Basel Biometric Society Suisse Romande
Webinar Series 2026

Optimal decision rules and subgroup effects with appropriate statistical guarantees

Date: September 30th, 2026
Time: 15:00-17:00 CET (9:00-11:00 EST)

Venue: Virtual & In-Person at
Debiopharm (Chemin Messidor 5, 1006, Lausanne)

Speaker:	Prof. Mats Stensrud (EPFL)
Costs per person:	Free (registration required - link below)
	Registration Link

Abstract
The current focus on precision medicine reflects the search for individualized decision rules, adapted to a patient's characteristics. This presentation will study how to define, choose, and estimate effects that inform individualized decisions. A central difficulty, common to most existing approaches, is that finer personalization comes at a cost: as more covariates are used to distinguish between patients, increasingly strong assumptions are needed.

An alternative strategy is proposed for detecting and estimating group-level effects, with statistical guarantees that the estimated groups truly differ. In realistic settings, decision rules based on the group-level effects can substantially outperform state-of-the-art optimal-regime methods, even when those methods rely on correctly specified models and are implemented with modern doubly robust machine-learning estimators. The practical relevance of the results will be illustrated through the re-analyses of randomized clinical trials.

Learn more about the speaker!
Prof. Mats Stensrud is an MD and associate professor at the Institute of Mathematics, EPFL, where he hold the Chair of Biostatistics (since 2020) and serve as director of the doctoral program in mathematics (since 2025). He develops causal and statistical methodology with two main goals: make the target of inference scientifically meaningful and keep assumptions transparent and testable. He is particularly interested in settings where exposures and outcomes evolve over time (longitudinal and time-to-event data). Many of his works are inspired by applications in clinical medicine and epidemiology.

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