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I plan to submit a proposal to NSF to participate in the U.S. Atlantic section to collect particulate samples for studying the interactions of resident plankton communities with bioactive trace elements (elements listed in Table 2 of Science Plan + several other bioactive metals, Si and P). I am proposing to collect total particulate ($>0.45 \mu\text{m}$ Supor membrane) samples from the GO-Flo bottles mounted on the GEOTRACES rosette. I will also propose to collect particulate samples from the same GO-Flo bottles for analysis of plankton element content by x-ray fluorescence. Through the combination of these two approaches, I hope to examine the changing composition of both the total particle assemblage and a subset of phytoplankton functional groups (e.g., diatoms, cyanobacteria) across several major gradients in the Atlantic Ocean.

I plan to focus my proposed sampling and measurements in the upper water column where plankton process (primary production, grazing, etc.) predominate. I will propose to collect samples from the upper 500 m of the water column at all 'full' and 'shallow' stations along the section. I am interested in collaborating with others for the collection of particulate samples from the GOFlo bottles. I anticipate needing 2 berths if I am responsible for collection of all particulate samples collected from GO-Flo bottles, but only 1 berth if this effort is shared with other groups sampling particulate TEs from bottles.

I may also propose to collect samples for analysis of phytoplankton pigments by HPLC. I would be interested to know if others are planning to do this as well, so that such efforts could be coordinated.