Brown teams up with NASA to begin environmental project for Narragansett Bay

By Paula Korn

Residents, fisheries, businesses and scientists throughout Rhode Island are expected to benefit from a new environmental project that focuses on Narragansett Bay, the state's premier natural resource and its most significant economic center.

In a cooperative agreement with the National Aeronautics and Space Administration (NASA) and a Rhode Island environmental consulting firm, Brown is embarking on a research project, "Rhode Island's Narragansett Bay from Space: A Perspective for the 21st Century," that could have a long-term effect on scientific and technological advancement well beyond the state's 400-mile coastline.

Building on fundamental research work at the University of Rhode Island, its Graduate School of Oceanography and the Rhode Island Sea Grant Program, this project will bring the next generation of space sensors to researchers and decision makers in the state. The project, announced Aug. 9, calls for researchers from Brown's Planetary Geology Group to analyze data from a new generation of remote sensing satellites. They will work with Applied Science Associates Inc. (ASA) of Narragansett, R.I., in cooperation with the NASA Business Outreach Program and the NASA/Rhode Island Technology Transfer Center.

"Narragansett Bay is Rhode Island's single most important asset and directly affects the quality of life for all Rhode Islanders," said President Gregorian, adding that he was pleased "that the work of Brown's excellent faculty and its long-standing research relationship with NASA are being brought to bear on issues that are vital to the long-term health of the Ocean State and the welfare of its people."

The Bay is responsible for approximately $1.6 billion in economic activity per year.

Geological sciences Assistant Professor John Mustard is the principal investigator for the project. Mustard is one of an elite group of scientists across the country specializing in the analysis of space remote sensing data. He said that the project will be able to integrate locally gathered historical information with satellite data to provide temporal and spatial information about the water, such as marine life, pollution, currents, temperature, tidal flux, ocean dynamics and other factors in the life and health of Narragansett Bay.

Remote sensing is an important tools for solving environmental problems. Although data gathered from satellites in low Earth orbit allow us to observe the Earth through a variety of highly sophisticated instruments, scientists study findings at ground level to correlate and calibrate the data. Data may be superimposed on finely detailed maps, creating computer models and graphic depictions of information useful in science, business and environmental planning. Remote sensing of Rhode Island's significant coastal regions offers a test for transferring NASA's observation technology and complements many fundamental studies conducted by URI's Graduate School of Oceanography. The project may lead to new commercial products in ocean modeling, information mapping, methods in interpretation and advanced computer algorithms for local and national distribution. The information developed with these new tools is designed to help policy makers and business leaders make informed decisions about the health and economic development of Narragansett Bay.

ASA is an environmental consulting firm that develops and uses computerized modeling tools to investigate complex issues, particularly marine and freshwater problems. The company will use the data processed by Brown scientists and other investigators to develop new information products that monitor

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and project environmental changes in Narragansett Bay. These changes have significant impact on the local fishery and tourism industries as well as the future economic development of the area.