Economics Seminar, Indian Statistical Institute, New Delhi.

SPEAKER: **Pradeep Dubey**, SUNY, Stony Brook and Cowles Foundation, Yale University

TITLE: **The Allocation of a Prize**

TIME: 11:30 AM - 1:00 PM.

DAY & DATE: Friday, 2nd December, 2011

PLACE: Seminar Room 2

Abstract:

Consider agents who undertake costly effort to produce stochastic outputs observable by a principal. The principal can award a prize deterministically to the agent with the highest output, or to all of them with probabilities that are proportional to their outputs. We show that, if there is sufficient dipersion in agents' skills relative to the noise on output, then the proportional prize will on average elicit more output from the agents than the deterministic prize. Indeed, assuming agents know each others' skills (the complete information case), this result holds when any Nash selection, under the proportional prize, is compared with any individually rational strategy selection under the deterministic prize. When there is incomplete information, the same result obtains but now we must restrict to Nash selections for both prizes. We also compute the optimal scheme among a natural class of probabilistic schemes - for awarding the prize, namely that which elicits maximal effort from the agents for the least prize. In general the optimal scheme is a monotonic step function which lies "between" the proportional and the deterministic schemes. When the competition is over small fractional increments (a case that commonly arises in the presence of strong contestants whose base levels of production are high), the optimal scheme awards the prize according to the "log of the odds", where the odds are based on the proportional scheme.

http://www.isid.ac.in/~pu/seminar.html