

## February 16<sup>th</sup> SFASA Seminar

**Speaker:** Philip Stark, Professor and Vice Chair of Statistics, University of California Berkeley, [www.stat.berkeley.edu/users/stark](http://www.stat.berkeley.edu/users/stark)

**Location:** University of California Berkeley, Evans Hall, Room 1011

**Time:** Thursday, February 16th, 4:30 p.m. - 6:30 p.m.

**Title:** The Will of the People and the Luck of the Draw: Risk-Limiting Audits and Resilient Canvass Frameworks

**Abstract:** An election should find out who won. Moreover, it should produce convincing evidence that it found the real winners--or report that it cannot. Resilient canvass frameworks (RCFs) formalize this idea. The overall human, procedural, hardware, and software elements involved in running an election is a RCF if it has a known minimum chance of identifying the correct winners, when it identifies winners at all. If voters' choices are recorded on voter-verifiable paper records and a compliance audit shows that this audit trail is intact and reliable, a complete hand count of the paper records would give the correct electoral outcome. A risk-limiting audit is a statistical technique that examines portions of the audit trail in a way that guarantees a large, known chance of leading to a complete hand count of the paper--if that hand count would reveal that the voting system found the wrong winners. Combining a voting system that produces voter-verified paper records, a compliance audit, and a risk-limiting audit, gives a RCF. Risk-limiting audits have been endorsed by the ASA and many groups concerned with election integrity, including Common Cause and Verified Voting. Risk-limiting audits have been conducted in California, Colorado, and Ohio. I will sketch several methods for risk-limiting audits and explain how they are connected to sequential nonparametric tests about the mean of a bounded population. I will explain some of the challenges in getting laws passed that have statistical content and in working with state and local election officials and election integrity advocates to implement risk-limiting audits. I will also discuss tradeoffs among efficiency, simplicity, transparency, and privacy.

**Directions:** Please click on the following link to see a campus map that shows the location of Evans Hall on Berkeley's campus: [www.stat.berkeley.edu/58](http://www.stat.berkeley.edu/58)

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