

## Course lecturers/teachers

**Professor Colin D. Butler, University of Canberra, Australia.** Professor Butler is especially interested in future global health, including the consequences of global environmental changes such as to the climate, ecosystems, energy sources and resource depletion. He has published widely, and given many invited talks on topics including food security, population growth, ecology and infectious diseases. Professor Butler is the editor of the book "Climate Change and Global Health" used during the course.

**Research Professor Timothy Carter, Finnish Environment Institute, Finland.** The expertise of Professor Carter is related to climate change impact and adaptation; scenario development and application; vulnerability indicators; impact modelling as well as spatial mapping. He is one of the leading authors of the report on climate change impacts, adaptation and vulnerability, by the IPCC, the Intergovernmental Panel on Climate Change. He has been a contributor to these reports for over twenty years.

**Professor Birgitta Evengård, University of Umeå, Sweden.** Professor Evengård has worked in the field of infectious diseases for many years, including a number of years in Africa. She has a particular interest in examining the effects of climate change on infectious diseases. She is also a member of an expert group under the Arctic Council.

**Professor Jouni JK Jaakkola, Director of the Center for Environmental and Respiratory Health Research (CERH) and WHO Collaborating Centre in Global Change, Environment and Public Health, University of Oulu, Finland.** Dr. Jaakkola has since 1980's conducted research into environment and health in populations applying epidemiologic methods and combining multidisciplinary collaboration. His main areas of interest include effects of indoor environments, ambient air pollution and water quality on respiratory, cardiovascular, reproductive health and cancer. He has contributed to theory and practice of exposure assessment applying both biomarkers of exposure, effects and effect modification.

**Adjunct professor Tiina M Ikäheimo, University of Oulu, Finland.** The research of Dr Ikäheimo focuses on the effects of extreme temperature on human health, especially in identifying susceptible populations for planning and implementing prevention and protection measures to mitigate the expected adverse health effects of climate change. Her research combines controlled experiments and population studies.

**Lecturer Timo Hugg, University of Oulu, Finland.** The expertise of Dr. Hugg is related to pollen dispersal between in- and outdoor environments, pollen concentrations in different urban environments, and the effects of environmental exposures on asthma, allergic diseases and symptoms.

**Research Professor Nils Petter Gleditsch, PRIO, Norway.** Nils Petter Gleditsch is Research professor at the Peace Research Institute Oslo (PRIO) and Professor emeritus at the Norwegian University of Science and Technology (NTNU) in Trondheim. He served as President of the International Studies Association in 2008–09 and edited Journal of Peace Research (1977–78, 1983–2010). His current research interests are on the decline of war and on the security implications of environmental change.

**Representative from the Ministry of Health: Mikko Paunio.** Mikko Paunio works as a medical counsellor for the Department for Promotion of Welfare and Health of the Finnish Ministry of Social Affairs and Health. He is a health care specialist and an adjunct professor of epidemiology at the University of Helsinki. During his career he has gained comprehensive experience with the prevention of infectious diseases, measles in particular. For the past 15 years he has been working for the Ministry of Social Affairs and Health - except for two years at the World Bank where he has involved with the global agenda of environmental health. His tasks related to climate change include memberships in national and international working groups, that have been constructing adaptation strategies.

**Representative from the County of Oulu Tytti Tuppurainen.** Tytti Tuppurainen is a Member of the Finnish Parliament (SD.) and a Member of the City Council of Oulu. Her previous experience include being a R&D Coordinator for the Oulu UAS School of Music, Dance and Media. She has a long history in different associations e.g. Yritetään yhdessä -association which prevents social exclusion and employs long-term unemployed persons. She has graduated as a Master of Arts from the University of Oulu. Ms Tuppurainen was the chair of regional climate change council 2009-2011.



CERH

Center for Environmental and Respiratory Health Research

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## WHO Collaborating Centre Course: CLIMATE CHANGE, WEATHER AND HUMAN HEALTH

The objectives of the course are to understand climate change and how it is related to health nationally and globally, at present and in the future. Firstly, the purpose is to increase knowledge on how key primary effects of climate change, such as temperature and climate extremes influence human health. Following, the course will provide information of secondary health effects, such as changes in the occurrence of allergens and infectious diseases. Finally, the course presents mitigation measures and public health responses for reducing and preventing adverse health effects.

**Schedule:** 27.-29.10.2014

**Location:** University of Oulu, Oulu, Finland. The lectures will be held in the auditorium of Kastelli Research Center in the vicinity of the medical campus and group works will be organized both at the Medical Faculty and Kastelli Research Center.

The course is organized by the Center for Environmental and Respiratory Health Research (CERH) in co-operation with Doctoral Programs in Public Health (DPPH) and University of Oulu Graduate School (UniOGS).

**More information:** [www.oulu.fi/cerh](http://www.oulu.fi/cerh)

**Lectures are open for all and available online:** <http://connectpro.oulu.fi/cerh>



*Climate change is  
the biggest global  
health threat of the  
21<sup>st</sup> century.*

UCL-Lancet Commission on Managing the Health Effects of Climate Change (Lancet 2009; 373: 1693-733).

## Course program

Time	DAY 1 Monday October 27	DAY 2 Tuesday October 28	DAY 3 Wednesday October 29
	<b>Theme: CLIMATE CHANGE</b>	<b>Theme: CLIMATE CHANGE, WEATHER AND HEALTH</b>	<b>Theme: CHALLENGES AND SOLUTIONS</b>
8.30	<b>Introduction and welcome words</b>  Rectorn Lauri Lajunen and Professor Jouni Jaakkola (20 min)	<b>Climate change and primary health effects</b>  Lecture I: Temperature and human health – Adjunct professor Tiina Ikäheimo (45 min)	<b>Climate change and tertiary health effects</b>  Lecture I: Solutions at regional level – Representative from the County of Oulu, Member of Parliament Tytti Tuppurainen (20 min)
9.00	Lecture I: What is climate change? General effects on environment – Professor Timothy Carter (45 min)	9.20 Temperature and human health in different climates – Adjunct professor Yuming Guo (20 min)	Lecture II: Solutions at national level – Representative from the Ministry of Social Affairs and Health, Medical counsellor Mikko Paunio (20 min)
9.45	Lecture II: What is climate change? Environmental and socioeconomic consequences – Professor Timothy Carter (45 min)	Lecture II: Climate extremes temperature and health – Professor Colin Butler (45 min)	Lecture III: Climate change – a threat to the waning of war? – Research Professor Nils Petter Gleditsch (45 min)
10.30	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
11.00	<i>Group work I</i>	<i>Group work III</i>	<i>Group work V</i>
11.45	Group work	Group work	Lecture IV: Climate change mitigation and human health – tba (45 min)
12.30	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
13.30	<b>Climate change and primary health effects</b>  Lecture III: Climate Change and Global Health – Professor Colin Butler (45 min)	<b>Climate change and secondary health effects</b>  Lecture III: Climate change and infectious diseases – Professor Birgitta Evengård (45 min)	<b>Group work results and presentations</b>  Group work presentations and discussion
14.15	Lecture IV: Climate Change and Global Health – Professor Colin Butler and Professor Jouni Jaakkola (45 min)	Lecture IV: Climate change, pollen and allergic diseases – Lecturer Timo Hugg, Professor Jouni Jaakkola (45 min)	
15.00	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
15.30	<i>Group work II</i>	<i>Group work IV</i>	Closing words, Professor Jouni Jaakkola

Some changes may occur

## Content of lectures

- What is climate change? These lectures will provide background information of general environmental effects and consequences and with national and international examples.
- Climate change and global health: Overall effects of climate change on health will be given during these lectures and separately showcasing the primary, secondary and tertiary effects. Although, the primary approach is global, also regional examples are provided
- Temperature and human health: This lecture showcases the effects of cold and hot temperatures on morbidity and mortality and with an emphasis on susceptible populations. The expected effects of climate change and temperature extremes and health are also presented.
- Climate extremes, disasters and health: Various other direct environmental effects of climate change can result in adverse health effects, such as storms, floods, wildfires, landslides, precipitation extremes, typhoons and blizzards. Their direct and indirect public health impacts are presented and preparedness and response discussed.
- Climate change, pollen and allergic diseases: This lecture highlights links between global climate change and anticipated increases in the prevalence and severity of asthma and related allergic disease. Firstly, the effects of climate change on pollen season, production, dispersal and potency are discussed. Secondly, the relationship between pollen exposure and the risk of allergic diseases and symptoms are viewed under different scenarios.
- Climate change and infectious diseases: The lecture demonstrates what climate-sensitive infectious diseases are and describes their modes of transmission (food and water borne-diseases, vector-borne diseases). Information will also be given on disease surveillance, early warning systems, health system preparedness and global efforts towards developing drugs and vaccines.



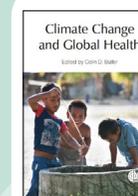
- Climate change and societal conflicts: The tertiary health effects include famine and hunger as a result of draughts or otherwise reduced food security, migration of population to areas of improved livelihood, societal disruptions, and at the worst case, wars.
- Climate change, mitigation and human health: This lecture will showcase the public health response to climate-related risks and includes information of policy, adaptation, mitigation, development of early warning systems

## Group work themes

- Occupational heat effects
- Pollen and allergic diseases
- Climate change, migration and health
- Climate change, housing and health
- Vector-borne diseases and health
- Climate change and food and water security
- Climate change and use of biomass fuels

## Course material

**Butler CD** (ed.) Climate Change and Global Health: A ground-breaking study of the impact of climate change on human health. CABI 2014, 304 p.



### Climate Change and Global Health

Edited by Colin D. Butler, University of Canberra, Australia

A ground-breaking study of the impact of climate change on human health