



**NOAA Teacher at Sea
Elsa Stuber
Onboard NOAA Ship McARTHUR II
June 4 – 9, 2007**

NOAA Teacher at Sea: Elsa Stuber

NOAA Ship MCARTHUR II Cruise S307

Mission: Collecting Time Series of physical, chemical and biological data to document spatial and temporal pattern in the California Current System

DAY 1: Sunday, June 3, 2007 San Francisco, Pier30/32

Visibility: 10 nautical miles

Wind direction: 270 NW

Wind Speed: 8 knots

Sea wave height in harbor: 1'

Seawater temperature: 15.129 C.

Sea level pressure: 1016.4

Air temperature: 15.2

Cloud cover: 1/4 cumulus

Science and Technology Log

The day began @ 07:30 picking up equipment at Moss Landing and riding up to San Francisco in van with other MCARTHUR II cruise members: Chief Scientist Tim Pennington, Biological Oceanographers-Marguerite Blum, Kit Clark, Erich Rienecker, Troy Benbow, Charlotte Hill; Physical Oceanographer, Dr. Curt Collins; CTD technician, Doug Conlin. At Pier 30/32, Marine Mammal Biologist, Katherine Whitaker, joined us and the other Teacher at Sea participant, Turtle Haste.

Tim Pennington coordinated the staging operation with the (FOO) Field Operation Officer Lt. Amanda Middlemiss. The large equipment for the cruise was at the pier on a flat bed truck and was loaded by crane on the ship's deck with the assistance of the ship's crew. All scientists were involved in unpacking the gear and setting up the wet lab and dry lab for the Time Series study work. As these labs have been physically updated since the last MBARI cruise on MCARTHUR II, set up in these labs required some modifications. All staff commented on the benefits and advantages of the lab improvements.

I reviewed material I researched on line prior to cruise about the Monterey Bay Aquarium Research Institute (MBARI) Time Series program. The focus is on the relations between oceanic carbon and nitrogen cycles and climate variability with emphasis on measuring the primary phytoplankton production. The research involves both observational and experimental studies with shipboard measurements of physical, chemical and biological parameters during cruises in Monterey Bay (since 1989) and offshore into the California Current (since 1997) at different seasons of the year. The data collected over this time

span is being used to construct synthetic views of the oceanographic system dynamics of the California Current. The work has documented seasonal cycles, El Ninos and La Ninas and longer decade-scale cycles (e.g., Pacific Decadal Oscillation). The overall goal is to learn as much as possible about the earth's climate and ocean systems, and therefore it is important to understand these cycles. Beyond construction of views of the California Current cycles and understanding the causation of them, will scientists determine that the directions show potential effects of global warming?

As stated in the summary of the MBARI Time Series Program report 2007: "Is this a local-or remotely-driven effect? We are uncertain. Is it important? You bet. Why? Because we are certain that (1) conclusions about global climate change begin with local observations, and (2) unusual conditions are often highly informative."

Chief Scientist (CS) Tim Pennington went over the wet lab organization with the three of us new to working there, defining the different sample bottles and chemicals used in collecting and processing the sea water samples. He showed us which type of samples were stored in the freezer or in the liquid nitrogen, and which were placed in the seawater bath on the back deck. We signed up for our individual research tasks, my assignment is seawater sample collection from the rosette bottles of the CTD and processing in the wet lab. When filtered samples are ready, to process with the flurometer for chlorophyll level. My shift is 08:00 - 12:00 and 20:00-24:00. I work with CS Tim. Then we are free to study/work in other areas as you would like or as you are needed. We put duct tape ridge along front edge of wet lab tables to help stop materials from sliding off counter if ship is rolling.

At 16:00 we moved our personal belongings to our assigned quarters and then were free to explore the set-up of the MCARTHUR II. Important to note were the areas where one must wear a hard hat and a PFD. No open toed footwear outside your quarters. Pay attention to stay far away from winches when they are being used.

FOO Lt. Middlemiss requested that we review the safety instructions packet found in our quarters and that we should be ready for the safety drill to take place the next day.

Bed at 00:30 June 4th.