A PROJECT TO ASSESS VOTING TECHNOLOGY AND BALLOT DESIGN
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The events surrounding the 2000 presidential election called attention to a variety of seldom-discussed facts: that voting technology and ballot design can influence election outcomes; that most polling places in the United States employ outdated technology; that training in election administration is inadequate; that minorities and the poor are more likely to cast their ballots on outdated systems; and that voting procedures affect how voters feel about their ability to exercise their right to vote and their willingness to accept the results of an election as legitimate.

Since 2000, states have commissioned studies, revamped election administration, redesigned ballots, and begun to invest in new voting equipment. More research, particularly on the interface between voters and various voting machines and ballots, is needed to provide a basis for the massive voting reform that is being undertaken.

This project brings together social and computer scientists from a number of disciplines to study voting technology and ballot design. We will first assess the impact of existing technology and ballot designs on a variety of factors: the ability of voters to cast their ballots accurately and efficiently, voter ease in casting complete ballots (if so desired), voter comfort using different technology and ballot interfaces, voter confidence that their ballots will be accurately recorded, and the level of voter turnout. We also will analyze the effects of alternative voting systems and ballot formats on the frequency of incomplete ballots and split-ticket voting.

The project will use a variety of research designs, data collection methodologies, and analysis techniques, including expert review, laboratory experiments, close-up observation, field tests, and "natural experiments" that occur as local jurisdictions change their voting technology and procedures. The project also will subject the team's "zoomable" voting interface design to the same rigorous evaluation applied to existing systems. Finally, we will create a generalized protocol for testing voting technology and ballot formats that will be disseminated for nationwide use.

The public benefits of this approach include the development of principles to guide voting technology and ballot design and of protocols to enable election administrators to make better decisions when purchasing voting machines, approving ballot formats, and matching particular machines with specific ballots. Scholarly benefits include improved understanding of human-computer interaction as it relates to voting behavior and commencement of a new approach to data collection and analysis in the study of voting technology, ballots, and voting behavior.

The project will be guided by regular interaction with practitioners and policy makers who have responsibility for the administration of elections in the United States. Regular interaction will allow greater dissemination of information about the project, encourage potential beneficiaries to review the findings and use the testing protocol, communicate project findings and recommendations to companies that manufacture voting machines, and facilitate the collection and analysis of data.

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