UNIVERSITY OF Miami

FACULTY SENATE

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APR 25 2005
FACULTY SENATE OFFICE

MEMORANDUM

To: Donna E. Shalala, President

From: Mary Coombs MC
Chair, Faculty Senate

Date: April 15, 2005

Subject: Faculty Senate Legislation #2004-19(B) – Establishment of the Center for Southeastern Tropical Advanced Remote Sensing (CSTARS)

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The Faculty Senate, at its March 30, 2005 meeting, voted unanimously to approve the establishment of the Center for Southeastern Tropical Advanced Remote Sensing (CSTARS) at the Rosenstiel School of Marine and Atmospheric Science. The proposal is enclosed for your reference.

This legislation is now forwarded to you for your action. If approved, the establishment would become effective immediately.

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MC/kl

cc: Luis Glaser, Executive Vice President and Provost
Otis Brown, Dean, Rosenstiel School
Hans Graber, Applied Marine Physics

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CAPSULE: Faculty Senate Legislation #2004-19(B) – Establishment of the Center for Southeastern Tropical Advanced Remote Sensing (CSTARS)

PRESIDENT'S RESPONSE

APPROVED: _____ DATE: 4/19/05
(President's Signature)

OFFICE OR INDIVIDUAL TO IMPLEMENT: Provost / Dean Brown

EFFECTIVE DATE OF LEGISLATION: _____
(if other than June 1 next following)

NOT APPROVED AND REFERRED TO: _____

REMARKS (IF NOT APPROVED): _____

CHARTER

CENTER FOR SOUTHEASTERN TROPICAL ADVANCED REMOTE SENSING (CSTARS)

Mission

Low Earth orbiting satellites provide a new perspective to observe Earth's environment at high spatial and spectral resolution. CSTARS is a satellite data reception and analysis facility in south Florida for environmental monitoring of the southeastern United States, Gulf of Mexico, Caribbean Basin and Equatorial Atlantic. CSTARS capabilities are diverse and include a wide range of applications in land, atmosphere, ice and ocean sciences, as well as more applied applications in the fields of environmental monitoring and natural hazard assessment. CSTARS promotes new scientific applications of remote sensing data, and is specifically designed to facilitate near-real time exploitation of high resolution satellite data.

Background

The University of Miami's Rosenstiel School has been involved in remote sensing for more than 20 years and has been a leader in algorithm development for optical and infra-red sensors for terrestrial and oceanographic applications. Researchers at the Rosenstiel School have considerable expertise in the analysis and use of remote sensing data, as well as in the operation of satellite downlink facilities.

Currently, high resolution remote sensing data such as SAR (Synthetic Aperture Radar) are underutilized by the scientific and operational monitoring communities, because of the high cost of these data and the difficulty of obtaining these data in near-real time. CSTARS enables rapid distribution of high resolution data for regions within its ground mask (approximately 2000 km radius) and because of its unique capabilities, can negotiate access to data for research purposes with satellite operators at beneficial rates.

Center Objectives

CSTARS will specifically:

1. monitor natural hazards such as tropical cyclones, flooding and volcanoes;
2. monitor environmentally sensitive ecological habitats such as the Everglades, coastal areas and wetlands;
3. establish a data archive for long term studies;
4. promote scientific applications of remote sensing data; and
5. cooperate with federal, state and local organizations to provide rapid access to satellite imagery and products to protect life and property, promote public welfare and recover from disaster.

One example where enhanced data access via CSTARS can provide critical information is in the area of environmental monitoring for the state of Florida. Many of the state's land and coastal areas, including coral reefs and the Everglades, represent critical habitat that will benefit from the enhanced monitoring afforded by CSTARS. As more people and societal infrastructure concentrate along coastal areas, the United States becomes more vulnerable to the impact of tropical cyclones. During the

hurricane season near-real time monitoring and rapid data dissemination of tropical cyclones that threaten land is essential and can save lives. Coastal pollution, beach erosion, storm dynamics, sea state climatology, Everglades water levels, distribution of invasive species and land use can all be monitored in near-real time, for the long term benefit of critical industries such as tourism, fishing and agriculture, as well as the quality of life for Florida's residents.

The rapid access/analysis capability of CSTARS meets a number of other requirements, e.g., wind and flood damage assessment after major storms and hurricanes, and volcano monitoring in the Caribbean and Central America. CSTARS data will also improve our understanding of and ability to forecast storms and hurricanes.

Location and Composition

CSTARS is located on the Richmond campus of the University of Miami in southern Miami-Dade County. Permanent staff includes two Co-Directors (with expertise in land and ocean remote sensing applications), a Station Manager, an Account Executive, and technical/scientific staff. The internal Advisory Committee includes the Co-Directors, a senior faculty member with remote sensing expertise, the Rosenstiel School Dean and Associate Dean, and another person from the local community, yet to be named, invested in the center. The external Advisory Committee, comprised of internationally recognized members of the remote sensing communities in academia, government, and industry, will tentatively include Gunther Kohlhammer (European Space Agency), Frank Herr (Office of Naval Research), Martin Ryan (Mitre Corporation), John Curlander (Vexcel), John LaBrecque (NASA), Howard Zebker (Stanford), Paul Rosen (Jet Propulsion Laboratory), Richard Bamler (Deutschen Zentrum für Luft- und Raumfahrt). CSTARS also has a Consortium with members from national research institutions and universities.

Sponsorship

CSTARS is a sponsored center funded jointly by the Office of Naval Research (ONR) and the National Aeronautical and Space Administration (NASA). Funding in FY 04 totaled $5,739,000. Total investment since inception (March 2000) is $19,707,000. CSTARS is actively pursuing other agencies such as NOAA and FEMA in addition to other federal and state agencies to provide a long term funding level of about ~$2,000,000 per year. This will allow us to operate and maintain the current infrastructure including pay satellite license fees. Additional funding will be sought to expand infrastructure and upgrade to new satellite technologies.