Minor in ATMOSPHERIC SCIENCE

Appalachian State University

College of Arts & Sciences

Appalachian's minor in atmospheric science is an interdisciplinary program that can help prepare students for graduate study and professional careers in meteorology, climate science, and atmospheric chemistry and air quality.

Job opportunities and career options in the atmospheric sciences are very diverse, including:

- broadcast meteorology,
- renewable energy siting and forecasting,
- seasonal climate forecasting,
- climate modeling,
- air quality forecasting and monitoring,
- instrumentation specialist.

According to the Bureau of Labor Statistics, the 2012 median pay of atmospheric scientists was $89,260 per year and the projected growth rate in jobs is 10% per year over the next ten years.

2017-2018 Minor Program of Study

Required (9 hours):

- Global Atmospheric Chemistry (CHE 2600)
- Weather & Climate (GHY 3100)
- Atmospheric Physics (PHY 3150) w/Calculus prereq.

Mathematical Electives (3-4 hours) Choose 1 of the following:

- Mathematical Electives (3-4 hours) Choose 1 of the following:
- Introduction to Programming with Interdisciplinary Applications (CS 1445)
- Statistical Data Analysis I (STT 3850)
- Quantitative Data Analysis for Earth & Environmental Scientists (ENV/GLY 3455)

Electives (6 hours) Choose 2 courses from the following:

- Climate Change, Snow & Ice (GHY 3600)
- Atmospheric Circulation (GHY 4620)
- Environmental Geochemistry (GLY 3131)
- Environmental Physics (PHY 3140)
- Air Pollution Effects on Plants & People (BIO 3320)
- Hydrogeology (GLY 4630)

UCAR — UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH

Appalachian State University is a member of the University Corporation for Atmospheric Research, that provides opportunities for student internships, career development, and training (https://www2.ucar.edu/)

For more information, please contact:
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Dr. Chris Thaxton at thaxtoncs@appstate.edu

> "Understanding the complex, changing planet on which we live, how it supports life, and how human activities affect its ability to do so in the future is one of the greatest intellectual challenges facing humanity. It is also one of the most important challenges for society as it seeks to achieve prosperity, health, and sustainability."
> — National Research Council

Active student research is a critical part of the mission of the Minor, the College, and the University.

While pursuing a minor in atmospheric science, several research opportunities exist, including: Regional weather modeling; Air pollution effects on plants; Aerosol monitoring, chemical analysis; Synoptic climatology, orographic precipitation, snow and ice, and tropical climate-glacier interactions; Ecosystems and hydrologic cycles; Image processing, wavelets, parallel and distributed computing, stochastic simulations.

Examples of Student Research Opportunities

Student researchers assist Dr. Baker Perry and collaborators in the NSF funded Integrated Climate Research and Education: Central Andes Precipitation Project (ICECAP) in Peru and Bolivia. (https://icecap.appstate.edu/)

Students assist faculty working to better understand air pollution formation and transport, the relationship of pollution and natural aerosol sources to a changing climate, and their impacts on regional ecosystems, weather, and climate in the Southern Appalachian Mountains. (https://appalair.appstate.edu/)
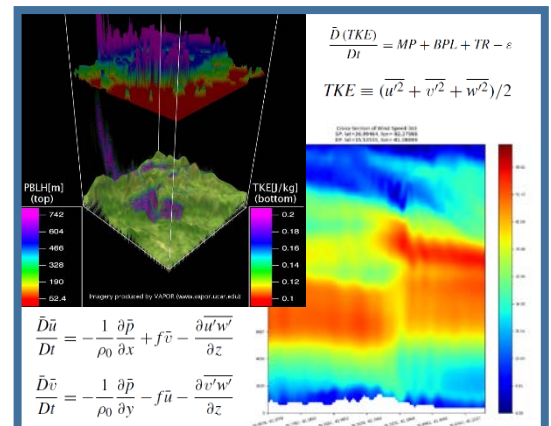
Students work with computer models to better understand the complex atmospheric dynamics in the Southern Appalachians. (https://physics.appstate.edu/research/applied-fluids-laboratory)