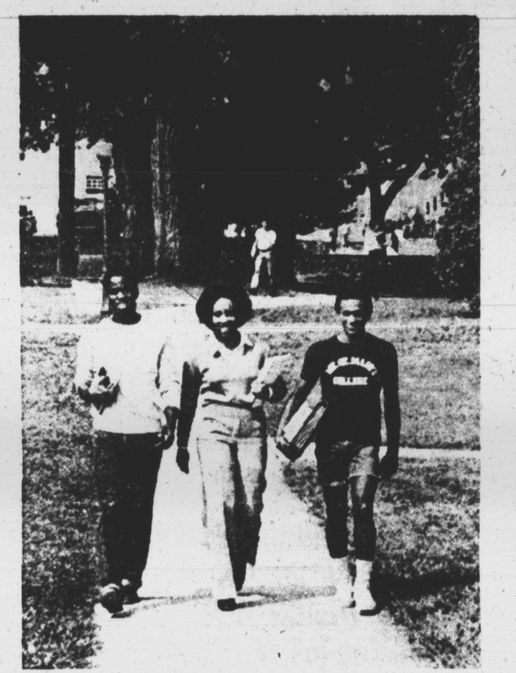
"THE CHALLENGING ALTERNATIVE"



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INFORMAL DISCUSSION at Frostburg State College found Benjamin Hooks (C) chatting with students during his visit to the campus as a speaker for the Artist and Lecture series.

Meteorology is wide open field

Meteorology is the study of the atmosphere, which is the air that surrounds the earth.

Meteorologists describe and try to understand the atmosphere's physical characteristics, motions, and processes, and determine the way the behavior of the atmosphere affects the rest of our physical environment.

The best known application of this knowledge is in understanding and forecasting the weather.

Meteorological research is also applied in many other areas not directly related to weather forecasting such as understanding and solving air pollution problems and studying trends in the earth's climate.

Meteorologists who specilize in forecasting the weather, known professionally as synoptic meteorologists, are the largest group of specialists.

They study current weather information, such as air pressure, temperature, humidity, and wind velocity, in order to make short-range and long-range predictions.

Their data come from weather satellites and observers in many parts of the world.

Although some forecasters still prepare and analyze weather maps, most data now are plotted and analyzed by computers.

Some meterorologists are engaged in basic and applied research. For example, physical meteorologists study the chemical and electrical properties of the atmosphere.

They do research on the effect of the atmosphere on transmission of light, sound, and radio waves, as well as study factors affecting formation of clouds, rain, snow, and other weather phenomena.

Other meteorologists, known as climatologists, study climatic trends and analyze past records on wind, rainfall, sunshine, and temperature to determine the general pattern of weather that makes up an area's climate.

These studies are useful in planning heating and cooling systems, designing buildings, and aiding in effective land utilization.

For example, they may make weather forecasts for individual companies, or may work on problems such as smoke control and air pollution abatement.

About one-third of all civilian meteorologists work primarily in weather forecasting, and another one-third work in research and development.

Almost one-fifth of all civilian meteorologists are in administrative or management positions.

Some meteorologists teach or do research — frequently combining both activities — in colleges and universities.

In colleges without separate departments of meteorology, they may teach geography, mathematics, physics, chemistry, or geology, as well as meteorology.

About 5,500 persons work as meteorologists. In addition to these civilian meteorologists, thousands of members of the Armed Forces did forecasting and other meteorological work.

The largest employer of civilian meteorologists was the National Oceanic and Atmospheric Administration (NOAA), where over 1,800 worked at stations in all parts of the United States and in a small number of foreign areas.

The Department of Defense employed over 200 civilian meteorologists.

Almost 2,000 meteorologists worked for private industry. Commercial airlines employed several

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—Meteorology

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hundred to forecast weather along flight routes and to brief pilots on atmospheric conditions.

Others worked for private weather consulting firms, for companies that design and manufacture meteorological instruments, and for firms in aerospace, insurance, engineering, utilities, radio and television, and other industries.

Colleges and universities employed over 1,300 meteorologists in research and teaching. A few worked for State and local governments and for nonprofit organizations.

Although meteorologists work in all parts of the country, nearly one-fifth live in just two States — California and Maryland. Almost one-tenth of all meterologists work in the Washington, D.C. area.

A bachelor's degree with a major in meteorology is the usual minimum requirement for beginning jobs in weather forecasting.

However, a bachelor's degree in a related science or engineering, along with some courses in meteorology, is acceptable for some jobs.

For example, the Federal Government's minimum requirement for beginning jobs is a bachelor's degree with at least 20 semester hours of study in meteorology and courses in physics and mathematics, including calculus.

However, employers prefer to hire those with an advanced degree, and an advanced degree is increasingly necessary for advancement.

For research and college teaching and for many top-level positions in other meteorological activites, an advanced degree preferably in meteorology, is essential.

However, people with graduate degrees in other sciences also may qualify if they have advanced courses in meteorology, physics, mathematics and chemistry.

The Armed Services give and support meteorological training, both undergraduate education for enlisted personnel and advanced study for officers.

NOAA has a program under which some of its meteorologists attend college for advanced or specialized training.

College students can obtain summer jobs with this agency or enroll in its cooperative education program in which they work at NOAA part of the year and attend school part of the year.

In addition to helping students finance their education, this program gives them experience valuable for finding a job when they graduate.

Beginning meteorologists often start in jobs involving routine data collection, computation, or analysis.

Experienced meteorologists may advance in academic rank or to various supervisory or administrative jobs.

A few very well qualified meteorologists with a background in science, engineering, and business administration may establish their own weather consulting services.

Job opportunities for meteorologists should be favorable through the mid-1980's.

Although the number of openings created by growth in the occupation and replacement needs is not expected to be large, the number of persons obtaining degrees in meteorology also is small.

If trends in the number of degrees granted continue, the number of people seeking entry to the field will about equal requirements.

Employment in the field, as a whole, is expected to increase about as fast as the average for all occupations.

Employment of meteorologists in industry and in weather pected to grow as private industry realizes the importance of meteorology to understanding and preventing air pollution, preventing air pollution.

Many companies are also recognizing the value of having their own weather forecasting and meteorological services which can be tailored to fit their needs.

There also should be some openings in radio and television as stations increasingly rely on their own meteorologists to prepare and deliver their weather reports.

Colleges and universities will offer some job opportunities, especially for those with advanced degrees.

The employment of civilian meteorologists by the Federal Government is not expected to grow significantly, although there will be

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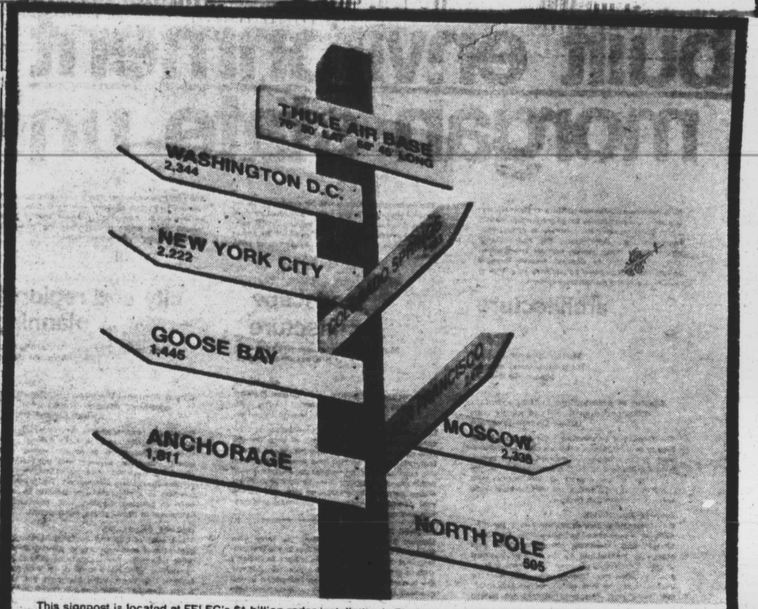

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