GH31B: Climate Link to Infectious Diseases: Toward Development of Successful Early Warning Systems II Posters

Climate variability such as El Nino/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.

Wednesday, 12 December 2018
08:00 - 12:20
Walter E Washington Convention Center - Hall A-C (Poster Hall)

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

Masahiro Hashizume
Nagasaki University

Kristie L Ebi
ClimAdapt, LLC

OSPA Liaison

Kristie L Ebi
ClimAdapt, LLC

Papers

GH31B-1213 Randomness of Vibrios in the environment

Moiz Usmani

Moiz Usmani[1], *Kyle Brumfield*[2], *Anwar Huq*[3], *Rita R Colwell*[4] *and Antarpreet Jutla*[1], *(1)West Virginia University, Morgantown, WV, United States, (2)University of Maryland, College Park, United States, (3)University of Maryland College Park, Maryland Pathogen Research Institute, College Park, MD, United States, (4)University of Maryland College Park, Centre for Bioinformatics and Computational Biology, College Park, MD, United States*

GH31B-1214 Characterizing the lagged effects of temperature and precipitation on malaria risk in the Peruvian Amazon

Mark Janko

Mark Janko[1], *Gloria Cristina Recalde*[2], *Carlos Mena*[3], *Beth Feingold*[4], *Ben M Zaitchik*[2] *and William K Pan*[5], *(1)Duke University, Durham, NC, United States, (2)Johns Hopkins University, Baltimore, MD, United States, (3)Universidad San Francisco de Quito, Quito, Ecuador, (4)SUNY-Albany, Albany, NY, United States, (5)Duke Univ-Global Health Inst, Durham, NC, United States*

GH31B-1215 Simulating Environmental and Engineering Drivers of Malaria Using Historical Data from Zambia: Toward a Process-Based, Weather-Informed Forecast of Malaria

Julia Reis

Julia Reis[1], *Nicholas DeFelice*[2] *and Julie Elizabeth Shortridge*[1], *(1)Virginia Tech, Blacksburg, VA, United States, (2)Columbia University, New York, NY, United States*

GH31B-1216 Climate Drives the Seasonal and Regional Variation in Seasonality and Epidemics across the Scattered Islands of the Maldives

Ashara Nijamdeen

Lareef Zubair[1], *Rushdha Salih*[2] *and* ***Ashara Nijamdeen***[1], *(1)Foundation for Environment, Climate and Technology, Digana Village, Sri Lanka, (2)Foundation for Environment, Climate and Technology, Akurana, Sri Lanka*

GH31B-1217 A decadal climate shift in the southwest Indian Ocean linked to recent malaria downturn in South Africa

Swadhin K Behera

Swadhin K Behera[1], *Takayoshi Ikeda*[2], *Yushi Morioka*[3], *Venkata Ratnam Jayanthi*[4], *Takeshi Doi*[5], *Masami Nonaka*[6], *Ataru Tsuzuki*[7], *Chisato Imai*[8], *Yoonhee Kim*[9], *Masahiro Hashizume*[10], *Shingo Iwami*[11], *Philip Kruger*[12], *Qavanisi Mabunda*[13], *Rajendra Maharaj*[12], *Neville Sweijd*[14] *and Noboru Minakawa*[15], *(1)JAMSTEC Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan, (2)Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan, (3)JAMSTEC, Yokohama, Japan, (4)Research Institute for Global Change, Yokohama, Japan, (5)JAMSTEC, Yokohama 236-0011, Japan, (6)Application Laboratory, JAMSTEC, Yokohama Kanagawa, Japan, (7)Nagasaki University, Nagasaki, Japan, (8)University of Tokyo, Tokyo, Japan, (9)Kyushu University, Fukuoka, Japan, (10)Limpopo Department of Health, Tzaneen, South Africa, (11)Malaria Control Center, Tzaneen, South Africa, (12)MRC, Durban, South Africa, (13)Applied Center for Climate and Earth Systems Science, Cape Town, South Africa*

GH31B-1218 Malaria prediction using weather-based time-series distributed lag nonlinear model

Masahiro Hashizume

Masahiro Hashizume[1], *Yoonhee Kim*[2], *Venkata Ratnam Jayanthi*[3], *Takeshi Doi*[4], *Yushi Morioka*[5], *Takayoshi Ikeda*[6], *Ataru Tsuzuki*[1], *Philip Kruger*[7], *Shingo Iwami*[8], *Chris FS Ng*[1,9], *Chisato Imai*[3], *Younseng Chung*[10], *Rajendra Maharaj*[11], *Neville Sweijd*[12], *Swadhin K Behera*[1] *and Noboru Minakawa*[1], *(1)Nagasaki University, Nagasaki, Japan, (2)University of Tokyo, Tokyo, Japan, (3)JAMSTEC Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan, (4)JAMSTEC, Yokohama 236-0011, Japan, (5)JAMSTEC, Yokohama, Japan, (6)Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan, (7)Limpopo Department of Health, Tzaneen, South Africa, (8)Kyushu University, Fukuoka, Japan, (9)Kumi, Korea, Republic of (South), (10)KAIST, Daejon, South Korea, (11)MRC, Durban, South Africa, (12)Applied Center for Climate and Earth Systems Science, Cape Town, South Africa*

GH31B-1219 Real time 2017 West Nile virus forecast: Operational Challenges

Nicholas DeFelice

***Nicholas DeFelice**, Columbia University of New York, Palisades, NY, United States and Jeffrey L Shaman, Columbia University of New York, New York, NY, UNITED STATES*

GH31B-1220 Fine scale biotic and abiotic effects of West Nile virus illness in humans

Johnny Albert Uelmen Jr

Johnny Albert Uelmen Jr[1], *Marilyn Ruiz*[1], *Surendra Karki*[2] *and Patrick Irwin*[3], *(1)University of Illinois at Urbana Champaign, Urbana, IL, United States, (2)University of Illinois at Urbana Champaign, Pathobiology, Urbana, IL, United States, (3)Northwest Mosquito Abatement District, Wheeling, United States*

GH31B-1221 Seasonal malaria forecasts over South Africa using the VECTRI model

Venkata Ratnam Jayanthi

Venkata Ratnam Jayanthi[1], *Takayoshi Ikeda*[2], *Adrian Mark Tompkins*[3], *Takeshi Doi*[4] *and Swadhin K Behera*[1], *(1)JAMSTEC Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan, (2)Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan, (3)Abdus Salam International Center for Theoretical Physics, Trieste, Italy, (4)JAMSTEC, Yokohama 236-0011, Japan*

GH31B-1223 The Effects of Climate Change on Tick Habitat Suitability and Potential Transmission of Lyme Disease in the South Central U.S.

Quiana Casandra Berry

***Quiana Casandra Berry**, CUNY Bronx Community College, Bronx, NY, United States, Adrienne Wootten, North Carolina State University Raleigh, Raleigh, NC, United States, Derek H Rosendahl, South Central Climate Science Center, Norman, OK, United States and Renee A McPherson, University of Oklahoma, Norman, OK, United States*

GH31B-1224 Improvement of a mechanistic *Aedes albopictus* population model considering diurnal temperature fluctuation

Kuo Zhang

***Kuo Zhang**, Center for Earth System Science, Tsinghua University, Beijing, China*

GH31B-1225 Environmental risk factors of Malaria distribution in the Ethiopian highlands

Andrea Hess

Andrea Hess[1], *Dawn Nekorchuk*[2], *Abere Mihretie*[3], *Aklilu Getinet*[3], *Teklehaimanot Gebrehiwot*[4], *Worku Awoke*[5] *and Michael C Wimberly*[2,6], *(1)University of Oklahoma Norman Campus, Department of Geography and Environmental Sustainability, Norman, OK, United States, (2)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, OK, United States, (3)Health, Development, and Anti-Malaria Association, Addis Ababa, Ethiopia, (4)Amhara National Regional State Health Bureau, Bahir Dar, Ethiopia, (5)Bahir Dar University, School of Public Health, Bahir Dar, Ethiopia, (6)South Dakota State University, Brookings, SD, United States*

GH31B-1226 The “epidemiar” R Package: Integrating Public Health Surveillance and Environmental Monitoring Data for Early Detection and Early Warning of Infectious Disease Transmission

Dawn Nekorchuk

Dawn Nekorchuk[1], *Justin Kyle Davis*[1], *Abere Mihretie*[2], *Aklilu Getinet*[2], *Teklehaimanot Gebrehiwot*[3], *Worku Awoke*[4] *and Michael C Wimberly*[1], *(1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, OK, United States, (2)Health, Development, and Anti-Malaria Association, Addis Ababa, Ethiopia, (3)Amhara National Regional State Health Bureau, Bahir Dar, Ethiopia, (4)Bahir Dar University, School of Public Health, Bahir Dar, Ethiopia*

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