
Please join the Biometric Colloquium

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CONFIDENT AND LOGICAL SELECTION OF A BIOMARKER CUT-POINT FOR PATIENT TARGETING

7th of May 2026 at 1:00pm

Seminarraum Center for Medical Data Science

Spitalgasse 23, Room 88.03.512

Medical University of Vienna, 1090 Wien

Host: Martin Posch

Abstract:

Confidently selecting a cut-point for a biomarker to target patients is challenging due to two levels of multiplicity: multiplicity arising from testing efficacy in the marker-positive and marker-negative subgroups at each potential cut-point, and the additional multiplicity induced by searching over infinitely many cut-points. Currently available methods do not strongly control the familywise type I error rate (FWER) across both levels of multiplicity. In this talk, I will present a method that achieves such control.

Adopting a confidence band approach, our method further establishes four principles that we believe any method for confident biomarker cut-point selection should strive to adhere to. For diseases with continuous outcomes, such as type II diabetes and Alzheimer's disease, our method provides exact simultaneous confidence intervals for efficacy in the marker-positive and marker-negative subgroups, simultaneously for all possible cut-point values. I will also demonstrate an interactive app implementing the proposed method.