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January 31, 2006

Daniel Onorato, Chief Executive, member, Board of Elections
John DeFazio, member, Board of Elections
David Fawcett, member, Board of Elections
County Office Building
542 Forbes Ave.
Pittsburgh, PA 15219

Dear Board Members

I have taught Computer Science at Carnegie Mellon for three years, after having received my Ph.D. there. My areas of specialty are computer operating systems and computer networks. In addition, I have served as a Judge of Elections in Mt. Lebanon since 1997.

It is with deep concern that I read in Friday's Post-Gazette that Allegheny County is on the verge of buying Diebold electronic voting machines. While I understand the difficult deadline pressure facing the Board of Elections and its origin in the respective mandates of federal and state law, I believe it is important that your deliberations include certain important issues with respect to Diebold.

First, press accounts and official findings of government bodies indicate that Diebold has run uncertified versions of its program code on their voting machines during elections. For example, the office of the Secretary of State of California writes on the second page of their "Staff Report on the Investigation of Diebold Election Systems, Inc." the following:

> The audit discovered that Diebold had, in fact, installed uncertified software in *all* its client counties without notifying the Secretary of State as required by law, and that the software was not federally qualified in three client counties. Diebold eventually acknowledged that it had failed to notify the Secretary of State of its proposed system modifications, and that its failure to obtain certification for these modifications violated state law.

I have read reports of similar incidents taking place in Georgia. Here in Allegheny County we currently rely on the years-old certification of our mechanical voting machines because they are the same machines. But by their very nature computers can behave *totally* differently any time their software is changed. While certification is no guarantee of correctness, voters should place *no* confidence in machines running unknown program code, and I find it disturbing that Diebold has apparently violated the trust of voters in this way.

Second, in my opinion, there is good reason to doubt the readiness of the Diebold machines for deployment. For example, in their document titled "2004 Presidential General Election Review–Lessons Learned," the Board of Elections of Montgomery County, Maryland, reports,

among other things, that 7% of their Diebold voting machines failed on election day. Fifty-eight out of the 2,597 machines failed to boot and twenty-five experienced hardware failures. But, more disturbingly, 106 units froze during voting, and election workers reported that this often happened when a voter pressed the "Cast Ballot" button. The Montgomery County Board wrote "The voter leaves the polling place with little or no confidence that their vote was counted."

The Montgomery County board also mentioned in passing that the Diebold GEMS vote-tabulating system froze several times on the night of the election, necessitating reboots. Their report mentions numerous other problems, issues, and concerns, and is worth reading.

On July 29th, 2005, the Oakland (California) Tribune reported in an article titled "E-voting machines rejected" the results of a rigorous test of Diebold voting machines. They quoted Secretary of State Bruce McPherson as follows: "There was a failure rate of about 10 percent, and that's not good enough for the voters of California and not good enough for me."

Third, on December 23, 2005, the Greensboro, NC News-Record reported in its article titled "Diebold pulls out of contract competition" that Diebold is unable to comply with North Carolina's voting machine law. The law requires vendors to escrow all relevant computer source code, and Diebold relies on large amounts of code that it cannot deliver for inspection, such as Microsoft Windows. It is my opinion that, given the size of the Windows code base and the frequency with which security problems in Windows are discovered, Diebold's reliance on Windows poses a serious structural barrier to voters acquiring confidence in the Diebold software infrastructure. The News-Record reports that Diebold's withdrawal leaves only ES&S currently eligible to sell voting machines in North Carolina.

I am aware that Diebold is offering the county a substantial discount compared to other vendors. But not every discount is a bargain.

Sincerely,

Dr. David A. Eckhardt
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University
Judge of Elections, Mt. Lebanon,
1997-present