

ABOUT THE MAJOR

Atmospheric Sciences seeks to understand the behavior and predictability of the Earth's atmosphere. A unique aspect of our program is its emphasis on mountain weather and climate. You'll have the option to specialize in one of three tracks:

- Professional Meteorology: gain a solid foundation in meteorology and become conversant in related fields such as hydrology, air pollution, data science, and communications.
- Environmental Sciences: learn to apply knowledge of the atmosphere to related environmental fields, e.g. air quality monitoring and modeling, remote sensing, hydrology and snow science, or public policy.
- Snow and Water Sciences: obtain a broad, interdisciplinary education involving the atmospheric sciences, hydrometeorology, hydrology, snow dynamics and avalanche studies, and mountain weather and climate issues.

You may want to satisfy the requirements for employment as a meteorologist with the National Weather Service or decide to pursue an atmospheric or environmental science career in the educational, government, or private sectors. With a degree in Atmospheric Sciences, you will gain critical thinking, problem solving, and communication skills; foundations in mathematics, physics, chemistry, and computer science; and the tools needed to address the challenges posed by hazardous weather and climate change in the 21st century.

LEARNING OUTCOMES

- Understand core concepts in the atmospheric sciences and related environmental fields.
- Investigate atmospheric processes and environmental problems using instrumentation, numerical models, and data analytics.
- Apply computer programming languages for data applications to environmental problems.
- Communicate in written and oral forms with scientific and lay audiences.
- Recognize the professional and ethical responsibilities expected of scientists.
- Complete an integrative research or internship experience that will prepare you for higher-level education or embarking on a career with skills you can adapt to evolving opportunities in the workforce.

PLAN & PREPARE

At the U, we plan for our students to have an Exceptional Educational Experience identified by four broad categories we call the Learning Framework: Community, Knowledge & Skills, Transformation, and Impact. This major map will help you envision, explore, design, and plan your personalized Exceptional Educational Experience with the Learning Framework at the core. In addition to assisting you in planning your coursework and navigating the requirements of your major, this map will help you incorporate other kinds of experiences to expand your knowledge, support your development, and prepare you for the future you want.

GET STARTED TODAY

- Schedule an appointment with an advisor: advising.utah.edu
- 🌐 Visit ugs.utah.edu
- 🔗 Learn more about the Learning Framework: ugs.utah.edu/learning-framework



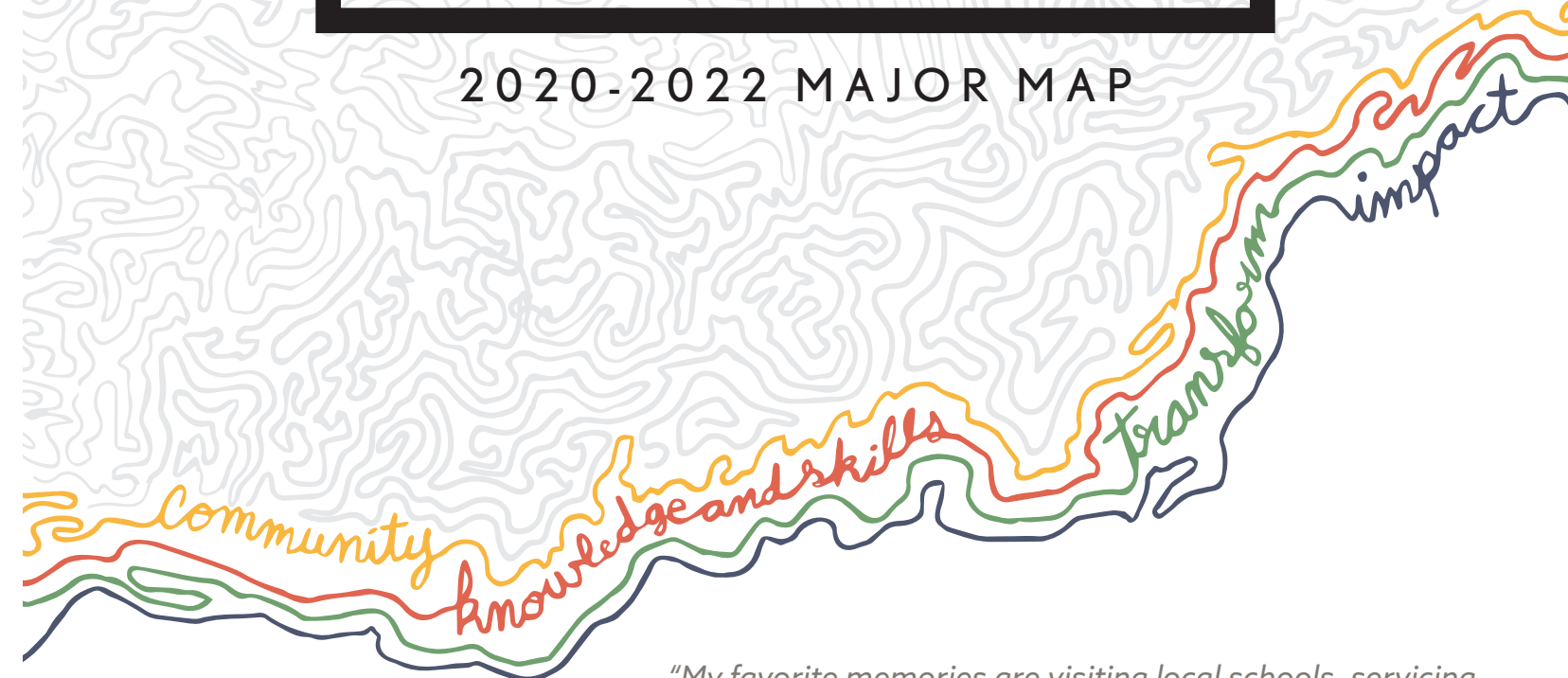
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ATMOSPHERIC SCIENCES

COLLEGE OF MINES & EARTH SCIENCES

2020-2022 MAJOR MAP



"My favorite memories are visiting local schools, servicing weather stations, launching balloons in a downslope wind storm, and of course the taco lunches. As a student, I authored 5 peer-reviewed articles, gave 11 conference presentations, and attended 7 workshops. All this and more prepared me to become a successful scientist."

>> **Brian Blaylock**
NRC Post-Doc at U.S. Naval Research Laboratory
Marine Meteorology Division

ATMOSPHERIC SCIENCES

Use this map to explore, envision, design, and plan your Exceptional Educational Experience.



GETTING STARTED

MAKING PROGRESS

FINISHING UP

WHERE CAN I GO AFTER GRADUATION?

COURSES

- In your first year, take ATMOS 1010 - Severe and Unusual Weather and ATMOS 1020 - Climate Change
- Begin taking Math and Chemistry classes
- Choose from three tracks: Environmental Sciences, Professional Meteorology, or Snow and Water Sciences

- Learn about employment opportunities in ATMOS 3000 - Professional Development
- Continue with allied science courses
- Take technical electives in your interest area

- Begin your experiential learning activity by participating in research with ATMOS faculty or through an internship program
- Stay on track through core ATMOS classes

- Finish up your experiential learning activity by participating in research with ATMOS faculty or through an internship program
- Specialize your degree program with your technical electives

- Air Quality Specialist
- Atmospheric Chemist
- Atmospheric Dynamist
- Atmospheric Physicist
- Atmospheric Scientist

COMMUNITY

- Visit the Student Epicenter in FASB¹ 104 to discover opportunities in the college
- Ski & snowboard the greatest snow on earth
- Explore campus: visit the Ute Weather Center, join the student AMS² chapter, attend the Fall department picnic, and follow social media sites

- Attend a local AMS chapter meeting, a weather discussion, and/or a Frontiers of Science lecture
- Participate in CMES³ outreach and events with Inclusive Earth

- Paint with the Dean
- Post and share weather photos and stories
- Hike in the Wasatch and visit Utah's National Parks

- Become a student leader in AMS
- Lead a forecast at the weather center
- Intern with a local tv station, state agency, or private firm

- Avalanche Forecaster
- Broadcast Meteorologist
- Climate Scientist
- Climatologist
- College or University Professor

KNOWLEDGE AND SKILLS

- Find tutoring resources through the Math Department or the Learning Center
- Install Python and code away

- Attend a green bag lecture at the Stegner Center
- Check in with your advisor and plan future semesters
- Become proficient in using environmental instrumentation and learn how to use computer programs to analyze environmental data

- Brief your fellow students on research
- Explore research and internships through UROP⁵ and the CPDC⁶
- Study air chemistry with the Nerd Mobile
- Chase storms or monitor air quality using mobile instrumentation

- Present research at UROP and/or the AMS conference
- Apply to graduate school
- Compete against your professor in the Forecast Contest
- Meet with your advisor for a graduation audit

- Disaster Risk Scientist
- Environmental Consultant
- Environmental Data Analyst
- Environmental Scientist
- Field Scientist

TRANSFORMATION

- Visit the Outreach Coordinator in FASB 205 to volunteer at a local elementary school
- Check out the weather or air quality on campus at the Ute Weather Station
- Take a safety class (CPR, First Aid, CERT Training)
- Attend office hours to get to know your professors

- Become aware of ethical scientific responsibilities by joining Inclusive Earth in FASB 104
- Attend a workshop through the Counseling Center to develop appropriate work-life balance

- Create a time management plan with a Student Success Advocate
- Attend a wellness workshop or training through the Center for Student Wellness

- Land a summer internship flying on NASA aircraft or with the Storm Prediction Center
- Attend annual AMS or NWA⁷ meetings

- Forensic Meteorologist
- GIS Specialist
- Hydrologist
- Hydrometeorologist
- Instrumentation Specialist
- Model Developer

IMPACT

- Job shadow a Student Forecaster in the Weather Center
- Find a mentor through AMS or Alumni Fire
- Visit the weather team at the Utah Department of Transportation Traffic Operations Center

- Volunteer for onsite school visits with the Outreach Coordinator in FASB 205
- Write your congressperson and vote
- Become a weather forecast intern

- Align your passions and professional goals with a Career Coach
- Become a CMES student ambassador
- Get involved with ASUU⁸

- Serve as a mentor for incoming students; talk to your academic advisor for opportunities!
- Create a weather video or podcast
- Become the Social Media Coordinator for the department

- Research Meteorologist
- Road Weather Specialist
- Science Teacher
- Solar/Wind Power Specialist
- Weather Forecaster

CAREER

- Activate your Handshake account
- Get started by creating your LinkedIn profile
- Attend the STEM Career Fair to learn about careers in atmospheric sciences and find internship opportunities

- Meet with a Career Coach to discuss your career goals and create a plan for after graduation
- Attend a CMES Speed Networking event

- Update your Handshake and LinkedIn accounts with your current interests and experiences
- Find a mentor or community member who can continue to provide professional guidance

- Attend the STEM Career fair for full-time employment opportunities
- Begin applying for jobs or graduate schools
- Network with industry partners

- Wildfire Forecaster

¹Frederick Albert Sutton Building ²American Meteorological Society ³College of Mines & Earth Sciences ⁴Research Experiences for Undergraduates ⁵Undergraduate Research Opportunities Program ⁶Career & Professional Development Center ⁷National Weather Association ⁸Associated Students of the U of U