

GLOBE OBSERVER AND DUST STORMS

Dust storms, formed by natural or anthropogenic mechanisms, contain particulate matter that can impact environmental and public health. To aid scientists, the Global Learning and Observations to Benefit the Environment Program (GLOBE) invites everyone to submit photographs of dust events in their area. Scientists can use these observations to verify satellite observations and validate models, which can help predict dust storms and enhance public health alerts for community preparedness. **Daniel Tong (George Mason U.)** and **Kerstin Schepanski (Leibniz Institute for Tropospheric Research, Germany)** serve as project scientists. To learn more, please visit the [GLOBE Observer and Dust Storms website](#) for training activities, webinar videos, and visualizations and download the [GLOBE Observer app](#).



Photo credit: NASA GLOBE

NASA HEALTH AND AIR QUALITY TEAM'S SITE VISIT TO PUERTO RICO

In January 2020, the HAQ Team attended the First Annual Meeting and Workshop, *Remote Sensing, Air Quality, and Public Health Research*, in San Juan, Puerto Rico. This team meeting was led by Pablo Méndez-Lázaro, for his three-year NASA-funded project, *Early Warning of Synoptic Air Quality Events to Improve Health and Well Being in the Greater Caribbean Region*. More than 100 participants attended this meeting, which provided an opportunity for researchers and stakeholders to share knowledge and experiences to fill the gap between science and decision-support tools using Earth observation data. The meeting agenda highlighted presentations by the research team and collaborators, focusing on three working groups: *Resilience, Public Health, and Well Being*; *Atmospheric Forcing and Air Quality*; and *Decision Support Tool: Computation and Visualization*. During the project's second year, these groups will continue to work closely together to better understand the impact of African Dust occurrences in the Caribbean, as they relate to identifying environmental and public health effects and improving forecasting measures.



First Annual Meeting at UPR Rio Piedras campus (Left) with meeting attendees (Center). Meteorologists Ada Monzón and John Haynes pose after the meeting (Right). Photo credit: H. Chapman/UPR

HEALTH AND AIR QUALITY APPLICATIONS APPLIED SCIENCES PROGRAM

haQ

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NASA HEALTH AND AIR QUALITY TEAM PRESENTS TALKS AT AMS 2020 HYPERWALL AND SCIENTIFIC SESSIONS

At the American Meteorological Society (AMS) 2020, held in Boston, MA, the NASA HAQ Team coordinated a scientific session, *NASA Earth Observation Systems and Applications for Health, Air Quality, Environmental Management, and Public Outreach*, moderated by **Helena Chapman (NASA HQ/BAH)**, to an audience of approximately 70 attendees. Eight topics were presented: *A Public Outreach Overview for NASA Earth Observation Systems and Applications for Health and Air Quality* (**John Haynes, NASA HQ**); *Capturing the Use of Earth Observations for Health Assessments of Climate Change: Learnings from the 2016 GCRP Climate Health Assessment* (**John Balbus, NIH/NIEHS**); *Characterizing Multiple Environmental Exposures from Satellite Observations and Examining Their Role on Children's Health* (**Xiaoze Yin, U. of Southern California**); *Enabling Worldwide Citizen Science Reporting of Dust Storms with NASA's GLOBE Observer App* (**Maril  Col n Robles, NASA Langley/SSAI**); *Hydroclimate-influenced Transmission of Waterborne Diseases in the Environment and Human Population* (**Antarpreet Jutla, U. of Florida**; Presented by **Moiz Usmani**); *Satellite Earth Observations Identify Arbovirus Transmission Hot Spots in an Urban Landscape* (**Michael Wimberly, U. of Oklahoma**); *Supporting One Health Collaborations in Environmental Health Applications* (**H. Chapman, NASA HQ/BAH**); and *SWOT Applications Engagement: Development, Progress, and Growth* (**Margaret Srinivasan, Jet Propulsion Laboratory**).

Organized by the Science Communications Support Team (**Steve Graham, NASA Goddard**), the three NASA HAQ Hyperwall talks at the exhibit hall included: *Earth Observations Applied to a Changing World: NASA Health and Air Quality Applications* (**J. Haynes, NASA HQ**); *Linking Satellite Data to the One Health Approach* (**H. Chapman, NASA HQ**); and *Air Quality Research Campaigns Supporting the Preparation for TEMPO* (**Laura Judd, NASA Langley/SSAI**). Also, as part of the AMS Town Hall sessions, **Abigail Nastan (Jet Propulsion Laboratory)** organized a MAIA and TEMPO Applications Town Hall, *Upcoming NASA Health and Air Quality Missions*. Presenters included: **J. Haynes (NASA HQ)**, **A. Nastan (Jet Propulsion Laboratory)**, **Michael Garay (NASA//Jet Propulsion Laboratory/California Institute of Technology)**, **Michael Newchurch (U. of Alabama-Huntsville)**, and **Aaron Naeger (U. of Alabama-Huntsville)**.



A. Naeger, M. Garay, A. Nastan, and J. Haynes (Left to Right) present at the MAIA/TEMPO Applications Town Hall (Left). HAQ session panelists give highlights on diverse topics (Center). J. Haynes presents his Hyperwall talk (Right). Photo credit: H. Chapman

NASA INVESTIGATORS IN THE NEWS

Susan Anenberg (George Washington U.): S. Anenberg presented, [*Climate Change, Air Pollution, and Public Health Impacts: Past, Present, and Future*](#), as part of the 2020 Research Seminar Series at the George Washington University's Milken Institute School of Public Health in February 2020.

Dan Goldberg (George Washington U.): [*Deadly Air Pollution is Blowing into your State from a Surprisingly Large Source*](#): D. Goldberg provided his perspectives on air pollution trends for this *Science* report in February 2020.

GEO HEALTH COMMUNITY OF PRACTICE HOLDS QUARTERLY TELECON



In March 2020, the Group on Earth Observations (GEO) Health Community of Practice (CoP) held the [quarterly telecon](#) to provide program/project updates and coordinate next steps of the GEO Health CoP work plan. This work plan supports GEO efforts and advances development of the GEO Earth Observations for Health (EO4HEALTH) initiative. **Josh Colston (U. of Virginia)** provided an update on his team's recent NIH grant, [Global Geospatial Mapping and Modeling of Household-level Covariates of Infectious Disease Transmission and Child Health](#). Then, **John Haynes (NASA HQ)** moderated a dialogue on current CoP activities and updates related to the ongoing COVID-19 pandemic. An estimated 45 participants, representing different agencies in public and private sectors, participated on the telecon. A follow-up telecon to continue the dialogue on CoP activities related to the COVID-19 pandemic will be held in early April 2020. The next quarterly telecon will be planned for late Summer 2020.

UPCOMING

Funding Opportunities:

ROSES-2020

Letters of Intent due
April 17, 2020
Full Proposals due
May 29, 2020

Meetings:

MAIA Science Team Meeting & Early Adopters Workshop
May 5-7, 2020
Virtual Connection

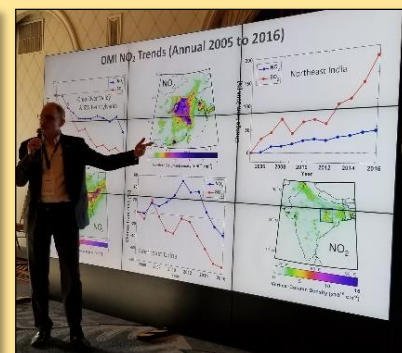
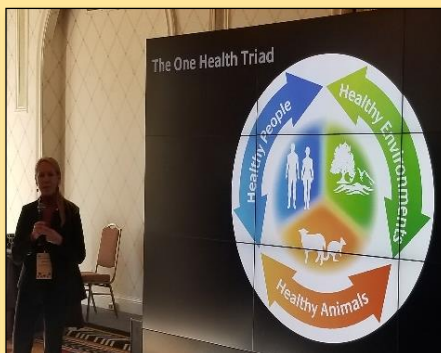
Joint MAIA-TEMPO Early Adopters Workshop
May 18-19, 2020
Virtual Connection

Air and Waste Management Association's Annual Conference & Exhibition

June 29-July 2, 2020
San Francisco, CA

NASA HEALTH AND AIR QUALITY TEAM PRESENTS TALKS AT NCSE 2020

The [National Council for Science and the Environment \(NCSE\)](#) 2020 Annual Conference, held in Washington DC, highlighted the theme, *Science in Environmental Decision-making*. At this event, the NASA HAQ Applications and Research and Analysis Teams presented Hyperwall talks. **John Haynes (NASA HQ)** presented *Earth Observations Applied to a Changing World: NASA Health and Air Quality Applications*, **Helena Chapman (NASA HQ/BAH)** described *Linking Satellite Data to the One Health Approach*, and **Barry Lefer (NASA HQ)** discussed *Measuring Air Quality from Space: Past Success and Future Plans*. These presentations were well attended and received by NCSE2020 attendees.



J. Haynes, H. Chapman, and B. Lefer present Hyperwall talks at NCSE2020 (Left to Right). Photo credits: S. Anenberg/H. Chapman

HAQAST2020 WEBINAR SERIES



The [NASA Health and Air Quality Applied Sciences Team \(HAQAST\)](#) hosted a series of 14 one-hour webinars, from February 18 to March 12, 2020. **Tracey Holloway**, **Daegan Miller**, and **Page Bazan (U. of Wisconsin, Madison)** coordinated the webinar agenda and technical logistics for the [HAQAST2020 Webinar Series](#).

Webinar presenters represented academic, federal, and non-governmental institutions, prepared high-quality talks on using NASA tools, assessing the health burden of PM_{2.5}, the future of HAQAST, and other health and air quality topics. Presenters included John Haynes (NASA HQ); T. Holloway; Bryan Duncan (NASA Goddard); Arlene Fiore and Xiomeng Jin (Lamont-Doherty Earth Observatory, Columbia U.); Will Barrett (American Lung Association), T. Holloway, and Yang Liu (Emory U.); Brad Pierce (Space Science and Engineering Center); Mark Zondlo (Princeton U.); Daniel Tong (George Mason U.); Susan Anenberg and Dan Goldberg (George Washington U.) and Michael Brauer (Institute for Health Metrics and Evaluation); Jason West (U. of North Carolina); Daven Henze (U. of Colorado, Boulder); Minghui Diao (San Jose State U.); Jeremy Hess (U. of Washington); and Susan O'Neill (USDA Forest Service) and Sean Raffuse (University of California, Davis). Notably, HAQAST and the **American Lung Association** collaborated to offer the webinar, [Tracking Air Quality to Help You Breathe: Data and Best Practices for Tracing the Health Impacts of Smoke for the Public Health Community](#).

These 14 high-quality presentations were watched by over 2,000 individuals, where 461 individuals attended on average four webinars each. Presentation slides are posted on the HAQAST2020 Webinar Series [website](#). Video recordings will be available by early April 2020.

PAST

Webinars:

[NASA Air Quality-Focused Remote Sensing for EPA Applications](#)

March 10-12, 2020

Meetings:

[National Council for Science and the Environment Annual Meeting](#)

January 6-9, 2020

Washington, DC

[American Meteorological Society Annual Meeting](#)

January 12-16, 2020

Boston, MA

First Annual Meeting and Workshop in Remote Sensing, Air Quality, and Public Health Research

January 27, 2020

San Juan, Puerto Rico

VISIT TO BU SCHOOL of PUBLIC HEALTH

In January 2020, the HAQ Team visited [Boston University School of Public Health](#). **John Haynes (NASA HQ)** presented an overview of NASA Applied Sciences Program and highlighted selected HAQ projects that integrate Earth observations for public health. HAQAST member, **Patrick Kinney (Boston U.)** facilitated a roundtable discussion with 16 faculty and graduate students. This meeting provided the opportunity to expand networks with public health researchers.

PUBLICATIONS

[Satellite-based Estimation of Hourly PM_{2.5} Levels during Heavy Winter Pollution Episodes in the Yangtze River Delta, China](#) *Chemosphere* (Q. She, M. Choi, J.H. Belle... **Y. Liu**)

[Pathogen-Specific Impacts of the 2011-2012 La Niña-Associated Floods on Enteric Infections in the MAL-ED Peru Cohort: A Comparative Interrupted Time Series Analysis](#) *International Journal of Environmental Research and Public Health* (J. Colston, M. Paredes Olortegui **B. Zaitchik**, et al.)

[Incorporating Low-cost Sensor Measurements into High-resolution PM_{2.5} Modeling at a Large Spatial Scale.](#) *Environmental Science & Technology* (J. Bi, A. Wildani, H.H. Chang, **Y. Liu**)