

# Stanford University

## Department of Statistics

### DEPARTMENTAL SEMINAR

4:30pm, Tuesday, November 19, 2019  
McCullough Building (04-490) Room 115

Refreshments served at 4pm in Sequoia Lounge.

**Speaker:** Jonathan Taylor, *Stanford Statistics*

**Title:** Inference after selection through a black box

**Abstract:**

We consider the problem of inference for parameters selected for reporting only after some algorithm, the canonical example being inference for model parameters after a model selection procedure. The conditional correction for selection requires knowledge of how the selection is affected by changes in the underlying data, and a fair amount of effort has gone into describing this selection explicitly.

In this work, we assume 1) we have access, in silico, to the selection algorithm itself and 2) for parameters of interest, the data input into the algorithm satisfies (pre-selection) a central limit theorem jointly with an estimator of our parameter of interest. Under these assumptions, we recast the problem into a statistical learning problem which can be fit with off-the-shelf models for binary regression. We consider two examples previously out of reach of this conditional approach: stability selection and inference after multiple runs of something like Model-X knockoffs.

Time permitting, we relate this work with a tool (in development) for executable preregistered reports with valid inference with selection.