

**Speaker: Alex Rudge (University of Bath)**

**Date: 15/03/2023 at 13:15 in 8 West 2.13**

**Title: Dynamic modelling of primary care health-records for earlier diagnosis of psoriatic arthritis**

**Abstract:**

Psoriatic arthritis is an inflammatory form of arthritis that typically develops in up to 20% of patients with the skin disease psoriasis. It can cause pain, inflammation, and degradation in joints around the body. Despite this, it is often underdiagnosed in primary care, with a delay in diagnosis associated with worse patient outcomes. The aim of this PhD project is to develop statistical models to predict the development of psoriatic arthritis in a cohort of psoriasis patients, using primary care electronic health records from the Clinical Practice Research Datalink (CPRD). The model we aim to use combines landmarking, a simple technique for producing dynamic predictions, with a Bayesian network, a probabilistic graphical model. We will also adopt an existing method to allow a Bayesian network to account for right censoring in the data using inverse probability of censoring weights (IPCW). Finally, we will report the methodology and results of an ongoing simulation study that aims to evaluate the effectiveness of using IPCW for parameter learning, as well as an attempt at a novel incorporation into the Bayesian network structure learning process.