

# SINGS

Swedish INterdisciplinary Graduate School

Swedish INterdisciplinary Graduate School in register-based  
research (SINGS)

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## SINGS - a truly interdisciplinary programme in register-based research

- offering a **large number of relevant courses** with integrated **networking activities**, including both core courses and a variety of elective courses so the tailoring of individualised study plans is possible,
- attracting a **sufficient number of doctoral students** from different universities and research areas,
- involving a **large number of teachers** from different research disciplines who have considerable experience in conducting register-based research, as well as **representatives from authorities and other data-owners**, and
- having a **dedicated management team and a steering group** consisting of members representing different research disciplines, which has ensured relevant input across a variety of aspects.

## SINGS Key figures 2014-2018

- **Courses of a large variety – all new**
  - A large number of courses, 28 in total
    - 12 core courses (i.e. six for each of the two cohorts)
    - 16 elective courses, mainly focused on methodological issues.
- **Attracted a large number of students**
  - 569 participating students, from different universities and research areas
  - **2 cohorts**
    - Cohort 1: 28 (14% from SIMSAM nodes)
    - Cohort 2: 25 (12% from SIMSAM nodes)
- **Involving a large number of teachers**
  - 102 in total, from different research disciplines and with considerable experience of conducting register-based research



## New version of SINGS

- New national and international partners
  - 7 Swedish higher education institutions: University of Gothenburg, Stockholm University, Lund University, Linköping University, Umeå University and Uppsala University, Karolinska Institutet (coordinating univ.) and international partner Harvard University.
  - **Added value:** one university would not have the required competences or resources to establish such a programme.
  - Most of the main Swedish higher education institutions are part SINGS, which in addition to them contributing with different skills and competences also ensures a large recruitment base
- Include new courses on emerging topics

## SINGS

- Focus **on methodological, practical, ethical and legal aspects** of utilising register data for research purposes
- **Core curriculum attended by all students**, strive to build a common knowledge base for a range of disciplines involved in register-based research
- **Elective courses** on different topics and at different levels in order to **enable the tailoring of individualised study plans**
- **Of relevance for many quantitative research disciplines**, such as epidemiology, public health, sociology, demography, psychology, statistics, health economics, and other medical and social sciences
- **Target group** doctoral students involved in register-based research
- **Runs in 2-year cycles**, students admitted biannually (around 25-30 per cohort is foreseen)
- **A minimum of 12 credits**; all core courses and a minimum of one elective course

## SINGS Objectives

- thorough knowledge of existing registers,
- the ability to identify and formulate problems of relevance for register-based research,
- the ability to use appropriate methods to undertake research-based research,
- the capacity to perform and assess register-based research, following laws and research ethical principles,
- methodological and practical skills when undertaking register-based research,
- insight into the possibilities and limitations of register-based research



## Interdisciplinary

- **Bringing a wide range of disciplinary experts** together as well as employing an interdisciplinary approach by integrating techniques, tools, perspectives, concepts, or theories from different disciplines, facilitates a comprehensive understanding of complex problems and promotes framing new research questions. **This process goes beyond the scope of a single discipline or area of research practice (1).**
  - Thus, **collaborations facilitate diverse perspectives and a broad, cross-border approach for various problem areas is promoted**, stimulating knowledge transfer and cross-fertilisation between different disciplines.
- 1. Committee on Facilitating Interdisciplinary Research, Committee on Science, Engineering, and Public Policy (2004). Facilitating interdisciplinary research. National Academies. Washington: National Academy Press

## SINGS National Steering group

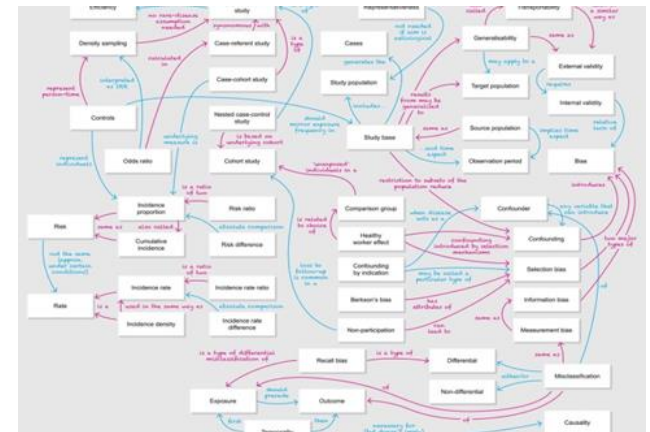
- Overall responsibility for the curriculum and quality assurance
- Overall responsibility for admission procedure and decides on budgetary matters
- **Members representing different research disciplines**
  - Considerable experience of conducting research utilising data from registers
  - Extensive teaching experience
  - Contribute with different subject-matter knowledge, competences regarding ethical and legal aspects, data infrastructure responsibilities
- Two **student representatives** from each cohort
  - Formal structure for student influence on the educational activities
- **Anita Berglund**, Ass. Professor of Epidemiology, Karolinska Institutet (Director and Chair Steering Group, member SWE-REG coordination group)
- **Gunnar Andersson**, Professor of Demography, Stockholm University (Deputy SWE-REG coordination group)
- **Jonas Björk**, Professor Epidemiology, Lund University
- **Xavier de Luna**, Professor Statistics, Umeå University
- **Kirk Scott**, Professor Economic Demography, Lund University
- **Max Petzold**, Professor Biostatistics, University of Gothenburg, Director of the Swedish National Data Service (SND)
- **Magnus Stenbeck**, Ass. Professor, Karolinska Institutet, Secretary in the Research Data Inquiry
- **Maria Brandén**, Senior Lecturer, Linköping University
- **John Östh**, Ass. Professor, Senior Lecturer Geography with GIS, Uppsala University
- **Karin Modig**, Ass. Professor Epidemiology, Karolinska Institutet (assistant director)



## Core courses (seven one-week courses, 1.5 credits each)

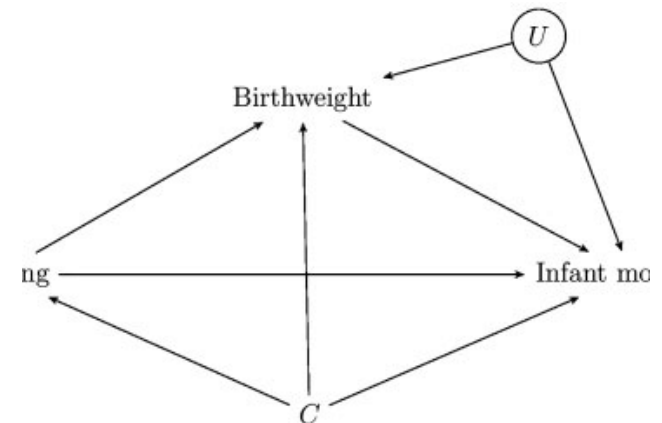
- Central concepts, designs and methods in epidemiological and sociological life course research
- Analysis of bias in register-based studies
- Causal inference from observational data
- Ethical and legal aspects on using personal information in register-based research
- Writing and presenting successful grant applications
- Longitudinal methods in register-based research
- Data science

Followed in a logical order, implying progression.



## Elective courses, ex. (one-week courses, 1.5 credits each)

- Statistical analysis of twin and family-based studies
- Advanced course in SAS programming
- Introduction to spatial methods
- Methods for life course epidemiology
- Causal Inference from observational data: emulating a target trial
- Fundamentals of statistical modeling
- Introduction to machine learning methods for analysis of large-scale register datasets



## Questions?

Join the session “Discussions based on morning sessions hosted by each of the Nodes”

14:20-15:00 Running in parallel from

- Room 8 - Information and discussion about SINGS -  
Host: Anita Berglund

