1154-AD-372 **Philip B. Stark*** (stark@stat.berkeley.edu). *Risk-Limiting Audits.*

Risk-limiting audits (RLAs) check whether the reported winner(s) of an election really won. They have been piloted in more than 10 states and are currently mandated by law in four. RLAs require a trustworthy paper record of voter intent. A procedure is a RLA with risk limit α iff the chance it will correct the reported outcome if the reported outcome is wrong is at least $1 - \alpha$, and the chance it alters a correct outcome is zero. RLAs can be formulated as tests of the hypothesis that one or more reported winners did not actually win. The most efficient method checks how the voting system interpreted randomly selected ballots and uses sequential hypothesis tests based on martingale inequalities.

RLAs have been developed for many social choice functions (e.g., plurality, multi-winner plurality, majority, super-majority, and IRV) using a variety of sampling schemes tailored to individual voting systems, to how jurisdictions handle ballots, and to how states coordinate audits. RLAs are recommended by NASEM, the Presidential Commission on Election Administration, the American Statistical Association, and the League of Women Voters, among others. (Received September 02, 2019)