A Career in Meteorology / Atmospheric Science

What is meteorology? Meteorology is the study of weather and weather forecasting. Civilian meteorologists work, 1) in operations, making forecasts, 2) in research, conducting weather related studies, 3) or in applications, using a combination of both. Accurate weather information is required for military operations such as troop movements, airplane flights, missile launches, and ship movements.

What do meteorologists do? Accurate weather predictions can save lives and property. Meteorologists study weather conditions and prepare current and long range weather forecasts. You begin your career directing data collection and interpreting weather maps, observation data, and satellite information. As you gain leadership and forecasting skills, you will serve in positions of increasing responsibility. Meteorologists forecast and use visual observations, and take readings from weather equipment, radar scans, and satellite photographs.

Where do meteorologists work? Many meteorologists work in weather forecast offices or weather support units at military bases in the U.S. and overseas. Some work at the National Climatic Data Center, National Center for Environmental Prediction, National Weather Service Forecast Offices or other offices within the National Oceanic and Atmospheric Administration. Others perform work in command and control centers aboard ships at sea. Meteorologists work for radio and television stations, and airlines in the private sector. They also teach at institutions of higher learning.

What are applications of atmospheric science? Climate data is used in every aspect of our national economy. For example, in agriculture it is used to study effects of climate variations on crop fields. In medicine it is used to conduct research for possible correlations between climate and diseases. Also, summaries of weather events are used in disaster mitigation efforts.

What are the typical working conditions for meteorologists? Meteorologists usually work in weather forecast offices or operations centers where weather information can be collected, analyzed, and plotted using computers. These stations and centers are either on land or aboard ships. They work outdoors when making visual weather observations. They also work in the office setting conducting research.

How do I find a job in atmospheric science? The federal government has forecast offices all across the country including U.S. territories. Go to http://jobsearch.usajobs.opm.gov for a listing of all the jobs in the federal government. The military services have weather observers and meteorologists.

What high school courses are necessary to prepare for a career in atmospheric science? A good background in mathematics and the earth and space sciences is mandatory. Knowledge of physics and chemistry is helpful toward a career in the atmospheric sciences.

Do I need more education than high school for a career in atmospheric science? How much and what kind? There are three patterns of education that may be pursued for a career in atmospheric science. The first is to complete a bachelor of science level program in meteorology or a related marine discipline; this requires about four years of college-level study. After this training, it is often possible to go directly to work in weather-related jobs, using the basic scientific knowledge of weather-oriented problems. The second is a bachelor of science in one of the basic sciences such as geology, chemistry, biology, physics, or engineering. Alternatively, one can continue into meteorology at the graduate school level and work toward the master's or doctoral level. The time required for attaining advanced degrees varies widely, depending upon both the school and the student. The third pattern is that offered by a number of junior colleges and technical schools. These programs lead to an associate of arts degree in technology or science.

If I decide to go to college, what is the best college or university for atmospheric science? Many colleges and universities offer courses in atmospheric science, oceanography and other marine sciences or earth sciences. The following websites offer more information: the American Meteorological Society (http://www.ametsoc.org); the American Geophysical Union (http://www.aug.org); and the American Association for the Advancement of Science (http://www.aaas.org).

What kinds of jobs are available to people with an education in meteorology? An atmospheric science degree or a degree in a related marine science qualifies an individual to perform many weather-related or atmospheric science jobs, such as weather forecaster, research meteorologist, physical scientist or administrator, consulting meteorologist, university professor or media weathercaster.

What college courses will be required if I major in atmospheric science? Although course requirements differ from one university to another, several courses are considered mandatory for a basic understanding of the atmospheric environment. Meteorology majors must complete courses in mathematics, emphasizing differential equations, chemistry, physics, geology, environmental dynamics, and meteorology applications.

When must I decide what kind of atmospheric scientist I want to be? Although most colleges require a declared major at the beginning of the third year, a student has the option to change fields throughout his/her college career. Because the marine sciences are interrelated, a meteorology major is equipped to enter almost any weather-related field.

How much does it cost to attend college? As with course requirements, college costs also vary greatly. Specific information should be obtained from the school itself.

Is financial aid available for those students who need help? How much? What kind? Financial aid, again varies with the school. The institution itself is the primary source of this information. Also check scientific, civic and social organizations websites.

What salaries do atmospheric scientists earn? Salary scales in both the private sector and the government are similar and follow the criteria of education, experience, and competence. The Federal Government offers a GS-5 position the starting salary of $24,677 for bachelor of science level college graduates. Through a promotion system, meteorologists employed by the government may eventually attain a grade of GS-15 with a starting salary of $89,625. Additional adjustments increase the pay by geographic locality. Check the 2005 Civilian Pay Scale for more information at http://www.opm.gov.

What training and professional development opportunities do you provide your employees? The Federal Government offers on-the-job training for its atmospheric scientist. This training consists primarily of additional classes in advanced atmospheric or environmental science, as well as training in management, finance and budget, computer science, communications and other courses as needed.

What does it take to become a really good atmospheric scientist? Operational meteorologists must be able to forecast the weather accurately while research meteorologists demonstrate how to apply their experience by writing publications and making scientific presentations on various research topics. To advance, meteorologists must demonstrate scientific knowledge and show excellent leadership skills. Most senior meteorologists have an advanced degree in areas such as mathematics, geophysics, astrophysics, oceanography, meteorology, or computer science. Outstanding performance and advanced education are keys to advancement in meteorology.

What life skills are critical for success? Good interpersonal relationship skills and the ability to work on teams will ensure success. Also, good communication skills, strong work ethic, willingness to take initiative and ability to problem solve.

Do you have special foreign language needs with your organization? Knowledge of a foreign of language is always a plus for any employee.

For further in formation about employment in the Federal Government contact your local Office of Personnel Management, listed under U.S. Government in the telephone directory or go to http://www.opm.gov. The Federal Government is an Equal Opportunity Employer.

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