

## Applied Earth Observations Innovation Partnership Webinar Series

January 26, 1:00-2:30 pm (Eastern)

In this webinar, we feature the work by Dr. Carl Trettin, Supervisory Research Soil Scientist and Team Leader at the US Forest Service and Dr. Lola Fatoyinbo, Research Physical Scientist in the Biospheric Sciences Lab at NASA Goddard Space Flight Center. Together they work on a project funded through [NASA's Carbon Monitoring System \(CMS\) Initiative](#) to estimate total ecosystem carbon in blue carbon ecosystems.

Mangroves and other Blue Carbon ecosystems have experienced rapid decline, either through land conversion for commodity production (aquaculture, rice, oil palm), unsustainable harvesting for timber and charcoal, or poor management. To counter this trend, a large focus is on restoration and reforestation and the determining what types of observations are required to monitor the successful regeneration of blue carbon ecosystems. This talk will highlight progress and results from research focused on developing MRV (monitoring, reporting and verification) methodology that incorporates canopy height measurements from multiple remote sensing sources (such as SAR, Airborne Lidar, VHS or other data) to estimate extent, stocks and changes in mangrove ecosystems. Dr. Trettin will discuss applications of relevant CMS data products at the US Forest Service, how to address carbon cycle issues relative to mangroves in regions of Africa and elsewhere, and the impact of this work for stakeholders in the region. Dr. Fatoyinbo will provide science highlights and updates on the development of remote sensing tools for carbon stock assessment in mangroves, describe the development of regional and global mangrove data products funded through [NASA's Carbon Monitoring System \(CMS\) Initiative](#), and where to access the data.



**Carl Trettin** is a Team Leader and Supervisory Research Soil Scientist in the Center for Forested Wetlands Research at the Southern Research Station of the U.S. Forest Service. Carl received his Doctorate in Forest Soils with a focus on carbon science in forested wetlands. His research focuses on carbon stocks in mangroves, and the development of remote sensing tools for carbon stock assessments; contributions of dead wood to soil carbon pools; hydrologic controls on biogeochemical cycling in freshwater and tidal freshwater wetlands; development and application of Forest DNDC in managed and unmanaged forests; and effects of management practices and stressors on soil processes.



**Temilola (Lola) Fatoyinbo** is a Research Physical Scientist in the Biospheric Sciences Lab at NASA GSFC where she studies forest ecology and ecosystem structure using active and passive remote sensing instruments, serves on Satellite Mission Science Teams and Principal investigator on several NASA Earth Science Division funded research grants. Lola received her Doctorate in Environmental sciences with a focus on forest ecology and dynamics of mangrove wetlands. Her research is focused on characterizing the vulnerability and response of coastal ecosystems to disturbances from land use and climate change; LiDAR and SAR remote sensing of upland and coastal ecosystem structure and Carbon stocks;

Using science to support the UN Sustainable Development Goals and Conservation; New instrument and new technology development, airborne and field campaigns, applications of carbon monitoring and ecosystem services accounting. She is also interested in science communication and training the next generation of scientist, having mentored over 30 NASA interns, NASA postdoctoral Fellows and visiting scientists. In 2012 she was the recipient of the Presidential Early Career Award in Science and Engineering for her efforts on merging scientific priorities with advanced technology to develop innovative remote-sensing instrumentation for carbon-cycle and ecosystems science.