PhD studentship bridging causal inference and pharmacometrics

Job ID
REQ-10060747

8月 29, 2025

Switzerland

摘要

Co-supervised by Novartis Pharmacometrics Department and Uppsala University in Sweden.

The INVENTS project consortium (https://invents-he.eu/), in which Novartis is an associated partner, aims at developing methods, workflows, and evidence-tools to improve the development and evaluation of evidence in rare diseases and pediatric populations.

Pharmacometrics (PMX) models are often used to support drug development in these settings, however, there is limited research on when the dose response relationship inferred through pharmacometrics models has the intended causal interpretation. The aim of this project is to advance our understanding of the potentials and limitations of pharmacometrics modeling approaches from an estimand and causal inference perspective for the development of new medicines in small sample size populations such as rare diseases and pediatric populations.

Preferred start date: ASAP
Duration: 4 years

About the Role

Major accountabilities:

- Assessing types of intercurrent events that can impact the interpretation or even the existence of measurements of the efficacy or safety endpoint of interest in the target population.
- Assessing and contrasting strategies, including the required assumptions, to handle such intercurrent events.
- Developing causal inference methodologies adapted to pharmacometrics models, to identify valid estimators (i.e., yielding unbiased estimates) of the estimand.
- Developing tools such as model diagnostics that help assess whether a model can be interpreted causally.
- Performing simulation studies and analyze real clinical data to assess the impact and limitations of the proposed approaches on the evidence generated.

Minimum Requirements:

- Master ' s level degree or equivalent in a relevant field such as statistics, pharmacometrics, mathematics, engineering, biomedicine, or medicine, with strong interest in causal inference.
- Strong interest in bridging principles from causal inference and pharmacometrics.
- Good interpersonal and communication skills.
- Exposure to scientific computing and programming

Desirable requirements:

- Expertise or coursework in causal inference.
- Expertise in R.
- Experience with modeling & simulation software such NONMEM or Monolix Suite.

Languages :

- Fluency in English (IELTS (academic) total score of 6.5 or higher with no section less than 5.5), or equivalent.

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Functional Area
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Job Type
Full time

Employment Type
Early Career (Fixed Term)

Shift Work
No

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