WCAS Center for Economic Theory
Kellogg Center for Mathematical Studies in
and Management Science
Theory Workshop

Wednesday, April 1, 2015   3:30-5:00pm
Jacobs 3245 (WCAS Economics dept. seminar room)
Reception following in 531 Jacobs Center

Ben Brooks, University of Chicago

The consequences of information in the first price auction
(with Dirk Bergemann and Stephen Morris)

Abstract: We study how the structure of information can affect welfare outcomes in the first price auction. For a fixed distribution of buyers' valuations, we consider all of the Bayesian equilibria in weakly undominated strategies that could arise under different specifications of the buyers' higher-order beliefs, as long as those beliefs are consistent with a common prior and the given prior distribution of values. Tight bounds on revenue and bidder surplus are provided for the models we consider. When there is no lower bound on how uninformed the buyers might be (beyond knowing the prior distribution), we derive tight upper and lower bounds on revenue and bidder surplus. These bounds hold for symmetric and arbitrarily correlated distributions of values with any number of bidders, and in particular the bounds apply to specifications where values are interdependent. When buyers are assumed to at least know their private values, we derive a tight upper bound on revenue and a tight lower bound on bidder surplus for arbitrary distributions of values and for any number of bidders. We also derive a tight lower bound on revenue and a tight upper bound on bidder surplus when values are binary (high or low) and the distribution of values is symmetric. We apply these results to study how entry fees and reserve prices impact the welfare bounds.

http://www.kellogg.northwestern.edu/research/math/centerinfo/theoryworkshops.htm