

Speaker: Rosemary HARRIS (Queen Mary University London, UK)

Title: **Insights from non-Markovian random walks**

Abstract

I will discuss some non-Markovian random walks as paradigms of stochastic processes with memory. In particular, I will demonstrate how such a statistical mechanics framework can be used to model repeated decision-making with distorted human recall of past experiences. In the case of two choices with different utility distributions, it is possible for an agent to become "trapped" in one of the choices on the basis of their early experiences. Significantly, it turns out that, under certain conditions, there is an optimal level of noise in the decision process which maximizes the expected returns in the long run.

[Based partly on arXiv:2108.05918, joint work with Evangelos Mitsokapas]