GLOBAL SEA-LEVEL FLUCTUATIONS: ODP'S INAUGURAL EXPEDITION TO THE NEW JERSEY CONTINENTAL SHELF

Dr. James Austin, Jr., University of Texas at Austin

One of ODP's long-term goals is to decipher sea-level history by constructing continental margin transects worldwide. The New Jersey margin is a natural laboratory for studying Neogene sea level change. Geophysical images have documented a series of inclined subsurface reflections (clinoforms) prograding across this shelf. A late Oligocene and younger age for these reflectors, which bound depositional units known as sequences, makes them the same age as similar successions identified elsewhere, and suggests that global sea-level fluctuations have triggered their development. In June-July 1997, Leg 174A will sample these clinoforms to decipher their sea-level signal; this investigation will be scientific ocean drilling's first in shallow water (less than 200 m deep). Leg 174A represents a continuation of other ODP and Office of Naval Research (STRATAFORM) activities, both on the continental slope and on the Coastal Plain, designed to complete a sea-level transect across the New Jersey margin. To recover complete sections in unstable sand-prone lithologies, multiple sites will drilled. Detailed core-log correlations, critical for deciphering sea-level history where core recovery was incomplete, will be made possible using Logging-While-Drilling techniques. Dr. Austin served as Leg 101 Co-Chief Scientist in the Bahamas, and will be Co-Chief Scientist of Leg 174A along the New Jersey Margin. He is also one of the leaders of ONR's STRATAFORM (Strata Formation on Margins) initiative.