

# UCAR AT A GLANCE

*More than 1,400 UCAR staff carry out research, education, and support activities at several locations, including NCAR's iconic Mesa Laboratory.*

## National Center for Atmospheric Research (NCAR) [www.ncar.ucar.edu](http://www.ncar.ucar.edu)

### Computational and Information Systems Laboratory (CISL)

[www.cisl.ucar.edu](http://www.cisl.ucar.edu)

Provides supercomputing resources, comprehensive data sets, scientific visualization tools and facilities, high-speed networks, and associated data-processing capabilities. Assists the atmospheric science community through the development of domain-specific software cyberinfrastructure and a broad research program in computer science. IMAGE brings mathematical tools to bear on fundamental geoscience problems and serves as a center of activity and integrator for the mathematical and geophysical communities.

Operations and Services Division (OSD)

Technology Development Division (TDD)

Institute for Mathematics Applied to Geosciences (IMAGE)

### Earth Observing Laboratory (EOL)

[www.eol.ucar.edu](http://www.eol.ucar.edu)

Provides observing facilities and instrumentation, including advanced radars, research aircraft, flux measurement systems, optical instrumentation for trace-gas measurement, and integrated sounding systems, to researchers in the atmospheric and related sciences. These facilities allow investigators around the globe to gather data required for their research programs.

Computing, Data and Software Facility (CDS)

Design and Fabrication Services (DFS)

Field Project Services (FPS)

In-Situ Sensing Facility (ISF)

Research Aviation Facility (RAF)

Remote Sensing Facility (RSF)

Technology Development Facility (TDF)

### Earth and Sun Systems Laboratory (ESSL)

[www.essl.ucar.edu](http://www.essl.ucar.edu)

Performs fundamental studies of the dynamics of the Earth and Sun systems across spatial and temporal scales. Assesses how natural forcing (such as solar variability) and human-driven perturbations (such as chemical emissions and land-use changes) affect the evolution of the Earth system and ultimately the habitability of our planet. Research within ESSL is highly collaborative, with specialties focused in four major research divisions and one institute that organizes collaborative projects.

Atmospheric Chemistry Division (ACD)

Climate and Global Dynamics Division (CGD)

High Altitude Observatory (HAO)

Mesoscale and Microscale Meteorology Division (MMM)

The Institute for Integrative and Multi-disciplinary Earth Studies (TIIMES)

### Research Applications Laboratory (RAL)

[www.ral.ucar.edu](http://www.ral.ucar.edu)

Conducts a comprehensive program of research, development and technology transfer in areas that currently include aviation, national security, numerical weather prediction, hydrometeorology, surface transportation, verification, and societal impacts. The JNT provides a testing and evaluation framework for new weather prediction model configurations and data assimilation methods and techniques before they are moved into operational use.

Aviation Applications Program (AAP)

Joint Numerical Testbed (JNT)

Hydrometeorological Applications Program (HAP)

National Security Applications Program (NSAP)

Weather Systems and Assessment Program (WSAP)

### Societal-Environmental Research and Education Laboratory (SERE)

[www.sere.ucar.edu](http://www.sere.ucar.edu)

Conducts multidisciplinary and interdisciplinary research designed to support decision makers in their judicious use of climate, water, and weather data and information; brokers partnerships between NCAR scientists and their colleagues in the national and international university, government, and private sectors; invests in the 21st-century work force by supporting undergraduate, graduate, and post-graduate career development; and provides leadership in (a) definition, planning, and execution of NCAR efforts in education, (b) development of appropriate social science components for NCAR research activities, and (c) research in the science of coupled natural and human environmental systems.

Advanced Study Program (ASP)

Center for Capacity Building (CCB)

Institute for the Study of Society and Environment (ISSE)

## UCAR Office of Programs (UOP) [www.uop.ucar.edu](http://www.uop.ucar.edu)

### **Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC)**

[www.cosmic.ucar.edu](http://www.cosmic.ucar.edu)

Conducts a science project between the United States and Taiwan involving a constellation of six microsatellites. Launched in 2006, COSMIC satellites collect atmospheric remote-sensing data for weather prediction, climate, and ionospheric and gravity research.

### **Cooperative Program for Operational Meteorology, Education and Training (COMET)**

[www.comet.ucar.edu](http://www.comet.ucar.edu)

Serves the geosciences community by providing a wealth of high-quality multimedia education on a wide range of atmospheric, hydrologic, and oceanographic-related topics, aimed at a broad audience of users and available at no cost via its MetEd Web site, [www.meted.ucar.edu](http://www.meted.ucar.edu). COMET also offers residence courses and workshops, and supports applied research through its Outreach Program.

### **Digital Learning Sciences (DLS)**

[www.dlsciences.org](http://www.dlsciences.org)

Develops systems and services that enable scientific and educational organizations—universities, school districts, libraries, and publishers—to organize, manage, comprehend, and enrich online resources to improve learning outcomes and learner engagement. DLS is a collaboration between UOP and the Institute of Cognitive Science at the University of Colorado at Boulder.

### **Global Learning and Observations to Benefit the Environment (GLOBE)**

[www.globe.gov](http://www.globe.gov)

In partnership with NASA and NSF, works with over a million students in more than 20,000 schools located in 109 countries. More than 40,000 teachers worldwide guide students in taking scientific measurements, using the Internet to report and analyze scientific data, and creating partnerships between students and international scientists.

### **Joint Office for Science Support (JOSS)**

[www.joss.ucar.edu](http://www.joss.ucar.edu)

Collaborates closely with scientists and research managers to plan, organize, and conduct scientific programs in the most productive, efficient, and cost-effective ways. Supports planning efforts, research programs, and field experiments worldwide.

### **National Science Digital Library (NSDL)**

[nsdl.org](http://nsdl.org)

Provides high-quality online materials for students, teachers, and professionals at all levels across the full range of disciplines in science, technology, engineering, and mathematics (STEM). NSDL's core integration activities are housed in UOP; other parts of the NSF-funded effort are distributed among several institutions, including primary partners Columbia and Cornell universities. NSDL serves as the digital library for NSF's STEM education programs.

### **Unidata Program Center**

[www.unidata.ucar.edu](http://www.unidata.ucar.edu)

Provides data, tools, and community leadership for enhanced Earth system education and research. Unidata is a diverse community of academic institutions vested in the common goal of sharing data, as well as tools to access, analyze, and visualize that data.

### **Visiting Scientist Programs (VSP)**

[www.vsp.ucar.edu](http://www.vsp.ucar.edu)

Operates programs designed to support and broaden education and research in the atmospheric, oceanic, and related sciences through fellowships to researchers at graduate, postgraduate, and more advanced levels. VSP also supports advisory panels and review teams, workshops, and summer institutes for the university community and federal-agency sponsors.

## University Corporation for Atmospheric Research (UCAR) [www.ucar.edu](http://www.ucar.edu)

### Corporate Affairs

[www.ucar.edu/governance/ca](http://www.ucar.edu/governance/ca)

Cultivates dialogue and facilitates relations among UCAR, its member institutions, policymakers and lawmakers, and the media.

Communications

[www.ucar.edu/news](http://www.ucar.edu/news)

Governance

[www.ucar.edu/governance](http://www.ucar.edu/governance)

Office of Government Affairs (OGA)

[www.ucar.edu/oga](http://www.ucar.edu/oga)

### Education and Outreach (EO)

[eo.ucar.edu](http://eo.ucar.edu)

Bridges the worlds of scientific research and education through exhibits, public visitor programs, workshops and professional development for Earth science educators, Web sites designed for learners of varied backgrounds, and diversity programs. SOARS works to increase the diversity of students pursuing careers in the atmospheric and related sciences through a four-year undergraduate and graduate mentoring program and learning community.

Significant Opportunities in Atmospheric Research and Science (SOARS)

[www.soars.ucar.edu](http://www.soars.ucar.edu)

### Finance and Administration (F&A)

[www.fin.ucar.edu](http://www.fin.ucar.edu)

Conducts activities related to the planning, management, and accountability of the business, financial, human, and physical resources of UCAR.

### UCAR Member Universities

University of Alabama in Huntsville  
 University of Alaska  
 University at Albany, State University of New York  
 University of Arizona  
 Arizona State University  
 California Institute of Technology  
 University of California, Berkeley  
 University of California, Davis  
 University of California, Irvine  
 University of California, Los Angeles  
 University of Chicago  
 Colorado State University  
 University of Colorado at Boulder  
 Columbia University  
 Cornell University  
 University of Denver  
 Drexel University  
 Florida State University  
 Georgia Institute of Technology  
 Harvard University  
 University of Hawai'i  
 University of Houston  
 Howard University  
 University of Illinois at Urbana-Champaign  
 University of Iowa  
 Iowa State University  
 Johns Hopkins University  
 University of Maryland  
 Massachusetts Institute of Technology  
 McGill University  
 University of Miami  
 University of Michigan-Ann Arbor  
 University of Minnesota  
 University of Missouri  
 Naval Postgraduate School  
 University of Nebraska-Lincoln  
 Nevada System of Higher Education  
 University of New Hampshire  
 New Mexico Institute of Mining and Technology  
 New York University  
 North Carolina State University  
 Ohio State University  
 University of Oklahoma  
 Old Dominion University  
 Oregon State University  
 Pennsylvania State University  
 Princeton University  
 Purdue University  
 University of Rhode Island  
 Rice University  
 Rutgers University  
 Saint Louis University  
 Scripps Institution of Oceanography at the University of California, San Diego  
 Stanford University  
 Stony Brook University, State University of New York  
 Texas A&M University  
 University of Texas at Austin  
 Texas Tech University  
 University of Toronto  
 Utah State University  
 University of Utah  
 University of Virginia  
 University of Washington  
 Washington State University  
 University of Wisconsin-Madison  
 University of Wisconsin-Milwaukee  
 Woods Hole Oceanographic Institution  
 University of Wyoming  
 Yale University  
 York University

### UCAR International Affiliate Institutions

Australian National University, Canberra  
 Atmospheric Environment Service, Downsview, Ontario, Canada  
 Bureau of Meteorology Research Centre, Melbourne, Australia  
 Central Weather Bureau, Taipei, Taiwan  
 Centro de Ciencias de la Atmósfera, Mexico  
 Centro del Agua del Trópico Húmedo Para América Latina y El Caribe, Panama  
 City University of Hong Kong  
 Deutsche Forschungsanstalt für Luft und Raumfahrt, Oberpfaffenhofen, Germany  
 Forschungszentrum Jülich GmbH, Germany  
 Federal University of Technology, Akure, Nigeria  
 Hong Kong Observatory  
 Hong Kong University of Science and Technology  
 Instituto de Astrofísica de Canarias, Tenerife, Spain  
 Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing  
 Instituto Nacional de Pesquisas Espaciais (INPE), São José dos Campos, Brazil  
 International Meteorological Institute, Stockholm, Sweden  
 Instituto Geofísico del Peru, Lima  
 Instituto Nacional de Meteorología, Madrid, Spain  
 Istituto di Metodologie per l'Analisi Ambientale of the National Research Council, Italy  
 Johannes Gutenberg-Universität, Mainz, Germany  
 Korea Meteorological Administration, Seoul  
 Lanzhou Institute of Plateau Atmospheric Physics, China  
 Macquarie University, North Ryde, Australia  
 Malaysian Meteorological Service, Kuala Lumpur  
 Manila Observatory, Philippines  
 Max Planck Institute for Meteorology, Hamburg, Germany  
 Meteorological Research Institute, Ibaraki, Japan  
 Meteorological Service of Catalonia, Barcelona, Spain  
 Monash University, Clayton, Australia  
 National Central University, Chung-Li, Taiwan  
 National Centre for Medium Range Forecasting, New Delhi, India  
 National Taiwan University, Taipei  
 Peking University, Beijing, China  
 Risø National Laboratory, Roskilde, Denmark  
 Russian Academy of Sciences, Moscow  
 Seoul National University, Korea  
 State Hydrometeorological University of the Russian Federation, St. Petersburg  
 Tel Aviv University, Israel  
 Universidad de Buenos Aires, Argentina  
 Universidad Complutense de Madrid, Spain  
 Università degli Studi dell'Aquila, Italy  
 Universität Hamburg, Germany  
 Universität Köln, Germany  
 University of Cape Coast, Ghana  
 University of Manchester, England  
 University of Nairobi, Kenya  
 University of Tokyo, Japan

### UCAR Academic Affiliate Universities

College of Charleston  
 Clark Atlanta University  
 Florida Institute of Technology  
 Jackson State University  
 University of Kansas  
 University of Louisiana at Monroe  
 Lyndon State College  
 Universidad Metropolitana  
 Millersville University  
 State University of New York College at Brockport  
 University of North Dakota  
 Plymouth State University  
 Saint Cloud State University  
 San Francisco State University  
 San José State University  
 South Dakota School of Mines and Technology  
 United States Naval Academy