**Analyzing South Carolina's Election Data:**

**What can we learn about the process and the software?**

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South Carolina presents an opportunity unique in the United States for analysis of election results. Although the state continues to use an all-computerized, unverifiable, and unauditable voting computer in the polling places, the fact that this same voting computer is used statewide and that the state makes all the data from those computers a public record allows analysis of the data with one computer program and allows the results to be compared across the state.

We have since 2010 been collecting the biennial election data and analyzing the data for anomalies. We have discovered, and continue to discover, errors and problems in the process of running elections on the complicated system that we use. That analysis has led to improvements in the process; knowing what procedural mistakes are made in the use of this technology permits mitigations and corrections to be promulgated that (sometimes) provides fewer problems in subsequent elections.

Additionally, analysis of the election data informs us about the underlying technology, and, as is usually the case, we learn more from what goes wrong than from what goes right. Although the software from the vendor (Election Systems & Software) is proprietary, we can learn much about the software from examining the anomalies. These include mistakes of double-counting votes, system logs whose timestamps move forward and backward in time, voting computers that have been used on Election Day but which report that they were never opened for use, and unexplained/undocumented events recorded by the software.

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