

**Faculty Seminar JGU Mainz, 11 June 2018**

**Charles Bellemare: Life-cycle decisions, dynamic programming, and correlation neglect:  
experimental analysis of alternative decision rules**

Abstract:

Rational forward looking behavior requires solving complex problems involving computation of the expected maximum future valuations across choice alternatives (E<sub>max</sub> computations). We conduct an experiment to measure the share of subjects able to perform these computations as well as the share of subjects using two alternative (sub-optimal) rules of computation which ignore correlation between future valuations. The first alternative rule captures subjects who perform E<sub>max</sub> computations ignoring correlation between unobservables in the information set. The second alternative rule captures subjects computing the maximum of the expected future valuations (maxE computations), akin to the option-value model of Stock and Wise (1990). Our experimental design exploits different correlation structures between future valuations to separate the share of subjects using each rule. The experiment was conducted with a large and heterogeneous sample of subjects, allowing to relate the propensity to use a given rule to a rich set of socio-economic characteristics. Our results suggest that 28% of subjects are able to perform E<sub>max</sub> computations exploiting the correlation structure, 20% of subjects perform E<sub>max</sub> computations ignoring correlation, while 52% of subjects perform maxE computations. Moreover, we find that the propensity to use a given rule significantly varies across education levels – higher educated subjects are significantly more likely to perform E<sub>max</sub> computations.