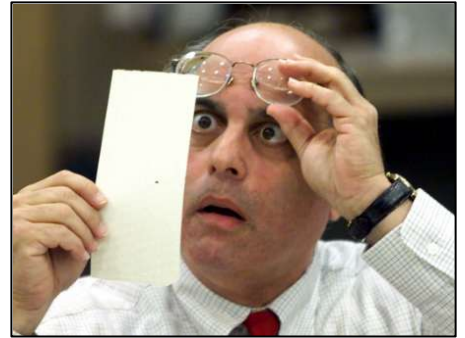# Voting Technology:
What Has Been and What Can Be

Spring 2004
MAS.967, Special Topics in Media Technology, 9 credits
Tuesday 2:00—3:30 PM, Location: Bartos Theatre (E15-070)
Ted Selker with members of the Caltech/MIT Voting Technology Project (VTP) and guests

Whose vote counts in an election?   Voting process does affect election results.   For the first time in history we are in a position to create technology and processes that can probably allow detection and correction of human error and fraud in voting. Improving voting technology should be central to protecting our democratic process. As well, it can instill confidence in our government and system. Digital technology may even improve our government and process.

Improved voting technology can also transfer to other areas. Solving problems of disenfranchisement of people relative to socioeconomic, physical, and cognitive disabilities in voting can be applied to other universal access problems. Solving problems of security, reliability and integrity in voting can help improve other transaction processing systems.

This course will survey voting systems and how they can be improved. We will give broad coverage of user experience, reliability, security and integrity of voting systems. The course will consist of weekly topic areas and lectures from voting technology experts. Topics will follow the largest areas of lost votes and topics of public debate.

Sources of 4 to 6 million lost votes in the American 2000 election:
      Registration—Can it be accurate?
      Ballot design—Can ballot design be fair?
      Polling place operations—Can polling places let everyone vote?

Sources of more lost ballots:
      Absentee ballots—Can the vote selling and stealing be stopped?
      Electronic technology—Can it improve security, integrity and reliability?

Scenarios for reducing voter coercion.

Week 1:	Overview: Voting as an end-to-end user experience.
Week 2:	How we have voted.
Week 3:	Universal verifiability all the spots where things can go wrong.
Week 4:	Security technology in computers and voting.
Week 5:	Voting machine companies and what they offer.
Week 6:	Ballot design, the unfair and the ugly.
Week 7:	Special needs considerations in voting.
Week 8:	History and registration.
Week 9:	Voter education.
Week 10:	New voting machine ideas.
Week 11:	The political venue and voting.
Week 12:	Improving the voting process.
Week 13:	If only we changed everything.

Students will be required to write two publication quality papers with references. Creating voting technology and technology evaluation experiments can be traded for papers. Written critiques of weekly readings are also required.