

Spring 2011 Seminar Series



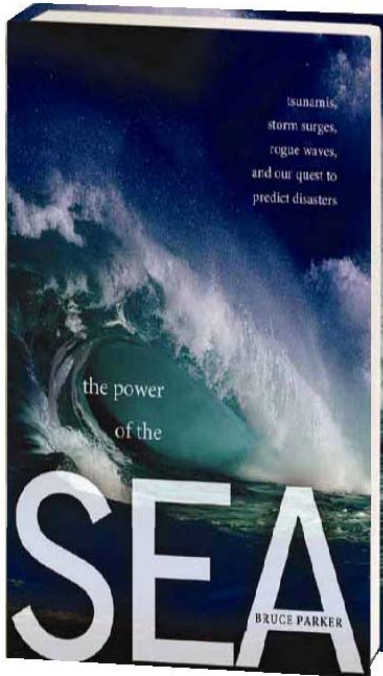
# CHALLENGES AND INNOVATION IN CIVIL AND ENVIRONMENTAL ENGINEERING

## The Power of the Sea: Tsunamis, Storm Surges, Rogue Waves, and Our Quest to Predict Disaster

**Bruce Parker**

*Retired Chief Scientist of the National Ocean Service in NOAA,  
Presently Visiting Professor, Center for Maritime Systems,  
Stevens Institute of Technology*

**February 24, 2011, 3:30pm, 129 DeBartolo**



Dr. Parker will give a presentation based on his new book *The Power of the Sea: Tsunamis, Storm Surges, Rogue Waves, and Our Quest to Predict Disasters*, which tells the story of our long struggle to understand the physics of the sea so we can use that knowledge to predict when the sea will unleash its power against us (so we can get out of its way and survive).

Over the centuries, while scientists and mariners were trying to learn how to predict the motions of the sea, the sea has killed millions, destroyed untold billions of dollars in property, and had more than one impact on history. The 300,000 lives lost to the 2004 Indian Ocean tsunami, the millions lost to storm surges in Bangladesh and India over the centuries, the thousands of ships lost at sea to rogue waves, and the millions killed in Asia by the droughts and famines caused by two strong El Niños at the end of the nineteenth century are but a few tragic examples.

But marine prediction has many other purposes besides helping us escape natural catastrophes, as is illustrated by several World War II tales, including the (first-ever-told) story of the tide predictions for D-Day, and the story of the first wave and surf forecasting technique developed for use by the Allies in the amphibious landings on the beaches of North Africa and Normandy. And there are even amusing stories in the book, such as: How did Benjamin Franklin "magically" make ocean waves disappear (and how did this help him understand how wind waves were generated -- 200 years ahead of his time)? How did a perigean spring tide almost ruin the Boston Tea Party? How do elephants actually "hear" a tsunami coming? Did the parting of the Red Sea begin with a tide prediction by Moses? How did a rogue wave begin the myth of the Bermuda triangle? Could Noah's flood have been inspired by a huge storm surge from a very rare tropical cyclone in the Persian Gulf?



*Bruce Parker first experienced the sea as a young boy working for his father's scuba diving and water ski schools in the Bahamas. Over the years he mixed his encounters with the sea with academic training and research to eventually become a world-recognized expert in the oceanographic subjects covered in his new book **The Power of the Sea: Tsunamis, Storm Surges, Rogue Waves, and Our Quest to Predict Disasters**. Dr. Parker is the former Chief Scientist for the National Ocean Service in NOAA, and is presently a Visiting Professor at the Center for Maritime Systems at the Stevens Institute of Technology. Dr. Parker is also a former Director of the World Data Center for Oceanography, a former Principal Investigator for the NOAA Global Sea Level Program, and at one time ran the U.S. national tides and currents program. He has a PhD in physical oceanography from The Johns Hopkins University.*