THE ICY POLES OR THE MUGGY EQUATOR: WHAT DRIVES NATURAL CLIMATE CHANGE?

Dr. Alan Mix, Oregon State University

Does climate change emanate mostly from the polar latitudes, where ice and snow drive changes in Earth reflectivity, topography, and sea level, or from the tropics and mid-latitudes, where monsoons and El Nino/La Nina events dominate? Isotopic, geochemical, mineralogical, and fossil records from deep-sea sediments provide evidence for climate changes in both high- and low-latitude systems on timescales longer than human experience, and offer insight into the processes that set the sensitivity of global climate to change. This talk will assess lessons learned from Late Neogene and Quaternary climate changes, piecing together parts of the paleoclimate puzzle from ten expeditions that range from Southern South America, to the tropical Atlantic and Pacific Oceans, and to the margins of North America. Dr. Mix sailed as a sedimentologist on ODP Leg 138, and in 2002 he will serve as chief scientist on ODP Leg 202. In addition, he and his students have contributed to Legs 154, 162, and 167.