NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

November 1, 2010

SUBJECT: Notice of Public Meeting to Receive Input for the Micro-siting of the Pioneer Array for the Proposed Ocean Observatories Initiative (OOI)

OVERVIEW

The National Science Foundation (NSF) gives notice of a public meeting to receive input for the micro-siting of the Pioneer Array moorings for the proposed OOI project. Project scientists supported by NSF made an initial determination of candidate sites where the moorings could be placed to meet the science/operational requirements of the Pioneer Array. Enclosure (1) lists the science/operational siting requirements and Enclosure (2) is a figure of the proposed micro-siting area that will be presented at the meeting. The eventual placement, or 'micro-siting', of the moorings is being coordinated with the public and marine user stakeholders. NSF is continuing to coordinate a series of public meetings to receive input for the final siting of the Pioneer Array. The details for the next meeting are as follows:

Date:	Monday, November 15, 2010
Time:	5:00 – 8:00 pm
Location:	University of Rhode Island, Narragansett Bay Campus Coastal Institute on Narragansett Bay Hazard A & Hazard B Meeting Rooms Directions can be found at: http://www.uri.edu/home/visitors/Map/baycampus_map.html

Micro-siting Goal: Determine mooring locations within the siting box for the proposed Pioneer Array mooring locations that meet OOI science/operational requirements and avoid conflicts with regional fishing interests.

Meeting Objectives:

1. Update on Action Items generated at the October 5, 2010 meeting.
2. Review the candidate mooring locations, their associated siting boxes, and the science and operational siting requirements.
3. Review fishing community requirements.
4. Discussion of options for mooring locations within the siting boxes.

BACKGROUND ON OOI

Oceanographic research has long relied on research vessel cruises (expeditions) as the predominate means to make direct measurements of the ocean environment. Remote sensing (use of satellites and other wireless technologies) has greatly advanced abilities to measure ocean surface characteristics over extended periods of time. A major advancement for oceanographic research methods is the ability to make sustained, long-term, and adaptive measurements from the surface to the ocean bottom. ''Ocean Observatories'' are now being developed to further this goal. Building upon recent technology advances and lessons learned from prototype ocean observatories, the proposed OOI is an interactive, globally distributed and integrated infrastructure that will be the backbone for the next generation of ocean sensors and resulting complex ocean studies that are presently unachievable. The proposed OOI would include

the installation, operation, and maintenance of infrastructure along the coasts of Oregon, Washington, and Massachusetts and global buoys in the Eastern Pacific and Atlantic oceans. In addition, there would be an integration of mobile assets such as autonomous underwater vehicles (AUVS) and/or gliders. This large-scale infrastructure would support sensors located at the sea surface, in the water column, and at or beneath the seafloor. The OOI would also support related elements, such as data dissemination and archiving, modeling of oceanographic processes, and education and outreach activities essential to the long-term success of ocean science.

BACKGROUND ON PIONEER ARRAY

The proposed relocatable Pioneer Array would consist of 2 lines of stand-alone moorings running north-south across the continental shelf. Moorings would provide locally generated power to seafloor and platform instruments and sensors and use satellite and other wireless technologies to link to shore and the Internet. The western (downstream) line would consist of surface moorings, wire-following profiler moorings with a surface expression, and surface-piercing profiler moorings with intermittent surface expressions. The eastern (upstream) line would consist of wire-following profiler moorings with small surface expressions. Gliders and AUVs would run missions in the vicinity of the moored array. The Pioneer Array would contain: ***10 moorings located at 7 proposed sites; and 3 AUVs and 6 gliders.***

NSF prepared a Draft Site-Specific Environmental Assessment (SSEA), which identified a larger general area as a starting point for locating the proposed placement of the moorings. The environmental impacts associated with moorings being placed anywhere within that general area are being addressed in NSF's Final SSEA. This micro-siting process, however, allows the public to continue the dialogue with NSF with regard to the final location of the moorings. NSF recognizes the detailed nature of this information and is coordinating the public meeting on November 15, 2010 to provide an opportunity for additional information exchange. I look forward to your participation.

Sincerely,

Jean McGovern
OOI Program Director
National Science Foundation

Enclosures (1): Pioneer Array micro-siting requirements and definitions
(2): Figure 1: Pioneer Array micro-siting area

ENCLOSURE (1)

Pioneer Moored Array Micro-siting Requirements and Definitions

Requirements

- Span the shelf break front
    - Occupy multiple locations across the shelf in depths from 55 fm to 275 fm
        - The frontal system is seldom found further inshore than 55 fm
        - The equipment is limited to 330 fm maximum depth
    - Occupy a site within the relatively cold, fresh water characteristic of the continental shelf – inshore of the shelf break front
    - Occupy a site within the relatively warm, salty water characteristic of the continental slope – offshore of the shelf break front
    - Occupy a site within the shelf break jet (at the 110 fm line +/- 2.5 nm inshore or offshore)
- Resolve characteristic frontal features
    - Mooring spacing less than or equal to the feature scale in the frontal zone (5 nm)
    - Maintain moorings within +/- 1 nm of a straight line across the shelf
    - Occupy a site eastward (upstream) of, and at the same depth as, the inshore site
    - Occupy a site eastward (upstream) of, and at the same depth as, the offshore site
- Avoid features not associated with the frontal system
    - Locate the array at least 8 nm downstream of canyon
    - Locate the array in a region with similar cross-shelf bathymetry for +/- 10 nm east and west of the center of the array
- Use AUVs to identify features surrounding the moored array
    - Locate moorings at least 8 nm from the edge of the AUV box
- Maintain a buffer zone around each mooring site
    - Buffer zone radius of 0.5 nm recommended
- Avoid submarine cables
    - Buffer zones should not overlap known cable routes

Definitions

[1] Shelf break front: A front is a region where horizontal property gradients show a local maximum. An example would be a temperature or salinity front, a dramatic change in temperature or salinity over a short distance. A persistent front is found offshore of the US east coast, near the change or "break" in bottom slope where the continental shelf meets the continental slope.
[2] Shelf break jet: A surface-intensified current associated with the horizontal density gradients at the front. In the frontal region south of Martha's Vineyard, the jet is roughly 10 nm wide, is centered approximately on the 110 fm line, and flows from east to west.
[3] Feature scale: The characteristic scale of dynamical features within the shelf break front. An example would be an eddy. This scale is 4-5 nm for the frontal region south of Martha's Vineyard.

ENCLOSURE (2)

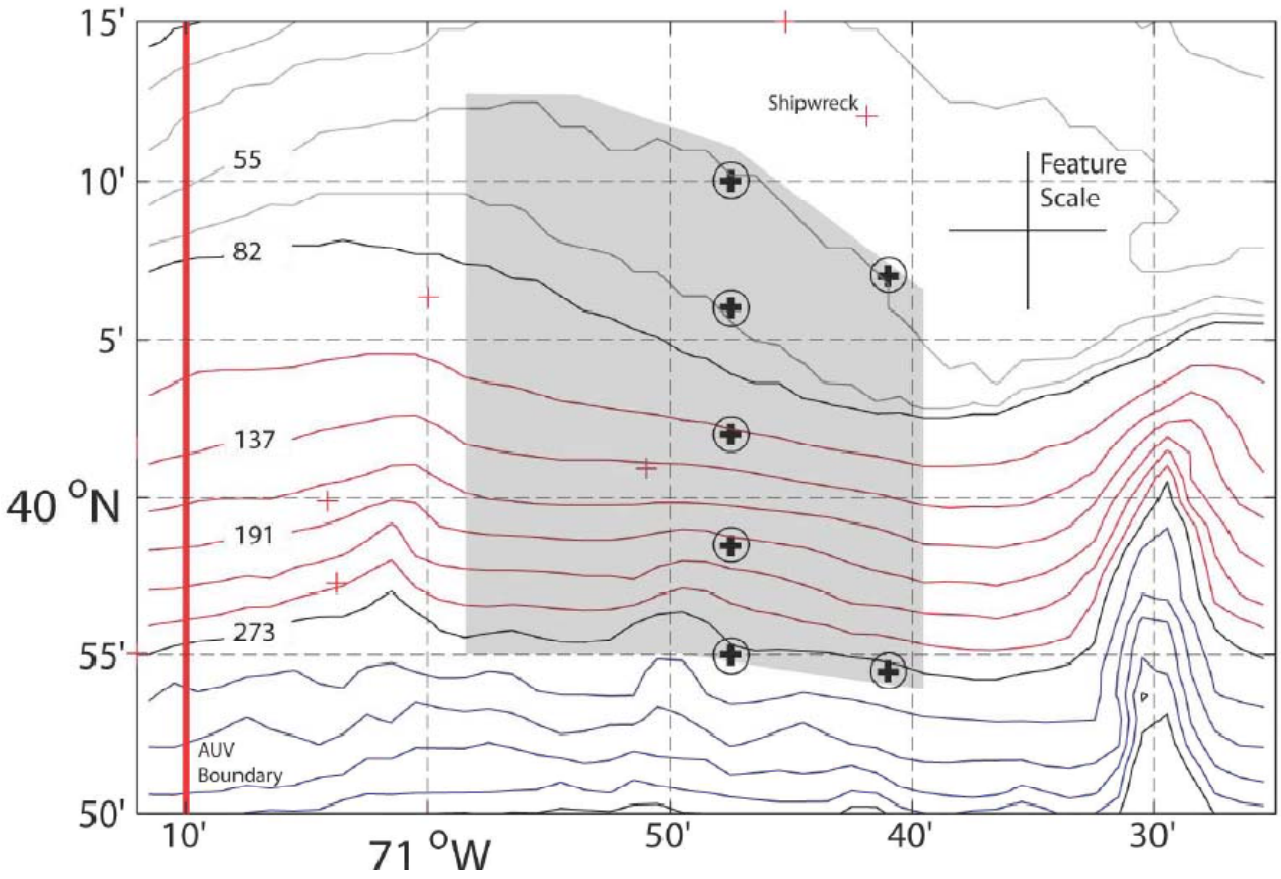

Figure 1: Pioneer Array micro-siting area for moorings (gray box). Proposed mooring sites are shown as black "+" surrounded by a 0.5 nm radius buffer zone. The vertical line at 71° 10' W is the western boundary of the area within which AUVs would operate. Red "+" represent charted ship wrecks or other objects. The large cross represents the approximate feature scale for the frontal region (5 nm). Depth contours are in fathoms.