Speaker: Christoper Jennison (University of Bath)

Date: 12/03/2024 at 13:15 in 1 West 2.01

Title: Optimising sequential and adaptive designs: the power of dynamic programming

Abstract:
Dynamic programming is a method for computing an optimal strategy in a sequential decision problem. It is computationally efficient since the computational demand increases linearly with the number of stages, even though the number of sample paths grows exponentially. The design of a group sequential or adaptive trials poses a sequential decision problem and thus may be amenable to dynamic programming techniques. I shall describe a number of applications of dynamic programming to clinical trial design. In particular, I shall explain how to derive optimal group sequential tests for Phase 3 confirmatory trials and how to develop an optimal treatment allocation scheme in a Phase 1, First in Human trial.