the Internet will lead to direct democracy. She asserts that most voters will not take part in online referendums and will not want to spend the time necessary to make direct democracy decisions necessary to run a nation. The author does believe that the Internet will have some affect on political systems and she does acknowledge its potential to have some affect on voter turn-out.


The author of this article examines options for election reform after the 2000 election, looking at both technological and administrative issues. He looks at the advantages and disadvantages to optical scanning and direct recording electronic machines (DREs), noting cost, security, and paper trails. He also discusses Internet voting, concluding that while convenience is an advantage, it suffers from more security and reliability issues than DREs. He examines the idea of imposing uniform standards in technology, procedures, and ballot design but finds that they would not take into account diverse resources and would lock down local preferences, goals, and experimentation. He suggests the federal government encourage voluntary standards, fund studies, and become a resource for voting
technology and election administration. Finally, he concludes that the federal government should also provide financial assistance to improve elections.


Shortly after the 2004 presidential election, a study of New Hampshire vote returns alleged that precincts using a particular brand of optical scanning voting machines returned vote totals for John Kerry that were too low compared to other voting systems. This article reviews the election data and concludes that there was no evidence that the type of voting machine used influenced the presidential or gubernatorial elections. The authors argue that when engaging in a statistical analysis of vote returns and technology, one must not assume that voting technologies are randomly assigned to precincts and that underlying precinct political tendencies must be taken into account. In their own analysis, the authors used variables taking into account the political predisposition of precincts. The authors assert that their methods can be used in the future to investigate allegations of vote fraud.


After briefly reviewing the history of voting technology and prior cases such as *Bush v. Gore,* this case note examines the Ohio case of *Stewart v. Blackwell,* where voters alleged that the use of punch card ballots in some counties and the use of direct recording electronic devices (DREs) in other counties violated the Equal Protection Clause. The author argues that the *Stewart* court incorrectly applied the rational basis test instead of the strict scrutiny test and mistakenly concluded that using punch-card machines is not arbitrary and unreasonable.


In this brief article, the author questions whether the rush to implement new voting systems after the 2000 election implemented systems which are insecure and which may lead to voter disenfranchisement. He discusses the discovery of Diebold code and passwords by researchers at Johns Hopkins.
He also discusses GEMS software and flaws regarding the storage of information. The author also briefly describes the voter verified paper trail and its use in alleviating some of the problems created by the use of these new systems.


This case note examines *Southwest Voter Registration Education Project v. Shelley*, where plaintiffs requested an injunction to postpone the California recall election until all punch-card ballots were phased out, arguing that the punch-card voting system disenfranchised a greater number of minority voters. The author analyzes the decisions of the Central District Court of California, which denied the injunction; the three-judge panel of the Ninth Circuit, which granted the injunction; and the Ninth Circuit sitting en banc, which affirmed the district court. The author looks at prior Ninth Circuit decisions and concludes that the Ninth Circuit sitting en banc incorrectly affirmed the district court.


After the 2000 presidential election, Florida passed sweeping election reform legislation. This article examines those reforms and the results in 2002 and 2004 elections. One reform passed by Florida was to eliminate punch-card machines, lever machines, and old-fashioned paper ballots, and replace them with touch screen direct recording electronic devices (DREs) and optical scanning devices. Although there were problems with the new voting machines, most of those problems were related to human error, and not software or hardware problems. Also, the use of the new machines cut residual vote rates in both 2002 and 2004. The use of DREs without voter-verified paper trails did, however, result in some legal challenges. The author examines one of these challenges, *Wexler v. LePore*. The author concludes that although not all of Florida’s election problems have been resolved by the election reform, the improvements are substantial.


Professor Kang’s article looks at the pros and cons on electronic voting. He indicates that “e-voting is inevitable” and the focus with regard to it should be on how to make it work better. He acknowledges that the digital divide is a current issue, but states that a long-term view needs to be taken rather than focusing on current problems. In taking the long-term
view he indicates the digital divide will be much smaller within the next
decade. Additionally, in looking at long-term issues he discusses why
people, specifically minorities, do not vote. To address the long-term issues
he indicates that we cannot let the Internet develop and hope these issues
will be addressed, but must “intentionally design cyberspace’s architec-
ture.” Mr. Kang discusses how the Internet can lead to people who
historically do not interact coming together in a virtual environment and
overcoming barriers that might be present in in-person interaction. He
discusses the ease of creating e-ballots in numerous languages, an act that is
too costly to be achieved in print. He emphasizes that short-term obstacles
should not shroud the use of the Internet in the voting process and that
attention needs to be paid to the proper development of inclusive systems.
He also addresses the direct democracy issue and indicates this may be a
detriment to racial minorities because of the correlation to also being in the
numerical minority. He advocates for the study of ways in which to
overcome the disadvantages of being a numerical minority. One of the
mechanisms he suggests is a means by which voters can be provided
assistance in using the new voting medium in the same manner information
is currently sent to voters in print to assist in “getting the vote out.”

Eddan Katz & Rebecca Bolin, Electronic Voting Machines and the

This article calls for the development of new federal voting standards
to address voter verification, testing, and independent review. At the time
this article was written, no new voting standards had been promulgated
since 2002. The authors begin with a history of federal voting standards.
The authors then look at the issue of voter verified paper audit trails
(VVPATs), reviewing the controversy over DRE machines and the
responses by critics, who see VVPATs as the solution, and those who see
VVPATs as a flawed solution. The authors suggest that voting standards
should define the purpose of auditing DRE systems and examine the role of
the voter in the verification of his or her vote. Concerning testing, the
authors see the current multi-level certification process as unwieldy,
burdensome, and too costly. They suggest that new standards should
streamline and clarify the process. Finally, the authors examine the need
for an independent review of voting software. They find that independent
review is needed, the current exemption of commercial off-the-shelf
(COTS) software is troublesome, and that while open source might be the
solution, open source needs to include the licensing as well as the disclo-
sure of code.

The author summarizes the Help America Vote Act of 2002 (HAVA) and briefly addresses some of the objections its critics raise. He finds the Act to be a balanced, bipartisan law that will improve the voting process.


Although there is a public perception that the problem-plagued punch-card voting systems were more likely to be used by poor people and minorities, the authors of this study find that this was not the case. They find that, overall, there was little difference between African-Americans living in counties that used punch-card systems and whites living in counties that used punch-card systems, although Latinos were more likely to live in counties that used punch-card systems. The poor were only slightly more likely to live in counties using punch-card systems, but also more likely to live in counties that used DREs. Democrats were more likely to live in counties using lever-machines. In addition to looking at the data on a national level, the authors compared differences across counties within states.


This article explores the barriers and benefits of establishing Internet voting systems. Barriers that need to be removed include: (1) equal access, (2) security, and (3) costs. Potential solutions include: (1) setting up Internet voting at polls in multiple locations, (2) using advanced encryption techniques, (3) moving the votes to secure computers, and (4) the ultimate savings offsetting the short term costs. The benefits listed are: (1) convenience, (2) fewer polling places, and (3) higher voter turnout. The author looks at the Alaska straw poll and the Arizona Democratic primary as test cases and discusses the California and Washington online voting task forces. Finally, she examines Minnesota law and how it could be changed to allow Internet voting.


In response to leaked memoranda and emails regarding bugs and security problems in Diebold’s voting software and equipment being posted on Web sites, Diebold sent takedown notices invoking the Digital Millennium Copyright Act (DMCA) to the offending Internet Service Providers (ISPs) and Webmasters. Although subsequent litigation resulted in an
agreement not to send any more takedown notices to ISPs and a declaration that Diebold knowingly misrepresented that a copyright infringement existed, the author of this article asserts that the DMCA still poses a threat to free speech related to electronic voting machines and security issues. The author examines the potential use of DMCA procedures to prevent private testing of electronic voting machines and argues that reforms are needed.


The author of this comment proposes adding the ability for the public to electronically veto legislation passed by Congress. She also proposes allowing electronic submission of citizen drafted initiatives, Internet voting for federal elections, and a formal process of electronic debate on proposed legislation. She argues that using the Internet in this manner will reintroduce the principles of direct democracy. Based on an examination of decisions in California and Oregon, she concludes her proposals would not violate the Guarantee Clause or Separation of Powers principle in the Constitution. She acknowledges issues regarding security and access with such a system, but asserts that encryption technology and access to the Internet through public libraries and schools would resolve these problems.


The production of a voter verified paper trail (VVPT) has been hailed as a resolution to concerns about security weaknesses in direct recording electronic voting machines (DREs). The author of this note argues that VVPTs are also flawed and recommends open source code as a solution instead. He finds that a proprietary code based DRE fails to provide for transparency or accountability. A VVPT does not resolve this problem because of the need for voter anonymity and secrecy. Open source code would be auditable and more robustly tested. Open source code would also increase public confidence. He asserts that current escrow provisions, preventing access to proprietary source code in order to protect intellectual property rights, should be eliminated.

The author of this article examines ballot level data on overvotes from the Florida 2000 election and the type of voting technology used. He finds that in counties using punch-card machines and central-count optical scanning equipment, Gore lost more votes than Bush to overvotes. Overvotes were least likely to occur in precinct-count optical scanning machines where voters were given overvote warnings and a chance to correct. Ballot design as well as technology impacted the number of overvotes. He asserts that had the post 2000 Florida election reforms been in place during the 2000 election, Gore would have won by approximately 30,000 votes. The author notes that the Help America Vote Act (HAVA) requires voting systems to allow voters to verify and correct ballots, but permits states to warn in general ways not specific and immediate feedback on overvotes in the individual’s ballot. He ends the article calling for the collection of ballot-level data to help with reform efforts.


The author discusses the implementation of various electronic voting systems after the 2000 presidential elections. She identifies the risks involved with whole reliance on these new electronic systems and discusses the flaws of Internet voting. She quotes a cryptographer regarding the necessarily high bar in the security of Internet voting. She views Internet security difficulties as “insurmountable” and sees problems with potential tampering of Internet voting schemes. She proposes a system she refers to as the Mercuri Method for electronic voting. Her method would involve a voter verified paper trail that is maintained in the event of a necessary recount or to be used for the official count. She provides an overview of the problems states have encountered in switching to electronic voting systems and cautions against placing too much “trust” in these systems.


When discussing Internet voting, this article focuses on online voting as opposed to offline electronic voting. Mr. Mercurio presents an overview of current voting systems and their positives and negatives. He also discusses in detail the idea of Internet voting and identifies the benefits and pitfalls of such an electronic system. In his article he discusses the view of opponents and proponents of Internet voting and shows how the arguments on both sides are valid. Additionally, he shows how the current voting
systems in use in the United States are fraught with similar problems feared with Internet voting and then shows how some of the current voting systems pitfalls would be alleviated by Internet voting. He discusses the use of Internet voting in both remote and polling place situations. He covers the use of Internet voting to increase voter participation, and the perceived problem of Internet voting increasing participation only among a select group. Mr. Mucurio addresses the digital divide arguments and discusses minority voting in the current voting systems and if the Internet were used. Additionally, he addresses "disadvantaged" voters. The author also covers the reliability and accuracy of the current voting systems as well as the reliability and accuracy of Internet voting. His discussion of the accuracy and reliability issues shows that the Internet can improve these areas. He advocates for Internet voting to begin in the polling place and to later be expanded to remote voting. He also suggests significant trials be done before widespread implementation and a phase-in of Internet voting. This, he indicates, will allow voters to adjust to the new system and develop faith in its accuracy and reliability.


The author of this article argues that previous studies on voting equipment and residual votes rely too much on county-level data when analyzing counties from multiple states. Due to this misplaced reliance, and a failure to look at precinct-level data in states using all five types of voting systems; these previous studies may have missed intrastate factors impacting residual rates. While previous studies have found punch-card systems to have substantially higher rejected ballots than other voting technologies, and thus implicate equal protection issues; the author’s study, using data from Pennsylvania and Wyoming, found no evidence that using punch-card systems produced more rejected ballots than other systems. She found other factors such as race and median income to be the cause of residual votes. She concludes by calling for further studies.


This article was written in response to the article, R. Michael Alvarez & Charles Stewart III, *Studying Elections: Data Quality and Pitfalls in Measuring the Effects of Voting Technologies*, 33 POL’Y STUD. J. 15 (2005). Miller defends her research and her conclusions regarding punch-card voting systems having little impact on residual votes in intrastate
studies of Pennsylvania and Wyoming. She reiterates her assertion that intrastate factors may have more of an impact on residual votes than type of voting technology used and that interstate studies may miss the significance of those factors.


While many people examining Internet voting in public elections focus on the digital divide, the authors of this article argue the focus instead should be on how experience with the Internet may affect political organization. They note that with the Internet, location is increasingly trivial and shared interests, not geography, determine communities. They describe two alternatives to geographically based districting and how these could be used to resolve the problems with geographic race-based districting. The authors then look at the Internet and a direct democracy system and see a major problem with such a system oppressing minorities. They conclude that while the Internet can have a positive impact on our political system, such as making alternatives to geographic representation more acceptable, it may have a negative impact when it comes to governing.


Mr. Morris is the president of Vote.com, an online polling website. In his article Mr. Morris advocates that the Internet will lead to direct democracy within the United States. He asserts that the use of the Internet will reduce the cost of campaigns and that online voting will cause the legislature to take more notice of the wishes of their constituents. He provides a brief history of the make-up of the U.S. governing system and why initially direct democracy was not feasible. He then shows how he sees the Internet making such a system now possible. In addition to indicating that the cost of elections will decrease, Mr. Morris states, in reference to communications and advertising voting issues, that with the use of e-mail “the mathematics dramatically change.” He states e-mail will be a no-cost alternative to direct mailings currently used. A caveat mentioned is the inability to procure a comprehensive e-mail address list. Another benefit Mr. Morris sees in the use of the Internet in the election arena is the diminished “involuntary communication.” He refers to television and other advertising that the voter is involuntarily exposed to and that had the viewer known it was to come he or she could take that time to pursue a different activity. With the Internet he indicates this is possible
since it requires an affirmative act by the voter to enter a web site or click past a banner ad. Additionally, he indicates that the Internet creates better-informed voters who are able to obtain information of different views on a national issue by accessing news information from across the country via the Internet. Mr. Morris also discusses that the use of referendums will make it more difficult for legislators to ignore the wishes of the majority and that the Internet will enable referendums to be more readily presented. He states that the digital divide will disappear as the Internet becomes more readily accessible with emerging technology and that this will lead to a significant increase in voter participation.


The author of this article examines the legacy of *Bush v. Gore* by looking at four post-*Bush v. Gore* cases: *Common Cause v. Jones*, *Andrews v. Cox*, *Black v. McGuffage*, and *Coyner v. Harris*. After briefly describing the cases and their issues, he discusses whether the *Bush v. Gore* decision can be extended to cases challenging voting machines. He looks at the language of the case, the legal analysis of the case, and potential principled limits on the case; and finds support for both limiting and expanding its application. Assuming *Bush v. Gore* can apply to these new cases on voting machines, he examines how it is applied in two of the cases. He focuses on whether discriminatory intent as well as disparate impact must be shown and whether rational basis or strict scrutiny should apply. He concludes that voting machine challenges should not need to show discriminatory intent and that strict scrutiny is the more appropriate standard.


The author of this article discusses the question of why Internet voting would be appropriate. He plainly states he is ignoring the technological difficulties associated with Internet voting. The author uses a paper by Frank Michelman, which asked the normative question, “Why vote?” as the basis for discussing “Why Internet voting?” The author discusses three questions on the subject: (1) will Internet voting enhance equality?; (2) will Internet voting result in better decisions?; and (3) how will Internet voting enhance deliberative democracy?

In this essay, the author examines how *Bush v. Gore* could be extended beyond recounts. Part I identifies problems with the Florida 2000 election, including high residual vote rates related to punch-card voting and the disparity of residual votes between counties using one type of voting equipment versus another. Part II discusses the *Bush v. Gore* decision and finds that the Court’s decision has departed from previous precedent by raising disparities in the mechanics of counting ballots to an equal protection violation. In Part III, the author asserts that the Court’s reasoning can be extended to other flawed election practices such as the patchwork of voting technology. Part IV of the article identifies legislative reform as a parallel, or perhaps superior method, of curing flawed election practices. She looks at the lack of legislative reform thus far in other states and recommends that federal legislation may be needed to ensure, among other things, that uniform voting technology be used statewide.


Mr. Pershing identifies his “day job” as that of a Voting Rights Act litigator. Since that is his background, he begins his article by posing the question, “Does Internet voting violate the Voting Rights Act?” In trying to answer this question Mr. Pershing focuses on the denial of equal access to the balloting process based on race. He provides an overview of the 2000 Arizona Democratic Primary and points out some of the enhancements to the whole voting process, not just the availability of Internet voting, that were made for that election. He also points out that the population that received the most significant increase in voting ease was the “Internet privileged.” The author provides an extensive review of the denial and dilution cases that have been brought under section 2 of the Voting Rights Act. He discusses the line of dilution cases and asserts that the level of proof needed in non-dilution cases is not clear. He discusses the 1982 amendment to the Voting Rights Act that removed the intent requirement and the language of Senate Report 97-417 that was used in eliminating intent and setting out factors to be considered. Additionally, he looks at the allocation of voting resources and its result in leading to racially disparate use of equipment fraught with errors in vote tabulation and recordation. He provides all of this information as a pre-cursor into looking at how the courts and legislators may react in Internet voting instances. Mr. Pershing indicates that to implement Internet voting and ensure equality of access, the Internet voting may need to take place at designated locations rather than allowing off-site voting. He also sees that at some later point, not providing some form of Internet voting may lead to a section 2 denial of access claim.

Since 1969, computer scientists have expressed concerns with security flaws in electronic voting machines. The author of this comment summarizes decades of reports and studies documenting the remarkably consistent problems and the recommendations to solve these problems with electronic voting machines. She finds that despite these warnings, Congress has failed to pass effective legislation to force states and voting machine manufacturers to address security issues in electronic voting machines. She also finds that the courts have failed to protect voters and candidates from fraud in electronic voting machines. While The Help America Vote Act of 2002 (HAVA) attempted to address problems with electronic voting, it did not prevent problems with the 2004 election. The author argues that Congress needs to increase the security of electronic voting by creating rigorous, uniform standards for voting machine manufacturers that incorporate the suggestions that computer scientists have made in the past.


The author of this note begins by briefly examining the five types of voting machines currently in use in the United States. She next looks at election reform on the federal and state level. She goes on to discuss judicial responses to voting machine error and asserts that in *Bush v. Gore*, the Supreme Court mistakenly held that states could use different voting machines with different residual voting rates. While acknowledging the confusion surrounding the precedential value of *Bush v. Gore*, the author looks at how the lower courts have begun to apply the equal protection holding in *Bush* to the use of different intrastate voting technologies with different error rates. She discusses the reasons for and against requiring uniform voting technologies within states, and concludes that requiring uniform voting technology is necessary to preserve the fundamental right to vote.


This article reviews the three-judge panel and en banc decisions by the Ninth Circuit concerning a suit, *Southwest Voter Registration Education Project v. Shelley*, to enjoin the California recall election. In the suit, the plaintiffs asserted that punch-card voting systems disenfranchised a disproportionate number of minorities because those systems have a higher
residual vote rate. The district court denied the injunction. A three-judge panel of the Ninth Circuit reversed, relying on an expansive application of *Bush v. Gore*. The article asserts that the three-judge panel went too far in its application of *Bush* and would lead to any irregularity in an election being vulnerable to a constitutional challenge. The Ninth Circuit sitting en banc reversed the three-judge panel but did not address the equal protection claim, instead relying on a deferential standard of review. The article asserts this decision treated the *Bush* decision as if it were irrelevant. The article argues that the Ninth Circuit sitting en banc should have distinguished or narrowed the application of the *Bush* decision.


In this article the authors assert that using multiple voting technologies violates the Equal Protection and Due Process clauses. The article begins with a history of election technology and follows with a look at empirical research on residual votes and balloting equipment from the 2000 election. Next, the authors look at the Help America Vote Act of 2002 (HAVA) and find that it does not address problems inherent in using multiple voting technologies. They examine *Bush v. Gore* and its implications, arguing that the decision opened up the potential for equal protection and due process scrutiny of voting administration. As evidence of this, the authors look at post-*Bush v. Gore* litigation in Illinois, California, and Ohio. They conclude that conflicting applications of standards of review, the threat to legitimate democratic process that disparate voting technologies represent, and the lack of effective legislative remedies make this an issue the Court needs to eventually address.


The author looks at Florida’s attempt at election reform post-2000 and concludes that it was rushed and failed to truly reform the problems that caused the 2000 election crisis. The author believes that adopting touch screen voting machines or optical scanning devices will prove problematic. He identifies concerns such as instructing voters to use the machines correctly and the reliability, security, and accuracy of using such machines. He asserts that technological reforms will not solve the problems that Florida experienced in the 2000 election.
In this essay, Mr. Schwartz responds to Dick Morris' article *Direct Democracy and the Internet*, 34 Loy. L.A. L. Rev. 1033 (2001) (see annotation above). The author discusses the three predictions: (1) less expensive elections; (2) greater voter participation; and (3) development of a "more direct form of democracy," made by Mr. Morris regarding the use of the Internet in modern elections and responds to these predictions. The author disagrees with Mr. Morris on most issues related to these topics. Mr. Schwartz identifies ways in which the Internet will make elections more expensive and discusses the continually increasing amount of funds spent on television and other mass media communication advertising. The author disputes the prediction of higher voter participation and indicates that any increase will be among groups with already high overall participation rates. The author sees the third prediction of direct democracy as problematic for several reasons. First, those participating in online polling activities are those already connected to the Internet; second, the inherent flaw in self-reporting data; and third, the skewing of information based on how a question is posed or framed. Additionally, Mr. Schwartz sees privacy concerns related to a move to Internet voting, that may cause people to further remove themselves from the political process.


The author begins this article, a systems analysis of technologically divergent election systems, by analyzing the ways that different voting technology created a voting technology divide in the Florida 2000 election. This divide disproportionally disenfranchised racial minorities and the poor. He looks at how differing views on technology shaped the opinions of the Florida Supreme Court in *Gore v. Harris*, 772 So. 2d 1243 (Fla. 2000), as well as those of the U.S. Supreme Court in *Bush v. Gore*, 531 U.S. 98 (2000), and at how those views shaped the decisions. The author examines the impact of "political lockups" on this voting technology divide and finds it violates the Equal Protection clause and Voting Rights Act. He asserts courts have a role in counteracting political lockups. The author goes on to analyze federal and state legislative reforms and finds them for the most part flawed. He concludes the article by suggesting seven necessary tasks for election reform.

After a brief background look at the pre-2000 election system, *Bush v. Gore*, and post-2000 studies on what went wrong, the author of this article examines the Help America Vote Act (HAVA). He discusses the provisions of the act, the state plans filed regarding implementation of the act, and issues that have arisen after the act. While the state plans vary, he finds full implementation of HAVA has been delayed due to uncertainty over federal funding, voting system standards, and the security controversy regarding direct recording electronic devices (DREs).


Residual vote rates fell between the 2000 and 2004 elections. This article examines the collected data and concludes the reduction of residual vote rates was substantially the result of improved voting technology. The author finds that the greatest improvements came from upgrading punch-card and optical scanning equipment to direct recording electronic devices (DREs). This finding contradicts previous studies in prior years that concluded optical scanners produced the greatest gains. The author attributes this to the newer DRE models and to improved training of poll workers. Other factors that improved the residual vote rate included an energized electorate.


In this article, the author begins by looking at the recent history surrounding difficulties with the five different voting methods used in elections and the federal and state responses. He identifies four equality norms that should be used to examine voting technology: (1) racial equality; (2) multilingual access; (3) disability access; and (4) inter-jurisdictional equality. After examining empirical research on electronic voting and how that research relates to the four equality norms, he finds that direct recording electronic devices (DREs) fare the best of the different voting technologies in this examination. The author discusses the problems of security and transparency regarding direct recording electronic devices (DREs) and looks at whether verified voter paper trails resolve any of these problems. He asserts that paper systems are no more accurate and reliable than paperless systems, no more resistant to fraud and error, and may be impractical. He suggests alternatives to paper such as procedural improvements, better standards and testing, cryptography, paperless audit trails, and open source software. He also makes recommendations on how
courts, legislative bodies, administrative bodies, and election officials can build better voting systems.


Using a dataset of voter history records in South Carolina and Louisiana, and applying quadratic ecological regression methods, the authors find that use of direct recording electronic devices (DREs) and lever machines result in smaller ballot rejection rates for African-Americans. The authors summarize existing literature and studies on the issue of racial disparity in rejected ballots and discuss the difference between their research and these other studies. They find that DREs and lever technologies can potentially prevent overvoting and undervoting, whereas central-count optically scanned ballots and punch-card machines do not. They also determine that African-Americans intentionally undervote more than whites. They conclude that voting technology can narrow but not completely eliminate the racial disparities in rejected ballots.


The author discusses how voting on the Internet may be enhanced by an interactive program that would assist voters in making decisions. He envisions a system by which voters can obtain decision advice from organizations, politicians and others with a web presence by visiting their web sites. Once there, the voter can use the software to fill in his or her ballot based on the sought advice. Additionally, Mr. Volokh sees a central web location that would provide the information for various organizations and a voter can select those with which he or she shares views. The author indicates that such a system may be opposed by various groups, but believes the arguments against it are surmountable. A benefit he identifies from such a system is the ability of special interest groups to show legislators just how many people in a demographic area voted based on that groups recommendations. Such hard evidence may be more persuasive to legislators when making key decisions. The author also presents a discussion of how the use of cyber-space may result in a closer connection to a voter's physical location.

In this note the author provides a look at the use of, and the positives and perils associated with, Internet voting. He begins by identifying three types of Internet voting schemes: (1) poll site (traditional), (2) kiosk (public places, e.g. malls), and (3) remote (from home). The author addresses early Internet voting and describes the 2000 Arizona Democratic Primary's online voting system that was a milestone in this area. He briefly discusses what was involved with the primary and the subsequent challenge based on a violation of the Voting Rights Act of 1965. Additionally, the author covers other federal and state activities related to Internet voting. He describes the studies of elections conducted using Internet voting. The author then provides a discussion of electioneering laws and how they may be affected by Internet voting. He begins with a short history of why electioneering laws were necessary and constitutional challenges to these laws that were posed over time. He identifies the unique problems of Internet voting on electioneering laws and provides a sample statute to address these issues. Lastly, he discusses the potential constitutional challenges that may be brought against these laws based on previous Internet speech challenges by the ACLU.


In this article, the author addresses the recently enacted Help America Vote Act (HAVA) and the reasons it does not do enough to assist disabled voters in the voting process. She begins by providing background on other federal laws that have been passed in an effort to provide equal access to disabled Americans. However, she identifies how these laws, the Voting Rights Act of 1965, the Voting Accessibility for the Elderly and Handicapped Act of 1984, the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 fail to adequately achieve voting access for the disabled. One shortcoming she identifies is the definition of “disability.” She also sees this shortcoming in HAVA. She identifies remedies available under each of these laws, but does not see that they go far enough inremedying the problem. Ms. Weis provides some historical background and House and Senate actions preceding the passage of HAVA and how accessibility issues for the disabled were addressed in the process and final bill. The author also covers what states have done generally in response to HAVA. She indicates HAVA compliance plans were vague as to how accessibility would be achieved and that for the 2004 election access was still limited. She indicates that while portions of HAVA have promise, she does not see the Act as a whole as providing full voting ability to disabled voters. Ms. Weis provides proposals for improving the law. Among these
are mandating standards that will ensure accessibility and the provision of a "meaningful definition of 'disability.'"


In this article the author looks at the Help America Vote Act (HAVA) and the changes made to voting equipment/systems since its enactment. He provides several graphs to show the changes in the types of systems from 2000 to 2004. He discusses concerns brought about by the use of new systems. Additionally, he provides an overview of the five major types of voting systems: (1) punch-card; (2) mechanical lever; (3) paper ballots; (4) optical scanning systems; and (5) direct recording electronic devices (DRE touch screen) systems. Because of the desire, by some, for voter verified paper trails (VVPT) the author addresses problems that arise when using some of these systems when a VVPT is needed. Specifically, he indicates that the use of the DRE is becoming more prevalent due to its accessibility for people with disabilities. However, the DRE poses a problem because there is no way to verify that a person's vote is properly recorded. The author provides an overview of those in favor of and opposed to mandatory VVPTs and the impossibility of a recount without such a system. He also discusses the potential for fraud and other errors with DRE systems. The author concludes that HAVA's attempt to "restore public confidence in the nation's electoral process" may not be easily achieved and in some ways thwarted by the increased use of high-tech voting machines.

**STATUTES**


This act prohibits discrimination on the basis of disability by programs funded by, or in association with, federal agencies, and discrimination in employment by the federal government or federal contractors. Section 508, in particular, requires that technology obtained or used by the federal government be accessible to those with disabilities.


This act requires accessible polling places for the elderly and disabled for federal elections. If polling places cannot be made accessible, an alternative method for casting a ballot must be made available. The act also requires that voting aids be accessible.

HAVA was passed in response to the 2000 election. This act, among other things, provides funding for states to update voting machines, creates an Election Assistance Commission (EAC), and establishes minimum standards for election systems.


This act addresses discrimination in voting in regards to race, language, or color. Section 2 in particular prohibits actions that have a discriminatory impact, regardless of whether the actions are intentional.


This act establishes absentee registration and ballot access for service people and those living abroad.

**RELATED CASELAW**

* Amer. Ass'n of People with Disabilities v. Smith (later cases v. Hood)


The plaintiffs in this case are a nonprofit organization, which is an advocate for persons with disabilities, as well as several visually and manually impaired voters in Duval County in Florida. *Id.* at 1278-79. In this case plaintiffs brought suit claiming violations of the Americans with Disabilities Act, the Rehabilitation Act of 1973 and Article VI, sec. 1 of the Florida Constitution. *Id.* at 1278. Plaintiffs allege these violations based on defendants having certified voting systems that do not provide for unassisted voting for the visually and manually impaired. *Id.* at 1279. Multiple defendants at the state, county and city levels were involved. *Id.* at 1276. Claims against the Secretary of State and Director of the Division of Elections were generally dismissed with prejudice (partially explained) and one count, related to the Rehabilitation Act, was dismissed with leave to amend. *Id.* at 1297. All counts against county and city officials were also dismissed with prejudice (with some explanation/clarification given). *

* Amer. Ass'n of People with Disabilities*, 227 F. Supp. 2d at 1297.
A second case by the above organization and individual plaintiffs was brought in the Middle District of Florida, federal district court. After concluding that the dismissal in *Amer. Ass'n of People with Disabilities v. Smith*, 227 F. Supp. 2d 1276 (M.D. Fla. 2002) did not preclude this action, the court held the following: plaintiffs have demonstrated genuine issues of material fact based on regulations establishing facility requirements. *Id.* at 1353. Additionally, the claim alleging violation of the Americans with Disabilities Act with respect to not certifying a voting system to assist manually impaired voters was allowed to proceed. *Id.* at 1355.

Several other orders came out of the district court with regard to this litigation:


**SW Voter Registration Educ. Project v. Shelley**


Plaintiffs brought suit challenging the use of punch-card machines in the 2003 Gubernatorial recall election in California. *Id.* at 1131. Plaintiffs sought to enjoin the use of these machines, and thus delay the recall election until proper replacements were made. *Id.* at 1134. The district court determined that Plaintiffs did not meet the burden necessary to warrant, nor did they show public interest required for, an injunction. *Id.* at 1146.

Plaintiffs in SW Voter Registration Educ. Project v. Shelley, 278 F. Supp. 2d 1131 (C.D. Cal. 2003), appealed the decision of the district court. The appellate court reversed the lower court’s decision. SW Voter Registration Educ. Project v. Shelley, 344 F.3d 882, 912 (9th Cir. 2003). The court discussed several issues in coming to its conclusion. Plaintiffs were found to have adequately established that their federal constitutional claims were likely to succeed on the merits. SW Voter Registration Educ. Project, 344 F.3d at 894. The court deemed this a “classic voting rights equal protection claim,” id. at 895, and that the claim made by Plaintiffs was virtually the same as the issue in Bush v. Gore, 532 U.S. 98 (2000). Id. at 895. To succeed when seeking a preliminary injunction, the court indicated that the plaintiff need not show he will prevail, but just the likelihood that, when considered with the shown hardship, a preliminary injunction will preserve the rights of the parties. Id. at 899. The court also found that the district court erred in their res judicata analysis, id. at 901, and on the laches claim. Id. at 905. Additionally, the court addressed the claim related to two California Propositions that were added onto the recall ballot and determined that the district court erred in denying the preliminary injunction. SW Voter Registration Educ. Project, 344 F.3d at 913. On issuing its decision, the court stayed its order for seven days to allow for further relief. Id. at 913.

• SW Voter Registration Educ. Project v. Shelley, 344 F.3d 914 (9th Cir. 2003).

The Ninth Circuit sitting en banc heard the case. The court reviewed the district court’s action in the light of whether there was an abuse of discretion. SW Voter Registration Educ. Project, 344 F.3d at 918. With respect to whether the district court abused its discretion in “weighing the hardships and considering the public interest,” the court found it did not. Id. at 919. The court discussed the difficulty in changing the election now that all the preparations had begun and the fact that absentee voters had already cast ballots. Id. at 919. The court indicated that an action now would halt an election in progress. Id. at 919. The court concluded that the hardships suffered by plaintiffs would not outweigh the importance of the need for the election to go forward as planned, and thus the court affirmed the district court’s judgment. Id. at 920.

Stewart v. Blackwell

This case involved a lawsuit in which the plaintiffs sought injunctive relief from the use of central-count optical scan and punch-card voting machines in several counties in Ohio. A Due Process violation under the Equal Protection Clause and a violation of § 2 of the Voting Rights Act of 1965 were alleged. *Id.* at 795. The court found that the plaintiffs did not provide sufficient evidence to make a case challenging the voting technologies involved. *Id.* at 805. The court concluded that there was no “‘actual’ denial of the right to vote” shown, and therefore the Voting Rights Act claim was not established. *Id.* at 808. The court also concluded that appropriate rational bases were given for the continued use of punch-card and central-count optical scan machines. *Id.* at 808. Therefore, the court concluded there had not been an Equal Protection violation and entered judgment for the defendants. *Id.* at 808.

This case was subsequently appealed and reversed in part and vacated in part by:


In this appeal the Sixth Circuit engaged in a discussion of standing, *id.* at 853, and mootness, *id.* at 855. Additionally, the court provided significant case law analysis related to the history of the right to vote. *Id.* at 856-58. Ultimately, the court determined that the defendants in the case below had made a proper Equal Protection claim in their argument that the use of different voting systems violated the Equal Protection Clause. *Id.* at 865, 876-77. Therefore, the court reversed the district courts decision on this issue and remanded the case with instructions to enter a judgment for the plaintiffs. *Id.* at 880. With respect to the Voting Rights Act claim, the court vacated the lower court’s ruling and remanded the case with instructions to the lower court to consider the “voluminous amount of the plaintiffs’ evidence. . . .” *Id.* at 878, 880.


**Wexler v. Anderson (earlier decisions v. LePore)**

- *Wexler v. Anderson*, 452 F.3d 1226 (11th Cir. 2006).

Elected officials from Florida, along with a registered voter, brought suit against the Supervisors of Elections in Palm Beach and Indian River counties and the Florida Secretary of State. The suit alleged equal protection and due process violations. *Id.* at 1227. The court framed the
issue as "whether Florida’s manual recount procedures in those counties employing paperless touch screen voting machines violate the rights of voters in those counties to equal protection and due process under the Fifth and Fourteenth Amendments to the United States Constitution." Id. The court describes the manual recount requirements in Florida and explains how the recount is done in both jurisdictions using optical scan equipment and those using paperless touch screen technology. Id. at 1228. Plaintiffs argued that their equal protection and due process rights were violated because paperless touch screen machines are incapable of providing the information (paper trail) they believe Florida law intended. Id. at 1231. Regarding this, the court looked at whether the different manual recount methods employed resulted in arbitrary and disparate treatment of voters, thus resulting in a deprivation of rights. Id. The court indicates that Plaintiffs focus on the residual voter is not correct and instead a question of whether touch screen voters are "less likely to cast an effective vote than voters in optical scan counties?" Wexler v. Anderson, 452 F.3d at 1231. The court concludes that the burden borne by those in touch screen counties does not warrant a strict scrutiny analysis. Id. at 1232. The court ultimately determines that the different manual recount employed with the touch screen systems, as opposed to optical scan systems, is justifiable and therefore does not amount to an equal protection violation. Id. at 1233. Additionally, the court determined that due to the burden, if any, on the voters from the differing recount mechanism, being justified there was no due process violation. Id. at 1233.

Additional case law related to this suit can be found at:

- Wexler v. LePore, 385 F.3d 1136 (11th Cir. 2004) (vacating district court (see below) that then resulted in the district court decision above which was the basis of the 2006 appellate decision).
- Wexler v. LaPore, 878 So. 2d 1276 (Fla. Dist. Ct. App. 2004) (a related state case affirming circuit court’s dismissal)

**Black v. McGuffage**


This case involved a civil rights action challenging the voting system in Illinois. Id. at 891. Plaintiffs challenged the use of punch-card systems, ineffective error notification in systems, and the inadequate education of voters on some systems. Id. at 891. Plaintiffs alleged violations of the
Voting Rights Act of 1965 and the Fourteenth Amendment of the United States Constitution. \textit{Id.} at 891. Defendants sought to dismiss these actions. In denying most of these requests, the court found the requirements of section 2 of the Voting Rights Act: 1) "the use of an electoral 'standard practice or procedure' and 2) a resulting diminution of the opportunity to African American and Latino voters 'to participate in the political process and to elect representatives of their choice, '” were met. \textit{Id.} at 897. The court found that the plaintiffs had sufficiently stated an equal protection claim based on an analysis of \textit{Bush v. Gore} and the determination that "people in different counties have significantly different probabilities of having their votes counted . . . ." \textit{Id.} at 899. The court did grant the defendants’ motion to dismiss the claim based on a violation of the privileges and immunities clause. \textit{Black}, 290 F. Supp. 2d at 902. The court, in stating the law allowing “significantly inaccurate systems of vote counting to be imposed on some portions of the electorate and not others with out any rational basis,” found that the plaintiffs had sufficiently alleged a violation of substantive due process. \textit{Id.} at 901.