

Speaker: Sofia Villar (MRC Biostatistics Unit, Cambridge)

Date: 17/04/2026 at 13:15 in 4 West 1.7

Title: Recent Advances for the Design, Analysis and Implementation of Response-Adaptive Designs: Are We There Yet?

Abstract:

Response-adaptive designs, where treatment allocation dynamically adjusts based on observed outcomes, have a rich history dating back to the 1930s, even predating the first randomized controlled trial (RCT) in 1948. While theoretically appealing, their practical implementation in clinical trials has faced significant challenges. This talk will present three recent advances developed by my group that bridge the gap between theory and practice. Each contribution addresses a critical aspect of response-adaptive designs, encompassing innovative design strategies (introducing a new optimal allocation proportion from a finite sample perspective), novel analytical approaches (exact tests and allocation probability tests), and practical implementation solutions (a mapping strategy to facilitate the seamless integration of response-adaptive designs into clinical trial workflows). These advances, while motivated by the context of clinical trials, have broader implications for improving the efficiency and ethical conduct of experiments in various domains, including digital experimentation.