Bergen Summer Research School

› Global Development Challenges

Global Health in Bio-medical, Social and Cultural perspectives
Bergen, 21 June - 2 July 2010

PhD-Research Course: Research Methods in Climate Change and Health

Course leaders:
- **Bernt Lindtjørn**, Professor, University of Bergen, Centre for International Health
- **Asgeir Sorteberg**, Associate Professor, University of Bergen, Bjerknes Centre for Climate Research
- **Ellen Viste**, Research Fellow, University of Bergen, Geophysical Institute
- **Thorleif Markussen Lunde**, Research Fellow, University of Bergen, Centre for International Health

Invited course leader:

- To be decided later

Course description, goals and objectives:

Global climate change may lead to changes in long term climate and extreme weather events which may affect human health through various mechanisms such as changes in food and water supply and changes in the ecology of infectious diseases. In order to address the impact of climate change on human health a broad research approach including social, demographic, and economic aspects is needed.

The course will explore the links between human health and the earth's environment, and consider the implications of those links for human health in a changing environment.

The central objective of the course is to help develop and strengthen the student's scientific knowledge on statistical and physical modelling of various climate and health issues.

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At the end of the course the participant will be able to:
- Discuss and describe the basis of climate change and its possible links to human health.
- Understand the main research tools and methods used in climate, and health research

The specific objectives include:

On health:
- Understand research methods to assess health impact such as
  - Statistical and physically based epidemiological methods to evaluate health condition
  - Identify methods to assess the possible climate impacts on climate-sensitive diseases
  - Identify mechanisms linking environmental conditions and health

On climate
- Understand research methods used in climate change modelling
  - Physical and statistical methods used in climate modelling
  - Understand the limits of climate predictability
- Understand the main physical mechanisms of climate variability and change on different timescales.

Apply the ideas, methods and tools within a country or region in the form of a case study (synthesis).

Methods:
The course is composed of lectures, group work, student presentations, and self-directed learning.

The group work will include case studies at the regional or national level that focus on specific regions of interest selected by the participants. This helps the participants' achievement of the learning objectives and shows the applicability of the ideas and methods to specific regional settings.

Because the topic of the course lies at the crossroad of several scientific disciplines, lecturers will be from various fields including the physical climate, statistics,

epidemiology, public health and medicine. A proper mix of knowledge-transfer methods such as lectures, films, case studies and critical incidents, will be used to insure that material that is new to most participants is communicated effectively.

Each session has specific objectives and short key readings that are included in the course reader. Further readings, which are not compulsory, are suggested and made available.

Targeted students, Prerequisites and ECTS

We welcome students from any natural science, social or health science arena whose dissertations involve scientific questions related to health and climate. The course assumes that the students have some prior knowledge of statistical methods.

The student should be a registered PhD student, or have completed masters in a relevant discipline.

Proficiency in the English language is required. Experience in use of statistics will be an advantage.

Course literature, which will be ready by May 1st 2010, must be read prior to the course.

The course participants are expected to attend teaching sessions and take part in discussions and group work. Participation is also mandatory in the plenary events of the overall programme of the Bergen Summer Research School 2010 (the programme will be published on the web in June 2010).

On the last day of the course, group results will be presented. Each group shall present a paper summarizing the work.

3 ECTS will be awarded upon successful participation and completion of the full programme.

Total hours: 90
Lectures	20
Group Work	20
Independent Study	50

Reading list:

Will be ready by May 1st 2010