

Statement of Interest for GEOTRACES Atlantic Section:  
Shipboard Determination of Dissolved Iron and Copper Speciation  
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Objectives: Determine dissolved iron and copper speciation from full water column stations on board ship, using competitive ligand exchange- adsorptive cathodic stripping voltammetry with the added ligand salicylaldehyde. Multiple analytical windows will be incorporated into speciation measurements to more thoroughly characterize the ambient ligand pool and facilitate intercomparison of data from other speciation methods. Additional samples will be taken for later analysis back in the laboratory to complement shipboard analyses and address any changes in speciation results following storage. The speciation data acquired will be used to test specific hypotheses regarding the distribution of iron- and copper-binding organic ligands and the role of ambient ligands in the cycling and bioavailability of these elements.

Sampling Requirements: 3 liters of 0.45  $\mu\text{m}$ -filtered seawater from the GEOTRACES trace metal clean sampling rosette system for 8-12 depths of the full water column stations. Focus is on deep waters and transitional zones, with fewer samples (2-4) from the surface depths of the full stations.

Berthing Requirements: 2 berths are requested to facilitate expedient speciation analyses shipboard of a large number of samples.

Shipboard Lab Space Requirements: ~2 x 6 feet of lab bench space in a clean lab or bubble for 2 laminar flow hoods (2'x4' each) and 2 complete voltammetric systems with additional laptops and printers.