



National Science Foundation
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Dear Colleague Letter: Clarification for Cascadia Initiative proposals

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The Cascadia Initiative (CI) is a project to build an onshore/offshore network of seismic and geodetic stations from Cape Mendocino in California to Cape Flattery in Washington. The network is targeted at understanding the structure and processes of this subduction margin, which has a history of large earthquakes every 300-500 years. The Cascadia Initiative is a community experiment: the data will be made freely available as quickly as possible.

Half of the funds were allocated to build 60 Ocean-Bottom Seismometers (OBS). These instruments were built by the three Ocean Bottom Seismometer Instrument Pool ([OBSIP](#)) Institutional Instrument Contributors (IICs), which are Scripps Institution of Oceanography, Woods Hole Oceanographic Institute and Lamont Doherty Earth Observatory. These new instruments have Trillium Compact seismometers and pressure gauges. A subset of the instruments is trawl-resistant so they can be deployed on the continental shelf.

The OBS deployments began in late summer 2011. The network configuration and site locations were determined at a planning workshop in Portland, Oregon in October 2010.

- [Workshop: Cascadia Initiative Workshop, Oct. 14-15, 2010](#)
- [Cascadia Amphibious Facility Planning Group report \(July, 2009\)](#)

Both the onshore and offshore components of the CI are now well underway. The 27 USArray sites have been recording data since September 2010, 232 Plate Boundary Observatory (PBO) GPS stations were upgraded to high-rate, real-time data collection by November 2011, and the first year's ocean floor deployment of 62 instruments produced useful data.

The Cascadia Initiative Expedition Team ([CIET](#)) has been tasked with implementing the community science plan. The CIET collected the first year's OBS data from the ocean floor in the summer of 2012. These data have basic clock drift corrections applied by the IICs, who upload the data to the Incorporated Research Institutions for Seismology (IRIS) Data Management Center (DMC). The data are available to everyone. However, the data initially lack basic metadata that land-based seismologists are used to receiving from the DMC, including horizontal component orientations and data quality information. For first year OBS data, IRIS analysts will determine instrument orientations, and associated uncertainty, and provide this metadata as soon as it is obtained for each set of deployments. We anticipate that OBSIP will have procedures in place to provide this from 2013 (second year data) onward. Additional PI efforts to produce instrument metadata for the offshore CI array may have merit. The Marine Geology and Geophysics (MGG) program may consider such a proposal (previously referred to as a Type 1). As the goal of the CI is to engage a broad community of Ocean Sciences (OCE) and Earth Sciences (EAR) researchers, NSF believes it is critical to have this type of metadata openly available to the community soon after collection of the data.

This Dear Colleague Letter is meant to update the community about where to submit various types of CI proposals and on what time scale. We have identified two classes of proposals that are important for the success of this first community experiment:

A. Derived onshore/offshore data products.

This category refers to higher order data products, including those that integrate onshore and offshore data. Examples include earthquake catalogs, moment tensor solutions, tremor catalogs etc. Generating these higher-order products is challenging as it involves integrating very different types of data from multiple non-uniform networks and therefore requires specific funding for the task. It also provides first-order information upon which a great deal of science can be done.

B. Science proposals using CI data (onshore and offshore) to address a variety of questions.

Data are already available from the onshore instruments as well as from the offshore instruments for deployments that have been completed (2011-2012 to date). Land/sea proposals may be co-reviewed by Earthscope and GeoPRISMS programs.

Type A proposals can be stand-alone proposals, and data products may be generated as parts of a Type B science proposal.

Where should I submit my proposal?

- CI proposals involving land studies ONLY: EarthScope Such proposals should be submitted to the EarthScope program. EarthScope contacts are Greg Anderson (greander@nsf.gov) and Chuck Estabrook (cestabro@nsf.gov). The EarthScope deadline is 16 July each year.
- CI proposals involving ocean studies ONLY: Marine Geology and Geophysics (MGG). Such proposals should be submitted to the MGG Program in OCE. The MGG contact is Donna Blackman (dblackma@nsf.gov). The MGG deadline is 15 February or 15 August each year.
- CI proposals involving both land and sea: GeoPRISMS
Such proposals should be submitted to the GeoPRISMS program. However, before submitting such proposals it is highly recommended that the PIs talk to the program officers to discuss the proposal's relevance to GeoPRISMS in view of the evolving priorities of this program. GeoPRISMS contacts are Bilal Haq (bhaq@nsf.gov) and Jennifer Wade (jwade@nsf.gov). The GeoPRISMS deadline is 1 July each year.

Please note that many CI data analysis proposals will probably be considered for co-review by GeoPRISMS, Earthscope, and MGG, so prospective submitters should be sure to discuss this possibility prior to submission.

It is essential that any PI wishing to submit contact the relevant program officer(s) listed above PRIOR submitting the proposal. Failure to do so could result in NSF returning the proposal without review.

PIs proposing new measurements or instrument deployments that may leverage or be complementary to CI should submit requests to the relevant core program from 2013 onward.

David Conover, Division Director, Ocean Sciences Division
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