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We plan to submit a proposal Feb 15th for Atlantic GEOTRACES. The focus is on the shorter lived U/Th series ($^{234}$Th, $^{228}$Th and all 4 Ra isotopes), which are ideally suited to study the sources and sinks of TEIs on time and space scales that are required to interpret lateral and vertical distributions of the TEIs in this basin. Such an effort requires samples of various types, including small volume samples from the CTD (4L $^{234}$Th), larger volumes from surface pumping (for Ra isotopes), and large volume samples for vertical profiles of dissolved & particulate $^{228}$Ra and $^{228}$Th. We are proposing to use in situ pumps from the UNOLS pump facility located at WHOI to collect the larger volumes we need by pumping through filters followed by a single Mn fiber cartridge and analyzing those fibers and at least part of the particle filter (of about 500L equivalent) for $^{228}$Th. For radionuclides alone, we do not need specialized pumps or trace metal clean sampling, though if funded we would be willing to collect large volume particulate samples for those that require them. We also note that if another large volume pumping effort is supported, we'd be happy to have that group lead all in situ pumping efforts as long as we can make arrangements to deploy Mn cartridges on them (again, our science focus will be on the radionuclides, not particulate TEIs).

A few important logistical details regarding this effort: We expect that we will be able to work within the time-frame budgeted for pumps listed in Table 4 of the planning document. Two casts with 8 pumps each will be conducted, one shallow (6hrs) and one deep (10 hrs, and only at stations where the bottom exceeds roughly 1000-2000 m); therefore most full ocean depth stations will have a 16-depth profile for large volume particulates and radioisotopes. Berthing: we expect the effort with our group handling pumping will require 3-4 berths, but only 2 if we are using another group's system.

In summary, our motivation is to write a strong hypothesis-driven proposal that can stand on its own, and as such we need to include a plan that, at a minimum, includes some type of large volume sampling for dissolved and particulate U/Th series. Given that these isotopes are not key parameters in GEOTRACES, we face an uphill battle for resources, but we feel that the linkages to key TEIs are invaluable and hope to be given a chance to participate.