

Measuring our changing Cryosphere one photon at a time: Tom Neumann (NASA GSFC)

**Abstract:** The Ice, Cloud, and land Elevation Satellite-2 (ICESat-2) uses lasers in space to measure and monitor our changing cryosphere. In this presentation, Dr. Neumann will talk about how the mission measures ice with photons, results to date, and how sometimes you've just got to go to the field and check the data for yourself.

**Bio:** Tom Neumann is the Deputy Director of the Earth Sciences Division at NASA Goddard where he helps oversee and guide the incredibly diverse portfolio of research, flight, and modeling projects. Tom's scientific work at Goddard has focused on ICESat-2, the next-generation laser altimeter which launched in 2018. Tom now serves as the ICESat-2 Project Scientist, after serving as the Deputy Project Scientist during the development and implementation stages of ICESat-2 from 2008 to 2018. He has been involved extensively in field work on the Greenland and Antarctic ice sheets, leading four expeditions and participating in five others between the two poles. Recent work has involved studies of snow chemistry on the East Antarctic plateau and calibrating ICESat altimetry data using ground-based GPS surveys in Antarctica.



Weighing the Cryosphere and monitoring its changes with the GRACE Follow-On satellite mission  
Michael J Croteau (NASA GSFC)

Bio: Mike Croteau is a satellite geodesist and focuses on time-variable gravity estimation with GRACE and SLR, including Level-1B combinatorial solutions with other datasets. He is also involved in the Geodesy and Geophysics Laboratory's Global Mean Sea Level work. Mike is a NASA TOPS Champion, advocating for open science and teaching open science best practices at GSFC and in the scientific community.



Using Geophysical Environmental data to support operations in Sea & Lake Ice: Walt Clark (US National Ice Center)

Abstract: The US National Ice Center (USNIC) is a tri-agency organization with a mission to provide global to tactical scale ice and snow products, ice forecasting and other environmental intelligence services to the US government. I will explore how analysts at the USNIC utilize satellite imagery, in-situ environmental data, and geophysical models to support ships operating in sea and lake ice.

Bio: Walter (Walt) Clark attended the University of South Alabama and received a B.S. in Atmospheric Science in 2014. Walt joined the U.S. National Ice Center in 2015 as a contracted snow and ice analyst before also serving as a Navy civilian Ice Analyst, the NOAA Lead Ice Analyst, and finally in his current position as Snow and Ice Product Area Lead for USNIC and the National Weather Service' Ocean Prediction Center. Walt has also worked within the private weather industry and as a meteorologist for a National Weather Service Weather Forecasting Office in the Pacific Northwest.

