Gordon Taylor presented his work on Microbial Processes in the Cariaco Basin. The Cariaco Time Series is a collaboration between three U.S. institutions (U South Florida, U South Carolina and Stony Brook U) and three Venezuelan institutions (Fundacion La Salle de Ciencias, U de Oriente and U de Simon Bolivar) that has been ongoing since 1995. The Cariaco's setting is along a productive coastal margin, prone to strong seasonal upwelling that makes it a very dynamic portion of the coastal ocean. Annual primary production is three times that found at the subtropical BATS and HOTS stations and carbon fluxes exported from the epipelagial are twice as large. This is the world's largest truly marine anoxic basin and the only US-sponsored time series in the tropics. The Cariaco Basin is considered a natural laboratory for studying the biogeochemistry and microbiology of an anoxic system, where organisms may have novel metabolisms and physiologies. It may also contain evolutionarily significant phylotypes. Two Microbial Observatory programs have recently been added to the Time Series Program, representing collaborations between scientists from Stony Brook University, University of Louisiana at Lafayette, Northeastern University, Universidad de Simon Bolivar (Caracas, VE), WHOI and MBL. These projects are examining both prokaryotic and eukaryotic (protist) community dynamics using a variety of molecular, cultivation and manipulative experimental techniques. Their goal is to better understand how geochemical gradients organize microbial communities in this sulfidic, oxygen-depleted environment. Methods being exploited include CARD-FISH, MICRO-FISH, DGGE, T-RFLP, SSU rDNA libraries and oligo-FISH combined with SEM for protistan molecular and α-taxonomies (Stoeck, Fowle & Epstein 2003). They are finding many prokaryotes related to organisms isolated from hydrothermal vents, cold seeps and sulfur-dominated habitats. Many novel protistan 18S rDNA sequences have been recovered from anoxic waters, including protozoa related to known anaerobes from animal guts and shallow anoxic habitats as well as a novel deeply-branching clade with no known close relatives. In addition to novel thiosulfate disproportionating prokaryotes, cultivation studies have yielded the first cultivable thiosulfate-oxidizing manganese oxidizing chemoautotrophic bacterium.