CENTER FOR LIFECOURSE HEALTH RESEARCH

Health and Bioscience Doctoral training course

Study design, Data processing and Epidemiology

Date: 21st, 23rd, 26-29th of November 2018

Course organizer: Dr. Sylvain Sebert and Pr. Jouko Miettunen

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Public: Doctoral students in Health and Biosciences – **Lectures are opened to all**

Registration: https://doodle.com/poll/k6e9mxfb9ex8eivx

Course objective:

*Too often not enough attention is paid on **the inevitable bias** to take into account when planning, designing, controlling and interpreting research from big or small data collections. Lacking basic principles and understanding, often lead to speculative or misinterpretation of the results*

The course will be a cross-disciplinary course with lectures by leading experts in longitudinal data collections, analyses and interpretations.

The training intends to bring knowledge and awareness on the following:

- Study design and data collection – *how to reduce bias?;*
- Sources of data – how to access the data relevant to **your** question?
- Pre-processing and good practices in data management;
- Estimating and improving your statistical power and precision;
- Dissecting your associations for interpretation

The course will combine lecture in English by University of Oulu researchers and International teachers and will be validated by a practical session.

The practical session will be a 15 minutes presentation of students project covering:

- Study question,
- Study design and potential bias,
- Data management plan,
- Directed acyclic diagram of the research question

Course program

Monday 19.11.18 – Joint program with the Biobank course			ROOM NUMBERS
Theme 1 - Longitudinal birth cohort studies in Europe – tools for open sciences - **Session I**			
Time	**Title**	**Who**	**Room number**
14:00	The European Birth Cohort Network	**Vincent Jaddoe**	**F202**

Friday 23.11.18			
Theme 1 - Longitudinal birth cohort studies in Europe – tools for open sciences - **Session II**			
Time	**Title**	**Who**	**Room number**
10:00 - 10:45	Welcome and introduction	**Sylvain Sebert**	**P117**
11:00 – 11:45	Study designs in Epidemiology - Why does it matter?	**Marjo-Riitta Järvelin**	**P117**

Theme 1 - Longitudinal birth cohort studies in Europe – tools for open sciences - **Session III**			
Time	**Title**	**Who**	**Room number**
13:00 - 13:45	The FinnGedi project	**Eero Kajantie**	**P117**
14:00 - 14: 45	The Generation NFBC studies a tool-box to study the molecular and environment determinants of life-long health	**Marjo-Riitta Järvelin and Sylvain Sebert**	**P117**

Monday 26.11.18			
Theme 1 - Longitudinal birth cohort studies in Europe – tools for open sciences - **Session IV**			
Time	**Title**	**Who**	**Room number**
11:00 - 11:45	Finnish health data - opportunity and challenges	**Johannes Kettunen**	**F101**
13:00 - 13:45	The ALSPAC study	**Nicholas Timpson**	**F101**

Theme 2 - Planning, managing, optimising, combining your data - **Session I**			
Time	**Title**	**Who**	**Room number**
14:00 - 14:45	From confounding to causality basic principle and assumption	**Nicholas Timpson**	**F101**

Tuesday 27.11.18			
Theme 2 - Planning, managing, optimising, combining your data - **Session II**			
Time	**Title**	**Who**	**Room number**
10:00 - 10:45	Introduction to causation and causal models	**Sylvain Sebert**	**101A**
11:00 - 11:45	Power and Attrition analysis	**Marianne Haapea**	**101A**
13:00 - 13:45	Building your structural equation models – The do(s) and don't(s)	**Mimmi Tolvanen**	**101A**

Time	Title	Who	Room number
14:00 - 14:45	Meta-analysis	**Jouko Miettunen**	**F202**

Theme 3 - Practical - **Session I**			
Time	**Title**	**Who**	**Room number**
15:00 - 15:45	Tutorial and recommendation	**Sylvain Sebert, Jouko Miettunen, Nina Rautio, Mimmi Tolvanen**	**F202**

Thursday and Friday 29.11.18 – 30.11.18

The practical will consist of a 10 + 10 min presentation of one of your research project, targeted to a **scientific audience with a broad range of expertise** including:

- The aim and hypothesis of your research;
- The source of data;
- Data management according to the FAIR principle;
- A flowchart of the study identifying the design of your study and the source of attrition;
- A graphical representation of the associations to be tested;
- The model(s) to be tested;
- The strengths of your approach;
- The opportunities to complement your prospect.

Theme 3 – Practical – **Session II**			
Time	**Title**	**Who**	**Room number**
9:00		Student 1	**F101**
9:20		Student 2	
9:40		Student 3	
10:00		Student 4	
10:20		Student 5	
10:40		Student 6	
Break			
11:20		Student 7	
11:40		Student 8	
Lunch break			
13:00		Student 9	
13:20		Student 10	
13:40		Student 11	
14:00		Student 12	

Friday 30.11.18

9:00		Student 13	**Place: P117**
9:20		Student 14	
9:40		Student 15	
10:00		Student 16	
10:20		Student 17	
10:40		Student 18	
Break			
11:20		Student 19	
11:40		Student 20	
Lunch break			

13:00	Student 21
13:20	Student 22
13:40	Student 23
14:00	Student 24