



Panel Discussion: Achieving an Interagency Arctic Observing System

**Eric Kasischke
Earth Science Division
NASA Headquarters**

17 November 2015

Arctic Observing Open Science Meeting

1. What are the key Arctic science objectives of your agency?

Earth Science Division: *The “purpose of NASA's Earth science program is to develop a scientific understanding of Earth's system and its response to natural or human-induced changes, and to improve prediction of climate, weather, and natural hazards.”*

Cryospheric Sciences Program: *To improve understanding of the mechanisms controlling and modeling of: (a) the mass balance and dynamics of the Greenland ice sheet, (b) the contributions of land-based ice to sea-level change, (c) the mechanisms controlling sea ice cover; and (d) estimates of snow accumulation on land-based and sea ice.*

Terrestrial Ecology Program: ABoVE: *To investigate the underlying processes and their interactions that control vulnerability and resilience in Arctic and Boreal ecosystems of western North America to environmental change, and to assess how people within and beyond this region may respond to changes in these processes and interactions.*

Terrestrial Hydrology Program, Ocean Biology and Biogeochemistry Program, Physical Oceanography Program, Atmospheric Composition: Upper Atmosphere Research Program, Tropospheric Chemistry Program, Radiation Sciences Program, Atmospheric Composition Modeling and Analysis Program



Arctic Observing Open Science Meeting

2. What observations does your agency support to help meet your key science objectives? (relative to Terrestrial Ecology and Cryospheric Sciences)

A. Spaceborne Missions

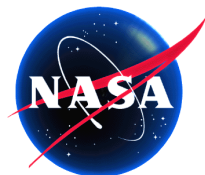
- ICESat – ICESat-2 (2017)
- Landsat Series
- MODIS-VIIRS
- AMSRE
- GRACE
- SMAP
- NISAR (2020)

B. Airborne Missions

- IceBridge
- CARVE
- AIRMoss
- ABoVE Airborne Campaign

C. Surface Measurements

- Range of surface observations in support of airborne campaigns (e.g., CARVE) and field campaigns (ABoVE)



Arctic Observing Open Science Meeting

3. How do you envision your agency's role in an interagency Arctic observing network?

- A. Key U.S. Agency (along with NOAA and USGS) for collection of satellite-based remote sensing data
- B. Key U.S. Agency for collection of a range of airborne-based remote sensing data
- C. Support research to develop advanced information products from spaceborne and airborne remote sensing data
- D. Collaborate with researchers from a broad range of agencies to collect surface-based observations required to calibrate, validate, and exploit remote sensing data
- E. Support long-term archives (DAACS) for satellite and airborne RS data and products and data from field campaigns

