METEOROLOGY

What can I do with this major?

AREAS

WEATHER FORECASTING (non-media)

Atmospheric pollution
Aviation weather
Marine weather
Fire weather
Surface transportation
Agriculture
Renewable energy
Combat weather

EMPLOYERS

Government:
- National Oceanic and Atmospheric Administration (NOAA) including the National Weather Service (NWS)
- Military Services:
  - Navy and Air Force
- National Aeronautics and Space Administration (NASA):
  - Goddard Institute for Space Studies (GISS)
  - Goddard Space Flight Center (GSFC)
- Department of Energy
- Department of Agriculture
- Department of Defense
- Department of Homeland Security

Utility and power companies
Renewable energy companies (wind and solar)
Large shipping companies
Private consulting firms that support:
- Agriculture (farmers, ranchers)
- Ocean shipping agencies
- Cruise lines
- Highway departments
- Ground shipping companies (truck and rail)
- Commodities traders
- Recreational areas and resorts
- Airlines
- Energy related companies
- Insurance companies

Airlines
Insurance industry
NGOs (Red Cross, World Food Bank, etc.)

STRATEGIES

Build a strong theoretical background in meteorology and practical experience in forecasting.
Pay attention to the specific coursework required by certain governmental organizations for employment (e.g., NOAA, NWS, etc.).
Take classes in computer programing and obtain programing experience through internships and summer jobs.
Be aware that weather forecasting is a 24/7 activity and some jobs will require shift work or unpredictable hours.
Consider developing a portfolio by writing papers about local weather events, attending conferences and training, and completing additional college course work.
Be prepared to serve as a liaison and voice to the community
Plan to take classes in communication, technical writing, speaking and listening.
Seek internships and summer opportunities to develop skills in real-world applications and to make connections.
Network with local governmental agencies, some of which may have a presence on campus.
Participate in as many on-campus forecasting activities as possible (forecasting game, forecasting for the local community, etc.).

AREAS	EMPLOYERS	STRATEGIES
MEDIA WEATHER FORECASTING Television broadcasting Radio broadcasting Internet broadcasting Forecasts for digital media	Networks and cable channels Small market television stations Private weather firms that supply weather forecasts to newspapers, radio, television, cable companies, and supply forecasts and forecasting/ graphic systems to broadcasters and digital media companies	Build a strong theoretical background in meteorology and practical experience in forecasting. Take classes in computer programing and obtain programing experience through internships and summer jobs. Develop strong public speaking and presentation skills. Be prepared to serve as a liaison and voice to the community. Take classes in journalism and broadcasting to supplement your skills for this career path. Become familiar with computer software for fore casting and web design. Consider applying for The American Meteorological Society Certified Broadcast Meteorologist program. Actively seek internships and summer opportunities to develop skills in real-world applications and to make connections. Create a resume tape or portfolio Participate in as many on-campus forecasting activities as possible (forecasting game, forecasting
CONSULTING/INFORMATION SERVICES Weather information systems Forensic meteorology Weather forecasting Climatology Risk assessment Decision support	Private weather firms that provide services to: Military (all branches) Disaster relief organizations Law enforcement Utility and power companies Construction companies Financial and insurance institutions Fisheries Urban and regional planners Landscape companies Professional sports teams Event organizers Film production companies Vacation resorts Retail outlets Manufacturing companies	Build a strong theoretical background in meteorology and practical experience in forecasting. Take classes in computer programing and obtain programing experience through internships and summer jobs. Acquire additional skills in office applications such as Excel, Word, PowerPoint,and GIS applications. Seek knowledge of environmental regulations, laws and applications which may be needed for this specialization. Develop strong communication skills for presenting reports and meteorological analyses to clients. Consider pursuing graduate studies to advance in this field.

AREAS	EMPLOYERS	STRATEGIES
CONSULTING/INFORMATION SERVICES cont'd		Investigate earning an MBA which may be beneficial when assisting firms with business decisions in private industry. Consider applying for The American Meteorological Society Certified Consulting Meteorologist program. Actively seek internships and summer opportunities to develop skills in real-world applications and to make connections. Participate in as many on-campus forecasting activities as possible (forecasting game, forecasting for the local community, etc.).
AIR AND ENVIRONMENTAL QUALITY Environmental assessments and permitting Climatology Air pollution Risk assessment Ambient monitoring Specialized studies (photochemical modeling, acid rain, global warming) Wildfire mitigation Facilities management and sustainability	Government: U.S. Environmental Protection Agency (EPA) and state environmental agencies Military Services: Navy and Air Force National Aeronautics and Space Administration (NASA): Goddard Institute for Space Studies (GISS) Goddard Space Flight Center (GSFC) Department of Energy Department of Agriculture Department of Defense Department of Homeland Security Research laboratories Universities and colleges Private-sector consulting firms Non-profit environmental organizations	Build a strong theoretical background in meteorology and practical experience in forecasting. Take classes in computer programing and obtain programing experience through internships and summer jobs. Develop additional skills in office applications such as Excel, Word, PowerPoint, and GIS applications. Conduct research with professors or scientists in the field. Stay abreast of current technologies, regulations, and statutes related to air quality. Join community groups or service organizations that focus on environmental awareness; attend public meetings. Actively seek internships and summer opportunities to develop skills in real-world applications and to make connections. Take air-pollution related electives to help build knowledge of the industry, issues, and technologies.

AREAS	EMPLOYERS	STRATEGIES
ATMOSPHERIC INSTRUMENTATION Meteorological software Monitoring parameters (temperature, wind velocity, humidity, etc.) Atmospheric chemistry sampling (of carbon dioxide, oxides of nitrogen, etc.) Remote-sensing operations Radar and Lidar Satellite imagery Equipment repair Mobile technologies	National Aeronautics and Space Administration (NASA): Goddard Institute for Space Studies (GISS) Goddard Space Flight Center (GSFC) National Oceanic and Atmospheric Administration (NOAA) Manufacturers of meteorological instruments Engineering firms Satellite and radar manufacturers Renewable energy companies	Build a strong theoretical background in meteorology and practical experience in forecasting. Take classes in computer programing and obtain programing experience through internships and summer jobs. Seek knowledge in areas such as computer science electronics, optics, or radiative transfer. Develop strong technical skills required for operating electronic instrumentation and meteorological observational sensors. Take classes in engineering and design.
RESEARCH Climate science Weather systems Air-sea interactions Atmospheric chemistry and aerosol transport Polar meteorology Geophysical fluids dynamics Boundary layer meteorology Heliophysics Geophysics Hydrology Oceanography	Universities and colleges University affiliated research laboratories: University of Wisconsin Space Science Engineering Center (SSEC) MIT-Lincoln Labs Cooperative Institute for Mesoscale Meteorology (CIMMS) Cooperative Institute for Environmental Studies (CIRES) Atmospheric research centers Satellite research centers Research laboratories: National Center for Atmospheric Research (NCAR) Government: National Oceanic & Atmospheric Administration (NOAA) including the National Weather Service (NWS) National Aeronautics and Space Administration (NASA): Goddard Institute for Space Studies (GISS) Goddard Space Flight Center (GSFC) Langley Research Center Marshall Space Flight Center Military Services: Navy and Air Force Professional and technical journal publishers Private weather research companies	Build a strong theoretical background in meteorology and practical experience in forecasting. Take classes in computer programing and obtain programing experience through internships and summer jobs. Develop strong analyses skills (e.g., statistics, mod eling, etc.). Develop additional skills in office applications such as Excel, Word, PowerPoint, and GIS applications. Conduct research with professors or scientists in the field. Stay abreast of current technologies, regulations, and statutes related to air quality. Join community groups or service organizations that focus on environmental awareness; attend public meetings. Actively seek internships and summer opportunities to develop skills in real-world applications and to make connections. Take air-pollution related electives to help build

AREAS	EMPLOYERS	STRATEGIES
EDUCATION Teaching Research	Universities and colleges Pre-K-12 schools Planetariums Museums Professional and technical journal publishers	Build a strong theoretical background in meteorology and practical experience in forecasting. Take classes in computer programing and obtain programing experience through internships and summer jobs. Consider obtaining a higher degree which will help you advance in this field. Research funding options such as assistantships or fellowships to help with tuition during graduate study. Meteorology is rarely taught as a stand-alone subject in schools Pre-K-12. If you plan on teaching this subject at this academic level, prepare to become a physics, earth, or general sciences teacher. Gain experience working for students of your target population. Get certification/license to teach in the state in which you will live and work. Complete a master's degree for community college teaching and a Ph.D. for university level teaching.

GENERAL INFORMATION

- Foster an inquisitive mind and imagination.
- Develop analytical skills and computer skills. An aptitude for math and science is critical.
- Consider majors such as meteorology, physics, engineering, or a science related disciplines to enter this field.
- Gain experience in computer languages such as FORTRAN, C/C++, Python, and/or IDL within a UNIX environment.
- Take part in an internship, co-op, or development program with the National Weather Service (NWS).
- Look into gaining an assistantship or fellowship to help with tuition during graduate study.
- The NWS provides opportunities to pursue graduate studies through certain programs and also work for a full salary.
- Be prepared to work around the clock on evening, weekends and even holidays.
- Expect to work independently, as many meteorologists work in isolation for long amounts of time.