Please join the Biometric Colloquium

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FLEXIBLE ADAPTIVE PROCEDURES FOR TESTING MULTIPLE TREATMENTS, ENDPOINTS OR POPULATIONS IN CONFIRMATORY CLINICAL TRIALS

Wednesday 4th of March 2026 at 9:15am

Seminarraum Center for Medical Data Science
Spitalgasse 23, Room 88.03.512
Medical University of Vienna, 1090 Wien
Hosts: Franz König and Martin Posch

Abstract:

The statistical methodology for the classical two-arm group sequential design has advanced vastly over the past three decades to incorporate, adaptive design changes, multiple treatments and multiple endpoints, while nevertheless preserving strong control of the family wise error rate. The graph based approach to multiple testing is an intuitive method that enables a clinical trial study team to represent clearly, through a directed graph, its priorities for hierarchical testing of multiple hypotheses, and for propagating the available type-1 error from rejected or dropped hypotheses to hypotheses yet to be tested. Although originally developed for single stage non-adaptive designs, we show how it may be extended to two-stage designs that permit early identification of efficacious treatments, adaptive sample size re-estimation, dropping of hypotheses, and changes in the hierarchical testing strategy at the end of stage one. We will present the statistical methodology for controlling the family wise error rate in the presence of these adaptive changes, and will generate the operating characteristics of different underlying scenarios and adaptive decision rules through a large simulation experiment.