

Climate Science, MS, PhD

Specialization(s): Agricultural Meteorology; Climatology; Micrometeorology; Remote Sensing; Turbulence in Plant Canopies

Department: Plants, Soils, and Climate Department

College: College of Agriculture and Applied Sciences

Overview

About This Degree

USU is the only university in the region that offers a degree in biometeorology. Biometeorology is the study of the connections between living systems and the atmosphere. The program at USU focuses on water use and exchanges of carbon dioxide between various land ecosystems and the atmosphere. These ecosystems include agricultural crops, rangelands in the area, and mountain ecosystems, which are especially important to the Intermountain West, as they are the main source of water resources.

Research conducted by faculty are cutting-edge projects dealing with the climate and its connections to land surfaces in the intermountain region. This includes: cycles of climate, what causes the droughts and wet episodes, regional-scale climate, and the effects of land surface changes on climate.

Students at USU have the unique opportunity to acquire both a theoretical and modeling education, as well as learning how to make actual measurements outdoors. Most universities' programs are limited to one or the other. Students can work on a variety of research topics, including climate dynamics and variability, regional climate modeling, modeling of hydrological processes, spatial variation in surface fluxes of carbon dioxide and water vapor, micrometeorology, remote sensing, and more.

Because USU's biometeorology program is designated as a Western Regional Graduate Program, students from participating western states qualify for in-state tuition. For more information, visit <http://wrgp.wiche.edu>.

Career Options

Students who graduate with a master's in biometeorology can pursue careers as research technicians and application engineers for consulting firms, environmental instrumentation firms, and government research labs.

Students who graduate with a PhD work as research associates, post-doctoral fellows, staff scientists in government laboratories, and as faculty at universities.

What it takes

Admissions Requirements

Students without an undergraduate or graduate degree in plants, soils, biometeorology, or a closely related field may be required to complete selected undergraduate courses prior to admission.

Application Requirements:

- Complete the [online application](#)
- Pay the \$55 application fee
- Score at or above the 40th percentile on the GRE
- Have a 3.0 or higher GPA on your last 60 semester or 90 quarter credits
- Provide transcripts of all college/university credits
- Provide three contacts for letters of recommendation

International students have [additional admissions requirements](#).

Admissions Deadlines

Applications for graduate programs are accepted year-round. However, chances for acceptance are best if students apply between October and January of each academic year.

Master's Degree Plan Options

Students can receive the MS by pursuing one of two options:

- In the **Plan A** option, students complete graduate-level coursework and must write a thesis.
- The **Plan B** option requires the production of a paper or creative work of art and is expected to reflect equivalent scholarship standards as a thesis.

Students are encouraged to pursue the Plan A option.

Financial Assistance

The department typically funds all of its graduate students with research [assistantships](#).

A variety of additional funding opportunities are available, including [fellowships](#), [scholarships](#), [tuition awards](#), and [travel support](#). Additionally, students may be eligible for subsidized [health insurance](#) through qualifying assistantships.

Program Requirements

[Click here](#) to see course requirements for the **Master of Science**.

[Click here](#) to see course requirements for the **Doctor of Philosophy**.

PhD Qualifying Exams:

Each student must undergo some sort of qualifying experience. Depending on the student's particular research and their faculty committee, the exam can either be a traditional oral and written exam, a scholarly proposal, or another option best suited to the student's individual situation.

Contact

Advisor(s)

Faculty

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Get Involved

Professional Organizations, Honor Societies, and Clubs

American Geophysical Union: AGU is a nonprofit corporation dedicated to the furtherance of the geophysical sciences through the individual efforts of its members and in cooperation with other national and international scientific organizations.

American Meteorological Society: AMS promotes the development and dissemination of information and education on the atmospheric and related oceanic and hydrologic sciences and the advancement of their professional applications. AMS publishes nine journals, sponsors more than 12 conferences annually, and offers numerous programs and services.

American Water Works Association: AWWA is the authoritative resource on safe water, with more than 60,000 members worldwide sharing knowledge on water resource development, water and wastewater treatment technology, water storage and distribution, and utility management and operations.

Ecological Society of America: ESA is a nonpartisan, nonprofit organization of scientists founded in 1915 to improve communication among ecologists, raise public awareness of the importance of ecology, and influence environmental decision making by enhancing communication between the ecological community and policy makers.

Labs, Centers, Research

Center for Atmospheric and Space Sciences: CASS is recognized nationally and internationally as a progressive research center with advanced space and upper atmospheric research programs. CASS scientists are tackling the adverse consequences of space weather. Undergraduate and graduate students are involved in numerous research projects in CASS that provide opportunities to program computers, analyze data, and build instrumentation.

Center for Integrated BioSystems: The CIB leads a progressive, interdisciplinary effort in research, core services, and education serving agriculture and life sciences. The CIB is where the first hybrid animal, a mule, was cloned, and was named one of "30 Awesome College Labs" by Popular Science magazine. The CIB has a research program with several active projects in diverse areas of life science that encompass plant, animal, and microbe functional genomics.

Remote Sensing/Geographic Information Systems Laboratory: The RS/GIS advances knowledge in the application of geospatial technologies in ecosystem science and natural resource management. The lab conducts research to meet the requirements of contracting agencies, which include the USDI Bureau of Land Management, USDA Forest Service, the U.S. Department of Defense, the National Guard Bureau, the U.S. Geological Survey, NASA, and various state and international agencies and organizations.

Rocky Mountain NASA Space Grant Consortium: RMNSGC is one of 52 National Space Grant Consortia in the United States. As a member of the consortium, USU has awarded more than 100 fellowships to students interested in aerospace-related education and careers. The majority of Space Grant student awards include a mentored research experience with university faculty and NASA scientists, engineers, and technologists.

Space Dynamics Laboratory: SDL is known for sending 500+ successful experiments into space and brings in \$54 million per year in revenue, the majority coming from grants, contracts, and appropriations. SDL's expertise in the development of sensors and calibration, small satellites and real-time intelligence has made it an internationally known organization in the space arena.

Utah Agricultural Experiment Station: The UAES is part of a network of researchers and facilities at the nation's land-grant universities and is committed to improving agriculture and managing natural resources for the people of Utah. At research facilities on the USU campus and throughout the state, UAES supports hundreds of research projects that promote agriculture and human nutrition and enhance the quality of rural life.

Utah Center for Water Resources Research: The UCWRR facilitates water research, outreach, design, and testing elements within a university environment that supports student education and citizen training.

Utah Climate Center: The UCC facilitates access to climate data and information and uses expertise in atmospheric science to interpret climate information in an accurate and innovative fashion for the public. The mission includes the design of new products to meet present and future needs of agriculture, natural resources, government, industry, tourism, and educational organizations in Utah and the Intermountain region.