Statement of Interest to participate in Alaska-Tahiti Section Planning Workshop:

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Naturally occurring ^{210}Po and ^{210}Pb radionuclides have been extensively utilized as tracers since the GEOSECS program to quantify particle cycling, remineralization rates and carbon export. ^{210}Po and ^{210}Pb are also identified as priority tracers by the U.S. GEOTRACES Scientific Steering Committee in their 'Principles and Priorities of the U.S. GEOTRACES Intercalibration Initiative.' We propose to collect and analyze water column dissolved and particulate samples from all super stations for ^{210}Po and ^{210}Pb along the proposed section between Alaska and Tahiti and continue our work conducted from North Atlantic, East Pacific and Western Arctic GEOTRACES sectional cruises.

The overarching goal of GEOTRACES is to study the distribution of trace elements and isotopes, to assess their sources, sinks and internal cycling and to characterize the physical, chemical and biological processes that regulate their distribution, particular at major boundaries. Towards accomplishing this goal, we propose to compare and contrast the distribution of ^{210}Po and ^{210}Pb to understand their removal rates using ^{210}Po/^{210}Pb and ^{210}Pb/^{226}Ra disequilibria, extent of remineralization, and their scavenging intensities within the: i) high productivity regimes of the Subarctic Gyre and the equatorial upwelling system with that of the oligotrophic regime in the North Pacific Gyre; ii) oldest and most nutrient-rich waters of the global ocean to historical data from other regions; iii) oxygen minimum zones of the N and S Pacific; and iv) volcanic sources in the North Pacific to that from the S. Pacific. Characterization the chemical and biological processes that control the distribution of Po and Pb will allow more robust interpretation of pigments (Po), biogenic and lithogenic particle (Al, Ti, ^{232}Th) distribution. The scavenging intensities of ^{210}Po and ^{210}Pb at all key interfaces will be compared to that of other particle-reactive radionuclides that provide relatively shorter-term (^{234}Th) and longer term (^{230}Th) rates.