**Postdoctoral Position in EcoSystem Modeling in the FjordEco Project the at University of Hawaii**

University of Hawaii, School of Ocean and Earth Science Technology (SOEST), Antarctic Oceanography Ecosystem Modeling.

SOEST at the University of Hawai`i in Manoa seeks a Postdoctoral Scholar to collaborate in a significant inter-disciplinary and multi-institutional (Scripps, U. Hawaii, U. Alaska) project (the FjordEco Project see summary below) to observe, simulate, and understand the extreme biological productivity blooms that occur in the fjords of the Western Antarctic Peninsula. Using the Regional Ocean Modeling System (ROMS) coupled with a state-of-the-art ecosystem model, we will examine the processes that sustain a season long bloom in the Antarctic fjord. A significant observational program will be conducted, and the observations will help to validate the model processes. The results will provide new insight into the mechanisms that make the Antarctic fjords among the most biologically productive sites and how these mechanisms may be sensitive to changes in the Earth system. Further research into the influence of these physical processes on the biology of the region will be encouraged. The successful candidate will join a dynamic team of biological oceanographers, physical oceanographers and glaciologists studying fjord ecosystem dynamics along the West Antarctic Peninsula.

The successful candidate will be responsible for development of new ecosystem simulation of Antarctic fjords, comparison with in situ data, scientific research into impacts on the Fjord ecosystem, and understanding the controlling factors of nutrient delivery into the ecosystem. It is expected that the successful candidate will publish scientific articles and contribute to and/or write new funding proposals, etc.

Minimum Qualifications include: Ph.D. or equivalent in biological oceanography, physical oceanography (with ecosystem experience), marine ecosystems, or related field, ability to work well independently as part of a team, and strong communication skills both verbal and written. Preferred candidates will have experience with ecosystem modeling, mathematical and computational skills with background in ecosystem dynamics. Candidates should be motivated to drive new developments in ecosystems simulations.

The appointment is planned for three years, and it will be reviewed annually and renewed based upon performance and funding. Stipend is commensurate with qualifications and experience. Review of applications will begin immediately, and will proceed until the position is filled. Electronic applications containing: (1) curriculum vitae; (2) one-page statement of research interests; (3) one published academic article most indicative of your work; (4) contact information for three references to [powellb@hawaii.edu](mailto:powellb@hawaii.edu). Email verification will be sent upon receipt of your application, please inquire if receipt is not received. For more information, please contact Dr. Brian Powell [<powellb@hawaii.edu>](mailto:powellb@hawaii.edu).

The University of Hawaii is an equal opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to race, color, national origin, religion, sex, age, veteran status, or disability. Applications from women, minorities, and persons with disabilities are encouraged.

Summary of the NSF funded *FjordEco Project*; PIs Craig Smith, Brian Powell, and Mark Merrifield (University of Hawaii at Manoa), Maria Vernet (Scripps Institution of Oceanography), and Peter Winsor and Martin Truffer (University of Alaska Fairbanks)

**Fjord Ecosystem Structure and Function on the West Antarctic Peninsula - Hotspots of Productivity and Biodiversity? (FjordEco)**

Marine communities along the western Antarctic Peninsula are highly productive ecosystems which support a diverse assemblage of charismatic animals such as penguins, seals, and whales as well as commercial fisheries such as that on Antarctic krill. Fjords (long, narrow, deep inlets of the sea between high cliffs) along the central coast of the Peninsula appear to be intense, potentially climate sensitive, hotspots of biological production and biodiversity, yet the structure and dynamics of these fjord ecosystems are very poorly understood. Because of this intense biological activity and the charismatic fauna it supports, these fjords are also major destinations for a large Antarctic tourism industry. This project is an integrated field and modeling program to evaluate physical oceanographic processes, glacial inputs, water column community dynamics, and seafloor bottom community structure and function in these important yet little understood fjord systems. These Antarctic fjords have characteristics that are substantially different from well-studied Arctic fjords, likely yielding much different responses to climate warming. This project will provide major new insights into the dynamics and climate sensitivity of Antarctic fjord ecosystems, highlighting contrasts with Arctic sub-polar fjords, and potentially transforming our understanding of the ecological role of fjords in the rapidly warming west Antarctic coastal marine landscape. The project will also further the NSF goal of training new generations of scientists, providing scientific training for undergraduate, graduate and posdoctoroal students. This includes the unique educational opportunity for undergraduates to participate in research cruises in Antarctica and the development of a novel summer graduate course on fjord ecosystems. Internet based outreach activities will be enhanced and extended by the participation of a professional photographer who will produce magazine articles, websites, radio broadcasts, and other forms of public outreach on the fascinating Antarctic ecosystem.

This project will involve a 15-month field program to test mechanistic hypotheses concerning oceanographic and glaciological forcing, and phytoplankton and benthic community response in the Antarctic fjords. Those efforts will be followed by a coupled physical/biological modeling effort study to evaluate the drivers of biogeochemical cycles in the fjords and to explore their potential sensitivity to enhanced meltwater and sediment inputs. Fieldwork over two oceanographic cruises will utilize moorings, weather stations, and glacial, sea-ice and seafloor time-lapse cameras to obtain an integrated view of fjord ecosystem processes. The field team will also make multiple shipboard measurements and will use towed and autonomous underwater vehicles to intensively evaluate fjord ecosystem structure and function during spring/summer and autumn seasons. These integrated field and modeling studies are expected to elucidate fundamental properties of water column and sea bottom ecosystem structure and function in the fjords, and to identify key physical-chemical-glaciological forcing in these rapidly warming ecosystems.