

## Joint Distinguished Colloquium in Interdisciplinary & Applied Mathematics & Columbia Data Science Institute Colloquium

# Barbara Simons

IBM Research (retired)

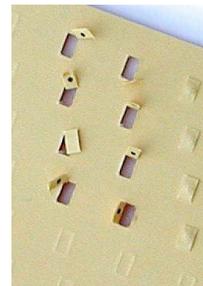
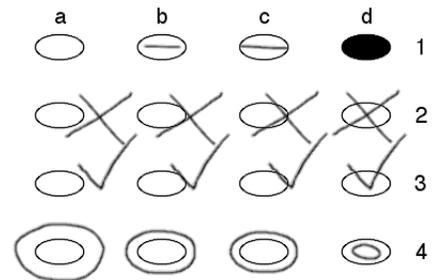
## Hacking the Election?

### Why We won't be able to Verify the Outcome of the 2016 Election

Partially as a result of hanging chads, almost \$4 billion dollars was allocated by Congress in 2002 to "modernize" our elections. The rush to spend money before there were any meaningful federal standards or testing resulted in the purchase of a large number of poorly designed and insecure voting systems. Most of these old systems still in use are way past their use-by date, with ancient software that may no longer be maintained and physical components in need of replacements that may no longer be manufactured. Election officials trying to cope with failing voting systems and inadequate funding may consider what they hope are cheaper alternatives, such as Internet voting.

Statewide databases of registered voters were also mandated in the 2002 legislation. Again, there are no standards, no independent review of the databases, and no guidelines for states. As of this writing, we know that the Arizona and Illinois voter registration databases were hacked into, with Russia viewed as the most likely culprit.

I'll present a very brief overview of how computers have made our elections more insecure, and what needs to be done (both technical and legal) to move to an evidence based voting system. I'll also discuss some of the false claims made about Internet voting, as well as why Internet voting is a major security threat to our democracy.



**Dr. Barbara Simons** is a former President of the Association for Computing Machinery (ACM), the world's largest educational and scientific computing society. She is the only woman to have received the Distinguished Engineering Alumni Award from the College of Engineering of U.C. Berkeley, where she earned her Ph.D. in computer science. A fellow of ACM and of the American Association for the Advancement of Science, she also received the Computing Research Association Distinguished Service Award and the Electronic Frontier Foundation Pioneer Award.

An expert on electronic voting, she published *Broken Ballots: Will Your Vote Count?*, a book on voting machines co-authored with Douglas Jones. She has served on the Board of Advisors of the U.S. Election Assistance Commission since her appointment in 2008, and she co-authored the report that led to the cancellation of Department of Defense's Internet voting project (SERVE) in 2004 because of security concerns. She was a member of the National Workshop on Internet Voting, convened by President Clinton, that conducted one of the first studies of Internet Voting and produced a report in 2001. She co-authored the July 2015 report of the U.S. Vote Foundation entitled *The Future of Voting: End-to-End Verifiable Internet Voting*. She is Board Chair of Verified Voting.

Simons served on the President's Export Council's Subcommittee on Encryption and on the Information Technology-Sector of the President's Council on the Year 2000 Conversion, as well as the boards of the U.C. Berkeley Engineering Fund, the Electronic Privacy Information Center, and the Oxford Internet Institute. She founded ACM's Public Policy Committee (USACM) in 1993 and served for many years as the Chair or co-Chair of USACM. She co-founded the Reentry Program for Women and Minorities in the Computer Science Department at U.C. Berkeley. She is retired from IBM Research.

### Wednesday, October 19, 2016

5:00 pm, Davis Auditorium

412 CEPSR, 530 West 120th Street

Tea at 4:00 PM in 503 Mathematics

#### Organizing Committee:

Qiang Du (APAM)  
Don Goldfarb (IEOR)  
Eitan Grinspin (Computer Science / APAM)  
Ioannis Karatzas (Mathematics)  
Andrei Okounkov (Mathematics)  
Michael I. Weinstein (APAM / Mathematics)