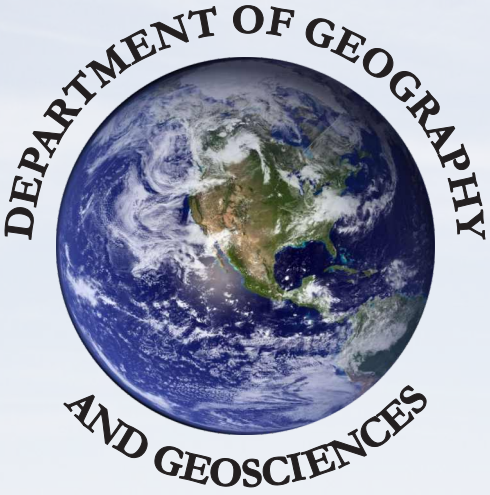


http://www.salisbury.edu/geography/

CAREERS IN GEOGRAPHY AND GEOSCIENCES: A WORLD OF POSSIBILITIES

Below is a *representative* list of the many possible career paths open to students who earn a B.S. degree in Geography or Earth Science.

Geographic Technology: Cartography, Geographic Information Systems, and Remote Sensing

Thousands of geographers have jobs involving maps. Maps are essential. They are used by planners, engineers, utility companies, state agencies, construction companies, surveyors, architects, and ordinary citizens. One of the greatest growth areas is the use of computers to generate maps and store map-related information. College geography programs provide a good background in the use of maps. Students usually will learn how to make traditional hand-drawn maps, as well as how to use a variety of sophisticated computer graphics systems to create maps. In addition, students will learn how to read and interpret maps so that they can be used effectively.

Cartographer/Computer Mapper - Cartography is the science (or art) of making maps. Though hand-drawn cartography is still prevalent, traditional drafting is being replaced rapidly by computers and graphics software, which allow maps to be created quickly and accurately. Complex maps are made with sophisticated scanning equipment, while simpler maps can be drawn on a personal computer. Generally, computer mappers begin with a grid, such as the familiar one based on latitude and longitude, to which they add such information as streets, population density, and physical features. Many cartographers are employed by the U.S. Government to make maps for various purposes. The Defense Mapping Agency has large cartography operations in St. Louis, San Antonio, and Washington, DC. The bureau of the Census collects data on the country's population, maps it and analyzes it. The U.S. Geological Survey employs people to produce topographical maps, which show terrain and key features. The private sector also employs cartographers. There are companies whose business it is to make and sell all kinds of maps, from road maps to trail maps. Other industries may have cartographers on staff to produce maps needed in their line of work.

Geographic Information Science Specialist - A geographic information system (GIS) is a computer hardware and software system that is used to store, display, analyze, and map information. Geographers, planners, land developers, real estate agents, utility companies, and municipal officials all use these systems. In fact, modern planning cannot move forward without these systems and those trained to run them. For example, a local government might use a GIS to evaluate alternative locations for roads, landfills, or other facilities. Using the GIS, such topics as population distribution, traffic movement, land availability, real estate prices, environmental hazards, soil types, and flood zones could be analyzed together to help the government make an informed choice. Jobs are available for those who like to work with computers and understand the importance of information retrieval.

Remote-Sensing Analyst - Another important area of mapping is remote sensing. This involves the interpretation of aerial photos and the analysis of satellite images. Virtually all modern maps of large areas are based in part on remote sensing, among them the land use maps used by the U.S. Geological Survey and the soil maps used by the Department of Agriculture. The Department of Defense, the State Department, and the Central Intelligence Agency employ thousands of people to interpret photos that have been taken by high-flying aircraft or satellites to determine what is going on in other countries. For example, during the Cold War, we learned a lot about crop production, military troop movements, missile launches, and nuclear testing in the Soviet Union through the work of remote-sensing analysts. Remote-sensing analysts should have training in geography and earth science and good visual skills.

Physical and Environmental Geography

Geography has a strong link to the natural sciences through physical geography and earth science. Courses that may be offered in these fields include climatology, meteorology, oceanography, geomorphology (landforms), soils, biogeography (distribution and ecology of plants), and natural resources. Courses in physical geography are important because they deal with earth processes that concern the human use of the earth. For instance, agriculture is dependent upon such physical processes as climate, weather, and the formation and erosion of soils. Physical geographers also study the impact of such natural hazards as hurricanes, tornadoes, volcanic eruptions, and earthquakes. Those with a good background in physical geography are also well prepared to deal with problems of air pollution, water pollution, and the management and disposal of solid, toxic, and hazardous wastes.

Weather Forecaster - Weather forecasting begins with a good understanding of climate, wind systems, and ocean currents. Forecasters must be familiar with local conditions and with weather events throughout the country. They study, predict, and report on everything from daily weather conditions to such dangerous phenomena as tornadoes and wind shear (updrafts and downdrafts of special importance to pilots). In addition to working for television and radio stations, weather forecasters work for the government and for large agribusiness corporations.. In addition to their background in geography, they should have studied earth science, physics, and some chemistry.

Coastal Zone Manager - The zone where land and ocean meet is critical for both humans and wildlife. Such environmentally sensitive areas as marshlands, bays, and river mouths have to adjust to the onslaughts of cities, ports, industries, roads, and thousands of pleasure-seeking tourists. Geographers can make a major contribution by helping to plan and manage the coastal zone. The job of the coastal zone manager often dovetails with the work of the oceanographer in their mutual concern for the continental shelf (the gently sloping submarine plain that borders the continent), particularly when faced with such man-made disasters as oil spills.

Environmental Manager - Environmental managers protect and conserve our natural resources. Their jobs involve the management of water; air quality; soil; energy; land reclamation; coast lands; river basins; and solid-, hazardous-, and toxic-waste disposal. Environmental managers work for governments or private industry. Many work for the federal Environmental Protection Agency or state departments of environmental protection, where they ensure adherence to the laws that keep the soil, water, and air clean. Some environmental managers work for land development companies or subdivision planners, where they prepare environmental impact statements describing how various projects would affect the natural environment.

Hydrologist - Hydrologists study sources of water and prepare plans for the wise long-term use of this critical resource. In the drier areas of the United States, the availability of water is crucial for agriculture, municipal uses, and recreation. Some of this water comes from surface sources, such as rivers and lakes, but some comes from underground aquifers (water-bearing rock strata). Even where water is not scarce, problems with groundwater contamination and flooding require the expertise of hydrologists. Hydrologists may be employed by governments at any level or in the private sector.

Outdoor Guide - Many physical geographers work as outdoor guides. Their education makes them ideally suited for this work, since they have studied all aspects of the physical environment and have usually taken related courses in biology, zoology, and environmental management. Outdoor guides must know about wildlife, landforms, climates, soils, natural vegetation, and the ways in which creatures are adapted to life in their specific habitats. Some outdoor guides lead canoe trips; others take people hiking, horseback riding in the mountains, fishing, or hunting.. Many outdoor guides work on big-game ranches, whose numbers are expanding rapidly, particularly in Texas and California.

Geoscience

Geoscientists gather and interpret data about the Earth and other planets. They use their knowledge to increase our understanding of Earth processes and to improve the quality of human life. By applying their knowledge of forces and factors that shape the Earth, geoscientists seek to reconstruct the past and anticipate the future. Their work and career paths vary widely because the geosciences are so broad and diverse. The National Science Foundation considers geology, geophysics, hydrology, oceanography, marine science, atmospheric science, planetary science, meteorology, environmental science, and soil science as the major geoscience disciplines. To the geoscientist, the Earth is an outdoor laboratory filled with opportunities to observe Earth processes in action, and many geoscientists work in the field. The following list gives a small glimpse of what geoscientists do in these disciplines and a variety of subdisciplines.

Environmental geologists study the interaction between the geosphere, hydrosphere, atmosphere, biosphere, and human activities. They work to solve problems associated with pollution, waste management, urbanization, and

Geomorphologists study Earth's landforms and landscapes in relation to the geologic and climatic processes and human activities, which form them including the physical properties and movement of glaciers and ice sheets. Geomorphologists also study natural hazards, such as flooding and erosion.

Marine geologists and oceanographers investigate the physical, chemical, biological, and geologic dynamics of oceans as well as the ocean-floor and ocean-continent boundaries. They also study the ocean basins, the continental shelves, and the coastal environments on continental borders.

Soil scientists study soils and their properties to determine how to sustain agricultural productivity and to detect and remediate contaminated soils.

Earth Science Education

Now that more and more earth science courses are being offered in high schools and colleges, the need for qualified earth science teachers has risen dramatically. Courses are geared to state curriculum requirements in earth science and normally include a selection of physical science courses, such as geology, meteorology, oceanography, hydrology, chemistry, and computer science as well as some geography courses. While teaching is not the highest-paid profession, there are numerous benefits, including time off for travel or professional development and the understanding that you are making a real difference in the lives of young people.

Economic Geography

Economic geography is concerned with the location and distribution of economic activity. It focuses on the the location of industries and retail and wholesale businesses, on transportation and trade, and on the changing value of real estate. Courses in economic geography may cover such topics as transportation, agriculture, industrial location, world trade, and the spatial organization and function of business activity. Students who have a strong interest in economic geography will be likely to see global interdependence as a focus of their academic program.

Location Expert - Economic geography provides a good background for this, since geographers know about demographics (the statistical characteristics of populations, such as age and income), transportation, availability of labor, shopping habits, and how cities expand. Location experts are employed by firms that assess location needs for clients. Some large companies employ their own location experts.

Market Researcher - Businesses need to know which products will sell, where they sell best, to whom they will sell, and why. Market researchers provide this information by studying buying habits, regional sales characteristics for certain products, and customer preferences. There is a large industry of market research firms employing many people. Marketing departments within companies also conduct market research.

Real Estate Agent/Broker/Appraiser - Geographers are particularly well equipped to evaluate the price of land or real estate. They are aware of the impact on value of zoning, available municipal services, transportation, environmental features, and potential return on the investment. Jobs are available in local and national real estate agencies, relocation companies, companies that relocate many of their own employees, appraisal firms, developers, and banks.

Urban & Regional Planning

Geographers often work as planners to ensure that communities develop in an orderly way, along with the services necessary to support them. Planners must be able to develop building plans for subdivisions and housing projects. They need to understand all factors that affect the value of land and real estate. Planning is a rapidly expanding field, and geographers are filling a great many jobs. Planning courses teach students how to prepare master plans that will benefit neighborhoods, communities, cities, and regions. Other topics include resource planning, land-use planning, and the delivery of municipal services (which involves the planning of police patrol routes, the location of firehouses and emergency medical services, and ways of making school bus routes shorter and more efficient).

Urban and Community Planner - Urban and community planners work to make cities pleasant and attractive places in which to live and work, taking into account zoning, traffic patterns, building density, recreational facilities, and the management of waste materials and water. They try to organize streets and the flow of traffic to avoid congestion. They try to plan for recreation so that everyone will have access to parks and open spaces. Planners work closely with builders to make sure that cities develop within the limits of the master plan. They need lots of geographical information to do all this. Most planners have bachelor's or higher degrees, and some have to pass a national exam.

Transportation Planner - Transportation has become a major problem in ever large urban area in the world. Transportation planners try to balance the use of private vehicles with the use of public transportation by developing multimodal systems that utilize cars, buses, commuter trains, subways, and even streetcars and helicopters.

Health Services Planner - Health services planners perform a wide variety of tasks relating to the delivery of health services. For example, they help determine the best location for new hospitals, community health centers, and clinics. Some health services planners work to determine the best garage sites for ambulances or emergency medical service vehicles. Still others help decide in which hospitals vital services should be offered to make service availability as efficient as possible. These planners work closely with doctors and hospital administrators.

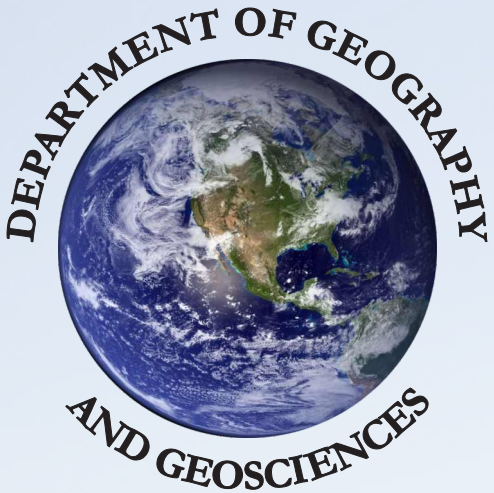
Regional and Human Geography

Students in this field study major regions of the world, such as Latin America, Europe, and Asia. They become area experts and come to understand the way of life in particular countries. They may also focus on aspects of geography that relate to different cultures, with an emphasis on cultural origins and movement and the cultural characteristics of regions (e.g., language, religion, ethnicity, politics, historical development, agricultural methods, settlement patterns, and quality of life). They often complement their major courses in a foreign language, anthropology, history, economics, or comparative political systems. Having done so, they bring real expertise and understanding to issues of U.S. foreign policy and to international business.

Community Developer - Many communities have drawn up plans for the redevelopment of their town centers, often with federal assistance. These areas are being rebuilt with an eye to history: research into the earlier nature of the downtown area is carried out, and that architectural and economic information is then woven into the development plan. Redevelopment programs, among them a very promising one called Main Street, U.S.A., use the expertise of geographers, historians, politicians, economists, and business people.

Area Specialist - Area specialists study specific countries or areas of the world. This type of job generally requires a good knowledge of the appropriate language and a thorough understanding of the culture and daily life of the area's inhabitants. Typically, an area specialist might be employed be a U.S. government agency, such as the State Department or the Central Intelligence Agency. Area specialists collect information from newspapers, radio broadcasts, television news shows, magazines, government documents, aerial photos, and the reports of intelligence agents.

This information was excerpted from the websites of the American Association of Geographers (www.aag.org) and the American Geological Institute (www.agiweb.org).



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CAREERS IN GEOGRAPHY AND GEOSCIENCES: OUR ALUMNI SUCCESSES

Alumni of the Department of Geography and Geosciences have enjoyed great success in the workplace and in graduate school upon graduation from Salisbury University. ***The employment rate for SU Graduates of the Department of Geography & Geosciences is one of the highest in the University.***

The Firms/agencies employing geographers and geoscientists are varied and numerous. Government at all levels is a major employer of geographers and geoscientists. At the Federal Level geographers and geoscientists work at:

The Department of State
The Central Intelligence Agency
The Department of Agriculture
The Corps of Engineers
The U.S. Geological Survey
The Bureau of the Census
The Defense Mapping Agency
Defense Intelligence
The Environmental Protection Agency
The National Oceanic and Atmosphere Administration
The Federal Aviation Administration
Naval Intelligence
Library of Congress
The Department of the Interior
National Park Service
Department of Defense
Federal Emergency Management Agency

At the State and Local Levels, geographers and geoscientists work at:

Departments of Transportation
Departments of Tax Assessment
Departments of Planning & Zoning
Departments of Natural Resources
Departments of Agriculture
Departments of Education
Departments of Recreation
Departments of Health
Departments of Economic/Community Development
Parks Departments
Departments of Sanitation
Departments of Public Services
Departments of the Environment
Departments of Tourism

In the private sector geographers and geoscientists are employed by a wide variety of businesses including:

Major Retail Stores & Restaurants (chains)
Leisure Resorts
Architectural and Engineering Firms
Travel Agencies
Toxic Waste Disposal Firms
Utility Companies
Real Estate Developers
Trucking Firms
Real Estate Agencies
Railway Companies
Environmental Planners
Airlines
Environmental Impact Assessment Companies
Map Publishers
Surveying and Marketing Companies
Radio & Television Stations
Multi-national corporations
Consulting Companies

Graduates of the SU Department of Geography & Geosciences have been accepted and granted graduate assistantships/fellowships which pay their fees and tuition and a salary at the following universities:

University of Alabama
University of Tennessee
University of Georgia
University of Florida
Clemson University
University of Miami
University of Michigan
Texas A & M University
University of Pennsylvania
Memphis State University
University of South Carolina
University of Maryland,College Park
Kent State University
George Mason University
Clark University
East Carolina University
University of Massachusetts
Mississippi State University
Old Dominion University
Virginia Commonwealth University
Virginia Polytechnic University
University of Akron
Indiana University of Pennsylvania
Indiana State University
Appalachian State University
West Virginia University
University of Nebraska, Lincoln
University of Nebraska, Omaha
University of California, Santa Barbara
Florida State University
University of North Carolina, Chapel Hill
Rutgers University
Salisbury University
Shippensburg University of Pennsylvania
Temple University
University of North Carolina, Charlotte
SUNY Binghamton
University of Wisconsin-Milwaukee
University of Mississippi
Northern Illinois University
University of Kansas
Penn State University
University of Delaware

Employment positions held by alumni of the Department of Geography & Geosciences include:

Diplomatic Courier, U.S. Department of State
Planner & Grants Coordinator, Wicomico Co., Maryland
Planner, Wicomico County, Maryland (four alumni)
Cartographer, Defense Mapping Agency, D.C. (multiple alumni)
Geography Teacher (multiple alumni)
Earth Science Teacher (multiple alumni)
Planning Consultant; Redman/Johnston Association, Easton, Maryland
Broadcast Meteorologist (multiple alumni)
Manager, Transportation Bureau of Baltimore
GIS specialists, Greenhorne and O'Mara, Laurel, MD (multiple alumni)
Preservation Planner, Charleston Co., South Carolina
Cartographer, Central Intelligence Agency (4 alumni)
Market Development Manager, EI Dupont Co., Columbia, Maryland
Engineer, Wicomico County Roads Division
Professor, Prince Georges Community College
Director of Planning, Nags Head, South Carolina
Meteorologist, The Weather Channel, Atlanta, Georgia
Pilot, Northwest Airline
Surveyor, Maryland Department of Natural Resources
Systems Analyst, Mattel Inc., California
Cartographers, Dewberry Davis, Annapolis & Fairfax, Virginia
Department Manager, Sears Roebuck, Salisbury
Representative, U.S. Public Health Service, D.C.
Planning Director, Cecil Co., Maryland
Recreation planner, Maryland State Department of Planning
Soil Conservationist, Maryland Department of Soil Conservation, Wicomico, County, Maryland
Soil Conservationist, Maryland Department of Soil Conservation, Dorchester County, Maryland
Soil Conservationist, Maryland Department of Soil Conservation, Somerset County, Maryland
Real Estate Agent/Investor, Honolulu, Hawaii
Planner, Frederick County, Maryland
Environmental Consultant, Point of Rocks, Maryland
Planner, Town of Easton, Maryland
Planner, Queen Anne County, Maryland
Planner/GIS Specialist, Worcester County, Maryland
Operations Engineer, Intergraph Corporation, Bethesda, MD
Supervisor, Cartographic Standard Div. Federal Aviation Administration
Graphics Programmer, NASA-Wallops Island, VA
Analysts, Naval Intelligence, D.C. (multiple alumni)
Analyst, G.P. Taurio Co., Fort Washington, MD
Analyst, Defense Intelligence, D.C.
Cartographer, U.S. Bureau of the Census, D.C. (3 alumni)
Real Estate Broker, Owings Mills, MD
Police, Maryland Department of Natural Resources (3 alumni)
Agent, University of Delaware Extension Service, Kent Co., Delaware
Planner, Bartlett, Illinois
Photogrammetrist, Defense Department, Reston, VA
Instructor, Radford University, Radford, VA
Assistant Professor, Auburn University, Auburn, Alabama
Associate Professor, Salisbury University
Professor, Salisbury University
Assistant Professor, University of Alabama
Associate Professor, Shippensburg University, PA
Research Analyst, Dept. of Defense, D.C.
Earth Science Teacher, St. Francis School, Salisbury
Director of Property Acquisitions, Anchor Capital Group, Pasadena, MD
Assistant Director of Planning, Talbot County, MD
Captain, District of Columbia Fire Dept.
Social Science Teacher, Worcester Co., MD
Instructor, Genesee Valley Outdoor Learning Center
Attorney, Baltimore, MD
Computer Analyst, Department of the NavyNaval Weapons Analyst, Naval Tech. Intelligence
Planner, Virginia Beach, VA
Sales Representative, Mobile Chemical Corp., Dallas, TX
Planner, Gainesville, Florida
Economic Development Planner, Knoxville, TN
Lieutenant, U.S. Army, U.S. Marine Corps
Analyst, Arinc Research Corp., Lothian, MD
Dockage Manager, Oxford, MD
Planner, Dorchester Co., MD
Environmentalist, Target Environmental Co., Columbia, MD
Environmental Technician, Earth Engineering & Sciences, Inc., Baltimore
Design Consultant - Redi-Truss, Inc., Salisbury
Planner, LaGrange, GA
Planner, Maryland State Dept. of Planning, Salisbury
Free Lance Designer/Planner, Salisbury
Tax Assessor, Caroline Co., MD
Intelligence Research Specialist, Naval Maritime Intelligence Ctr.
Senior Project Engineer, F.M.C. Corporation, Denville, NJ
Instructor, Flager college, St. Augustine, FL
Urban Planner, Harland Bartholomew, Assoc., Richmond, VA
Survey Technician, Johnson, Mermeran & Thompson, PA, Sparks, MD
Planner/GIS Specialist, Anne Arundel County, MD
Assistant State Climatologist, GA
Engineering Program Manager, Advanced Communications Systems, Fairfax, VA
Captain/pilot, Hawaii air National Guard
GIS/Image Specialist, 3D Incorporated, Easton, MD
Project Manager, Bauch, Walls, and Lane Engineering Firm, Easton, MD
Design Engineer, MK Enterprises, Silver Spring, MD
Surveyor, Fox & Associates, Hagerstown, MD
Cartographer, Maryland Dept. of Natural resources
Meteorologist/Forecaster, NOAA/National Weather Service
Plans Examiner, City of Salisbury, MD
Executive VP, Bount County Chamber of Commerce, Maryville, TN
Environmental Protection Specialist, Aberdeen Proving Ground, MD
Trooper, Maryland State Police, Berlin, MD
Cartographer/GIS specialist, Computer Sciences Corp., Wallops Island, VA
Photogrammetrist, 3D Incorporated, Easton, MD
Economic Development Coordinator, Talbot County, MD
Director of Planning, Clarendon County, SC
Department Operations Engineer, Defense Mapping Agency, Bethesda, MD
Senior Planner, Charles County, MD
Planner, Charles County, MD
GIS Research Specialist, Hughes, STX Goddard Space Flight Center, Greenbelt, MD

For more alumni info, go to:
http://www.salisbury.edu/geography/sugaa/welcome.htm