

## Political Science 688-002/Statistics 701: Election Forensics

Winter 2008

Monday 4–6 (7603 HH)

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Office hours: T 2–3:45 or other times by appointment.

Course web page: <http://www.umich.edu/~wmebane/ps688.html>

### Course Requirements

This is a research seminar. I expect you to participate actively in seminar discussions. At intervals throughout the semester I'll ask you to make a presentation to the class to initiate that week's discussion.

Your principal work for the seminar is to write a research paper on some topic relevant to the themes, analytical tools and data considered in the course. A proposal for the paper is due by March 17. The proposal should be in the vicinity of 5-10 pages in length, state the question and hypotheses to be addressed, describe the data and the analytical plan and connect the paper to relevant literature. The paper is due in my office on April 21.

### Reading Availability

Articles in refereed journals are available either through J-Stor or online e-journals. All URLs are live in the online version of this syllabus, linked to the course webpage.

### Reading schedule

#### 1. Threats and Legal Remedies (Jan 14)

- The Brennan Center for Justice Voting Technology Assessment Project. 2006. *The Machinery of Democracy: Voting System Security, Accessibility, Usability, and Cost*. [http://www.brennancenter.org/stack\\_detail.asp?key=97&subkey=38150&init\\_key=105](http://www.brennancenter.org/stack_detail.asp?key=97&subkey=38150&init_key=105)
- Brennan Center Task Force on Voting System Security. 2006. *The Machinery of Democracy: Protecting Elections in an Electronic World*. [http://www.brennancenter.org/stack\\_detail.asp?key=97&subkey=36343&init\\_key=105](http://www.brennancenter.org/stack_detail.asp?key=97&subkey=36343&init_key=105)
- Foley, Edward B. 2007. "The Analysis and Mitigation of Electoral Errors: Theory, Practice, Policy." *Stanford Law & Policy Review* 18.2 (Spring): 350–382.
- Hasen, Richard L. 2007. "The Untimely Death of Bush v. Gore." *Stanford Law Review* 60.1 (October): 1–44.

Campbell, Tracy. 2005. *Deliver the Vote: A History of Election Fraud, An American Political Tradition, 1742–2004*. Carroll & Graf.

Fortier, John C. *Absentee and Early Voting*. American Enterprise Institute

Gumbel, Andrew. 2005. *Steal This Vote*. Nation Books.

Joseph Harris. 1934. *Election Administration in the United States*. Brookings.  
[http://vote.nist.gov/electi\\_admin.htm](http://vote.nist.gov/electi_admin.htm)

Hayduk, Ronald. *Gatekeepers to the Franchise*. Northern Illinois University Press

Saltman, Roy G. 1988. "Accuracy, Integrity, and Security in Computerized Vote-Tallying." NBS Special Publication 500-158. <http://www.itl.nist.gov/lab/specpubs/500-158.htm>

## 2. Robust Estimation and Outlier Detection (Jan 28)

- Mebane, Walter R., Jr., and Jasjeet S. Sekhon. 2004. "Robust Estimation and Outlier Detection for Overdispersed Multinomial Models of Count Data" *American Journal of Political Science* 48 (Apr.): 392–411.
- Wand, Jonathan N., Kenneth W. Shotts, Jasjeet S. Sekhon, Walter R. Mebane, Jr., Michael C. Herron, and Henry E. Brady. 2001. "The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida." *American Political Science Review* 95 (December): 793–810. available at <http://www.umich.edu/~wmebane/butterfly.pdf>
- Democratic National Committee. 2005. *Democracy At Risk: The 2004 Election in Ohio*. Section VI. Pages 1–72. <http://www.umich.edu/~wmebane/Ohio2004/OhioReportCover2Cover.pdf>

House Judiciary Committee Democratic Staff. 2005. *Preserving Democracy: What Went Wrong in Ohio*.

[http://www.house.gov/judiciary\\_democrats/ohiostatusrept1505.pdf](http://www.house.gov/judiciary_democrats/ohiostatusrept1505.pdf)

Miller, Mark Crispin. 2005. *Fooled Again* Basic Books.

## 3. Post-election "Audits" (Recounts) (Feb 4)

- Norden, Lawrence, Aaron Burstein, Joseph Lorenzo Hall and Margaret Chen. 2007. *Post-election Audits: Restoring Trust in Elections*. [http://www.brennancenter.org/stack\\_detail.asp?key=97&subkey=38150&init\\_key=105](http://www.brennancenter.org/stack_detail.asp?key=97&subkey=38150&init_key=105)
- Jefferson, D., K. Alexander, E. Ginnold, A. Lehmkuhl, K. Midstokke and P.B. Stark. 2007. "Post Election Audit Standards Report—Evaluation of Audit Sampling Models and Options for Strengthening California's Manual Count." [http://www.sos.ca.gov/elections/peas/final\\_peaswg\\_report.pdf](http://www.sos.ca.gov/elections/peas/final_peaswg_report.pdf)
- Aslam, Javed, Raluca A. Popa, and Ronald L. Rivest. 2007. "On Auditing Elections When Precincts Have Different Sizes." <http://people.csail.mit.edu/rivest/AslamPopaRivest-OnAuditingElectionsWhenPrecinctsHaveDifferentSizes.pdf>
- Rivest, Ronald L.. 2007. "A Simple Rule of Thumb for Election Audit Size Determination." <http://people.csail.mit.edu/rivest/Rivest-ASimpleRuleOfThumbForElectionAuditSizeDetermination.pdf>
- Aslam, Javed A., Raluca A. Popa, and Ronald L. Rivest. 2007. "On Estimating the Size and Confidence of a Statistical Audit." <http://people.csail.mit.edu/rivest/AslamPopaRivest-OnEstimatingTheSizeAndConfidenceOfAStatisticalAudit.pdf>
- Stark, P.B. 2007. "Conservative statistical post-election audits." Technical report 741, Department of Statistics, University of California, Berkeley, CA. <http://statistics.berkeley.edu/~stark/Preprints/conservativeElectionAudits07.pdf>

Estok, Melissa and Neil Nevitte and Glenn Cowan. 2002. *The Quick Count and Election Observation: An NDI Guide for Civic Organizations and Political Parties*. Washington, DC: National Democratic Institute for International Affairs.

[http://www.accessdemocracy.org/library/1417\\_elect\\_quickcountthdbk\\_1-30.pdf](http://www.accessdemocracy.org/library/1417_elect_quickcountthdbk_1-30.pdf)

#### 4. Election Monitoring (Feb 11)

- Lehoucq, Fabrice. 2003. "Electoral Fraud: Causes, Types, and Consequences," *Annual Review of Political Science* 6 (June): 233–256.
- Hyde, Susan D. 2007. "The Observer Effect in International Politics: Evidence from a Natural Experiment." *World Politics* forthcoming.  
[http://pantheon.yale.edu/~sdh28/Hyde\\_Armenia.pdf](http://pantheon.yale.edu/~sdh28/Hyde_Armenia.pdf)
- Hyde, Susan D. 2007. "How International Election Observers Detect and Deter Fraud." [http://pantheon.yale.edu/~sdh28/Fraud\\_Conference.pdf](http://pantheon.yale.edu/~sdh28/Fraud_Conference.pdf)
- Simpser, Alberto. 2006. "A Theory of Corrupt Elections." Working paper.  
[http://harrisschool.uchicago.edu/Programs/beyond/workshops/pol\\_econ\\_papers/Simpser-Cor](http://harrisschool.uchicago.edu/Programs/beyond/workshops/pol_econ_papers/Simpser-Cor)
- Mebane, Walter R., Jr. 2007. "Evaluating Voting Systems To Improve and Verify Accuracy." Prepared for presentation at the 2007 Annual Meeting of the American Association for the Advancement of Science, San Francisco, CA, February 16, 2007, and at the Bay Area Methods Meeting, Berkeley, March 1, 2007.  
<http://www.umich.edu/~wmebane/bamm07.pdf>
- European Union. 2001. "Preliminary Statement—2 October 2001." European Union–Election Observation Mission in Bangladesh 2001.  
<http://www.lcgbangladesh.org/election01/docs/eu2oct01.pdf>

Bjornlund, Eric C. 2004. *Beyond Free and Fair: Monitoring Elections and Building Democracy*. Washington, DC: Woodrow Wilson Center Press.

Beaulieu, Emily, and Susan D. Hyde. 2007. "In the Shadow of Democracy Promotion: Strategic Manipulation, International Observers, and Election Boycotts." *Comparative Political Studies* forthcoming.  
[http://pantheon.yale.edu/~sdh28/Beaulieu\\_Hyde.pdf](http://pantheon.yale.edu/~sdh28/Beaulieu_Hyde.pdf)

#### 5. Benford's Law Tests (Feb 18)

- Mebane, Walter R., Jr. 2006. "Election Forensics: Vote Counts and Benford's Law." Prepared for delivery at the 2006 Summer Meeting of the Political Methodology Society, UC-Davis, July 20-22.  
<http://www.umich.edu/~wmebane/pm06.pdf>
- Mebane, Walter R., Jr. 2006. "Election Forensics: The Second-digit Benford's Law Test and Recent American Presidential Elections." Paper prepared for the Election Fraud Conference, Salt Lake City, Utah, September 29–30, 2006.  
<http://www.umich.edu/~wmebane/fraud06.pdf>
- Mebane, Walter R., Jr. 2007. "Statistics for Digits." Prepared for delivery at the 2007 Summer Meeting of the Political Methodology Society, Pennsylvania State University, July 18–21.  
<http://www.umich.edu/~wmebane/pm07.pdf>
- Hill, Theodore P. 1995. "A Statistical Derivation of the Significant-digit Law." *Statistical Science* 10 (4): 354–363.

Benjamini, Yoav, and Yosef Hochberg. 1995. "Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing." *Journal of the Royal Statistical Society, Series B* 57 (1): 289–300.

- Cindy Durtschi, William Hillison and Carl Pacini. 2004. “The Effective Use of Benford’s Law to Assist in Detecting Fraud in Accounting Data.” *Journal of Forensic Accounting* 5:17-34.
- Miller, Steven J., and Mark J. Nigrini. 2008. “The Modulo 1 Central Limit Theorem and Benford’s Law for Products,” *International Journal of Algebra* 2 (3): 119–130.
- Kontorovich, Alex V., and Steven J. Miller. 2005. “Benford’s Law, Values of L-Functions and the  $3x + 1$  Problem,” *Acta Arithmetica* 120 (3): 269–297.
- Janvresse, Élise, and Thierry de la Rue. 2004. “From Uniform Distributions to Benford’s Law.” *Journal of Applied Probability* 41: 1203–1210.
- Berger, Arno. 2005. “Multi-Dimensional Dynamical Systems and Benford’s Law,” *Discrete and Continuous Dynamical Systems* 13 (1, June): 219-237.

## 6. Ballots, Turnout and Exit Polls (Mar 3)

- Mebane, Walter R., Jr. 2004. “The Wrong Man is President: Overvotes in the 2000 Presidential Election in Florida.” *Perspectives on Politics* 2 (Sept.): 525–535. MS available at <http://www.umich.edu/~wmebane/mebane.pop2004.pdf>
  - Democratic National Committee. 2005. *Democracy At Risk: The 2004 Election in Ohio*. Section VI. Pages 13–16, 73ff. <http://www.umich.edu/~wmebane/Ohio2004/OhioReportCover2Cover.pdf>
  - Herron, Michael C., and Jasjeet S. Sekhon. 2005. “Black Candidates and Black Voters: Assessing the Impact of Candidate Race on Uncounted Vote Rates.” *Journal of Politics* 67 (1): 154–177.
  - Tanner, John. 2005. Letter to Nick A. Soulas, Jr., Assistant Prosecuting Attorney, Franklin County, Ohio. June 29, 2005. [http://www.usdoj.gov/crt/voting/misc/franklin\\_oh.pdf](http://www.usdoj.gov/crt/voting/misc/franklin_oh.pdf)
  - Mebane, Walter R., Jr. 2005. “Voting Machine Allocation in Franklin County, Ohio, 2004: Response to U.S. Department of Justice Letter of June 29, 2005.” <http://www.umich.edu/~wmebane/franklin2.pdf>
  - Democratic National Committee. 2005. *Democracy At Risk: The 2004 Election in Ohio*. Sections III, IV and V. <http://www.umich.edu/~wmebane/Ohio2004/OhioReportCover2Cover.pdf>
  - Edison Media Research and Mitofsky International. 2005. “Evaluation of Edison/Mitofsky Election System 2004.” <http://www.exit-poll.net/election-night/EvaluationJan192005.pdf>
  - Lindeman, Mark. 2006. “Beyond Exit Poll Fundamentalism: Surveying the 2004 Election Debate.” Paper prepared for presentation at the 61st Annual Conference of the American Association for Public Opinion Research, Montreal, Canada, May 18-21, 2006. <http://inside.bard.edu/~lindeman/beyond-epf.pdf>
- Herron, Michael C., and Jasjeet S. Sekhon. 2003. “Overvoting and Representation: An Examination of Overvoted Presidential Ballots in Broward and Miami-Dade Counties.” *Electoral Studies* 22 (1):21–47. <http://elections.berkeley.edu/election2000/HerronSekhon.pdf>

Tomz, Michael, and Robert P. Van Houweling. 2003. "How Does Voting Equipment Affect the Racial Gap in Voided Ballots?" *American Journal of Political Science* 47 (1): 46–60.

Democratic National Committee. 2005. *Democracy At Risk: The 2004 Election in Ohio*. Sections I–V.  
<http://www.umich.edu/~wmebane/Ohio2004/OhioReportCover2Cover.pdf>

7. Mexico 2006 (Mar 10)

- Mebane, Walter R., Jr. 2007. "Election Forensics: Statistics, Recounts and Fraud." Prepared for delivery at the 2007 Summer Meeting of the 2007 Annual Meeting of the Midwest Political Science Association, Chicago, IL, April 12–16.  
<http://www.umich.edu/~wmebane/mw07.pdf>
- European Union. 2006. "European Union Election Observation Mission Mexico 2006: Final Report."  
[http://ec.europa.eu/external\\_relations/human\\_rights/eu\\_election\\_ass\\_observ/docs/2006\\_24](http://ec.europa.eu/external_relations/human_rights/eu_election_ass_observ/docs/2006_24)
- Estrada, Luis, and Alejandro Poiré. 2007. "The Mexican Standoff: Taught to Protest, Learning to Lose." *Journal of Democracy* 18 (1): 73–87.
- Eisenstadt, Todd A., and Alejandro Poiré. 2006. "Explaining the Credibility Gap in Mexico's 2006 Presidential Election, Despite Strong (Albeit Perfectable) Electoral Institutions," CNAS Working Paper, November 8, 2006.  
[http://www.american.edu/ia/cnas/pdfs/workingpaper4\\_elections.pdf](http://www.american.edu/ia/cnas/pdfs/workingpaper4_elections.pdf)

8. Sarasota 2006 (Mar 17)

- Frisina, Laurin, Michael Herron, James Honaker and Jeffrey Lewis. 2007. "Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida." MS. Draft of February 13, 2007.  
<http://www.dartmouth.edu/~herron/cd13.pdf>
- Mebane, Walter R., Jr., and David L. Dill. 2007. "Factors Associated with the Excessive CD-13 Undervote in the 2006 General Election in Sarasota County, Florida." MS.  
<http://www.umich.edu/~wmebane/smachines1.pdf>
- Browning, Kurt S. 2007. "Statement from Secretary Kurt S. Browning on the Release of the Division of Elections Audit Report and Independent Study from the Security and Assurance in Information Technology Lab." Press release.  
<http://election.dos.state.fl.us/pdf/KBrowningAuditReport.pdf>
- Browning, Kurt S. 2007. "Audit Report of the Election Systems and Software, Inc.'s, iVotronic Voting System in the 2006 General Election for Sarasota County, Florida (February 2007)." Report. Florida Department of State, Division of Elections.  
<http://election.dos.state.fl.us/pdf/auditReportSarasota.pdf>
- Yasinsac, Alec, David Wagner, Matt Bishop, Ted Baker, Breno de Medeiros, Gary Tyson, Michael Shamos and Mike Burmester. 2007. "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware." Report. Security and Assurance in Information Technology Laboratory, Florida State University, Tallahassee, Florida, February 23, 2007.  
<http://election.dos.state.fl.us/pdf/FinalAudRepSAIT.pdf>

- GAO. 2007. “ELECTIONS: Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida’s 13th Congressional District,” Statement before the Task Force on Florida-13, Committee on House Administration, House of Representatives.  
<http://www.gao.gov/news.items/d0897t.pdf>

Felten, Ed. 2007. “Sarasota: Could a Bug Have Lost Votes?” Freedom to Tinker blog.  
<http://www.freedom-to-tinker.com/?p=1126>

## 9. Voting Technology (Mar 24)

- Feldman, Ariel J., J. Alex Halderman, and Edward W. Felten. 2006. “Security Analysis of the Diebold AccuVote-TS Voting Machine.” MS.  
<http://itpolicy.princeton.edu/voting/ts-paper.pdf>
- Feldman, Ariel J., J. Alex Halderman, and Edward W. Felten. 2006. “Security Analysis of the Diebold AccuVote-TS Voting Machine: Main Demonstration Video.” Video.  
<http://itpolicy.princeton.edu/voting/videos/ts-paper.wmv>
- Niemi, Richard G., and Paul S. Herrnson. 2003. “Beyond the Butterfly: The Complexity of U.S. Ballots.” *Perspectives on Politics*, 1 (2 Jun.): 317–326.
- Technical Guidelines Development Committee. 2007. “Voluntary Voting System Guidelines Recommendations to the Election Assistance Commission,” August 31, 2007.  
<http://people.csail.mit.edu/rivest/Final-TGDC-VVSG-08312007.pdf>
- Norden, Lawrence, Jeremy M. Creelan, David Kimball and Whitney Quesenbery. 2006. *The Machinery of Democracy: Usability of Voting Systems*.  
[http://www.brennancenter.org/stack\\_detail.asp?key=97&subkey=36941&init\\_key=105](http://www.brennancenter.org/stack_detail.asp?key=97&subkey=36941&init_key=105)

Saltman, Roy *The History and Politics of Voting Technology*. Palgrave Macmillan.

Rubin, Aviel. *Brave New Ballot*. Morgan Road Books

Punchscan. Watch the Intro videos at Learn More and look over the FAQ.  
<http://punchscan.org/>

## 10. Voting Machine Allegations and Tests (Mar 31)

- Anonymous. 2004. “FL: Unknown: Voter Reg vs Results: by County.”  
[http://uscountvotes.org/index.php?option=com\\_content&task=view&id=35&Itemid=43](http://uscountvotes.org/index.php?option=com_content&task=view&id=35&Itemid=43)
- Hartmann, Thom. 2004. “Evidence Mounts That The Vote May Have Been Hacked.” CommonDreams.Org News Center.  
<http://www.commondreams.org/headlines04/1106-30.htm>
- Mebane, Walter R. Jr. 2004. “Letter Sent to the Editor of Common Dreams Regarding ‘Evidence Mounts That The Vote May Have Been Hacked,’ by Thom Hartmann.”  
<http://www.umich.edu/~wmebane/commondreams/commondreams.html>
- Mebane, Walter R. Jr. 2004. “Letter Sent to Kathy Dopp (organizer of ustogether.org) Regarding the Responses to my Letter that were Posted at ustogether.org.”  
<http://www.umich.edu/~wmebane/ustogether/ustogether.html>
- Sekhon, Jasjeet S. 2004. “The 2004 Florida Optical Voting Machine Controversy: A Causal Analysis Using Matching.”  
<http://sekhon.berkeley.edu/papers/SekhonOpticalMatch.pdf>

- Wand, Jonathan. 2004. "Evaluating the Impact of Voting Technology on the Tabulation of Voter Preferences: The 2004 Presidential Election in Florida."  
<http://wand.stanford.edu/elections/us/FL2004/WandFlorida2004.pdf>
- B. D. McCullough and Florenz Plassmann. 2004. "A Partial Critique of Hout, Mangels, Carlson and Best's 'The Effect of Electronic Voting Machines on Change in Support for Bush in the 2004 Florida Elections'," working paper, 2 December 2004.  
[election04.ssrc.org/research/critique-of-hmcb.pdf](http://election04.ssrc.org/research/critique-of-hmcb.pdf)

11. TBA (Apr 7)

12. TBA (Apr 14)