



## Working Group on Statistical Learning Seminar

**Title:** Flexible methods for survival data: from synthetic patients to dynamic prediction in cure models

**Speaker:** Marta Cipriani (UCD)

**Date:** Thu 16th April 2026 at 3:00PM

**Location:** E0.32 (beside Pi restaurant)

**Abstract:** Survival analysis plays a crucial role in medical research by evaluating treatment effects, disease progression, and patient outcomes. However, as biomedical studies become increasingly complex, two major challenges arise: the difficulty of sharing sensitive patient data without compromising confidentiality, and the need for predictions that adapt as the patient's situation changes. This presentation addresses both challenges. The first part introduces a flexible framework for generating synthetic survival data that retains the essential characteristics of the original dataset. This approach allows researchers to share and reproduce complex relationships between covariates and time-to-event outcomes while ensuring patient privacy. The second part focuses on cure models, which differentiate between patients who will eventually experience an event and those who will not. Within this framework, a dynamic prediction method is developed to incorporate longitudinal information, enabling survival predictions to be updated over time as individual profiles evolve.