GEO Health Community of Practice (CoP)
Community Telecon
July 19, 2022

In Attendance: 38 participants
John Haynes (NASA), Juli Trtanj (NOAA), Helena Chapman (NASA HQ/BAH), Helen Amos (NASA Goddard), Sushel Unninayar (NASA Goddard & KBR/Morgan State Univ.), Hunter Jones (NOAA), Karen Holcomb (NOAA/CDC), Bob Chen (CIESIN/Columbia Climate School, Columbia Univ.; NASA SEDAC), Cascade Tuholske (CIESIN/Columbia Climate School, Columbia Univ.), Julie Spencer (Los Alamos National Laboratory), Kane Moser (Los Alamos National Laboratory), Assaf Anyamba (Oak Ridge National Laboratory), Tabassum Insaf (NY Department of Health), Ben Zaitchik (Johns Hopkins Univ.), Karin Ardon-Dryer (Texas Tech University), Andrea Portier (AGU GeoHealth), Jesse Bell (Univ. of Nebraska Medical Center), Kristina Kintziger (UNMC COPH), Jonathan Joseph Harris (Rensselaer Polytechnic Institute), Michael Wimberly (Univ. of Oklahoma), Dawn Nekorchuk (Univ. of Oklahoma), Shannon Vattikuti (Mississippi State Univ.), Olayinka Osuolale (Elizade Univ., Nigeria), Rui Kotani (GEO Secretariat), Nhilce Esquivel (Stockholm Environment Institute), Jorge Cabrera (SICA), Adrian Guzman (Mexican Space Agency), Melissa MacDonald (ECCC, Canada), Haley Oba (SEES Intern), Marvel Hanna (SEES Intern), Benjamin Folk, Ryan Dempsey, Aswin Surya, Komalpreet Singh, Neha, Cassie, Paxton.

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

John Haynes (NASA HQ) shared news that AmeriGEO Week 2022 will be held from August 15-19, 2022, in Asunción, Paraguay and virtually. He also said that GEO Week 2022 will be held in Accra, Ghana and virtually, from October 31 to November 4, 2022. Next, he shared the recent NASA web feature, Great Air Quality for the Great Lakes Region, and the recent GEO Secretariat article on EO4Health activities, Managing health risks with Earth observations.

Juli Trtanj (NOAA) said that the NOAA Climate Program Office, National Integrated Heat Health Information System (NIHHIS), and CAPA Strategies are conducting the community-led heat mapping campaigns across 14 U.S. cities and counties as well as two international cities (NOAA and communities to map heat inequities in 14 U.S. cities and counties and Mapping Campaigns). She mentioned that they are midseason (at five weeks) for the heat awareness campaigns, where they are co-advertising with partners and using common hashtags (heatsafety, nihhis). She commented that agencies are taking turns to leverage expertise, such as recognizing risk factors and offering recommendations for heat-related illnesses. Then, she said that Hunter Jones (NOAA) and John Haynes (NASA HQ) were invited panelists for the Managing Climate-Driven Zoonotic Risk: An Interagency Workshop, organized by Sandia National Laboratories. Next, she commented that the WMO Services Commission is considering the advantages and disadvantages of naming heatwaves, without immediate plans to name heatwaves (WMO has no immediate plans to name heatwaves). Finally, she mentioned that the EPA Challenge, Let’s Talk about Heat Challenge, will close on July 22, 2022.
Helena Chapman (NASA HQ/BAH) shared the upcoming Satellite Remote Sensing for Measuring Urban Heat Islands and Constructing Heat Vulnerability Indices (August 2-11, 2022), as a follow-up from the Satellite Remote Sensing for Urban Heat Islands (November 2020). Next, she mentioned that NASA Earth Science Applications Week 2022 will be held from August 9-11, 2022. Then, she reminded CoP members about two upcoming deadlines: 1) Call for abstracts for the American Geophysical Union (AGU) will be open until August 3, 2022; and 2) Call for expressions of interest for the Climate, Environment and Health Responders for the Americas will be open until August 1, 2022.

Bob Chen (CIESIN/Columbia Climate School, Columbia Univ.; NASA SEDAC) shared the NIH Request for Proposals for Research Coordinating Center to Support Climate Change and Health Community of Practice, and mentioned that any CoP member interested in linking with a Columbia Univ. proposal should contact him.

Helena Chapman (NASA HQ/BAH) introduced Michael Wimberly (Univ. of Oklahoma), who shared an update on the Arbovirus Mapping and Prediction (ArboMAP) to Forecast Mosquito-Borne Disease Outbreaks. Dawn Nekorchuk (Univ. of Oklahoma) mentioned that the redesigned ArboMAP report snapshots offer a more user-friendly interface, which are useful for health departments, and that the code is freely available on Github.

Hunter Jones (NOAA) asked about their interactions with state health departments, their interest in co-developing these tools, and if these reports are only used internally by health departments (e.g. budget decisions, timing of interventions) or if they are shared publicly. Michael Wimberly (Univ. of Oklahoma) said that South Dakota (as the original study site) have been most engaged in the project. He shared the challenges with these reports impacting budgeting decisions. For example, he noted that nuisance mosquitoes are active earlier in the season (vs WNV-transmitting mosquitoes), so vector control resources are used accordingly, leaving fewer resources during the later WNV season. He commented that this tool must be co-developed with state health departments and explained that they conducted a co-development workshop with staff from four health departments who reviewed the older reports and offered feedback on how to optimize graphical elements. Dawn Nekorchuk (Univ. of Oklahoma) said that they are working with the South Dakota Department of Health to compile information for internal reports, who have expressed satisfaction with the new reports.

Hunter Jones (NOAA) asked about future opportunities to incorporate different modeling approaches for ensemble prediction approaches at the state level. Michael Wimberly (Univ. of Oklahoma) stated that they use a narrow ensemble approach, noting that integrating a few models works better than individual models. He said that their code is set to prepare ensemble models, where end-users can download the code and add in their modeling approach in the appropriate slot. Dawn Nekorchuk (Univ. of Oklahoma) commented that the variables are parameters that can change for each state or implementation effort. Juli Trtanj (NOAA) commented that it would be interesting to connect these modeling approaches with heat drivers. Tabassum Insaf (NY Department of Health) commented that since states are data stewards for health data, working directly with states would be ideal. She suggested reaching out through CDC-funded mechanisms (e.g. National Environmental Public Health Tracking, Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases, Environmental Health Capacity grants) to enhance coordination at the national level.
Assaf Anyamba (Oak Ridge National Laboratory) asked if they have plans to expand their work to implementing national early warning system, which could align with the CDC Center for Forecasting and Outbreak Analytics. Michael Wimberly (Univ. of Oklahoma) commented that they do not currently have a specific plan for national implementation, and mentioned challenges related to socio-political (vs technical) factors. He said that although states have the most up-to-date testing data, there is a time delay as data flow from states to CDC, which can ultimately hinder using these data for timely predictions. Juli Trtanj (NOAA) agreed that it would be ideal to harmonize efforts, especially focusing on environmental drivers. Michael Wimberly (Univ. of Oklahoma) said that through their larger NASA grant in South Dakota and smaller NASA funding for multiple states, they highlighted that this model can be scalable. He commented that they would be interested in collaborating with other teams on strategies to scale this work to the national level.

Jorge Cabrera (SICA) asked if EO4Health have any formal collaborations with WHO, where these findings can expand beyond political interests and strengthen connections with Ministries of Health. Juli Trtanj (NOAA) said that they would like to further discuss the topic of collaborations with the WHO GIS Centre for Health. Helena Chapman (NASA HQ/BAH) agreed that the AmeriGEO Week 2022 would offer an ideal platform for these discussions.

Rui Kotani (GEO Secretariat) said that she joined the GEO Secretariat Team as the GEO Disaster Risk Reduction Coordinator in July 2021 (GEO Secretariat strengthens senior team). She said that they would like to connect the Disaster Risk Reduction Working Group with the Human Planet Initiative, EO4Health, and Global Water Sustainability (GEOGLOWS), with other relevant international agencies. She shared three links with CoP members: Early Warning, Alert and Response System (EWARS); Emerging Infectious Diseases article (World Health Organization Early Warning, Alert and Response System in the Rohingya Crisis, Bangladesh, 2017-2018); and the GEO Proposed strategy for the development of the post-2025 GEO Work Programme.

Nhilce Esquiavel (Stockholm Environment Institute) said that she forms part of the Disaster Risk Reduction Working Group and has interests in collaborating with water and sanitation (WASH) and health teams. She noted that with limited WASH data, Earth observations can offer valuable data for decision-making models at the municipal or country level. She commented that regional meetings are essential to build WASH networks and leverage expertise (e.g. 2022 Sector Ministers’ Meeting).

Juli Trtanj (NOAA) said that the UN has plans to develop early warning systems against extreme weather and climate change (UN weather agency to spearhead 5 year early warning plan, boosting climate action). She mentioned that they would like to elevate ongoing work within the CoP and possibly invite UN representatives to join the CoP and develop feasible health deliverables.

Helena Chapman (NASA HQ/BAH) introduced Assaf Anyamba (Oak Ridge National Laboratory), who highlighted that this second Rensselaer Polytechnic Institute-NASA Student Engagement collaboration offered direct connections between NASA scientists and data science students. Jonathan Harris (Rensselaer Polytechnic Institute) described the etiology and risk factors of Crimean-Congo hemorrhagic fever (CCHF), shared two primary data sets (Program for Monitoring Emerging Diseases Mail Archive, NASA Goddard Earth Sciences Data and Information Services Center), and presented the findings of his class project.
Michael Wimberly (Univ. of Oklahoma) asked if the multivariate STM method was more effective than other time modeling techniques, especially related to climate drivers and relationships with disease alerts. Jonathan Harris (Rensselaer Polytechnic Institute) commented that although this class project focused on MALSTM and did not review other modeling techniques, it would be interesting to explore other modeling approaches. He said that this project included precipitation and temperature variables, where temperature was observed as a more important driver than precipitation.

Shannon Vattikuti (Mississippi State Univ.) asked about the specific environmental parameters related to increased incidence of CCHF disease. Jonathan Harris (Rensselaer Polytechnic Institute) commented that agricultural labor and climate variability between countries may be two factors. Assaf Anyamba (Oak Ridge National Laboratory) said that there are high concentrations of CCHF-transmitting ticks in this region (e.g. Middle East, southern Russia). He noted, however, that there are differences in data reporting in these regions, which may not reflect the actual disease surveillance.

Helena Chapman (NASA HQ/BAH) asked Assaf Anyamba (Oak Ridge National Laboratory) about lessons learned from this Rensselaer Polytechnic Institute-NASA Student Engagement collaboration. Assaf Anyamba (Oak Ridge National Laboratory) commented that enthusiastic partners (like Thilanka Munasinghe, RPI) and students are essential for such engagements. He also said that due to the semester-long course, scientific questions must be feasible for a short-term project, and mentorship can help students stay on track and guide students to adjust analytical techniques as necessary. He stressed that it is important to understand the biology of vectors or pathogens as well as the specific analytical techniques with big data. However, he concluded that this short-term project offers a great example on how students can conduct research, better understand datasets, and learn about various Earth observations. Juli Trtanj (NOAA) commented that they should follow up with the GEO Disaster Risk Reduction Working Group and AmeriGEO, to identify next steps for building capacity and collaboration.

John Haynes (NASA HQ) and Juli Trtanj (NOAA) 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) and Juli Trtanj (NOAA) closed the teleconference and mentioned that the next community teleconference will be scheduled for Tuesday, August 2, 2022 from 8:30-10:00AM EDT (GMT-4).

Adjourned: 12:30PM EDT (GMT-4)