GEO Health Community of Practice (CoP)
Telecon: Infectious Diseases
June 15, 2021

**In Attendance:** 42 participants
Juli Trtanj (NOAA), Helena Chapman (NASA HQ/BAH), John Balbus (NIEHS/NIH), Trisha Castranio (NIEHS/NIH), Hunter Jones (NOAA), Sophia Liu (HHS; USGS), Joshua Prasad (US Department of Health and Human Services), Victoria Gammino (MITRE), Nicole Rasmussen (MITRE), Ferdouz Cochran (MITRE), Renee Dauerer (MITRE), Stacie Dunkle (FAO), Cynthia Hall (NASA Earth Science Data Systems), Sydney Neugebauer (NASA), Dorian Janney (NASA Goddard), Mike Gremillion (U. of Alabama), Assaf Anyamba (USRA/NASA Goddard), Helen Amos (NASA Goddard/SSAI), Sushel Unninayar (NASA/GSFC & GESTAR/MSU), Bob Chen (CIESIN at Columbia U.; NASA SEDAC), Cascade Tuholske (Earth Institute/CIESIN at Columbia U.), Allison Baer (U. of Maryland), Maria Tonellato (U. of Maryland), Josh Colston (U. of Virginia), Shannon Vattikuti (Mississippi State U.), Dana Yakabowskas (NY State Department of Health), Juan Castillo (PAHO), Anna Stewart Ibarra (Inter-American Institute for Global Change Research), Adrian Guzman (Public Health Agency of Canada), Melissa MacDonald (Environment Climate Change Canada), Céline Audette (Environment Climate Change Canada; Meteorological Services Canada), Katerina Kyratzi (National Observatory of Athens, Greece; BEYOND Center of Excellence in EO), Haris Kontoes (National Observatory of Athens, BEYOND Center of Excellence in EO), Lefteris Theodoropoulos (National Observatory of Athens), Mira Rossi (National Observatory of Athens), Sandra Gomez (UNITEC, Honduras), Luis Chaves (Costa Rica), Alessandro Paravano (Politecnico di Milano, Italy), R Heinig, Renee, Sheldon Waugh.

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

**Juli Trtanj (NOAA)** opened the telecon by welcoming all participants. She invited CoP members to provide brief updates on upcoming conferences and related activities.

**Juli Trtanj (NOAA)** mentioned that the **GEO Virtual Symposium** will be held from June 21-24, 2021, and she encouraged CoP members to attend different sessions, where we can discuss potential synergies at the next telecon. She mentioned that she and **John Haynes (NASA)** and will be presenting on **Starting Essential Variables on Health** at the Generalizing the Concept of the Essential Variables session (Parallel Session E) and **Bob Chen (CIESIN at Columbia U.; NASA SEDAC)** will be presenting on **Population, Settlement, and Infrastructure Data for GEO Applications in Climate, Disasters, and Sustainable Development at the Human Planet Initiative Datasets in Support to GEO Projects and GEO Engagement Priorities session** (Parallel Session E) at the GEO Virtual Symposium – both on Wednesday, June 23, 2021 (12:30-1:30PM EDT/GMT-4).

**Helena Chapman (NASA HQ/BAH)** shared the health-related upcoming parallel and spotlight sessions for the GEO Virtual Symposium 2021:

- **Parallel Sessions on Health-related Topics:**
  - Sustainable Partnerships for Health Decision-making and One Health Collaborations (by EO4Health) – **June 21, 2021 (8:30-9:30AM EDT/GMT-4)** (*Zoom LINK*)
  - Earth Observation for Climate Change and Mosquito-borne Diseases (by EuroGEO Action Group for Ephdemic) – **June 23, 2021 (11:00AM-12:00PM EDT/GMT-4)**
Generalizing the Concept of the Essential Variables – June 23, 2021 (12:30-1:30PM EDT/GMT-4)
Demonstrating Earth Observation Operational Services for Shaping Cost-effective Strategies to Support Policy Makers and Stakeholders – June 24, 2021 (7:00-8:00AM EDT/GMT-4)

- **Spotlight Session on Health-related Topics:**
  - Health Spatial Data Infrastructure Concept Development Study Report – June 22, 2021 (4:00-4:30AM EDT/GMT-4) and June 23, 2021 (12:00-12:30PM EDT/GMT-4)

Juli Trtanj (NOAA) encouraged CoP members to submit their abstracts for AmeriGEO Week 2021 (Deadline: June 15, 2021). She mentioned that they will support the *Special Edition of the GEO Health CoP: The Americas* on September 7, 2021 (8:30-10:00AM EDT/GMT-4). If this model is appropriate, then she said that they plan to support *Special Edition* telecons to focus on different geographic regions. Then, she reminded CoP members about the community-led summer campaign by NOAA’s National Integrated Heat Information System and partners, to map the hottest parts of cities in 11 states across the United States (NOAA and Communities to Map Heat Inequities in 11 States).

Helena Chapman (NASA HQ/BAH) introduced Katerina Kydatzi (National Observatory of Athens; BEYOND Center of Excellence in EO) provided an overview of the Early Warning System for Mosquito borne diseases (EYWA) of the EuroGEO Action Group’s Earth Observation for Epidemics of Vector-borne Diseases. She introduced her team members, Haris Kontoes (National Observatory of Athens; BEYOND Center of Excellence in EO) and Mirka Rossi (National Observatory of Athens, BEYOND Center of Excellence in EO).

Juli Trtanj (NOAA) inquired about the end-user community and if EYWA is currently operational. Katerina Kydatzi (National Observatory of Athens; BEYOND Center of Excellence in EO) mentioned that the EYWA is operational and that they directly engage with public health authorities. Haris Kontoes (National Observatory of Athens; BEYOND Center of Excellence in EO) said that the outcome is directed to regional public health authorities who lead the monthly mosquito surveys, optimize the network, and deploy assessments. He said that the frequency can be every 15-30 days, depending on the time of year. He confirmed that they have coordinated actions with mosquito surveillance and vector organizations.

Juli Trtanj (NOAA) wondered if the public health authorities would find data elsewhere, if EYWA did not exist. Haris Kontoes (National Observatory of Athens; BEYOND Center of Excellence in EO) said that they are adding data to the current surveillance programs by using EO and in situ data for the mosquito smart app. He stated that the models are mostly data driven, and that although they continue to refine the models, validation has been optimal to date.

Shannon Vattikuti (Mississippi State U.) shared his enthusiasm for EYWA. He agreed that citizens often hold valuable local to regional information that may be quite helpful to these initiatives. Dorian Janney (NASA Goddard) mentioned that the GLOBE Program has participants across Europe, and that they are always seeking new connections. Later this summer, she said that they are using citizen science to capture larvae photos for AI applications. She confirmed that the “advocate, deliver, engage” messaging resonates closely with GLOBE and shared related resources on the GLOBE Zika Education and Prevention Project [webpage](https://www.globe.gov/education/prevention) and the GLOBE Mosquito Habitat Mapper [webpage](https://www.globe.gov/education/mosquito-habitat-mapper).

Sophia Liu (HHS; USGS) shared *The Crowd and The Cloud* [webpage](https://www.globe.gov/education/crowd-cloud) and [documentary](https://www.globe.gov/education/crowd-cloud-documentary).
Helena Chapman (NASA HQ/BAH) introduced Victoria Gammino (MITRE), who described her team’s current work on disease vector habitat detection using remote sensing to combat onchocerciasis. She presented this USAID proof of concept as a two-prong strategy – mass drug administration and larvicide spraying – to explore how to validate, test for black fly habitats, and identify if larvae have been eliminated. She shared one challenge that although the principal fly ranges are within a couple hundred yards from the river, there remains significant search space where they aim to reduce sampling costs and determine if larvae have been eliminated with spraying interventions. Since this is operational research, they aim to scale and increase efficiency, and they seek collaborators and feedback. In particular, she said that they are interested in any microclimate data or digital elevation models in Uganda as well as any geological training data sets. She stated that along with USGS data, they are inquiring with local universities to identify correct data sources. Juli Trtanj (NOAA) provided two resources that have African hubs: 1) SERVIR; and 2) WMO Regional Climate Centres.

Helen Amos (NASA Goddard/SSAI) inquired about the spatial resolution needed for their digital elevation maps. Renee Dauer (MITRE) confirmed that they seek less than 10m resolution, and that the image is about 1.8m. Assaf Anyamba (USRA/NASA Goddard) said that his team uses SRTM data and said that he learned that higher resolution census data can provide elevation information. Victoria Gammino (MITRE) agreed with this potential data source and said that they have not explored this option yet. Assaf Anyamba (USRA/NASA Goddard) said that Jim Tucker (NASA Goddard) has generated elevation data from a higher resolution. He mentioned that if you have access to the original source of high-resolution data, then you can request the corresponding elevation.

Juli Trtanj (NOAA) said that the WMO COVID-19 Task Team, co-led by Ben Zaitchik (Johns Hopkins U.), is planning on conducting a series of roundtable discussions, which will lead to a larger scientific meeting on infectious diseases and climate services in September 2021. She mentioned that this symposium would serve as a follow-up to the Climatological, Meteorological and Environmental Factors in the COVID-19 Pandemic Virtual Symposium (August 2020). She said that the objective is to provide an updated synthesis document of lessons learned. Helena Chapman (NASA HQ/BAH) reminded CoP members about the WMO COVID-19 Task Team Report.

Anna Stewart Ibarra (Inter-American Institute for Global Change Research) shared three updates. First, she said that the IAI and the Alliance of Public Health Associations of the America will be hosting the Is Zero Covid Feasible? / Es viable la estrategia COVID Cero? discussion about the viability and evidence from Latin America will be held on Tuesday, June 29, 2021 at 5:00PM EDT (GMT-4) with English/Spanish translation. Second, she said that the 29th Meeting of the Conference of the Parties to the IAI and 51st Meeting of the Executive Council will be held on Tuesday, June 22, 2021 from 1:00-4:00PM EDT (GMT-4) and Wednesday, June 23, 2021 from 10:00AM-1:00PM EDT (GMT-4), and CoP members are welcome to join as observers. Finally, she mentioned that the IAI will be announcing various scholarships and grants to support capacity training across the Americas region, and she will share these details on the next CoP telecon.

Juli Trtanj (NOAA) mentioned that the WMO/WHO Study Group on Integrated Health Services will be planning a series of region-focused engagements with official WMO health focal points within Met services. She said they are planning a series of listening sessions to discuss barriers and obstacles to doing science, prediction, and engaging with health partners, which in turn can guide how organizations can modify their structure for climate-based services for health community. Moving forward, she said that she will share additional details with CoP members when CoP expertise could facilitate the development of workshops and other related activities.
Serge Olivier Kotchi (Public Health Agency of Canada) mentioned that they have developed risk maps about Lyme disease in central and eastern Canada from 2000-2015 (Remote Sensing Journal: Earth Observation-Informed Risk Maps of the Lyme Disease Vector Ixodes scapularis in Central and Eastern Canada), and they are currently working to update this risk map from 2015 to 2020.

Juli Trtanj (NOAA) asked if there were any Small Work Group updates. Dorian Janney (NASA Goddard) mentioned that the Food Security and Safety Small work Group has generated three key questions for focused research teams: 1) crops and water security; 2) aquaculture; and 3) impact of heat on cultivating agriculture. She hopes that this deep dive can leverage expertise across these three topics.

Juli Trtanj (NOAA) thanked CoP members for their continued contributions to the field and engagement in the group discussion. She agreed that this telecon had provided an opportunity to share information, connect researchers, and leverage resources that can amplify current activities using Earth observations for public health applications.

Juli Trtanj (NOAA) closed the telecon and mentioned that the next telecon will be scheduled for Tuesday, June 29th at 8:30AM EDT (GMT-4). This telecon will focus on IAI infectious and vector-borne disease research applications.

Adjourned: 9:55AM EDT (GMT-4)