



Two-day DSBS Course
Fundamentals of Causal Inference,
Arvid Sjölander
3-4 February 2020

Lecturer

Arvid Sjölander, Senior Researcher,
Dept of Medical Epidemiology and Biostatistics,
Karolinska Institutet

Course on Fundamentals of Causal Inference

- Day 1: potential outcomes, counterfactuals, DAGs
- Day 2: marginal causal effects, instrumental variables

Time 9:00 – 17:00

Venue Lundbeck A/S
Ottiliavej 9
2500 Valby

Registration

The course fee is DKK 500 for the full course.

Deadline

Please register before
January 10, 2020

To register, please send a
mail to

commres1351@Lundbeck.com

Joint registration by department
is warmly welcomed.

There is a limit on the number
of attendees. The first come,
first serve principle will be
applied.

Fundamentals of Causal Inference

Literature and other teaching material

Causal inference from observational data is a key task in medical research, and of allied sciences such as biostatistics, epidemiology, sociology, behavioral sciences and demography. These disciplines share a methodological framework for causal inference that has been developed over the last decades.

This course presents this unifying causal framework and shows how standard statistical concepts and methods can be understood within this framework. The course emphasizes conceptualization, but also introduces several novel causal inference methods. Specifically, this course will cover the following topics:

- Formalization of causal effects using potential outcomes and counterfactuals
- Covariate selection using Directed Acyclic Graphs (aka causal diagrams)
- Estimation of marginal causal effects using regression standardization and inverse probability weighting
- Estimation of causal effects in the presence of unmeasured confounding, using instrumental variable methods

Literature and other teaching material

- "Causal Inference", by Miguel Hernan and James Robins. Unpublished, but partly available on Miguel's homepage <http://www.hsph.harvard.edu/faculty/miguel-hernan/causal-inference-book/>
- Slides to be handed out during the course