

## **CLIMATE CHANGE IN THE TROPICAL ATLANTIC: CLUES TO PATTERNS AND PROCESSES FROM THE CARIACO BASIN**

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Beyond the rather limited range of historical and instrumental data, the geologic record has provided abundant evidence of natural climate changes that are abrupt and large in magnitude. In recent years, perhaps the most dramatic insights into the workings of the climate system have come from studies of ice cores and high-deposition-rate sediment cores from the North Atlantic which show that climate in the late Quaternary experienced dramatic oscillations on millennial and sub-millennial time scales. Although evidence is growing that these large and rapid changes are global in extent, the availability of marine cores with sedimentation rates high enough to resolve such short-term events and allow testing of hypotheses is limited. In his presentation, Dr. Peterson will discuss results from ODP Leg 165 drilling in the Cariaco Basin, a small anoxic marine basin located on the northern continental shelf of Venezuela. Here, sedimentation rates in excess of 75 cm/kyrs and the virtual absence of sediment mixing by burrowing organisms have resulted in preservation of a climatic and oceanographic record of nearly unparalleled resolution in the western tropical Atlantic. Recovery of sediments at ODP Site 1002 is allowing study of how climate variability in the tropics relates to the abrupt changes recorded in high-latitude ice cores, as well as how this variability influences the burial of organic carbon in a classic anoxic marine setting. Dr. Peterson sailed as a sedimentologist on ODP Leg 115 in the Indian Ocean, and more recently in the same capacity on Leg 165.