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UNH Awarded \$1.6M For Wind Measurement Project

By [Carmelle Druchniak](#)
UNH News Bureau

DURHAM, N.H. -- U.S. Senator Judd Gregg (R-NH) and officials at the National Oceanic and Atmospheric Administration (NOAA) this week announced \$1.625 million in research funds have been awarded to the University of New Hampshire's [Institute for the Study of Earth, Oceans, and Space \(EOS\)](#) to support the development, operation and validation of the GroundWinds LIDAR system.

This state-of-the-art wind measurement system is a collaborative effort among UNH, the Mount Washington Observatory and NOAA. The initial testing site is located in the town of Intervale.

EOS Director Berrien Moore III, principal investigator for this project, explains: "This is a remarkable opportunity for the university and EOS to significantly advance our country's weather forecasting system as well as our understanding of our planet. This technology stands at the threshold of an entirely new set of satellite observations. It truly is the 'next horizon' for our students, our technical staff and our faculty."

Moore further emphasized the "farsighted vision of Senator Gregg and NOAA." The GroundWinds-I instrument, developed by the Michigan Aerospace Company in collaboration with UNH, will use reflected light from a laser to measure wind in the atmosphere. Moore noted that the real payoff will be to adopt these technologies for a space mission.

"This is a significant challenge, but we believe that it would be possible within the next three to four years," he says. Accordingly, a portion of this grant will be utilized as seed funding for the next major step in this research project: GroundWinds-II. In this ground-based demonstration, an ultra-violet laser will replace the visible laser used in the current GroundWinds-I system. The UV system will more closely approximate the eventual satellite system, says Moore.

GroundWinds-II will also be tested in another environment where marine air dominates, as opposed to the New Hampshire site where continental air is primarily measured. "The oceanic air presents a real challenge," Moore notes, since it is very clean and free

from aerosols. "Simply put, we get less reflection," he adds.

Locations on the island of Hawaii will be investigated as possible sites for GroundWinds-II in the coming months.

The funding announced this week will also make possible a comprehensive education outreach effort comprised of computer-based interactive kiosks: one at the Mount Washington Observatory Summit Museum and the other in the North Conway Weather Discovery Center.

These GroundWinds kiosks will describe the science behind the LIDAR (Light Detection and Ranging) wind measurement system, the Doppler effect, and will also allow the user to see current wind speed data as the GroundWinds technology is operated over the Mount Washington Valley. The kiosks will be designed for users of all ages.

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