

BIOSTATISTICS SEMINAR



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Knowing the signs: simpler ways to think about p-values, and much else

Many well-known problems with two-sided p-values are due to their use in hypothesis tests, with "reject/accept" conclusions about point null hypotheses. In this talk we present an alternative motivation for p-value-based tests, viewing them as assessments of only the sign of an underlying parameter, where we can conclude that the parameter is positive, negative, or simply say nothing either way.

Our approach is decision-theoretic, but – unusually – we consider the whole set of possible utility functions available. Doing this we show how, in a specific sense, close analogs of familiar one- and two-sided tests are always the optimal Bayesian decision.

We argue that this simplicity should aid non-experts' understanding and use of tests – and help them think critically about whether or not tests are appropriate tools for answering their questions of interest. We also give several extensions of the method, to similarly re-interpret confidence intervals, multiple testing corrections, Bayes Factors, and post hoc assessments of a test's merit.

This is joint work with Chloe Krakauer (PhD candidate, University of Washington) and Tyler Bonnett (NIH)

Thursday October 22, 2020

3:00 pm - 4:00 pm

Zoom meeting: Please also find a link in the email invite, with the password.

<https://uncsph.zoom.us/j/92138801086?pwd=Y0lINUNQcS9lZERjalVhbVZSZ3AwQT09>



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