

Metals in Organisms

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Statement of interest for US GEOTRACES Peru-Tahiti section:

I am interested in submitted a proposal to examine the changes in TEI concentrations in plankton cells/communities, biogenic material, and particulate material along the GEOTRACES Peru-Tahiti section. These elements would include those listed in Table 2 of the GEOTRACES Science Plan + several other bioactive (e.g., Ni, Co) that would be expected to respond to redox cycling and nitrogen transformations. I will likely propose to collect total particulate (0.45 μm Supor membrane) samples from GO-Flo bottles, as well as particles and plankton cells from the same bottles for analysis of plankton element content by synchrotron x-ray fluorescence. I plan to perform these measurements both in the euphotic zone where autotrophic processes will predominate, as well as depths where denitrification and other N transformations occur. The high productivity of the upwelling region will also provide good opportunities to examine remineralization of sinking plankton collected with bottles deeper in the water column. I expect that this sampling can be completed with 1-2 berths, depending on collaboration with other groups on sampling and filtration activities.