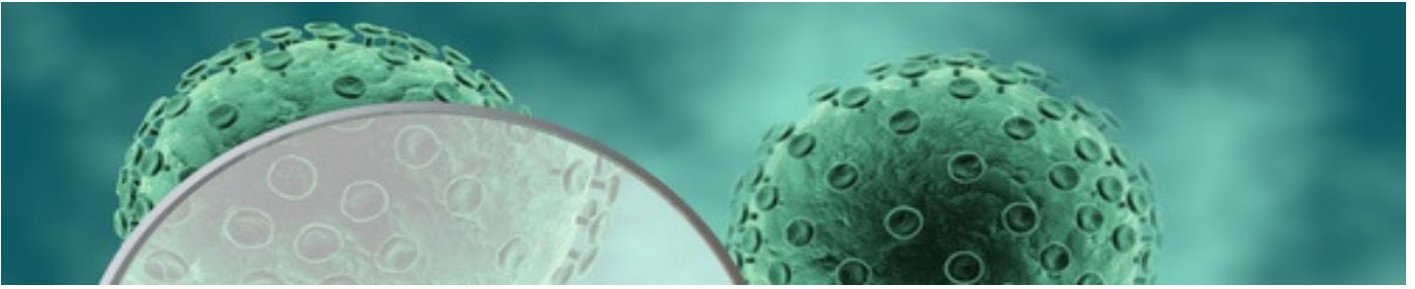


# CAS in Clinical Research



## Prognostic Research: Concepts and Models

### Description

Prognosis is the probability that a specific event will occur in the future. Prognostic research is fundamental to clinical decision making, healthcare policy, and discovering new approaches to patient management. In this course we describe the basic concepts used to develop, validate, and implement a prognostic model in clinical practice and discuss how a web-based calculator might be constructed to give a useful decision-making tool. In addition, we consider the reporting and impact of prognostic models and how the quality of prognostic research might be improved in order that prognostic information may be translated into clinically useful decision tools.

In the statistical sessions we will guide you through the main steps in prognostic modelling. As well as using standard regression techniques, you will be introduced to penalization as a modern estimation method that can improve the predictive ability of a model. We will present methods to select prognostic variables and investigate their form (using for example with splines), compare and choose candidate models using information criteria, and validate the chosen model. Although statistical theory will be discussed in the lectures, the emphasis will be on practical application of the statistical methods. The practicals in R will give you experience of selecting prognostic factors and assessing them, choosing between different models, and fitting and validating a prognostic model.

For more information about the Statistical Software R, please visit the course "Introduction to the Statistical Software R".

### Objectives

- By the end of this course participants will have:
- An understanding of different types of prognostic research
- An understanding of how prognosis is used in clinical decision making and in discovering new approaches to managing patients
- Practical experience of analysing and assessing potential prognostic factors
- Practical experience of developing and validating a prognostic model
- An understanding of the quality of prognostic research and how it can be improved

### Dates

**6 – 8 September 2023**

### Equipment

Participants should bring their own portable computers.

### Contact:

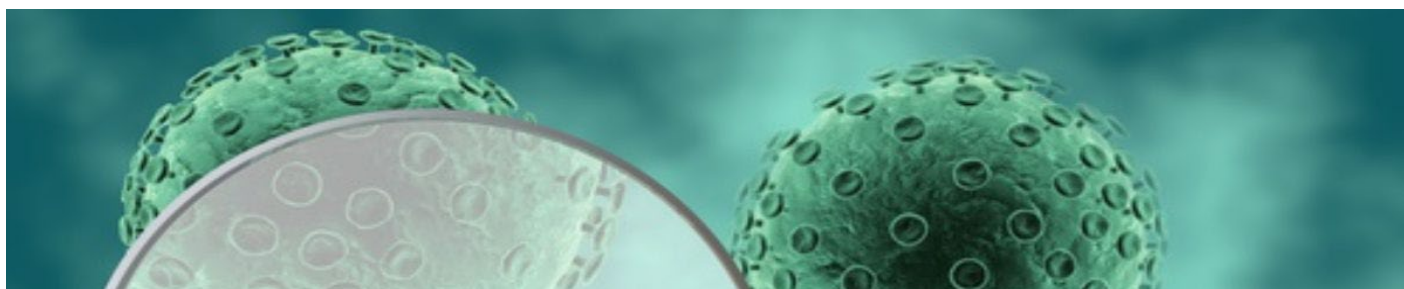
Course coordination: Melissa Nef

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# CAS in Clinical Research



## Course Structure

There will be a mixture of lectures, group exercises and computer practicals. The practicals assume some experience with standard regression analysis.

## Assessment

Attendance and completion of practicals and group work.

## Credits

**1 ECTS**

Preparation work: 2 h , Contact: 21 h

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

## Facilitators

Prof. Matthias Egger, Institute of Social and Preventive Medicine (ISPM) Bern

Prof. Georgia Salanti, Institute of Social and Preventive Medicine (ISPM) Bern

Dr. Orestis Efthimiou, PD, Institute of Social and Preventive Medicine (ISPM) Bern

## Location

University of Bern, Mittelstrasse 43, Room: tba

## Contact:

Course coordination: Melissa Nef

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