

## GEOTRACES Statement of Interest

Collaborative Research: GEOTRACES Atlantic Section: Mercury Speciation Along a Zonal Section in the North Atlantic

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We are proposing to determine the concentration of Hg species (Total Hg, monomethylHg, dimethylHg and elemental Hg) in samples collected during the 2010 North Atlantic GEOTRACES cruise. This will be a very interesting track as there will be opportunities to observe the distribution and biogeochemistry of Hg under a variety of oceanographic conditions (coastal zone to mid-gyre) and from differing sources (atmospheric deposition, hydrothermal and continental margin inputs). The track also complements research activities and cruises we both have currently in the North Atlantic, and will allow us to broaden the context of our process-focused investigations.

The gaseous Hg species (elemental and dimethylHg) have no shelf life and are prone to contamination; therefore, they must be analyzed immediately after collection at sea. To this end, we request three berth spaces and would prefer lab space in an analytical van outside of the main lab if electrochemists are on board using Hg electrodes.

Our water requirements are ideally 2.5 liters at each depth (0.5 filtered, 2 unfiltered). We would also be very interested in receiving particulate subsamples as well as aerosol and rain samples.

Both PI's will be involved in data interpretation and sample analysis, with Lamborg focusing on total and gaseous analyses and Hammerschmidt on methylated and particulate determinations. There will be a method development component to this project as well, as both labs are actively exploring new methods for high throughput and improved detection methods for Hg determinations in seawater. This cruise will provide ample opportunity to compare new and established methods.