Title: The causal problem of entanglement and how quantum mechanics solves it

Abstract: The causal problem of entanglement consist in the fact that the statistics of typical experiments with entangled quantum objects (EPR/B experiments) cannot be explained by the usual principles of causal explanation, even if one disregards all spatio-temporal constraints (Wood & Spekkens 2015, Näger 2015). More precisely, it is impossible that both central principles of the theory of causal Bayes nets (Glymour, Spirtes & Scheines 1993; Pearl 2000)—the causal Markov condition and the faithfulness condition—hold in such experiments. In this talk I introduce to the problem and show that quantum mechanics (in a GRW collapse interpretation) even violates both principles: the quantum mechanical causal model involves internally cancelling paths (violating the faithfulness condition) as well as common causes that do not screen off (violating the Markov condition). Nevertheless, I argue for the claim that there are good reasons to regard the quantum mechanical explanation as a *causal* one, if one moderately generalizes the causal principles in an appropriate way. Solutions to the causal problem should be regarded as a framework for metaphysical models of entanglement.