

Dear Colleagues,

This message is to inform the marine biogeochemistry community about the plans for an intercalibration effort being planned by the GEOTRACES program, so that scientists who wish to participate may do so.

GEOTRACES is an international study of the marine biogeochemical cycles of trace elements and their isotopes, an interest shared with many scientists working in IMBER and in SOLAS. Therefore, we are distributing this message as widely as possible to invite colleagues to participate in the intercalibration activity.

The US National Science Foundation anticipates funding two cruises to support the intercalibration of sampling, sample handling, and analytical methods used to measure dissolved and particulate trace elements and their isotopes in seawater; a copy of the proposal is posted on the Intercalibration page of the GEOTRACES web site (www.geotraces.org). The purpose of this intercalibration is to ensure that results obtained throughout the GEOTRACES program, and in related studies, are accurate, internally consistent and quantitatively comparable.

The primary objective of the first cruise (approximately May, 2008, in the vicinity of Bermuda) will be to test for contamination and comparability in various sampling systems used to collect seawater and particulate material. In addition, seawater samples will be collected and distributed to investigators worldwide to facilitate comparison of analytical methods (details below). Objectives for the second cruise will be refined based on results from the first cruise.

Water sampling systems that will be supported aboard the first cruise by the US NSF award include:

- 1) An epoxy powder-coated rosette with 12-liter Go-Flo bottles and a Kevlar conducting hydrowire (intended to be the principal water sampling system for the US GEOTRACES program),
- 2) A standard rosette with 12-liter Niskin bottles, and
- 3) 30-liter Go-Flo bottles deployed on a Kevlar hydrowire.
- 4) A clean surface pumping system for sampling the upper 100-200m.

The NSF award will support the collection of particulate material using the rosette mounted GO-Flo bottles and in-line filtration of 5-10 L onto various filter types (various materials and pore sizes to be tested). We also want to intercalibrate methods for collecting larger volume particulate samples (e.g., using *in situ* pumps), but no funding was obtained for this. We encourage other participants to bring large volume particle sampling systems.

Scientists interested in bringing other sampling systems (water or particles) on the cruise to compare with those described above are encouraged to contact the PIs (Greg Cutter, gcutter@odu.edu; Ken Bruland, Bruland@ucsc.edu; Rob Sherrell, sherrell@marine.rutgers.edu) to ascertain whether the sampling systems are compatible

with the objectives of the intercalibration program, and to determine if space and berths aboard the ship are likely to be available. Investigators wishing to test their sampling systems aboard the cruise will need to secure funding to support their participation. Letters of support can be provided by the Chairs of the GEOTRACES Scientific Steering Committee if desired (contact Bob Anderson, boba@ldeo.columbia.edu).

To facilitate the comparisons of analytical methods, the US NSF award will support the collection of 0.2-micron filtered and acidified seawater that will be distributed in acid-cleaned, 0.5-liter, low-density, polyethylene bottles. These samples can be obtained by request to Ken Bruland (bruland@ucsc.edu).

For analyses requiring samples larger than 0.5 liters (e.g., Th-230, Nd isotopes) or for analyses requiring special handling (e.g., Hg), investigators will need to provide pre-cleaned sample containers along with instructions for sample collection and handling. Investigators involved in analyses that require large volumes or special handling are encouraged to organize teams with common interests to develop a shared sample collection and distribution system. A representative from each team will work with the principal investigators to ensure that the needs of the participating scientists are met.

The US NSF award does not cover participant costs. It is hoped that the cost associated with analysis of intercalibration samples will be minimal, and can be covered by existing funding. In cases where additional funding must be sought, a letter of support can be provided by the Chairs of the GEOTRACES SSC.

Scientists who have already expressed an interest in participating are listed on the GEOTRACES web site (Intercalibration page at www.geotraces.org). If you wish to participate, and your name is not on the list, please contact Greg Cutter (gcutter@odu.edu) and provide the following information:

- a) trace elements and/or isotopes to be measured,
- b) whether the analyses involve dissolved or particulate elements,
- c) volume of water required for each analysis, and
- d) a description of sampling systems to be tested at sea.

Sincerely,

Bob Anderson and Gideon Henderson, Co-chairs, GEOTRACES SSC
Greg Cutter, Ken Bruland, Rob Sherrell, Intercalibration Co-PIs