GEO Health Community of Practice (CoP)
Community Telecon
October 24, 2023

In Attendance: 33 participants
John Haynes (NASA HQ), Helena Chapman (NASA HQ/BAH), Kim McMahon (NOAA NWS), Stephanie Schollaert Uz (NASA GSFC), Meryl Kruskopf (NASA SERVIR), Carl Malings (NASA GS FV & Morgan State Univ.), Jake Merryman (DOS GHSD), Assaf Anyamba (Oak Ridge National Laboratory), Karly Harrod (Oak Ridge National Laboratory), Bob Chen (CIESIN/Columbia Univ; NASA SEDAC), Ben Zaitchik (Johns Hopkins Univ.), Douglas Rao (NC Institute for Climate Studies), Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida), Antarpreet Jutla (Univ. of Florida), Moiz Usmani (Univ. of Florida), Cascade Tuholske (Montana State Univ.), Nahabwe Haven (Univ. of California, Davis, Uganda site), Elizabeth Doran (Univ. of Vermont), Olayinka Osuolale (Elizade Univ., Nigeria), Jorge Del Rio Vera (United Nations Office for Outer Affairs Affairs), Paschalis Tziastas (European Commission), Stéphanie Brazeau (Canadian Space Agency), Didier Davignon (Meteorological Service of Canada), Erin Rees (Geomatics Unit, Public Health Agency of Canada), Mahesh Jampani (International Water Management Institute, Sri Lanka), Carlos Barboza (Ministry of Public Health, Uruguay), Mercy Borbor (Escuela Superior Politécnica del Litoral, Ecuador), Bernd Eggen, David Rodriguez-Araujo, Gabriel González Escobar, Dheeresh Kumar, Jose Portillo, Martin.

Summary Notes:
*Prepared by Helena Chapman (NASA HQ/BAH)

John Haynes (NASA HQ) opened the telecon by welcoming all participants.

John Haynes (NASA HQ) highlighted that the GEO Ministerial Summit 2023 will be held from November 6-10 in Cape Town, South Africa, and that several CoP members – including Juli Trtanj (NOAA) and Antarpreet Jutla (Univ. of Florida) – will be in attendance. Then, he mentioned that the NASA HAQAST Utah meeting was held on October 19-20 in Salt Lake City, Utah, with 120 in-person and over 200 online participants. He said that the session recordings will be posted on the website within two weeks. Next, he commented that the GEO Secretariat has launched the Global Heat Impacts and Solutions Survey, to assess heat impacts and solutions worldwide, which targets global policy makers and communities to help provide a rapid assessment of the gaps and opportunities for the emerging Global Heat Resilience Service. Finally, he thanked Thilanka Munasinghe (Rensselaer Polytechnic Institute) and Assaf Anyamba (Oak Ridge National Laboratory) for their contributions to the GEO blog article entitled, Health Community of Practice supports student engagement.

Helena Chapman (NASA HQ/BAH) encouraged CoP members to share their One Health Day 2023 (recognized on November 3) activities on the One Health Commission’s global map website.

Antarpreet Jutla (Univ. of Florida) introduced Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida).
Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida) shared her talk on the role of climate and weather processes on the entomological relevance of vector-borne diseases in Florida. She described the spatiotemporal dynamics to better understand transmission risk as well as the Florida Sentinel Chicken Program (established in 1978). She presented one novel research finding, where transmission risk of Eastern equine encephalitis virus (EEEV) was associated with cypress/tupelo wetlands, yet precipitation and temperatures values (weekly time series) were not important for seroconversion in their model. However, her team noted that none of these environmental variables in the model were important for West Nile virus (WNV) transmission.

Antarpreet Jutla (Univ. of Florida) and Assaf Anyamba (Oak Ridge National Laboratory) opened the telecon for collective discussion.

Carlos Barboza (Ministry of Health, Uruguay) asked about the risk of disease transmission in geographic regions with chicken farms. Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida) mentioned that chickens in Florida are used predominantly for monitoring viruses (data points), as chickens do not develop high viremia levels with these viruses and transmission is halted.

Mercy Borbor (Escuela Superior Politécnica del Litoral, Ecuador) asked if they are using El Niño as a climate variable in their model. Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida) said they did not use El Niño as a climate variable in this specific model, but that there are several papers looking at EEEV transmission in Florida with correlations to El Niño. She agreed that it is important to consider these extreme weather events on a broader scale.

Assaf Anyamba (Oak Ridge National Laboratory) commented on the increasing activity of capacity building across the Americas region, and he wondered what she has found as the most important barrier for adopting Earth observation data for disease surveillance in their training activities. Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida) highlighted that they just completed a workshop entitled, IV International Course on Ecological Determinants of Vector-borne Disease Dynamics, a collaboration between the Univ. of Florida’s Florida Medical Entomology Laboratory and the Oswaldo Cruz Institute (FIOCRUZ) in Brazil, as well as conduct regular workshops for mosquito control associations that focus on GIS mapping of fieldwork data. Although she commented that using Earth observation data is easier than it was over the past decade, and there is greater interest in using these data sources, one significant barrier in data accessibility remains.

Antarpreet Jutla (Univ. of Florida) asked about their future plans to expand work to other vector-borne diseases. Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida) mentioned that they have focused primarily on zoonotic arboviruses, but that they are also considering the impacts of El Niño events in South America as well as the influence of environmental and other factors (e.g. urban). She commented that mosquitoes in Florida tend to feed on humans and other animals (not chickens), so they need to focus on public health data to train the models.
Carlos Barboza (Ministry of Health, Uruguay) mentioned that the sandfly (*Lutzomyia longipalpis*) and visceral leishmaniasis remains a challenge across South America, including Uruguay (Visceral leishmaniasis in Uruguay, published in Archivos de Pediatría del Uruguay in 2017). He asked about their plans to incorporate data into visualizations or early warning alerts, as possible tools at the local level. Lindsay Campbell (Florida Medical Entomology Laboratory, Univ. of Florida) said that their team has access to a robust data set, and they are working with the Florida Department of Health to create a visualization through a dashboard to better understand transmission dynamics that can be useful for their daily operations (e.g. outreach activities, health messaging). She stated that the model, which will be trained on sentinel chicken data, aims to find a signal that has a lead time that can provide some information to make accurate predictions for high-risk geographic areas and resource allocation. Ideally, she commented that they would like to develop this model that can be scalable to other geographies, recognizing the variation in changing environmental conditions and availability of state-level resources.

Erin Rees (Geomatics Unit, Public Health Agency of Canada) said that a challenge for their team is having a surveillance system of sentinels that responds to their needs (e.g. estimating exposure risk by ensuring that all relevant and non-relevant vector habitats are adequately sampled). Although she stated that this is challenging in terms of having sufficient resources, she agreed that Earth observation data are helping them design more efficient surveillance programs to align with their overall surveillance goals.

Antarpreet Jutla (Univ. of Florida) asked if CoP members working in South America recognize that the resurgence of Zika virus in the region is a concern for public health agencies. Assaf Anyamba (Oak Ridge National Laboratory) said that they have observed a regional increase in dengue cases in populations affected by drought events associated with El Niño. He commented that there is evidence where different climate anomalies are having various disease manifestations, and that it is important to consider these complex dynamics (e.g. increased precipitation may not necessarily be associated with vector-borne disease outbreaks).

Antarpreet Jutla (Univ. of Florida) provided the Infectious Disease Work Group update, where they have established a fully automated listserv for communication purposes (send email to geoinfectiousdiseases@lists.ufl.edu). He said that they plan to hold the next Work Group telecon on November 17.

John Haynes (NASA HQ) and Helena Chapman (NASA HQ/BAH) thanked CoP members for their continued contributions to the field and engagement in the group discussion. They agreed that these teleconferences provide an opportunity to share information, connect researchers, and leverage resources that can amplify current activities using Earth observations for public health applications.

John Haynes (NASA HQ) closed the teleconference and mentioned that the next community teleconference will be scheduled for Tuesday, November 14, 2023 at 8:30AM EST (GMT-5).

Adjourned: 9:25AM EDT (GMT-4)