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Climate Information for Public Health Action Summer Institute

News From the Ground

This newsletter provides updates on the latest developments within the CIPHA network, including the activities of alumni and facilitators, meeting reports, news from the health and climate community and opportunities for collaboration.

Editorial

The public health community understands the importance of taking climate into account when working on vulnerability assessments and in the definition and implementation of public health programs and policies. However, there is still a need to better understand how climate variability and climate change can impact and actually affects health today and in the near future, that is the health vulnerability under current and future climate events.

Both the magnitude and the scope of the impact of climate on public health depend on the interactions between exposures to climate variability, or alterations of weather patterns, and the vulnerabilities of the exposed individuals and natural systems. All are relevant for the incidence or prevalence of health outcomes under a geographical range that goes beyond geo-political boundaries and changes, all the way to geo-climate-sensitive boundaries. Thus, the severity of impacts is determined by the changes and the interaction of climate or weather and non-climatic factors under a timely structure that may include concurrent or lagged effects. Exposures include changes in the frequency and intensity of climate (variability), weather (short-term) events, as well as seasonal patterns, and changes in the mean temperature, precipitation and other climatic variables that affect health determinants (such as food and water security), and disease transmission mechanisms (Pan American Health organization (PAHO)/World Health Organization (WHO), Vulnerability and Adaptation Assessment, 2012).

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Vulnerabilities to climate sensitive diseases need to be considered and understood within the context of multiple determinants for health outcomes. Adverse individual health outcomes from flooding, for instance, are correlated not only to heavy or persistent local precipitation events, the quality of existing infrastructure or land use choices over recent or past years that impact household's income and provision of health services, but also to intrinsic individual factors, that can be genetic, biological and immunological. An additional key aspect is the existence of well-planned risk management strategy and, hence, the degree of preparation of individuals, households, and communities to deal with the event.

Malnutrition in rural areas can be seen as a consequence of a persistent shrinking pattern of rural households' income related, at least partly, to diminishing yields of local and regional crops caused by unfavorable variations of temperature and precipitation. But is also related to the vulnerability of the local food production scheme as influenced by trade policies, or macro-economic policies which can move prices down diminishing household's income or communities' resources, to access to education and information (good practices in agriculture, public health interventions, or public health programs) which may lead to better choices of crops, or to proper diets, even under households' smoothing consumption patterns due to losses of income (Skoufias E, et al, The Impacts of Climate Variability on Welfare in Rural Mexico, Policy Research WP 5555, World Bank,2011)

Disentangling the effects of climate on health events either at individual or at population levels requires active participation of surveillance systems as they anchor and define the beginning and end of the process that helps individuals and population getting healthier.

The advances of public health and health-related sciences can definitively help to better understand the mechanisms behind and the importance of intrinsic and extrinsic risk health factors. Climate and weather events are part of those extrinsic risk factors that deliver conditions for developing diseases or exacerbating others, so that vulnerabilities to health diseases can arise or diminish as a result of their presence or persistence.

The collaboration between several and varied key players (public/private health institutions, stakeholders and sponsors) implied by this idea is not an easy task; but the willingness to include a deeper appreciation of interconnected risks should drive a major scaling up of successful 'multiple-benefit' approaches to protect, promote and restore the people's health through organized efforts and informed choices of society, organizations, public and private, communities and individuals.

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Updates

Alumni

2011 Mercosur training institute, Silvia Fontan is leading the electronic edition of an Environmental Health Bulletin in the Ministry of Health of Argentina. In the last edition, she reflected on climate variability and its relationship to health in urban populations of Latin America. She emphasized the importance to address this issue from an interdisciplinary perspective to produce evidence and enable decision-makers, scientist and communities to have an open dialogue and to design and implement appropriate policies. More information available online at: https://docs.google.com/file/d/0B9KwoYyLY5fwME56eDJkWE92M2s/edit?pli=1

2011 SI Jennifer Vannos is currently on a contract position with Health Canada as a Post Doctoral Researcher in the Environmental Health Sciences Research Bureau, in the Population Studies Division. Present research assesses the detrimental effects of synoptic weather types on the human mortality, examining the modifying effects of overall synoptic air mass situations with air pollution. This is completed using distributed non-linear lag modeling in 12 cities across Canada, focusing on the interactions between air pollutants and the modifying effects of temperature on the mortality outcomes from the model. She is also assessing traffic-related air pollution effects on children's health in Windsor, Ontario, while controlling for spatial auto-correlation and confounding socio-economic factors within the city. Future research will look into linking indoor and outdoor air pollution in urban areas in Canada.

Facilitators

2009 - 2011 IRI, John del Corral was invited to bring the International Research Institute for Climate and Society (IRI) Data Library technology to the Indian Institute of Technology and the India Meteorological Department in New Delhi, India. During his stay from May 2 to May 11, del Corral guided the installation of the IRI Data Library software and developed a tailored map room for meteorological station data in India.

2009-2011 IRI, Anthony Barnston, chief forecaster, Michael Tippett, research scientist, Shuhua Li, senior staff associate, and David DeWitt, research scientist, have a paper in the current issue of the *Bulletin of the American Meteorological Society* called "Skill of Real-Time Seasonal ENSO Model Predictions during 2002-11: Is Our Capability Increasing?." The researchers evaluated the skill of real-time model predictions of El Niño-Southern Oscillation (ENSO) conditions during the 2002-2011 periods and compared them to skill levels documented in the 1990s. The findings indicate positive but slow progress in improving ENSO prediction capability, and that for the first time, dynamical prediction models are more skillful on average than statistical models.

2011 CIESIN, Susana Adamo, gave a keynote speech at the Social Work and Social Development: Action and Impact conference held in Stockholm from July 8 to July 12. The conference was hosted jointly by three organizations: the International Association of Schools of Social Work; the International Council on Social Welfare; and the International Federation of Social Workers. Adamo's presentation, "Migration, Displacement, and Climate Change," was related to "Migration in a Transforming World," a sub-theme of the third day's theme, "Global Social Transformation and Social Action.

2008-2011 IRI, Madeleine Thomson was recently designated a member of the Scientific and Technical Advisory Committee for Climate Change and Health in Africa by the Regional Director of WHO.

Calls

Call for letters of interest: Population health vulnerabilities to vector-borne diseases - Increasing resilience under climate change conditions in Africa

The World Health Organization's Special Program for Research and Training in Tropical Diseases (TDR), with IDRC funding, is launching a call for letters of interest as part of its research initiative on vector-borne diseases and climate change in Africa. This initiative aims to build an evidence base on the connections between vector-borne diseases and the environmental, socio-economic, and socio-political risks and vulnerabilities that increase the impact of climate change. The research will help developing countries create strategies for anticipating, preventing, or reducing these risks.

Grants of up to US$600,000 will be awarded to carry out cutting-edge research in Africa. Deadline for applications: September 10, 2012. For more information, please visit the TDR website.

Call for applications for the second round of awards under the IPCC Scholarship Programme.

The Intergovernmental Panel on Climate Chance (IPCC) has opened a IPCC Scholarship Programme aiming to build capacity in the understanding and management of climate change in developing countries by providing opportunities for young scientists from developing countries to undertake studies that would not be possible without funding under the programme.

Applicants must be post-graduate students under the age of 30 studying at PhD level. They must have already been accepted at a recognized educational institution to start studies in 2013, or be currently enrolled on continuing PhD courses.

Students interested in applying for an IPCC scholarship can download application forms at:http://www.ipcc.ch/ipcc-scholarship-programme/ipcc_scholarshipprogramme.shtml

Stars in Global Health

This unique program enables innovators in low- and lower-middle-income countries and Canada to develop their bold idea with big impact to improve global health conditions.

They are seeking ideas that reflect the full spectrum of global health including health and medical education, non-communicable diseases, information communication technologies, health-related water and sanitation, and agriculture.

Awards are initially valued at $100,000 CAD for up to 12-18 months to demonstrate proof-of-concept of the idea. More information available at : http://applications.grandchallenges.ca/

Expressions of Interest "International Journal of Climate Change Strategies and Management": Climate Change in Africa

The International Journal of Climate Change Strategies and Management (IJCCSM) is a leading journal on matters related to the management of climate change and its impacts, with a special emphasis to developing countries. Consistent with this, IJCCSM (a Thomson Reuters Indexed periodical) invites abstracts for a special issue on "Climate Change in Africa", which will document and promote the results of research and projects focusing on climate change adaptation in the African continent, one of the most vulnerable regions in the world. For more information please contact info@iccip.net.

Upcoming Courses

Climate Change Impacts and Adaption. University of Edinburgh, United Kingdom, September 2012.

It is one of the courses in Edinburgh's new online distance learning Postgrad Certificate in Global Environment Challenges.

This course provides a high-level understanding of climate change impacts and adaptation at global, national and local scales, through an introduction to the underlying science of climate change and a variety of case studies. It explores the potential for adaptation and the potential win-wins of coupling adaptation with mitigation. Participants will develop their capacities to assess key climate change vulnerabilities of a business, industry sector or geographical area and to recommend effective adaptation strategies.

25th PhD Workshop on International Climate Policy (ICP), Swiss Federal Institute of Technology. Zurich, Switzerland. October 25-26, 2012.

The ICP workshops series is organized semi-annually under the auspices of the European PhD Network on International Climate Policy. It aims to offer doctoral candidates the opportunity to present their research ideas and results, receive feedback, and exchange information and assistance in an informal setting. PhD students from all disciplines working on topics relevant to climate policy and environmental economics are invited to submit applications. The 25th ICP workshop will cover topics of relevance for climate change mitigation and adaptation, such as policy instruments, carbon market mechanisms, science-policy interface, climate and development, renewable energy and forests in a changing climate, as well as climate change negotiations and new climate governance architectures.

To apply for the workshop, please submit the application form available on the workshop's website (http://www.ib.ethz.ch/news/workshop).

The 12th International RSM Workshop: Reflections and Prospects. La Jolla, CA, USA. November 5-9, 2012.

The Regional Spectral Model (RSM) originally developed at the National Centers for Environmental Prediction (NCEP) has been used extensively in regional downscaling of coarse resolution forecasts, analyses and simulations, which is one of the hottest topics in atmospheric modeling. One of the major purposes of this year's workshop is to introduce a non-hydrostatic version of RSM (called MSM). The remaining purpose is, as in past years, to provide opportunities for the RSM community to exchange their regional downscaling modeling findings using different versions of RSM. Furthermore, the RSM workshops are designed to gather together international regional model developers and users, to learn the latest modeling features being developed. Through these discussions we wish to formulate future plans for RSM development. More information available at:

http://rsmworkshop.wikispaces.com/RSM2012Registration

Upcoming Events

Science Symposium on Climate and Health. Atlanta, GA, USA. September 12-13, 2012.

The Center of Disease Control, Climate and Health Program within the National Center for Environmental Health (NCEH), and the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) will hold the second annual Science Symposium on Climate and Health, in collaboration with the National Oceanic and Atmospheric Administration (NOAA).

The purpose of the Symposium is to facilitate information exchange on the state of science related to climate variability and change; and to identify data, tools and partnerships that support improved climate-related public health decision-making. More information please contact climateandhealth@cdc.gov .

Space Environment Monitoring School. Remote sensing, environment and health. Cayenne, French Guiana, November 5- 16, 2012.

Launched in 2009, the school of SBI "Observation Space Environment", jointly organized by Brazil (University of Brasilia, University of the State of Amazonas Federal University of Amazonas) and France (University of Toulouse, Institut de recherche pour le développement) .The 2012 edition of the Summer School will be held in Cayenne (French Guyana), on "Environment - Health" and the contributions of remote sensing in the field, rapidly changing, of particular interest to Governments of countries in the region. The objectives of the school include: a) Organize and consolidate the community of users of space technology applied to environmental sciences; b) Exchange experiences among students from Latin America and the French and Brazilian teachers and impart knowledge about technology and its applications to the fields of earth sciences, water sciences, and environmental monitoring

More information available online at:
http://oseocees.wordpress.com/

Fourth Conference on Environment and Health at the AMS annual meeting. Austin, TX, USA. January 6-10, 2013.

The overarching theme for the 2013 American Meteorological Society (AMS) Annual Meeting is "Taking Predictions to the Next Level: Expanding Beyond Today's Weather, Water, and Climate Forecasting and Projections." In the context of this overarching theme, the goal of 4Health is to go in-depth into Earth's influence on human health and well-being. In doing so, it is sought to better understand how the atmospheric and oceanic systems exert measurable (positive or negative) impacts; moreover, we are interested in how planetary information feeds into surveillance and preparedness (including adaptation) models and decisions.

This conference is especially interested in public health and medical factors such as asthma, cardio and respiratory diseases, food-borne diseases and nutrition, vector-borne and zoonotic diseases, water-borne illnesses, communicable diseases, mental health, food security, heat and extreme weather-related mortality and morbidity, as well as physical safety.

These topics will be explored in the context of hydro-meteorological and oceanographic factors so that our community understands how our science and technologies are utilized (or could be applied) for health. Of specific interest are papers that address end-to-end science and management approaches of the health concerns in the context of environmental factors such as ocean and coastal–related human health risks, dust transport, transformation, and consequence, extreme temperatures, including attendant influences on drought and wildfires, adaptation risks and solutions at local, regional, and international levels, disaster risk reduction for healthcare delivery services (e.g., EMT) and infrastructure (e.g., hospitals), including its systems of dependency (e.g., utility grids, water, sanitation).

More information at:
http://annual.ametsoc.org/2013/index.cfm/programs-and-events/conferences-and-symposia/fourth-conference-on-environment-and-health/

Publications

Climate change and human health: Spatial modeling of water availability, malnutrition, and livelihoods in Mali, Africa. Jankowsha M, et al. *Applied Geography 33 (2012) 4e15*

This study develops a novel approach for projecting climate trends in the Sahel in relation to shifting livelihood zones and health outcomes. Focusing on Mali, we explore baseline relationships between temperature, precipitation, livelihood, and malnutrition in 407 Demographic and Health Survey (DHS) clusters with a total of 14,238 children, resulting in a thorough spatial analysis of coupled climate-health dynamics. Results suggest links between livelihoods and each measure of malnutrition, as well as a link between climate and stunting. A 'front-line' of vulnerability, related to the transition between agricultural and pastoral livelihoods, is identified as an area where mitigation efforts might be usefully targeted.

Available online at: http://www.sciencedirect.com/science/article/pii/S0143622811001627

Human health and the Rio Conventions: biological diversity, climate change and desertification. Patz j, Corvalán C, Horwitz p, Campbell - Lendrum D, et al. WHO 2012

This discussion paper is the result of collaboration between the World Health Organization and the Secretariats of the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification.

The report reviews the scientific evidence for the linkages between health and biodiversity, climate change and desertification, the representation of health in the corresponding Rio Conventions, and the opportunities for more integrated and effective policy. This document demonstrates the importance of human health as an integrating theme across sustainable development, and a strong motivation for concerted global actions to address global environmental change. Available online at:
http://www.who.int/globalchange/publications/reports/healthintherioconventions/en/index.html

Urban vulnerability to temperature-related hazards: A meta-analysis and meta-knowledge approach. Romero Lankao P., Qin H and Dickinson K .*Global Environmental Change*, May 2012

In addition to summarizing results across many studies on vulnerability of urban populations to the health impact of temperature hazards, as most meta-analyses do, our use of a meta-framework allows us to examine differences in methodology, theoretical frameworks and causation narratives across a diverse set of studies, and thereby to compare "apples to oranges." Using this approach, we find for instance, that the vast majority of papers examining urban vulnerability to temperature-related hazards come from one research paradigm: the "urban vulnerability as impacts" approach. We also find that cities from middle and low-income countries are understudied. Available online at: http://www.sciencedirect.com/science/article/pii/S0959378012000490

The health impacts of global climate change: A geographic perspective. Maantay J and Becker S. *Applied Geography 33 (2012) 1–3*

An often-overlooked consequence of global climate change is the potentially severe impacts to public health. Throughout the world, the local climate and weather events strongly influence the prevalence of some diseases and other threats to human health (EPA, 2011). Direct and indirect impacts of climate change have considerable potential to cause significant loss of life, affect communities, and increase health-care costs and lost work days (IPCC, 2007). Given the complexity of factors that influence human health, assessing health impacts related to climate change often poses a difficult challenge.

Effects of climate change on human health can be categorized into direct and indirect temperature effects, effects of extreme events such as storms, floods, and droughts, effects of the spread of climate-sensitive diseases, effects of air quality, and other effects on human health.

Available online at: http://www.sciencedirect.com/science/article/pii/S0143622811001615

Human energy budget modeling in urban parks in Toronto, ON, and applications to emergency heat stress preparedness. Vanos J , . Warland J, Gillespie T,. Slater G, Brown R,. Kenny N. *Applied Meteorology and Climatology. Online. DOI: 10.1175/JAMC-D-11-0245.1, 2012*

The current study tests applications of the COMFA energy budget model by assessing the moderating effects of urban parks in contrast to streets, as well as park 'types' (open or treed). Exploration into energy budget modeling is based on empirical meteorological data collected in Toronto, Canada, on fair weather days, plus the effects of a heat wave and climate change, at various metabolic activity levels.

The results showed that there is great potential for outdoor energy budget modeling as a meaningful guide to heat stress forecasting, future research, and application in bioclimatic urban design for improving thermal comfort.

Available online at: http://journals.ametsoc.org/doi/abs/10.1175/JAMC-D-11-0245.1

A healthy turn in urban climate change policies; European city workshop proposes health indicators as policy integrators. Keune H, Ludlow D, van den Hazel P, Randall S, Bartonova A. *Environ Health.* 2012 Jun 28;11 Suppl 1:S14.

The potential relevance of a focus on climate change related health effects for climate change policies at the city region level was reviewed by scientists, city representatives from several EU-countries, representatives of EU city networks and EU-experts during a workshop. Health issues were deemed as being important indicators of success for urban climate change policies, given the extent to which climate change policies contribute to public health and as such to quality of life. Simultaneously, the health perspective may function as a policy integrator in that it can combine several related policy objectives, such as environmental policies, health policies, urban planning and economic development policies, in one framework for action. Public health was considered to be of strategic importance in organizing public support for climate change policies. One important conclusion of the workshop was the view that the connection of science and policy at the city level is inadequate, and that the integration of scientific knowledge on climate change related health effects and local policy practice is in need of more attention.

Available on line at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3388442/pdf/1476-069X-11-S1-S14.pdf

Contact Information

Please contact ciph@iri.columbia.edu to send your comments or materials to be included in the next CIPHA newsletter. The deadline for documents to be included in the next issue is October 20th, 2012.



If you have questions about IRI activities, please visit our home page: http://iri.columbia.edu

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