Causal inference for population health sciences

Facilitators
PD Dr. Tracy Glass, PhD
Swiss Tropical and Public Health Institute & University of Basel

Description
This 4.5-day in-person course, comprising a mix of lectures and hands-on practical sessions, is aimed at students who want to gain a fundamental understanding of what causal inference is and how it might apply to their own research. The course will cover defining the research question in a causal framework, creating a direct acyclic graph, identifying valid covariate adjustment sets, and selecting a method for estimating the causal contrasts. We will guide the learning through lectures followed by practical sessions applying the knowledge gained. The practical sessions will be carried out using R software.

Objectives
Students will:
- understand the setting for which causal inference is warranted and the framework for potential outcomes
- understand the difference between causal estimands, estimators, and estimates
- understand how to generate and interpret a directed acyclic graph
- understand hypotheses underlying the identification of causal effects,
- identify the most suitable methods to answer different research questions,
- run basic analyses with the methods presented

Dates
14-18th October 2024

Eligibility
Open to PhD students of the SSPH+ Inter-university Graduate Campus; other students and external participants are welcome to apply.
**Prerequisites**

Prerequisites for the course are knowledge in statistics, especially statistical inference and regression modeling with some experience in implementing statistical analysis. Familiarity with R/R studio is preferred for use during the practical sessions.

**Course Structure**

4.5 days with time split between lectures and practical sessions.

**Assessment**

Class participation, practicals and quizzes.

**Credits**

2 ECTS

Preliminary Work: 10 h; Contact time: 36 h; In-course work: 5-10 h

(1 ECTS corresponds to appr. 25-30 hours workload)

**Location**

Swiss TPH, Kreuzstrasse 2, 4123 Allschwil, Switzerland, room tba

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**Registration**

https://www.conftool.com/ssph-phd-courses2024

**Deadline for registration**

14 September 2024