



The Atmospheric Investigation, Regional Modeling, Analysis and Prediction (AIRMAP) Cooperative Institute provides leadership and integration for research, development, education, and outreach for issues related to the understanding of air quality and climate.

### The Challenge . . .

Increasing population and industrialization are changing the climate and chemical composition of the Earth's atmosphere. Understanding the forcings and responses of this complex environment and making useful predictions of air quality and climate are critical needs of humankind.



### Our Mission . . .

The health of the atmosphere is vital to our survival, yet it can only be tracked by world-class instrumentation and understood by innovative theoretical approaches. AIRMAP, a Cooperative Institute established in 2000 by the National Oceanic and Atmospheric Administration (NOAA) and the University of New Hampshire (UNH), developed such capabilities to conduct multi-disciplinary studies that characterize the atmospheric system at varying spatial and temporal scales. These achievements led to AIRMAP's current leading role in improving the nation's air quality forecasting technologies and quantifying chemistry-climate connections.

- **Atmospheric Investigation:** Collection of data on the physical (*e.g.*, temperature and atmospheric circulation) and chemical (*e.g.*, trace gases and aerosols) components of the New England atmosphere.
- **Regional Modeling:** Utilization of a suite of climate, emission, and photochemical models (*e.g.*, mesoscale meteorological and photochemical models, and global and regional climate models) to simulate the temporal and spatial distribution of key atmospheric variables.
- **Analysis and Prediction:** Interpretation of observational data, corroboration of theoretical results, and projection of current understanding to future assessments of air quality.



### The Observational Network . . .

Instrumented air monitoring sites are located along a 200 km north-south transect in New Hampshire beginning over the Gulf of Maine (Appledore Island), near the coast at Thompson Farm (Durham), up to 400 m elevation at Castle Springs (Moultonborough), and at 2000 m on the summit of Mount Washington (North Conway). The UNH atmospheric observatories provide continuous measurements of chemical species and near-real-time data on the Internet ([www.airmap.unh.edu](http://www.airmap.unh.edu)).



### Education & Outreach . . .

Undergraduate and graduate students are actively involved in AIRMAP research, presentation of results at national meetings, and publication of papers in high-impact scientific journals. Public awareness of air quality issues is enhanced through kiosks featuring real-time data ticker tape and interactive computer displays in the main UNH library and the Seacoast Science Center.



Top to bottom:  
Mount Washington,  
Castle Springs,  
UNH Thompson Farm,  
Appledore Island.

### Administration . . .

The Institute is governed by a Memorandum of Agreement between NOAA and UNH. It establishes a Director, a NOAA Liaison, and a Board of Advisors.

THE INSTITUTE FOR THE STUDY OF EARTH, OCEANS, AND SPACE  
University of New Hampshire, Morse Hall, Durham, NH 03824-3525

[www.airmap.unh.edu](http://www.airmap.unh.edu)

AIRMAP Principal Investigator: Robert Talbot ([robert.talbot@unh.edu](mailto:robert.talbot@unh.edu))