

## GH23A: Climate Link to Infectious Diseases: Toward Development of Successful Early Warning Systems I

Climate variability such as El Niño/Southern Oscillation and Indian Ocean Dipole influence the abundance of vectors that in turn affect the spread of the diseases like malaria in many parts of the world. In addition to the pathogens, survival of the host is also directly influenced by climate conditions and indirectly through the climate induced environmental conditions. Many of these climate and environmental factors are also responsible for water-borne infections like diarrhea and airborne diseases like flu. Therefore, appropriately attributing the outbreaks in infectious diseases to climatic variables and quantifying those relationships to a number of outbreaks would be important in the directions of preparing mitigation strategies. This session will discuss those mechanisms of climate-disease connections and developments of climate based early warning systems for infectious diseases. We encourage abstract submissions on the topics of climate link to infectious diseases, disease monitoring and climate-based predictions of infectious diseases.

**Tuesday, 11 December 2018**

**13:40 - 15:40**

📍 *Marriott Marquis - Independence F-H*

### Primary Convener

Swadhin K Behera

*JAMSTEC Japan Agency for Marine-Earth Science and Technology*

### Conveners

Masahiro Hashizume

*Nagasaki University*

Kristie L Ebi

*ClimAdapt, LLC*

Glenn McGregor

*Durham University*

### Chairs

Swadhin K Behera

*JAMSTEC Japan Agency for Marine-Earth Science and Technology*

Masahiro Hashizume

*Nagasaki University*

### OSPA Liaison

Kristie L Ebi

*ClimAdapt, LLC*

## Papers

- 13:40 **GH23A-01** Establishment of an early warning system for malaria in Southern Africa, incorporating climate predictions – Overview of the iDEWS project  
*Noboru Minakawa*  
(Invited)  
**Noboru Minakawa**<sup>1</sup>, Neville Sweijd<sup>2</sup>, Swadhin K Behera<sup>3</sup>, Masahiro Hashizume<sup>1</sup>, Takeshi Ikeda, Yognhee Kim, Peter Witbooi, Philip Kruger, Willem Landman, Rajendra Maharaj, Masami Nonaka, Yushi Morioka and Ataru Tsuzuki, (1)Nagasaki University, Nagasaki, Japan, (2)Applied Center for Climate and Earth Systems Science, Cape Town, South Africa, (3)JAMSTEC Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan, (4)University of Tokyo, Tokyo, Japan, (5)University of the Western Cape, Department of Mathematics, Cape Town, South Africa, (6)Limpopo Department of Health, Tzaneen, South Africa, (7)University of East Anglia, Climatic Research Unit, School of Environmental Sciences, Norwich, United Kingdom, (8)MRC, Durban, South Africa, (9)Application Laboratory, JAMSTEC, Yokohama Kanagawa, Japan, (10)JAMSTEC, Yokohama, Japan
- 13:55 **GH23A-02** The Macroscope Meets the Microscope: Connecting Earth Observations with Public Health Surveillance to Forecast Mosquito-Borne Diseases  
*Michael C Wimberly*  
(Invited)  
**Michael C Wimberly**, Justin Kyle Davis, Andrea Hess and Dawn Nekorchuk, University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, OK, United States
- 14:10 **GH23A-03** Challenges for Malaria Early Warning Systems in the Amazon  
*William K Pan*  
**William K Pan**<sup>1</sup>, Mark Janko<sup>1</sup>, Ben M Zaitchik<sup>2</sup>, Beth Feingold<sup>3</sup>, Gloria Cristina Recalde, Carlos Mena, Francesco Pizzitutti and Axel Berky, (1)Duke University, Durham, NC, United States, (2)Johns Hopkins University, Baltimore, MD, United States, (3)SUNY-Albany, Albany, NY, United States, (4)Universidad San Francisco de Quito, Quito, Ecuador
- 14:25 **GH23A-04** Use of Seasonal Climate Forecasts to Develop an Early Warning System for Dengue Fever Risk in Central America and the Caribbean  
*Cory Morin*  
**Cory Morin**, Snohomish, WA, United States, Kristie Ebi, University of Washington, Seattle, United States and Samuel Sellers, University of Washington Seattle, Seattle, United States
- 14:40 **GH23A-05** A Prediction System for Vector-Borne Diseases : a Use Case for Weekly Estimation of West Nile Virus Risk  
*Johnny Albert Uelmen Jr*  
**Marilyn Ruiz**<sup>1</sup>, Marcus Slavenas<sup>2</sup>, Nancy Westcott<sup>3</sup>, Rebecca L. Smith<sup>4</sup>, Surendra Karki, William M<sub>6</sub> Brown, **Johnny Albert Uelmen Jr**, Leslie A. Stoecker and Kenton McHenry, (1)University of Illinois at Urbana Champaign, Urbana, IL, United States, (2)University of Illinois at Urbana Champaign, National Center for Supercomputing Applications, Urbana, IL, United States, (3)Illinois State Water Survey, Champaign, United States, (4)University of Illinois at Urbana Champaign, Pathobiology, Urbana, United States, (5)University of Illinois at Urbana Champaign, Pathobiology, Urbana, IL, United States, (6)National Center for Super Computing Applications, Urbana, IL, United States

14:55 **GH23A-06** Assessing the importance of climate variability for predicting West Nile Virus mosquito infection rates and human risk in the Northeast US

Alexander C Keyel

**Alexander C Keyel**<sup>1</sup>, Oliver<sup>2</sup>, Elison Timm<sup>2</sup>, P Bryon Backenson<sup>3</sup>, Catharine Prussing, Sarah Quinones, Kathleen McDonough, Mathias F Vuille, Jan E. Conn and Laura Kramer, (1)New York State Department of Health, Albany, NY, United States, (2)University at Albany, State University of New York, Department of Atmospheric and Environmental Sciences, Albany, NY, United States, (3)New York State Department of Health, Albany, United States

15:10 **GH23A-07** Integrating Climate Change and Variability into Infectious Disease Decision Making: Lessons from sub-Saharan Africa.

Colin Quinn

**Colin Quinn**, US Agency for International Development, Falls Church, VA, United States, Tegan Blaine, U.S. Agency for International Development, Bureau for Africa, Washington, DC, United States, Fernanda Zermoglio, Chemonics International, Washington DC, United States, James Colborn, Clinton Health Access Initiative, Maputo, Mozambique and Kristie Ebi, University of Washington, Seattle, United States

15:25 **GH23A-08** Applying Proxy Data to Investigate the Relationship between Climate Variability and Diarrheal Disease Incidence in South Africa

Neville Sweijd

**Neville Sweijd**<sup>1</sup>, Takayoshi Ikeda<sup>2</sup>, Swadhin K Behera<sup>3</sup>, Noboru Minakawa<sup>4</sup>, Masahiro Hashizume, Caradee Wright and Jhandre Breedenkamp, (1)Applied Center for Climate and Earth Systems Science, Cape Town, South Africa, (2)Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan, (3)JAMSTEC Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan, (4)Nagasaki University, Nagasaki, Japan, (5)South African Medical Research Council, Johannesburg, South Africa, (6)Clicks Group Limited, Cape Town, South Africa

15:25 **GH23A-08B** Climate-based predictions of malaria outbreak probability in Limpopo, South Africa

Takayoshi Ikeda

**Takayoshi Ikeda**<sup>1</sup>, Swadhin K Behera<sup>1</sup>, Masami Nonaka<sup>1</sup>, Masahiro Hashizume<sup>2</sup>, Ataru Tsuzuki, Rajendra Maharaj, Qavanisi Mabunda and Noboru Minakawa, (1)JAMSTEC Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan, (2)Nagasaki University, Nagasaki, Japan, (3)MRC, Durban, South Africa, (4)Malaria Control Center, Tzaneen, South Africa

[Find Similar](#)

**View Related Events**

**Day:** Tuesday, 11 December 2018