



MEMORANDUM

To: Edward T. Foote II, President

From: *SG* Steven Green  
Chair, Faculty Senate *SG*

*5/11/00*  
*Steve,*  
*2 approvals.*  
*Thanks.*  
*SG*

Date: 8 May 2000

Subject: Faculty Senate Legislation #99023(B) - Approval of the Name for the Rosenstiel School of Marine and Atmospheric Science Center for Air-Sea Interaction

\*\*\*\*\*

The Faculty Senate, at its 3 May 2000 meeting, voted to approve the name of a sponsored center, the Rosenstiel School of Marine and Atmospheric Science Center for Air-Sea Interaction for the period of time of continuous funding and any extensions thereafter.

This legislation is now forwarded to you for your action.

SG/kl

cc: Luis Glaser, Provost  
Otis Brown, Dean  
Mark Donelan, Applied Marine Physics

CAPSULE: Faculty Senate Legislation # 99023(B) - Approval of the Name for the Rosenstiel School of Marine and Atmospheric Science Center for Air-Sea Interaction

RESPONSE BY THE PRESIDENT: Approve DATE: 5/11/00

OFFICE OR INDIVIDUAL TO IMPLEMENT: \_\_\_\_\_

APPROVED: [Signature]

EFFECTIVE DATE OF LEGISLATION: \_\_\_\_\_

NOT APPROVED AND REFERRED TO: \_\_\_\_\_

REMARKS (IF NOT APPROVED): \_\_\_\_\_

# **Center for Air-Sea Interaction**

A proposal to the Faculty Senate from the:  
Rosenstiel School of Marine and Atmospheric Science  
University of Miami

## **Mission**

The mission of the Center for Air-Sea Interaction is to encourage and facilitate research on the physical, chemical, and biological aspects of the interaction of air and sea. This includes theoretical, laboratory experimental, field observational, and numerical modeling approaches.

## **Objectives**

- To stimulate research on air-sea interaction among faculty at the University and to encourage collaboration with active researchers in this area at AOML/NOAA, NHC and other institutions nationally and internationally.
- To provide and maintain a state-of-the-art laboratory facility (Air-Sea Interaction Saltwater Tank – ASIST) for fundamental studies in fluid mechanics, wave mechanics, gas transfer, remote sensing, aerosol generation, fluid/structure interaction, fluid/body interaction, boundary layer mixing and environmental health effects.
- To provide and maintain a field facility for air-sea interaction centered on the ASIS (Air-Sea Interaction Spar) buoys, suitable research ships, aircraft, offshore towers and long-term monitoring stations.
- To implement a fully coupled wind, wave, circulation and storm surge model that is well adapted to sensitivity tests on various source functions derived from the above objectives and would provide high resolution predictions for the coasts of the southeast United States, the Gulf of Mexico and the Caribbean.
- To collaborate in research with the Center for Southeastern Tropical Advanced Remote Sensing of the University.
- To provide an intellectual climate conducive to advancing the field of air-sea interaction by encouraging high profile visitors, having regular seminars, arranging workshops and symposia.

## Background

In 1960, the first serious attempts to improve our knowledge of air-sea interactions were being put in place at the University of Kiel, University of Washington, University of British Columbia, and the CSIRO (Australia). At the time the aerodynamic drag coefficient of the oceans on the atmosphere was guessed to within an order of magnitude. Today, numerous independent studies suggest that this important parameter is known to within  $\pm 30\%$  under well defined conditions. There is no doubt that progress has been made in understanding air-sea interaction, but much remains to be learned. For instance: the important roughness controlling roles of wind waves and swell are now manifest but the physics of the processes is poorly understood; the role of transfer of momentum, energy, heat and moisture between air and sea, especially the role of waves; the breaking of waves and the attendant mixing of the upper layers and the vertical distribution of momentum, heat and kinetic energy; the rates of transfer of gases between atmosphere and ocean are at the center of CO<sub>2</sub> balance issues and the consequences for climate change and prediction; the generation of aerosols and salt nuclei and their role in atmospheric visibility and cloud physics; radar and acoustic reflectivity of the surface and the rapidly expanding influence of remote sensing in satisfying societal needs.

The Center for Air-Sea Interaction (CASI) will address all of these issues *inter alia*. The process of advancing understanding will be a suitable balance of theory, laboratory experimentation, field observations and numerical modeling. The fuel will be the strong interaction among active minds embarked on an exciting adventure for a valuable and common goal.

## Staffing

The permanent staff of the Center will consist of a Scientific Director (Prof. Mark Donelan), Assoc. Director (Assoc. Prof. Hans Graber) and Research Coordinator (Mrs. Frances Sampedro). The Center is an interdisciplinary research activity. Thus faculty and staff from many disciplines and schools are expected and encouraged to be members of the Center. These will include those currently involved in air-sea interaction research, e.g.: Res. Assist. Prof. William Drennan, Assoc. Scientist Dr. Brian Haus (also manager of the ASIST facility), Prof. Rod Zika, Assist. Prof. Hal Maring, Prof. Donald Olson, Prof. Peter Minnett, Assoc. Prof. Lynn Shay, Assoc. Prof. Shuyi Chen, Prof. Sharon Smith, Assoc. Prof. Gary Hitchcock; AOML/NOAA staff including: Dr. Kristina Katsaros, Dr. Peter Black, Dr. Rik Wanninkhof, Dr. Shari Yvon-Lewis, Mr. Sam Houston; University of California, Irvine staff including: Prof. Eric Saltzman, Prof. Carl Friehe and Assist. Prof. Warren De Bruyn. Students and temporary staff will be in the neighborhood of 4 MS students and 2 Ph.D. students and 2 post-doctoral fellows. In addition we expect to host two or three visitors from other institutions for collaborative work or sabbaticals.

## **Funding**

Heretofore the research, which has been supported by extramural funding from a variety of sources, has been conducted by principal investigators working alone or in loose collaboration with other faculty at the University of Miami and other universities. The Center will provide a clear focus for this work and in addition will attempt to secure funding from The National Science Foundation and The Office of Naval Research to support the infrastructure. In addition, users of the ASIST facility will be charged rent on a daily basis to offset the operation and maintenance cost.