1125-60-1504 **Mark L Huber*** (autotomic@gmail.com), 392 Cardinal LN, Upland, CA 91786. *Fast biased user-specified relative error estimates.*

The output of random computer simulations is often analyzed using estimates derived from classical statistics. However, the flexibility to generate a random amount of data gives the ability to create a new type of estimate where the relative error of the estimate does not depend on the quantity being estimated, but is instead specified by the user ahead of time. While estimates for means of continuous random variables have long been known, only recently have these been extended to estimating the mean of discrete random variables such as Bernoulli and Poisson. The first versions of these estimates were biased: in this talk I will show how biased versions of these estimates can shrink the relative error of the estimate more quickly. In the case of Poisson data, fewer samples are required to estimate the mean (on average) within a specified relative error with specified failure rate than are needed by the Central Limit Theorem approximation. (Received September 17, 2016)