

## **GEO Health Community of Practice (CoP)**

### **Telecon: Focus on COVID-19 Activities**

April 9, 2020

#### **In Attendance:** 62 participants

John Haynes (NASA HQ), Juli Trtanj (NOAA), Helena Chapman (NASA HQ/BAH), Sue Estes (NASA/UAH), John Balbus (NIH/NIEHS), Ann Liu (NIEHS), Trisha Castranio (NIH/NIEHS), David Green (NASA HQ), Laura Mulvay (NASA HQ), Helen Amos (NASA Goddard/SSAI), Mariel Friberg (NASA Goddard/USRA), Dorian Janney (NASA Goddard), Shan Kowalski (NASA Langley), Pawan Gupta (USRA/MSFC), Tian Yao (NASA GSFC/SSAI/NASA Disasters Program), Sushel Unninar (NASA Goddard/GESTAR/MSU), Cynthia Hall (NASA Earth Science Data Systems), Amanda Quintana (USGCRP), Corey Hummel (HQ US Air Force, Directorate of Weather), Lt Col Robert Branham (US Air Force, Chief Climate Services Integration), Stan Benjamin (NOAA Global Systems Lab, Boulder, CO), Angelica Gutierrez (NOAA), Tabassum Insaf (New York State Department of Health), Mark Shimamoto (AGU), Lisa Conti (Florida Department of Agriculture and Consumer Services), Kiersten Johnson (USAID Bureau for Resilience and Food Security), Brad Goodwin (ATSDR), Merrie Beth Neely (GEO Aqua Watch), Niloofar Ganjian (Health Finance Institute), Ben Zaitchik (John Hopkins U.), Antar Jutla (U. of Florida), Augustin Vintzileos (U. of Maryland-ESSIC, College Park), Mohammad Sajadi (U. of Maryland-ESSIC, College Park), Steve Greb (U. of Wisconsin-Madison, Director GEO AquaWatch), Susan Anenberg (George Washington U.), Bill Pan (Duke U.), Haofei Yu (U. of Central Florida), Aaron Naeger (U. of Alabama in Huntsville), Bob Chen (Center for International Earth Science Information Network, Columbia U.), Ashish Sharma (U. of Illinois, Urbana-Champaign), Ali Akanda (U. of Rhode Island), Mohammad Sajadi (Institute of Human Virology, U. of Maryland School of Medicine), Talat Odman (Georgia Institute of Technology), Greg Carmichael (U. of Iowa), Chang-Yu Wu (U. of Florida), James Kubicki (U. of Texas at El Paso), Steven Ramage (GEO Secretariat), Joy Shumake-Guillemot (WHO/WMO), Rifat Hossain (WHO), Jorge del Rio Vera Unoosa (UN Office for Outer Space Affairs), Ivan Petiteville (European Space Agency), Tomas Hrozensky (European Centre for Space Law), Essa Bataineh (UN Environment Programme), Astrid-Christina Koch (European Commission, DG DEFIS – Copernicus), Alvaro Monett (Economic Commission for Latin America), David Rodríguez (Council of Ministries of Health in Central America and Dominican Republic, COMISCA), Sally Edwards (PAHO, Panama), Serge Olivier Kotchi (National Microbiology Laboratory, Public Health Agency of Canada), Didier Davignon (Meteorological Service of Canada), Celine Audette (Environment and Climate Change Canada), Milind Pimprikar (CANEUS International, Montreal, Canada), Andreas Skouloudis (Joint Research Centre, Italy), Naledzani Mudau (South African National Space Agency).

#### **Summary Notes:**

*\*Prepared by Helena Chapman (NASA HQ/BAH)*

**John Haynes (NASA HQ)** and **Juli Trtanj (NOAA)** opened the telecon by welcoming all participants. They moderated a dialogue on current CoP activities and updates related to the ongoing COVID-19 pandemic.

**Mohammad Sajadi (U. of Maryland, College Park)** and **Augustin Vintzileos (U. of Maryland, College Park)** provided an update on their research that examines weather- and climate-related variables on COVID-19 transmission. They aimed to validate the study, using a smaller scale to compare growth rates at the state and county levels, and examine correlations with temperature and specific humidity. They also described favorable days and subseasonal-seasonal forecasting. **John Haynes (NASA HQ)** asked about dates regarding the case data. **Mohammad Sajadi (U. of Maryland, College Park)** mentioned that the map showed temperatures in March and April 2019, and the highlighted areas were predicted at higher risk. He mentioned that Wuhan was not included in these areas.

**John Haynes (NASA HQ)** asked about their perspectives related to the resurgence of COVID-19 cases in tropical areas like Singapore. **Mohammad Sajadi (U. of Maryland, College Park)** mentioned that we may not see typical patterns since no known pre-existing immunity exists across global populations. He commented that with seasonal variation, COVID-19 may present certain requirements for temperature and humidity conditions – along with other environmental variables – that influence transmission. He stated that the real test will be observing COVID-19 transmission in the cooler weather.

**John Balbus (NIEHS)** asked about the time unit of analysis, and what would be the ideal time unit (e.g. week by week, daily time series with two-week lag). **Mohammad Sajadi (U. of Maryland, College Park)** stated that when they reviewed the first seven places with high COVID-19 community spread, they examined the time period and predicted 20-30 days before the first community death.

**David Green (NASA HQ)** asked about the impact of mobility on COVID-19 spread. **Ben Zaitchik (Johns Hopkins U.)** confirmed that their research team is examining mobility and change in mobility related to COVID-19 spread.

**Rifat Hossain (WHO)** provided an update of the Monitoring and Evaluation of COVID-19 Response. Over the past two weeks, he stated that they have improved the monitoring and evaluation framework with the set of indicators. He said that their team is in contact with experts from various academic institutions. He mentioned that COVID-19 transmission rate is dependent on diagnostic testing, which they recognize as they are developing predictive models. As they evaluate the data, he stated that they understand that all models have a high degree of uncertainty. **Juli Trtanj (NOAA)** offered to identify and connect GEO members who are interested in learning more about this COVID-19 indicator framework with Rifat and this team.

**Steven Ramage (GEO Secretariat representative)** mentioned that they just announced a [call](#) for the GEO community to provide examples of Earth observations in support of COVID19 monitoring. They hope to compile the resources next week and share the update in the next telecon. The goal is to share findings at the GEO Plenary in late 2020, so that these real-time news can provide lessons moving forward.

**Jorge Del Rio Vera (UN Office for Outer Space Affairs)** presented on the UN-SPIDER COVID-19 [webpage](#) that serves as a knowledge portal. He said that they aim to provide

resources from diverse agencies (e.g. European Space Agency, European Commission, and NASA) in one central location. He said that if any GEO member would like their agency added, then they should email Jorge ([oosa@un.org](mailto:oosa@un.org)).

**David Green (NASA HQ)** shared one [resource](#) from NASA Disaster Team regarding COVID-19 transmission and air pollution. **John Haynes (NASA HQ)** shared two recent web features on COVID-19 transmission and air quality impacts from [NASA Earth Observatory](#) and [NASA SPoRT](#). Cynthia Hall (NASA Earth Science Data Systems) added one [resource](#) on how to find and visualize NASA NO<sub>2</sub> satellite data.

**Astrid-Christina Koch (European Commission, DG DEFIS – Copernicus)** provided an overview on the Copernicus Emergency Service Activation related to the COVID-19 response in Italy. She mentioned that this was a result of the activation by Italy's Civil Protection Department for the northern region (Turin region) to monitor and evaluate temporary health facilities (e.g. triage facilities, field hospitals). **Juli Trtanj (NOAA)** asked about the decision-making process for Copernicus Emergency Service Activation to engage in another country as well as access to data and resources. **Astrid-Christina Koch (European Commission, DG DEFIS – Copernicus)** stated that these data (satellite and in-situ sources) are available to all end users through a standard procedure for user authorization. For example, she mentioned that if you are working in Europe in the emergency management entity, you complete a form that is evaluated and then the activation proceeds for the respective disaster. She described that previous examples of this emergency service activation have included tropical cyclones, volcanoes, floods, and earthquakes.

**John Balbus (NIEHS)** and **Andreas Skouloudis (Joint Research Centre, Italy)** provided an update on the global health-care facilities and their adequacy to cope during the evolving COVID-19 epidemic. **John Balbus (NIEHS)** said that Earth observation images and imagery analyses are essential to examine the real-time impact of environmental conditions (e.g. floods, high winds) on the potential vulnerability of health care facilities. These data are especially important since communities may experience heat waves, tornadoes, and floods in the upcoming months. He mentioned that stakeholders are connecting resources in a decentralized manner (e.g. coordination of local meteorologists with health care systems).

After the finalization of the slide presentations, **John Haynes (NASA HQ)** and **Juli Trtanj (NOAA)** encouraged other GEO members to provide updates on their COVID-19 activities.

**Aaron Naeger (U. of Alabama in Huntsville)** provided a link to the NASA SPoRT [blog post](#) on NO<sub>2</sub> monitoring over California.

**Ali Akanda (U. of Rhode Island)** mentioned that his team has connected to different research groups (e.g. NASA Ames, Conservation International, U. of Texas at El Paso) and expanded the discussion on how different tribal nations are managing the COVID-19 response. They are working on an opinion piece with water security links to COVID-19 and vulnerable communities. He mentioned that since some people fear a second wave of COVID-19 transmission, they aim to identify hotspots for COVID-19 transmission where water security may play a role.

**Ben Zaitchik (Johns Hopkins U.)** stated that they continue to work on hydrometeorological indicators in the United States and selected countries. He mentioned that they are collaborating with Switzerland researchers on SIR dynamic models.

**Joy Shumake-Guillemot (WHO/WMO)** provided an update that the FAQ guides and checklists regarding the relationship between COVID-19 and extreme heat should be released in early May 2020.

**Juli Trtanj (NOAA)** stated that the USGCRP Climate Change and Human Health Group has developed an informal COVID-19 task team to discuss the relation of climate and weather variables and COVID-19 transmission. She also mentioned that other federal agencies are working on modeling capacity and experimental modeling.

**Pawan Gupta (NASA MSFC/USRA)** mentioned that his team is completing aerosol analyses to examine the response of the shutdown due to COVID-19 in China, Italy, and India. He plans to present his findings at the next telecon.

**John Haynes (NASA HQ)** shared an update on two funding opportunities related to COVID-19 research activities.

- 1) [NASA's Rapid Response and Novel Research in Earth Science](#): Released in February 2020, this solicitation encourages the innovative use of NASA satellite data to address environmental, economic, and/or societal impacts of the COVID-19 pandemic. Proposals should describe a project with one-year duration and requesting a US\$100,000 budget.
- 2) [COVID-19 High Performance Computing Consortium Request](#): Formed in March 2020, this unique public-private consortium was spearheaded by the White House Office of Science and Technology Policy, the US Department of Energy and IBM. Formed in March 2020, this solicitation offers researchers a range of computing capabilities to accelerate scientific understanding and discovery of COVID-19 virus and related treatments and vaccine development.

**Ivan Petiteville (European Space Agency)** mentioned that the European Space Agency and NASA announced [funding opportunities](#) for the COVID-19 response.

**John Haynes (NASA HQ)** mentioned that a research team at Harvard University published a [report](#) on the exposure to air pollution and COVID-19 mortality in the United States. He also shared that the National Academies of Sciences, Engineering, and Medicine recently published a [report](#) on the relation of temperature and humidity to COVID-19 seasonality. **John Balbus (NIEHS)** mentioned that as the Harvard University study examined long-term antecedent exposure in areas with high PM 2.5 levels, he was unsure about the extent of short-term exposure or variable exposure throughout the COVID-19 response.

**Juli Trtanj (NOAA)** stated that if any GEO member or colleague was working on research activities related to pollen or wildfires during the COVID-19 response, an upcoming telecon can incorporate this this topic into the discussion.

**Andreas Skouloudis (Joint Research Centre, Italy)** mentioned that they are quickly analyzing data to examine if there are any significant associations with environmental factors and COVID-19 transmission. He said that they would like to examine countries with late spring seasons (e.g. northern Europe, New York) and identify any potential associations with mortality rates. He stated that there is no predictive capacity at this point and would like to identify where to rationalize efforts according to climatic conditions. He identifies this especially as the Southern Hemisphere will be entering winter conditions soon, and the potential COVID-19 transmission is unknown.

**John Haynes (NASA HQ)** mentioned that there are additional topics to explore, including the zoonotic links of COVID-19 transmission from the horseshoe bat. **Helena Chapman (NASA HQ/BAH)** mentioned that this COVID-19 pandemic has encouraged a global discussion about the One Health concept, which describes the interconnectedness between human, animal, and environmental health. She provided links to available resources on the [One Health Initiative](#) and [One Health Commission](#) webpages. **Bill Pan (Duke U.)** agreed that the One Health concept is an essential topic, especially as SARS and MERS have jumped from animals to humans. He said that the One Health community has continued to discuss the need to prepare for the next pandemic.

**John Haynes (NASA HQ)** and **Juli Trtanj (NOAA)** closed the telecon and mentioned that the next telecon would be scheduled for the following Friday, April 17<sup>th</sup>.

Adjourned: 1:00 PM EST