

The background of the slide is a composite image. The top half shows a white naval ship on the left, a fighter jet in flight in the center, and an amphibious tank on the right. The bottom half shows a submarine underwater. The entire scene is set against a blue background with a faint molecular or network structure overlay.

# The Office of Naval Research Arctic and Global Prediction Program

Martin Jeffries

Arctic Observing Open Science Meeting • 17-19 November, 2015 • Seattle, WA



# Arctic Science Objectives

## ONR Arctic and Global Prediction Program

### Program Motivation

The changing Arctic marine environment, particularly the rapid decline in summer ice extent, has implications for future safe and effective US Navy operations.

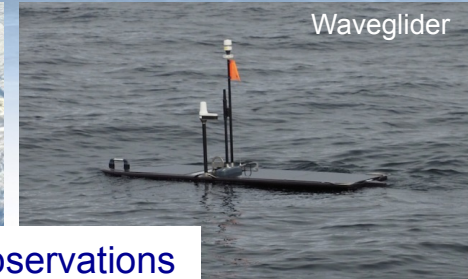
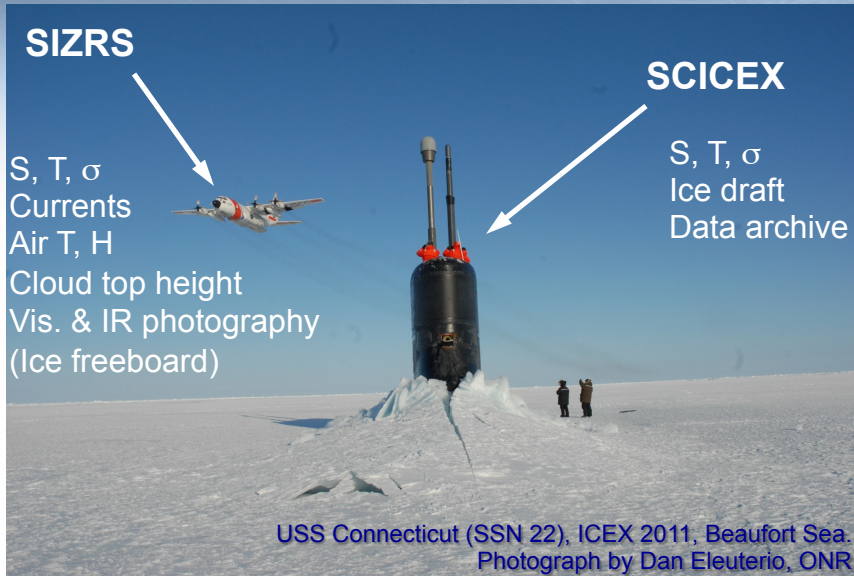
### Program Goal

Improve Navy understanding of, and capability to predict, the Arctic operational environment: Sea Ice, Winds, Waves, Sea Spray, Icing, Fog .....

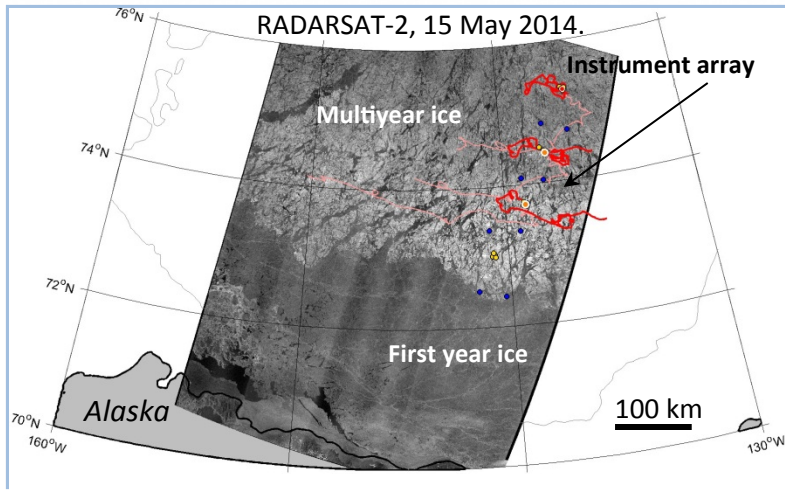
### Program Thrusts

1. Fully-coupled ocean-wave-ice-atmosphere system **modelling** with sufficient resolution to represent key processes, and assimilation of *in situ* and remotely-sensed observations.
2. Improve **understanding** of the Arctic environment and processes to enable more accurate representation in models, leading to improved prediction.
3. Develop **observing** technology for sustained measurements that can provide long-term monitoring, further scientific understanding and constrain the models.

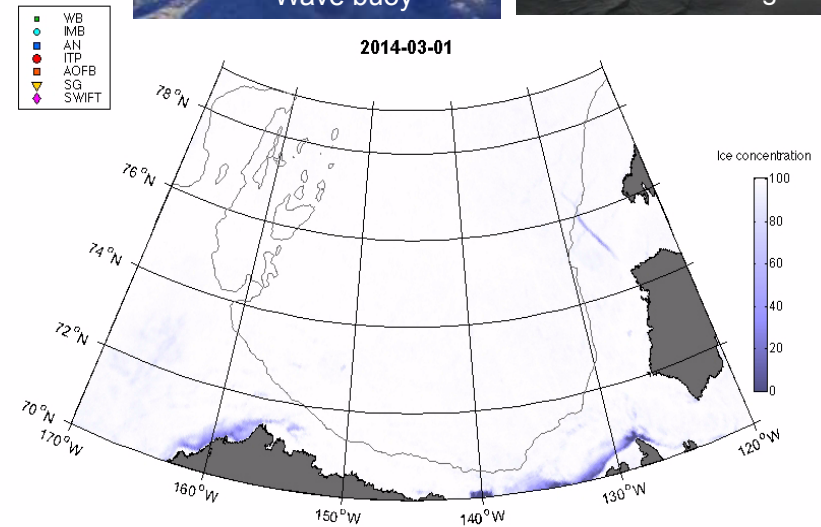
# Observations



Intensive, Integrated Observations  
 & Technology Development



Remote Sensing



Marginal Ice Zone Field Experiment,  
 March-October 2014



# Role in Inter-agency Observing

- ❖ **Observing Technology R&D**
- ❖ **Intensive Observation Periods**
  - Canada Basin Acoustic Propagation Experiment (CANAPE)
    - Main field experiment, FY17 (longer duration possible)
    - Six moorings w/ULS; Seaglider operation possible
  - Stratified Ocean Dynamics of the Arctic (SODA) DRI, FY16-FY20
    - Main field experiment, FY18
- ❖ **Remote Sensing**
  - SAR, Blended/Merged Products, Algorithm Development
- ❖ **SCICEX**
- ❖ **SIZRS**
  - Continues through FY18