

[Inici](#) > Virtual BSC RS/Life Session: Population-wide prescription trajectories, polypharmacy and drug-drug interactions

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Objectives

Title: Population-wide prescription trajectories, polypharmacy and drug-drug interactions

Abstract: “Multi-step disease and prescription trajectories are key to the understanding of human disease progression patterns and their underlying molecular level etiologies. We present approaches to the identification of frequent prescription trajectories from population-wide healthcare data comprising millions of patients and corresponding strategies for linking these to observed changes in drug dosages in poly-pharmacy settings. Patterns and observations are further linked to known and possibly currently unknown drug-drug interactions. This type of analysis can form the basis for creating N=1 treatment plans. Examples on how changes in drug use correlate with mortality will be presented. We use prescription and diagnosis data covering 7-10 million patients from Denmark collected over a 25-40 year period and use them to “condense” millions of individual trajectories into a smaller set of recurrent ones.”



Research Director at the Novo Nordisk Foundation Center for Protein Research at University of Copenhagen. He is a leading pioneer in the biomedical sciences through invention and introduction of new computational strategies for analysis of biological data for use in molecular biology, medicine and biotechnology, including machine learning approaches. Søren Brunak is an EMBO member, and also member of the Royal Danish Academy of Sciences and Letters and the Royal Swedish Academy of Sciences.

Speakers

Speaker: Søren Brunak, Professor, Research Director, Novo Nordisk Foundation Center for Protein Research, Copenhagen University

Host: Alfonso Valencia, Life Sciences department director
Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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