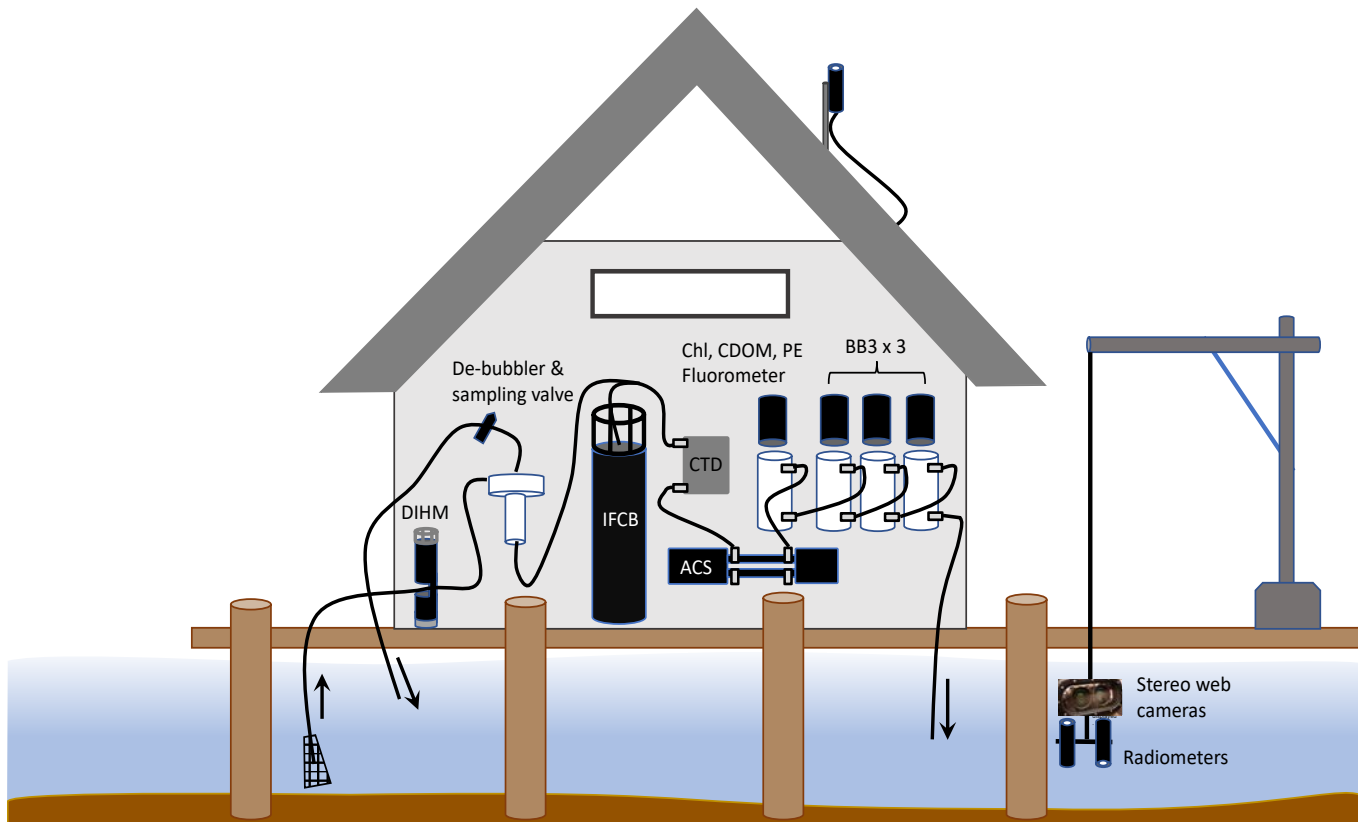


Real-time Phytoplankton in Narragansett Bay

Colleen Mouw

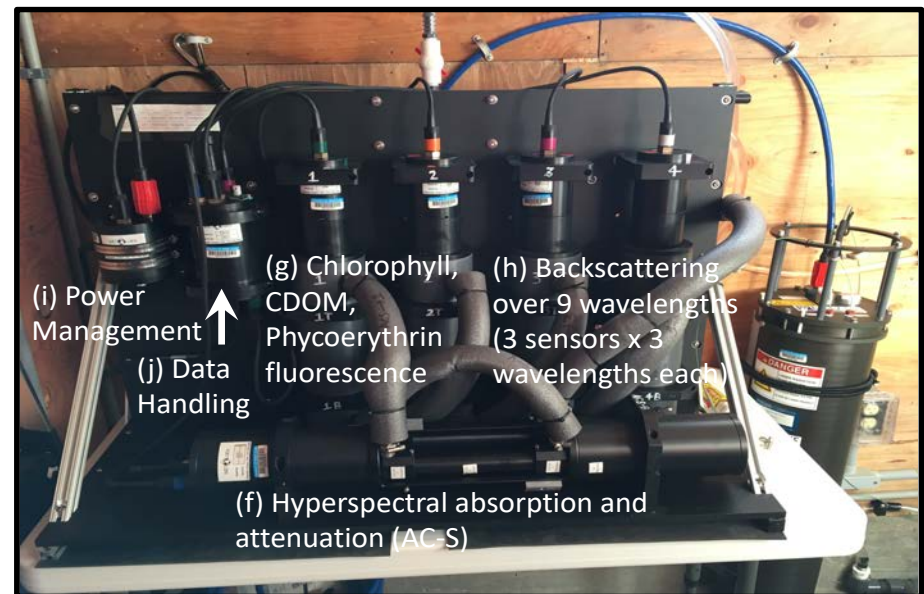
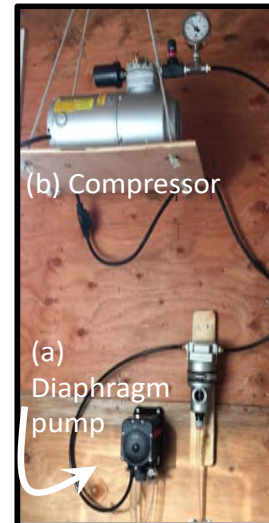
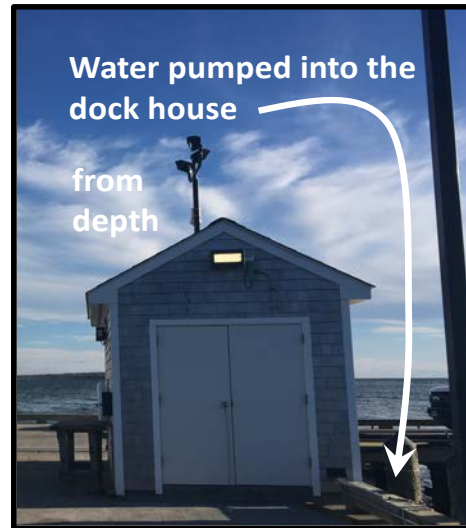
cmouw@uri.edu

GSO Dock Observatory

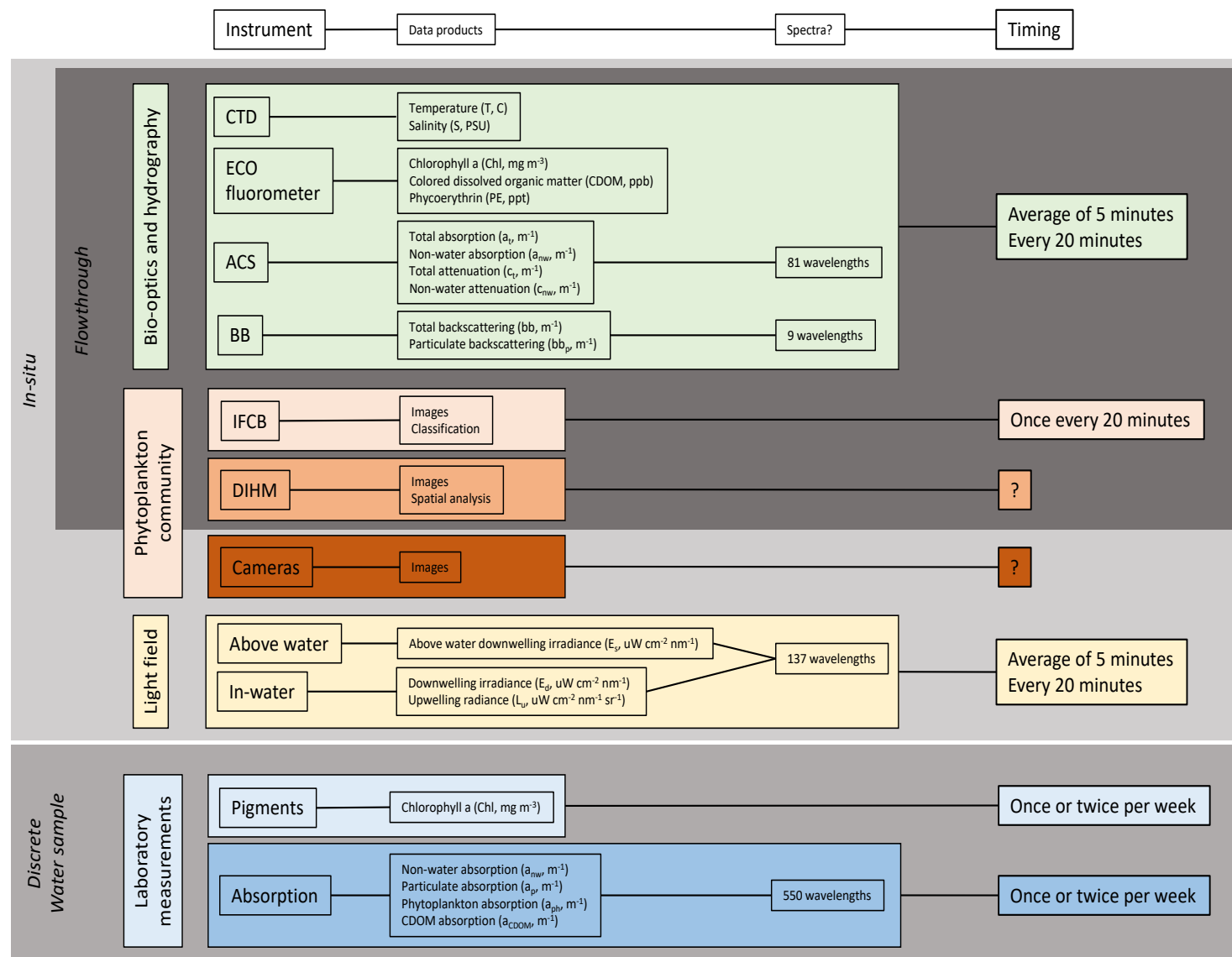


Instrumentation

- Particle Imaging:
 - Imaging flow CytoBot
 - Digital In-line Holographic Microscope (Omand)
- Temperature / Salinity
- Absorption / Attenuation / Scattering Backscattering
- Chl, CDOM, Phcoerythrin Fluorescence
- Radiometry
- Stereo Web Cameras



Data Streams



Phytoplankton Imaging

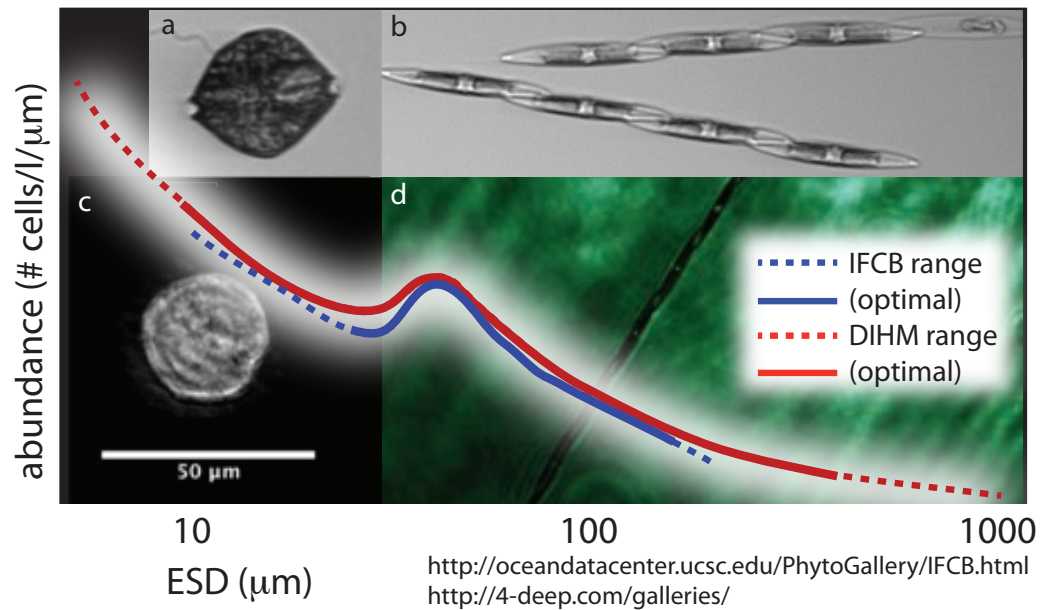
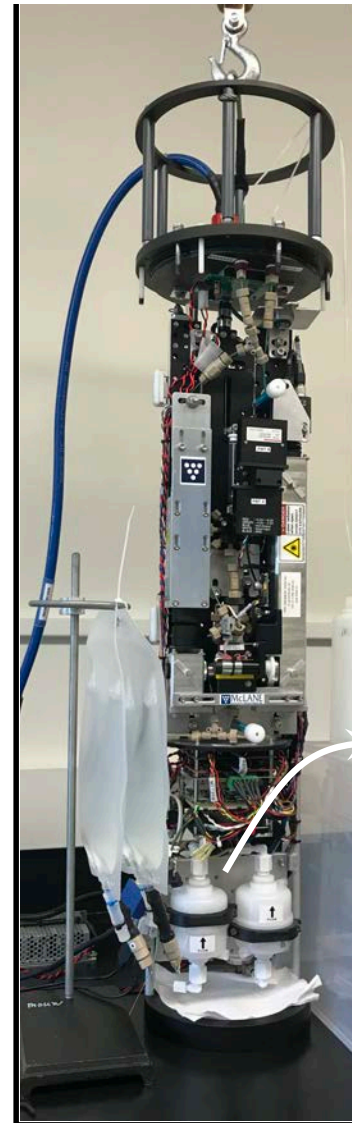


Figure: Courtesy of Melissa Omand



Imaging
Flow
CytoBot

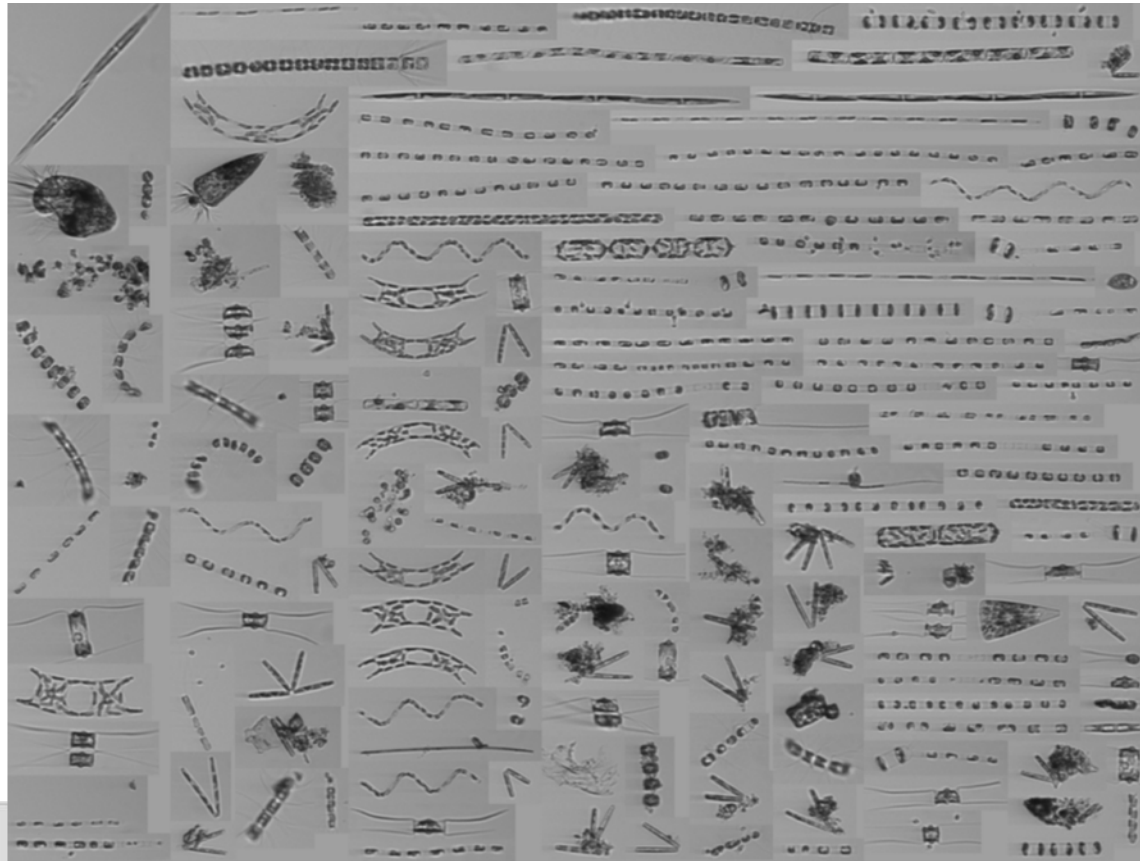


Submersible
holographic
microscope

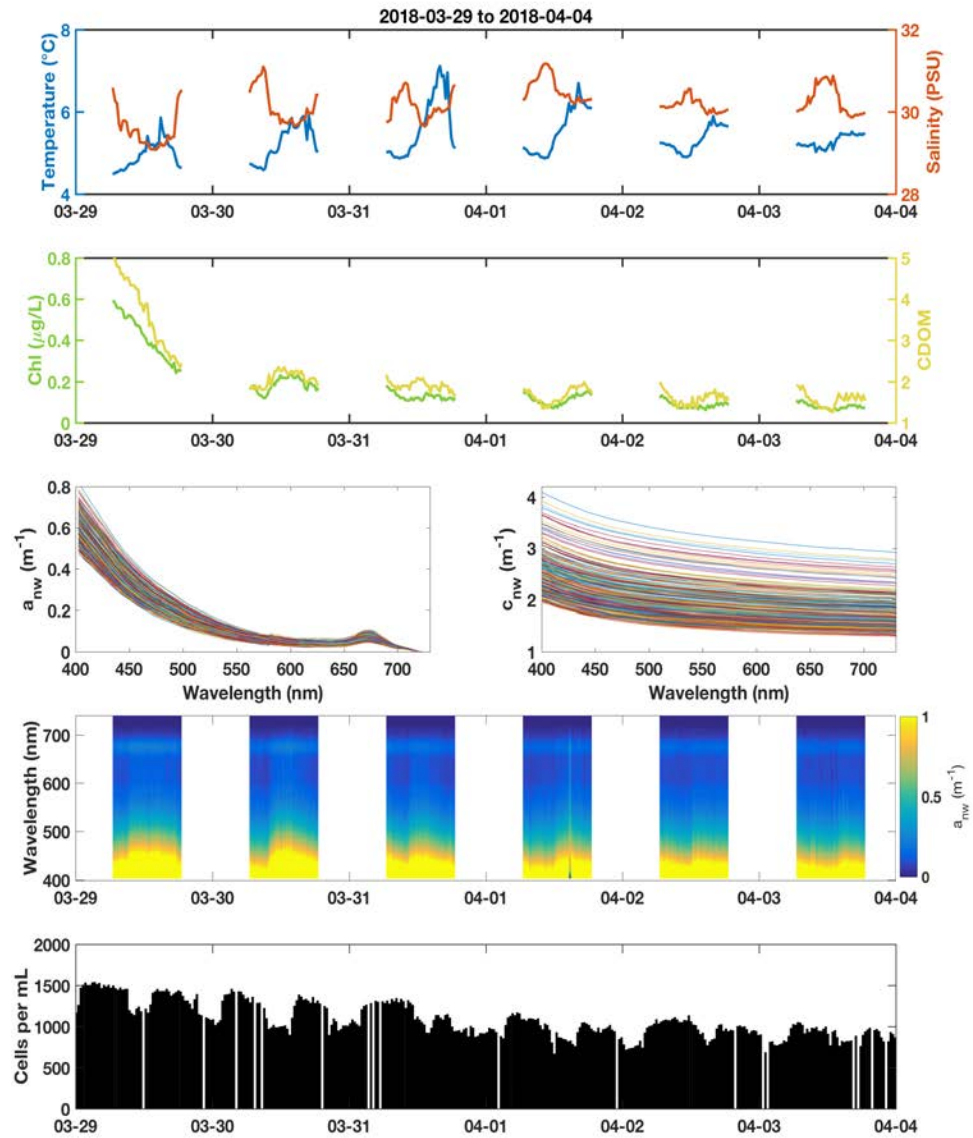
Data Availability: <http://phyto-optics.gso.uri.edu:8888>

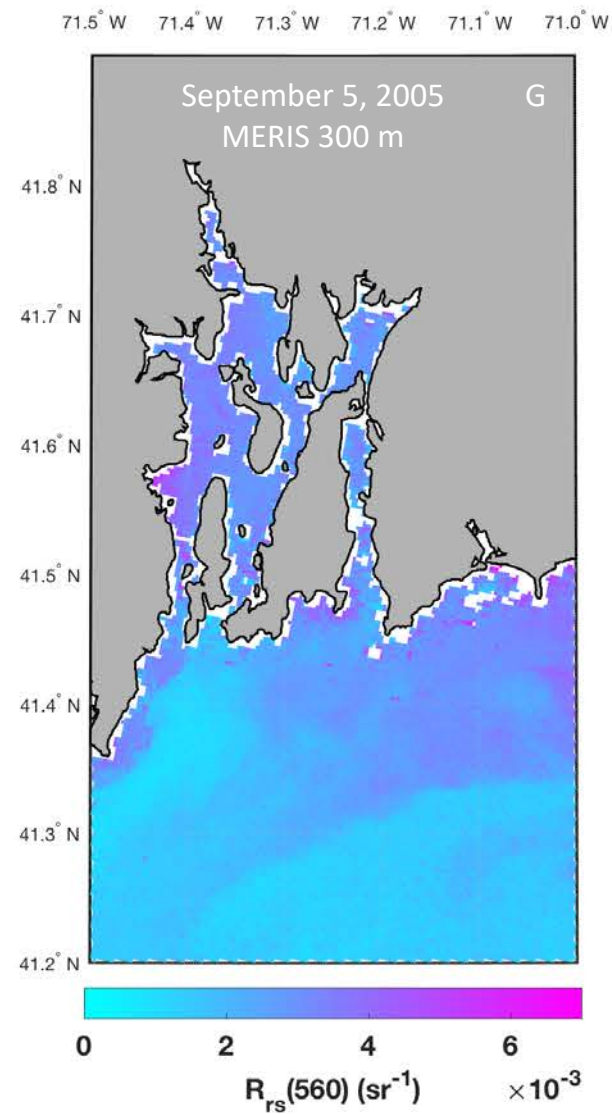
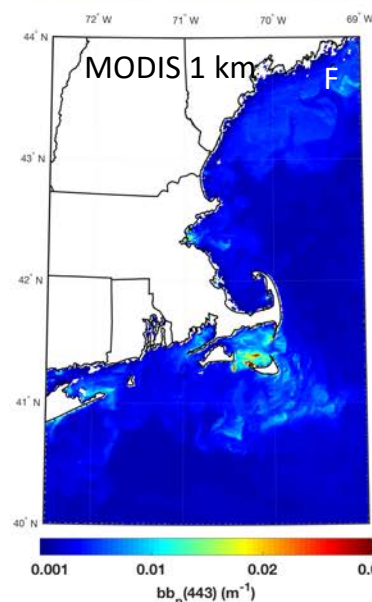
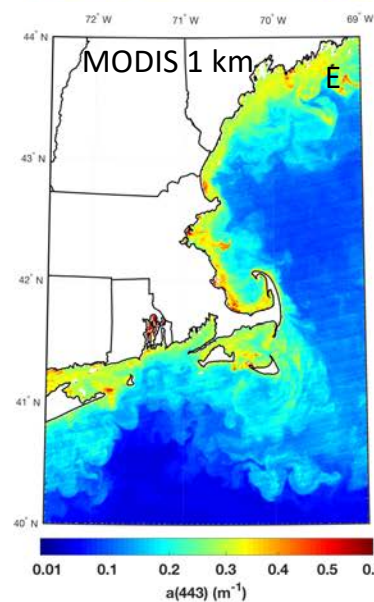
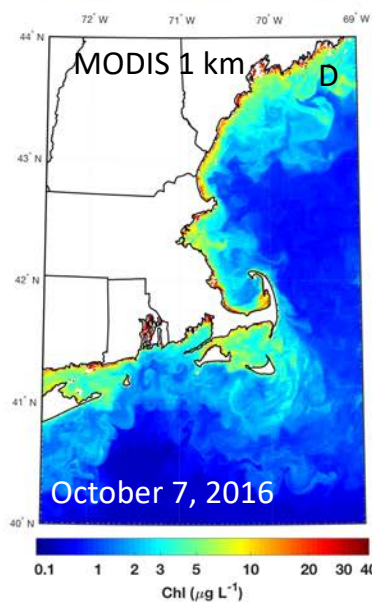
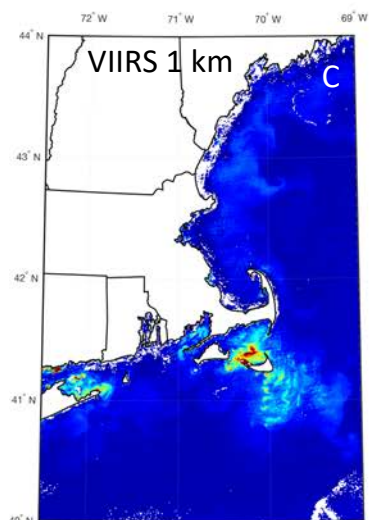
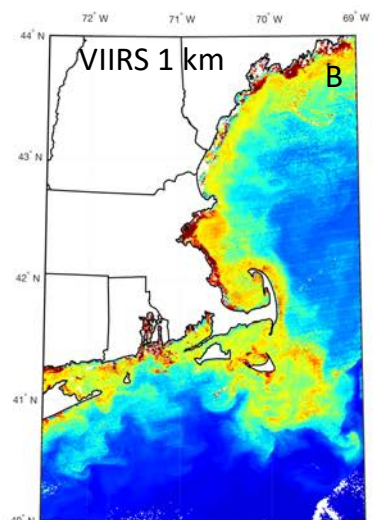
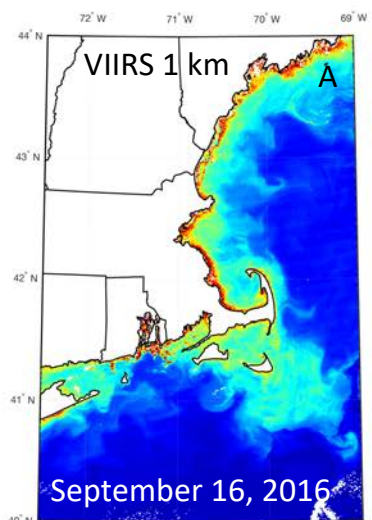
2+ year continuous
operation

Deployed Nov. 8 2017



Optical Data Example





Applications

How can this technology/data stream be helpful?

- Development of optical relationships for remote sensing development/validation
- Phytoplankton/HAB identification/monitoring
- Non-algal particle (turbidity) quantification
- CDOM variability
- Light availability/attenuation
- Real-time “view” of water column conditions

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