

Management Team: What we do and don't do

Responsibilities of the management and implementation team.

- Develop proposal in cooperation with the SSC
- Solicit participation from the community
- Oversee all aspects of logistics, interaction with the ship operator and agents, communication with the science community and data-management.

Prior to the cruise

- Work with schedulers to get a vessel
- Obtain clearance from Peru
- Establish collaboration with IMARPE
- Identify agents in Tahiti and Arica
- Run a planning meeting in Spring 2013
- Separate meeting with ship operator
- Liaison with ODF

During Cruise

- Moffett & German co-chief scientists
- we will provide for all sample acquisition, quality control and archival of the appropriate operational metadata (navigation, event logs, etc) and hydrographic data following previously-established GEOTRACES and WOCE/CLIVAR protocols.

Staging

- Arrange transportation for all vans and equipment assoc. with GEOTRACES infrastructure to the ship
- Includes:
- GEOTRACES Sampling van and rosette

The Scripps Ocean Data Facility (ODF)

- in charge of hydrographic and nutrient data acquisition and will work with the management team on shipboard data management

Water collection(trace elements)

- GEOTRACES carousel sampling system operated by Cutter's group in combination with those from a conventional rosette (below) following the GEOTRACES cruise protocols.
- Seabird aluminum frame with polyurethane powder coating that holds twenty four, 12 L GO-Flo bottles capable of firing up to 3 at once.
- The carousel uses a Seabird 9+ CTD with dual temperature and conductivity sensors, SBE 43 oxygen sensor, a Seapoint fluorometer, and a Wet Labs transmissometer; all of the pressure housings and pylon are titanium, eliminating the need for zinc anodes
- 14 mm OD, 7800 m long Kevlar conducting cable spooled onto a Dynacon traction winch with slip rings. The bottles are fired (up to 3) on the upcast while moving into clean water at ca. 3 m/min in order to minimize contamination from the frame and sensors.

Sampling

- GO Flo bottles → HEPA-filtered, positive pressure clean lab van
- they are sub-sampled for dissolved and particulate TEIs.
- 2 GO-Flo bottles will be fired at each depth; one GO-Flo will be pressurized (<8 psi) with filtered, compressed air (will use nitrogen for suboxic waters) and the water directly passed through a 0.4 μm Acropak capsule filter
- The second GO-Flo → the entire volume (ca. 11.5 L) is passed directly through a 0.45 μm polysulfone Supor filter membrane filter under <8 psi pressure for particles. The filtrate from this membrane filter is then used for TEIs that are not as prone to contamination (e.g., Al, Mn), and the filter used for total metal determinations via acid digestion and ICP-MS analysis.

ODF CTD (Isotopes)

- 12 position, CTD rosette operated by the SIO Ocean Data Facility (ODF) and overseen by Jim Swift. This unit has 30L Niskin-like bottles that have coated stainless steel springs and Viton o-rings, and will also be equipped for direct, inline filtration (0.4 μm Acropaks just like those on the GO Flo bottles). Sensors on this system include a transmissometer, *Seabird SBE-43 oxygen probe*^{*}, and fluorometer.

Nanomolar Nutrients

- Cutter's lab will make determinations of nitrite, nitrate, and phosphate at nanomolar concentrations for all samples in the upper 200 m. The detection limits on our continuous-flow Astoria Pacific Rapid Flow Analyzer are lowered ca. 100 fold using long path length (2.2 m), liquid core waveguide cells.

Shipboard Zinc

- Zinc is the most contamination-prone element, and shipboard determination has often been carried out by previous workers as a quality control. Moffett will supervise a postdoctoral investigator who will make measurements on board. Current plans are to use an anodic stripping voltammetric technique originally developed for cadmium and zinc (Fischer and van den Berg, 1999) modified for zinc speciation by Moffett's former student Rachel Wisniewski-Jakuba (Jakuba et al., 2008a, 2008b), who did her Ph.D. on zinc.

Post cruise

- Responsible for ensuring the timely transmission of all data and meta-data acquired during the cruise to the US GEOTRACES data archive (BCO-DMO, WHOI) who, in turn, will be responsible for transferring all such data and metadata to the International GEOTRACES Data Office.
- Responsible, together with Jim Swift (ODF) for creating a final cruise report and a “hydrographic synthesis”, of publishable quality, describing the basic context (water mass structure, major current flows, etc) that will aid the interpretation of TEI data obtained from shore-based analyses.
- Host a “synthesis meeting” to promote collaboration and discussion among the participants which we anticipate will be funded by the U.S. GEOTRACES project office.

What we pay for

- 4 super techs plus Zn analyst, associated with the sampling operation.
- Travel for these 5 people plus the three of us.
- Travel expenses for observers
- Shipping of GEOTRACES infrastructure to and from the vessel.
- Agents fees associated with core operations

What we don't pay for

- Costs associated with other sampling systems (surface pumps, McLane pumps)
- Agents fees associated with individual PIs incl. clearing their gear, transportation services etc.
- Shipping
- Other PI-specific costs incurred on board

Our Science Plans

- The management project does not pay for our respective science plans
- We have to write proposals for Feb 15
- Moffett and German are rotating off the SSC
- Funding decisions are not made by us