

# North Atlantic Bloom Experiment



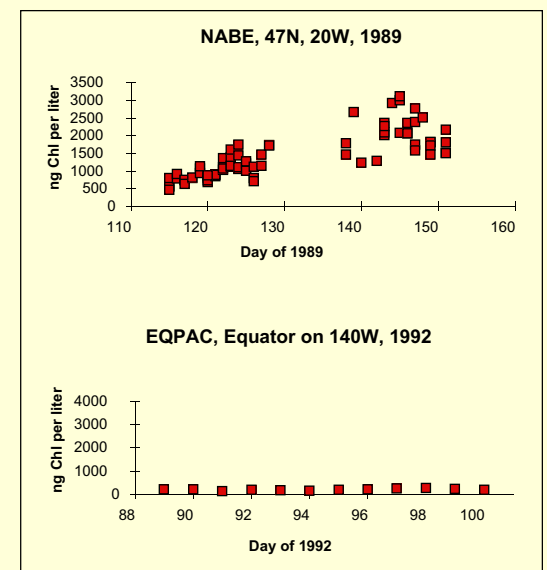
**Left:** German and U.S. scientists transfer samples during NABE intercalibration exercises in 1989.

**Top right:** John Martin, U.S. JGOFS co-ordinator for NABE

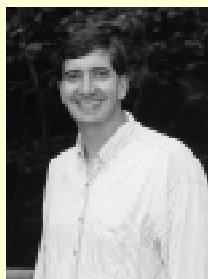
**Bottom right:** Current U.S. JGOFS chairman Hugh Ducklow shared U.S. coordination responsibilities for NABE with John Martin.



*These graphs compare daily time series of surface ocean chlorophyll during NABE and EQPAC. In the bloom, Chl increases from ca 500 to 3000 ng Chl l<sup>-1</sup>. For comparison, in the equatorial Pacific, surface Chl is held rigidly in check by intense grazing and iron limitation. Blooms are caused by excess nutrients, including iron, and a lag between phytoplankton growth and zooplankton grazing pressure.*



## Synthesis and Modeling Project



*SMP coordinators Jorge Sarmiento (left) and Scott Doney (right)*

*The central objective of the U.S. JGOFS Synthesis and Modeling Project (SMP) is to synthesize knowledge gained from U.S. JGOFS and related studies into a set of models that reflect our current understanding of the ocean carbon cycle and its associated uncertainties. Shown here is a time-series 1-D biogeochemical*

*model of the BATS site where every winter deep mixing reconnects surface and sub-surface nutrient pools. With the onset of spring warming and stratification, a bloom of phytoplankton biomass is predicted by the model and seen in the annual pattern of Chl at BATS.*

