

### **Event overview**

On Tuesday, December 13, 2022, the [US Group on Earth Observations \(USGEO\)](#) held a Town Hall at the [American Geophysical Union \(AGU\) Annual Meeting](#). The USGEO Town Hall, entitled “[USGEO: Engaging the Earth Observations Enterprise](#)”, aimed to help the AGU community better understand how USGEO benefits them and to collect feedback on how USGEO might better engage with and serve them. The Town Hall consisted of two complementary elements – a presentation and an AGU community Q&A session with a USGEO Panel.

The 30-minute presentation gave an overview of the structure and functioning of USGEO, AmeriGEO, and GEO and shared key achievements from the past two years. The 30-minute Q&A session with the USGEO panel focused on the needs and concerns of the AGU community. The topics raised are summarized below with key points from the panelist’s responses. USGEO panelist bios are also below, and a recording of the session can be viewed [here](#).

### **Audience questions and summary of panelist responses**

Below are questions raised by the audience during the Town Hall. Attendees could ask questions either orally or via the Slido app. All of the questions are included below; however, there was insufficient time to address all of the questions raised via Slido. Lawrence Friedl served as the moderator.

#### **What is USGEO’s plan for / approach to *in situ* data (as opposed to data collected by satellite, aircraft, drones, etc.)?**

The Satellite Needs Working Group is highly visible, but *in situ* data (e.g. stream gauges, soil moisture sensors) is also a high priority for USGEO. *In situ* datasets significantly outnumber satellite-based datasets in the Earth Observation Assessment, and discussions are ongoing regarding how best to represent *in situ* datasets in the next USGEO National Plan and the next international GEO 10-year strategy.

For example, the US is a world leader in Mesonet climate change data, with the best coverage on the planet currently in the US. Discussions are ongoing around how to better run the network and manage/distribute the data. Soil moisture monitoring is part of Mesonet. Data harmonization is challenging because each state has different funding, research plans, institutional design, and monitoring plans. Drought monitoring programs need as much data as they can get in order to generate good estimates; there are serious potential financial impacts around crop outcomes.

#### **What is the relationship between AmeriGEO and LACI?**

AmeriGEO and LACI have an ongoing and fruitful collaboration built around exchanging ideas about needs and priority activities, particularly related to climate risk assessment. They are working together to develop 9 pilot projects spanning 11 countries (Brazil, Canada, Chile, Colombia, Ecuador, El Salvador, Jamaica, Paraguay, Peru, Uruguay, and USA) to collect information about needs across the Americas and the Caribbean, with a goal of finding funding to support these pilots. LACI also participated strongly in the most recent AmeriGEO Week, and good connections were made across sessions.

#### **What is the status of GEOSS?**

It was a priority in GEO’s last 10-year plan and is still active, but discussions are ongoing around what it can and should be moving forwards. GEOSS was one of the foundational concepts at GEO’s inception in 2005. It was envisioned as a system of systems to unify access to and standardize formatting of diverse national Earth observation data / observing systems. But consensus on objectives was never reached. Some saw it as an actual data portal / information system (and made significant investments in building that), while others saw it as a system of rules and standards to enable interoperability. Recent evaluations of what the global EO community needs and expects and how/whether GEOSS is currently used reveal the need for a definitive consensus around objectives. Significant investment is needed to make the existing data portal more useful. Some GEO countries are committed to doing

that, while others wonder if those resources might not be better invested elsewhere (though unclear whether those resources can be reallocated or are tied specifically to the GEOSS portal).

**Many agencies don't know that USGEO exists or what its goals are. The audience for the National Plan is also unclear. How can this information be made more widespread and useful?**

The objective of the USGEO Subcommittee is to provide a forum for its 16 agencies and 3 components of the Executive Office of the President to interact, share information and updates on activities, and collaborate on common interests related to Earth observation within the context of the Administration's priorities. The Subcommittee meetings are attended by agency representatives, whose responsibility it is to share USGEO information with their agencies. USGEO also uses the priorities identified in the National Plan to help guide federal Earth observation activities and enable implementation of the Administration's priorities.

The National Plan is one product of many produced by the USGEO Subcommittee. It documents what the Administration and the agencies identify as in the national interest and commit to achieving, enables better coordination of activities between agencies, and communicates these priorities and activities to the general public, academia, the non-profit sector, and the private sector. It also shows how data gets used by various communities. When writing a National Plan, USGEO collects input from across the nation, working hard to ensure the needs of the user community are reflected.

Within the federal government, Earth observation data needs can be communicated up the chain, for example through the biennial Satellite Needs Working Group process. The need for accessible Earth observation datasets increases every cycle of the SNWG process, with a key need in recent years being the Federal acquisition of commercial datasets (e.g. Planet, Maxar, Teledyne) for scientific use alongside federal/civil earth observation datasets. Examples can be found under the stakeholder engagement program at <https://www.earthdata.nasa.gov/esds/impact/snwg/sep>.

Listening sessions go beyond the Federal government to gather input from state and local governments, the private sector, academia, and non-profits. The 2019 National Plan received significant input from the commercial satellite data analytics sector.

USGEO also collects community perspectives by hosting guest presentations from non-federal organizations, including small academic institutions. Sometimes these are in response to information needs for specific activities, sometimes more general interest. USGEO and SNWG are also happy to talk about their activities if invited by a non-Federal organization or a gathering of different kinds of institutions.

Small academic institutions (such as community colleges, 2-year academic institutions) are a major constituency for NSF, as are minority/HBCU/tribal colleges. Any concerns from the academic community can be transmitted to the NSF representative to USGEO, Dr. Barbara Ransom, and she will ensure the issue is raised in USGEO discussions.

The SNWG collects data needs from the community and prioritizes solving them. Commercial data buys, and how they should be handled, are major points of discussion in USGEO. Data use licenses started out fairly restrictive (e.g. limited to purchasing agency, with limited broader distribution). This was detrimental to innovation and training that comes from the academic research community, as well as to considerations related to international treaties. As a result of the discussion, USGEO member agencies are initiating less restrictive licensing agreements.

**Initially, GEO sought to organize data providers and make their products more accessible to the world. Now it seems like the focus is more on gathering needs from data users. How does GEO gather information about data users and help them get their needs met?**

GEO takes assessing user needs very seriously. Since GEO lacks the resources to conduct detailed global market research, they focus on aggregate needs as expressed by multilateral environmental agreements (MEAs) such as the Sustainable Development Goals, the Paris Climate Agreement, the Convention on Biological Diversity, the Sendai Framework for Disaster Risk Reduction, the Ramsar Convention on Wetlands, etc. These MEAs represent the negotiated consensus needs, priorities, and commitments of their signatory national governments, which in turn represent the needs of the business, non-profits, academic institutions, and general public of those countries. If GEO were to engage with a specific thematic issue or geographic area, its approach would be to connect with relevant organizations having overview knowledge of that space. This nested intermediate approach helps GEO's engagement be realistic and successful.

Also, CEOS plays an important role in data quality assurance by setting standards for documenting data collection methods and metadata, as well as through data calibration evaluation validation activities. And guidance must be provided to data users so they understand clearly how a given dataset can be used vs. how it cannot (in terms of what is physically represented, levels of uncertainty, etc.).

**Question from moderator to panel: Looking ahead to 2023 – what's something related to EO and/or USGEO that you are looking forward to?**

Excited about NASA's open-source science initiative, The Year of Open Science, that will work to make all Federally funded research fully accessible to the American public. Many other Federal agencies besides NASA are engaging.

Working with the American Association of State Climatologists. Attending a Mesonet meeting. Forming community among network operators – the folks in the field collecting data. Communities understand their own community. Solutions developed in the field can be useful in similar contexts in other places. Excited to engage with those field-level exchanges. Lots of data being generated and used in those spaces. Ensure value of that work, keeping stations working and delivering data, gets recognized and appreciated for how it makes better decisions possible.

Wrapping up the recommendations for the cloud document, increasing interagency collaboration and sharing of knowledge/technology across NASA, NOAA, USGS. Year of Open Source Science, NASA initiative to make data easier to access for the public. Better data management to further enable research. Coming together in the next few years.

NSF has initiated a new Directorate of Technology, Innovation, and Partnerships (TIP). In the Earth observing space, NSF would like to see a big push in related workforce training and closer engagement between universities and private sector to develop more tools and utilities for space-based Earth observations, especially to support decision-making processes related to climate change and other environmental challenges.

For USGEO Earth Observation Assessment, we want to identify dependencies/chokepoints in terms of data products used by various agencies that we might not be aware of. Ensure recommendations in National Plan acknowledge and support these concerns. Assess robustness of system, identify where upgrades are needed, and develop the best recommendations to cover them. Also, new rule by Securities and Exchange Commission may require companies to disclose their climate risks. If passed, will significantly increase companies' demand for climate data/modeling/services from the AGU and USGEO communities.

### Speaker and Panelist Bios

**Mr. Lawrence Friedl (presenter and moderator)** is the director of the Applied Sciences Program of the Earth Science Division at NASA Headquarters. He also serves as a Co-Chair of the interagency U.S. Group on Earth Observations (USGEO) and represents the United States on the international Group on Earth Observations (GEO). He has been at NASA since 2002, served previously at EPA working on geospatial data and technology applications, and has a background in aerospace engineering and public policy.



**Dr. Barbara Ransom (panelist)** is a ~20-year Program Director in the Office of the Assistant Director of the Directorate for Geosciences at the National Science Foundation (NSF). Her background is in the Earth and ocean sciences, and she has been involved in numerous cross-NSF and US federal agency activities. Her role in USGEO is to represent the needs, concerns, and perspectives of the academic community. Barbara is the Lead of the Geoinnovation Hub in the NSF Directorate for Geosciences and supports activities in the innovation space and the development of public-private partnerships.

**Dr. Dana Ostrenga (panelist)** is the Assistant Project Manager for Earth Science Data and Information Systems at NASA Goddard Space Flight Center. Her expertise is in developing data applications and systems designed to collect and assess scientific information to support consolidation of atmospheric, oceanic, hydrological, or climate data observing system. She also oversees the design, implementation, and maintenance of satellite environmental information technological systems for data and product generation, evaluation, curation, and dissemination. Dr. Ostrenga co-chairs USGEO's Data Management Working Group and participated via remote connection.

**Dr. Michael Cosh (panelist)** is a Research Hydrologist with the USDA Agricultural Research Service-Hydrology and Remote Sensing Laboratory in Beltsville, MD. His research focus is on soil moisture monitoring, calibration, and validation of soil moisture products. Dr. Cosh co-chairs the Earth Observation Assessment Working Group.

**Dr. Cerese Albers (panelist)** is the Program Executive for Earth Science Data Systems at NASA HQ, which oversees the life cycle of NASA's Earth science data, from acquisition through processing and distribution, to maximize the scientific return from NASA's missions and experiments for research and applied scientists, decision makers, and society at large. The program includes NASA's SNWG Management Office which manages the implementation of NASA's solutions to federal agency needs for Earth observations as expressed through the USGEO Satellite Needs Working Group biennial survey process.

**Ms. Natalia Bermudez (guest panelist)** is the InterAmerican Associate for SERVIR within the Capacity Building team of the Applied Science Program at NASA. She collaborates with SERVIR hubs and other Capacity Building networks in the region (USGEO, AmeriGEO, Latin America and the Caribbean Initiative (LACI), EOTEC Dev Net Americas, UNGGIM Americas) to promote and connect activities related to the use of the Earth Observation in developing countries. She has been at NASA since 2022 and has a background in Geographic Information Science, Social Studies, and Environmental Management.

**Dr. Pamela Collins (facilitator)** is the Senior Advisor for Interagency & International Affairs in the Earth Science Division at NASA Headquarters, where she coordinates engagement with the global Group on Earth Observations (GEO) and USGEO, supporting research collaborations and providing science-based policy guidance. Prior to joining NASA, she led Conservation International's global ecosystem services modeling work, and previous work focused on water resources management and paleoecology.

