The international GEOTRACES program is a coordinated effort “to identify processes and quantify fluxes that control the distributions of key trace elements and isotopes in the ocean, and to establish the sensitivity of these distributions to changing environmental conditions.” This is done by long transects across ocean basins for high resolution sampling and more focused process studies at specific sites. To date the US has conducted 3 major transects in the North Atlantic, South Pacific, and Arctic Oceans. The 2015 US Arctic transect went from Dutch Harbor, Alaska, through the Bering Strait to the North Pole and back to Dutch Harbor onboard Coast Guard icebreaker Healy over 62 days. It was one of three expeditions, with the German Polarstern coming from Fram Strait to the North Pole, and the Canadian Amundsen sampling waters through the Canadian Archipelago to the Canada Basin. All cruises were studying the same parameters to obtain a quasi-synoptic view of the Arctic Ocean. This seminar will present the rationales behind the GEOTRACES Arctic studies, a travelogue of the trip, and a summary of some of the findings so far.