

2001

**Report on the Status of Academic
Geoscience Departments**



American Geological Institute

Participating Institutions

Acadia University
University of Akron
University of Alabama
University of Alaska Anchorage
University of Alaska Fairbanks
University of Alberta
American Museum of Natural History
American River College
Amherst College
Anoka-Ramsey Community College
Appalachian State University
University of Arizona
Arizona State University
University of Arkansas at Little Rock
Arkansas Tech University
Auburn University
Baldwin-Wallace College
Ball State University
Baylor University
Bellevue University
Beloit College
Bentley College
Berea College
Bloomsburg University
Boise State University
Boston College
Boston University
Bowdoin College
Bowling Green State University
Brevard College
Brigham Young University
Brigham Young University-Idaho
University of British Columbia
Brock University
Brooklyn College (CUNY)
Brown University
Bryn Mawr College
Bucknell University
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of California, Riverside
University of California, Santa Barbara
University of California, Santa Cruz
California Institute of Technology
California Lutheran University
California Polytechnic State University
California State Polytechnic University,
Pomona
California State University, Chico
California State University, Fresno
California State University, Fullerton
California State University, Hayward
California State University, Los Angeles
California State University, Northridge
California State University, Sacramento
California State University, San Bernardino
California State University, Sonoma
California University of Pennsylvania
Calvin College
Cambrian College of Applied Arts & Tech.
Carleton University
Carnegie Institution of Washington
Case Western Reserve University
Centenary College of Louisiana
Central Michigan University
Central Washington University
Chapman University
College of Charleston
City College of San Francisco
Clarion University
Clemson University

Cleveland Museum of Natural History
Cleveland State University
Coker College
Colby College
Colorado College
University of Colorado
Colorado School of Mines
Colorado State University
Columbia University
Columbus State University
Concord College
Concordia College
University of Connecticut
Cornell College
Cornell University
Dalhousie University
University of Delaware
Delta College
Denison University
University of Denver
Denver Museum of Nature and Sci.
DePauw University
Desert Research Institute
Dickinson College
Dine College - Shiprock
Drexel University
Duke University
East Carolina University
East Georgia College
Eastern Connecticut State University
Eastern Kentucky University
Eastern Michigan University
Eastern Oregon University
Eastern Washington University
Eckerd College
Edinboro University of Pennsylvania
Elizabeth City State University
Fairleigh Dickinson University
Ferris State University
University of Florida
Florida Institute of Technology
Florida International University
Florida State University
Fort Lewis College
Franklin & Marshall College
Fresno City College
Furman University
Georgia Perimeter College
Georgia Southern University
Georgia Southwestern College
Glenville State College
Grand Valley State University
University of Guelph
Guilford College
Gustavus Adolphus College
University of Hawai'i at Manoa
Holy Cross College
University of Houston
Hunter College (CUNY)
Idaho State University
University of Illinois at Chicago
University of Illinois at Urbana-
Champaign
Indiana State University
Indiana Univ./Purdue Univ., Fort Wayne
Indiana Univ./Purdue Univ., Indianapolis
University of Iowa
Iowa State University of Sci. & Tech.
Jacksonville University
The Johns Hopkins University
Juniata College
University of Kansas

Kean University
Kent State University
University of Kentucky
Kutztown University of Pennsylvania
La Salle University
Lakehead University
Laurentian University
Lawrence University
Lehigh University
University of Lethbridge
Lewis-Clark State College
Los Angeles County Museum of Natural
History
University of Louisiana at Lafayette
Louisiana State University
University of Louisville
University of Maine
Manitoba Museum of Man & Nature
Mansfield University
Marshall University
Mary Washington College
University of Maryland
University of Massachusetts
McGill University
McMaster University
Memorial University of Newfoundland
University of Memphis
Meramec Community College
Mesa State College
University of Miami
Miami University
University of Michigan
Michigan State University
Michigan Technological University
Middle Tennessee State University
Middlebury College
Millersville University
University of Minnesota, Duluth
University of Minnesota, Morris
University of Minnesota, Twin Cities
Minnesota State University
Minot State University
University of Mississippi
Mississippi State University
University of Missouri, Columbia
University of Missouri, Kansas City
University of Missouri, Rolla
University of Montana
University of Montana-Western
Montana State University
Montana Tech of the Univ. of Montana
Moravian College
Mount Allison University
Mount Holyoke College
Mount San Antonio College
Mount Union College
Murray State University
Muskegon Community College
Muskingum College
Naval Postgraduate School
University of Nebraska, Lincoln
University of Nebraska, Omaha
University of Nevada, Reno
University of New Brunswick, St. John
University of New Hampshire
New Jersey City University
University of New Mexico
New Mexico Institute of Mining & Tech.
New Mexico State Univ., Las Cruces
University of New Orleans
New York University
Nichols College

University of North Alabama
University of North Carolina, Asheville
University of North Carolina, Chapel Hill
University of North Carolina, Charlotte
University of North Carolina, Wilmington
North Carolina State University
University of North Dakota
North Dakota State University
University of North Texas
Northeastern University
Northeastern Illinois University
Northeastern State University
Northern Arizona University
University of Northern Colorado
Northern Illinois University
University of Northern Iowa
Northwest Missouri State University
Northwestern University
Northwestern State University
Norwich University
University of Notre Dame
Oberlin College
Odessa College
Ohio University, Athens
Ohio State University
Ohio Wesleyan University
Oklahoma State University
Old Dominion University
Olivet Nazarene University
University of Oregon
Oregon State University
University of the Pacific
Pacific Lutheran University
University of Pennsylvania
Pennsylvania State University, Altoona
Pennsylvania State University, Hazleton
Pennsylvania State University, University Park
University of Pittsburgh
University of Pittsburgh at Bradford
University of Pittsburgh, Johnstown
Plattsburgh State University (SUNY)
Plymouth State College
Portland State University
Princeton University
Purdue University
Radford University
Rensselaer Polytechnic Institute
Rice University
University of Rochester
Royal Ontario Museum
Saint Cloud State University

Saint Louis University
Saint Norbert College
Saint Petersburg Junior College
San Antonio College
San Diego State University
San Francisco State University
San Jose State University
Shawnee State University
Shorter College
Simon Fraser University
College of the Siskiyous
Slippery Rock University
Smith College
Smithsonian Institution/National Air & Space Museum
Smithsonian Institution/National Museum of Natural History
University of the South
University of South Dakota
South Dakota School of Mines & Tech.
South Dakota State University
University of South Florida, Saint Petersburg
University of South Florida, Tampa
Southeast Missouri State University
Southern Arkansas University
University of Southern California
Southern Connecticut State University
University of Southern Maine
Southern Methodist University
University of Southern Mississippi
Southwestern Oregon Community College
Stanford University
Stephen F. Austin State University
Sul Ross State University
SUNY at Albany
SUNY at Buffalo
SUNY at Stony Brook
SUNY, College at Brockport
SUNY, College at Buffalo
SUNY, College at Geneseo
SUNY, College at Potsdam
Syracuse University
Tarleton State University
University of Tennessee, Knoxville
University of Tennessee, Martin
Tennessee Technological University
University of Texas at Arlington
University of Texas at Austin
University of Texas at Dallas
University of Texas at El Paso

University of Texas at San Antonio
Texas A&M University
Texas Christian University
Texas Tech University
University of Toronto
Trinity University
Tufts University
University of Tulsa
Ulster County Community College
United States Military Academy
United States Naval Academy
University of Utah
Valdosta State University
Vanderbilt University
Vassar College
University of Vermont
University of Victoria
Virginia Polytechnic Inst. & State Univ.
Washington University
University of Washington
Washington State University
University of Waterloo
Wayne State University
Weber State University
Wellesley College
Wesleyan University
West Chester University
State University of West Georgia
Western Kentucky University
University of Western Ontario
Western State College of Colorado
Western Washington University
Wheaton College
College of William and Mary
Williams College
University of Windsor
University of Wisconsin-Eau Claire
University of Wisconsin-Extension
University of Wisconsin-Madison
University of Wisconsin-Milwaukee
University of Wisconsin-Oshkosh
University of Wisconsin-River Falls
University of Wisconsin-Stevens Point
Wittenberg University
Woods Hole Oceanographic Institution
The College of Wooster
Worcester State College
York College of Pennsylvania
York University

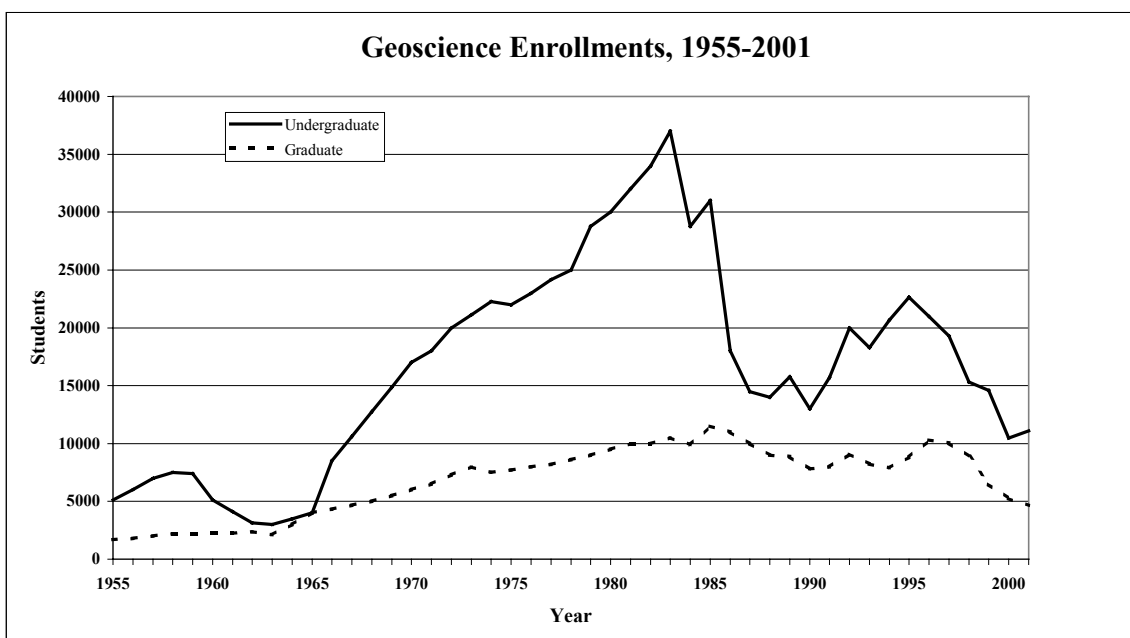
2001 Report on the Status of U.S. Academic Geoscience Departments Selected Results

The 2001 Report focuses on responses received from 347 (46%) of 755 U.S. degree-granting departments of geoscience. Additional data from three AGI sources—*Directory of Geoscience Departments*, GeoRef Information Services, and *Demographic and Compensation Survey of North American Geoscientists, 2000*—have also been used to analyze the following report topics: geoscience enrollments and degrees granted, employment trends of recent graduates, faculty ranks, faculty teaching specialties, geoscience theses and dissertation topics, research funding support, geoscience employment by employer category, age distribution, and gender distribution.

Geoscience Student Enrollments

Since 1952, AGI has tracked geoscience student enrollment patterns. The steady climb to the highest enrollment levels (1965 to 1983) was due in large part to the tremendous and stable growth that occurred in the petroleum sector. From that 1983 peak, enrollment levels have gone through a net decline, with mixed enrollment rises and declines, and—more recently—a continued decline from 1996 to 2000. From 1983 to 2000, there has been a 66.8% decline in geoscience enrollments. In 2001, there was a slight increase in undergraduate enrollments over 2000 levels, from 10,473 to 11,104—a 6% increase (see Figure 1). However, there was a decrease in graduate enrollments, from 5,254 to 4,622—a 12% decrease. Total enrollments remained about the same from 2000 to 2001.

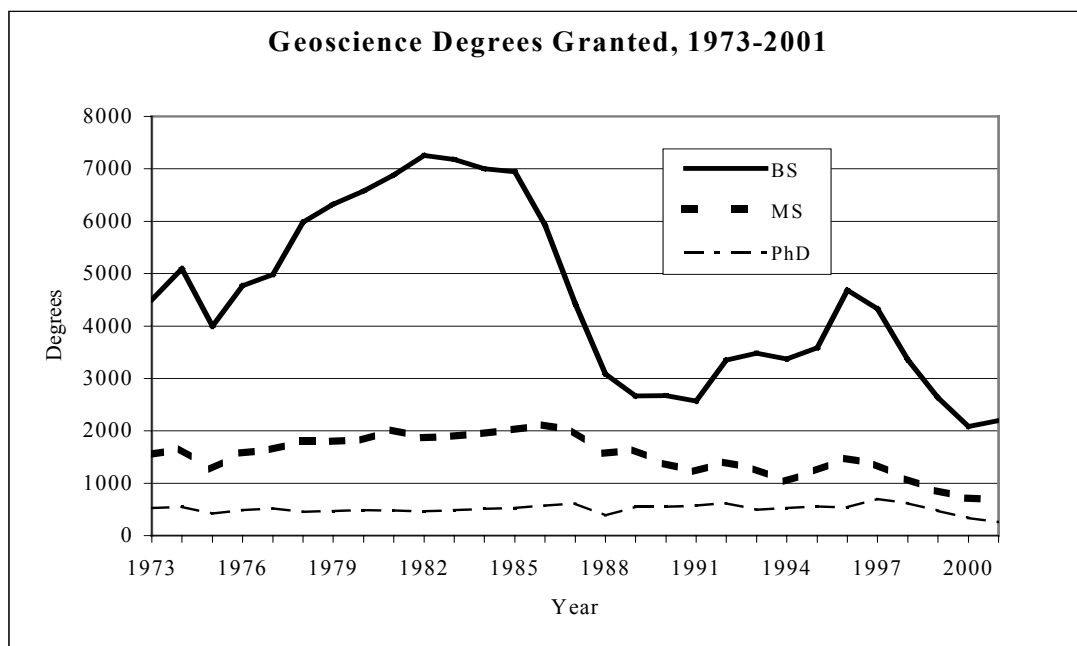
Figure 1



The number of undergraduate geoscience degrees awarded has predictably followed a similar pattern. However, graduate enrollments and graduate degrees granted have been

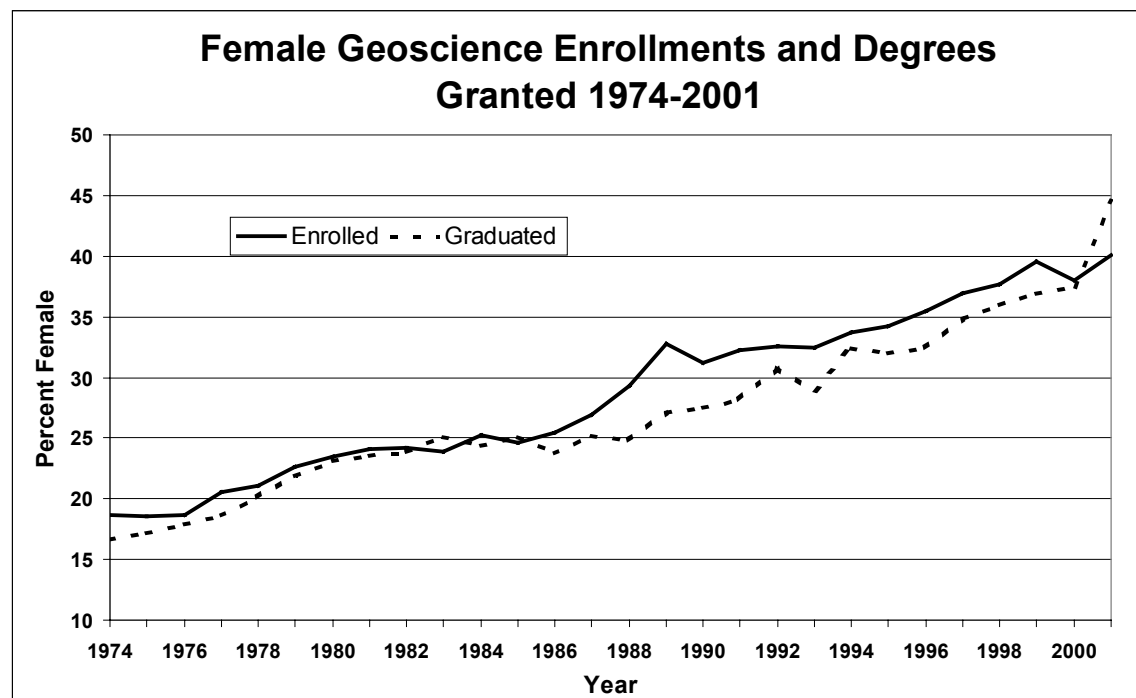
relatively stable over the years, in marked contrast to the volatility of undergraduate enrollments and degrees granted. There was a decrease in degrees awarded between 1999 and 2001, from 3,783 to 3,139—a 17% decrease (see Figure 2).

Figure 2



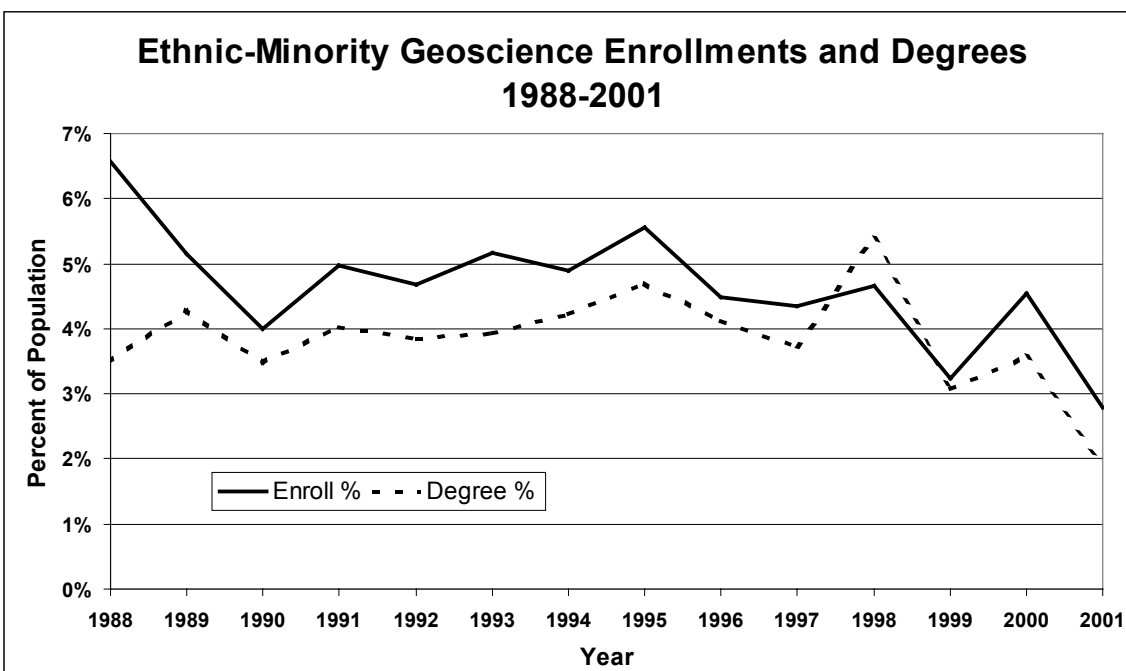
Enrollment of women in the geosciences has steadily increased over the past 20 years, although the levels of participation have not attained total parity with the general population. In 2001, enrollments and degrees granted increased for women (see Figure 3).

Figure 3



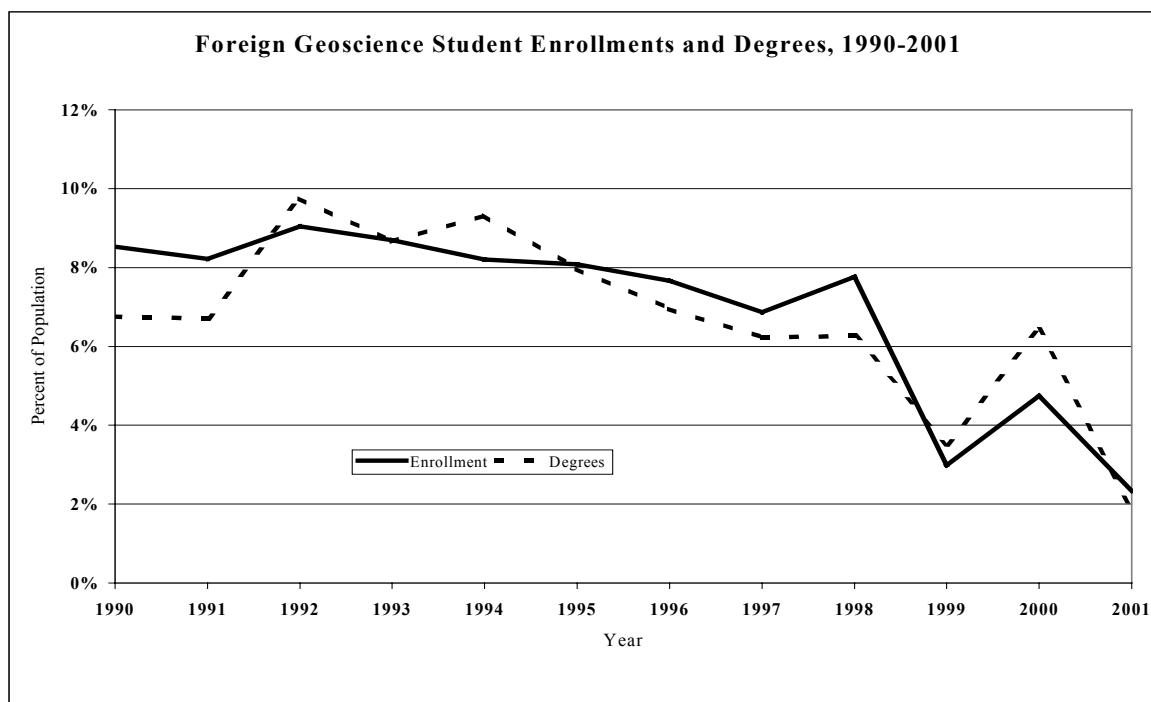
In the 1990s, ethnic-minority geoscience student participation has generally remained constant. From 1988 to 2001, however, there has been a marked decrease (see Figure 4).

Figure 4



Foreign-student participation in geoscience enrollments and degrees granted has generally been on the decline since 1992 (see Figure 5). Foreign students by far are more prevalent at the graduate level and in receiving graduate degrees.

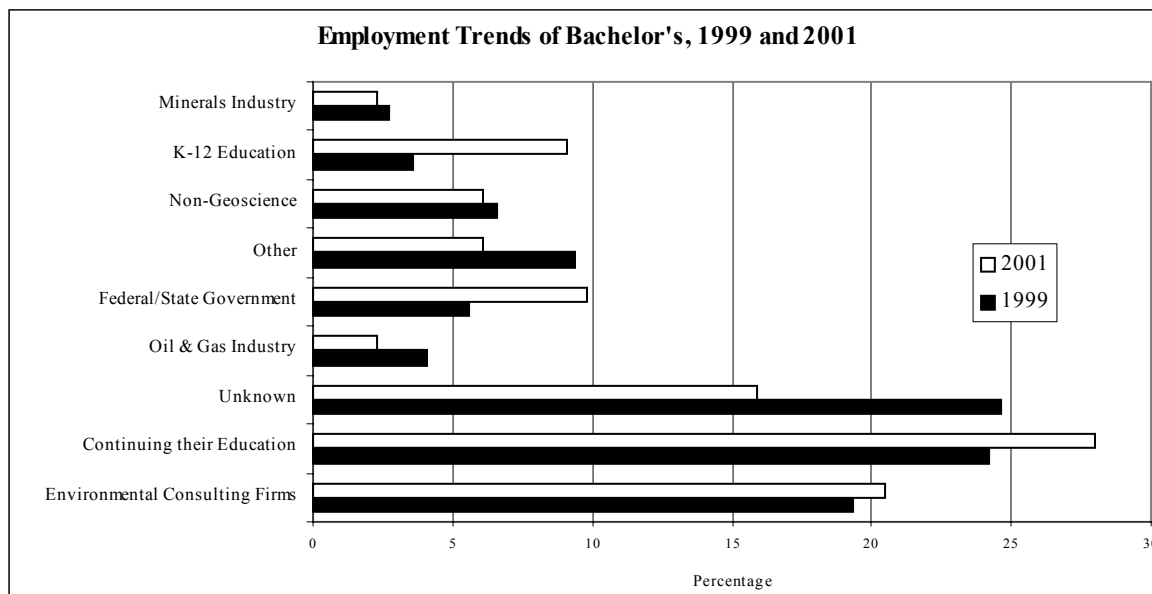
Figure 5



Employment

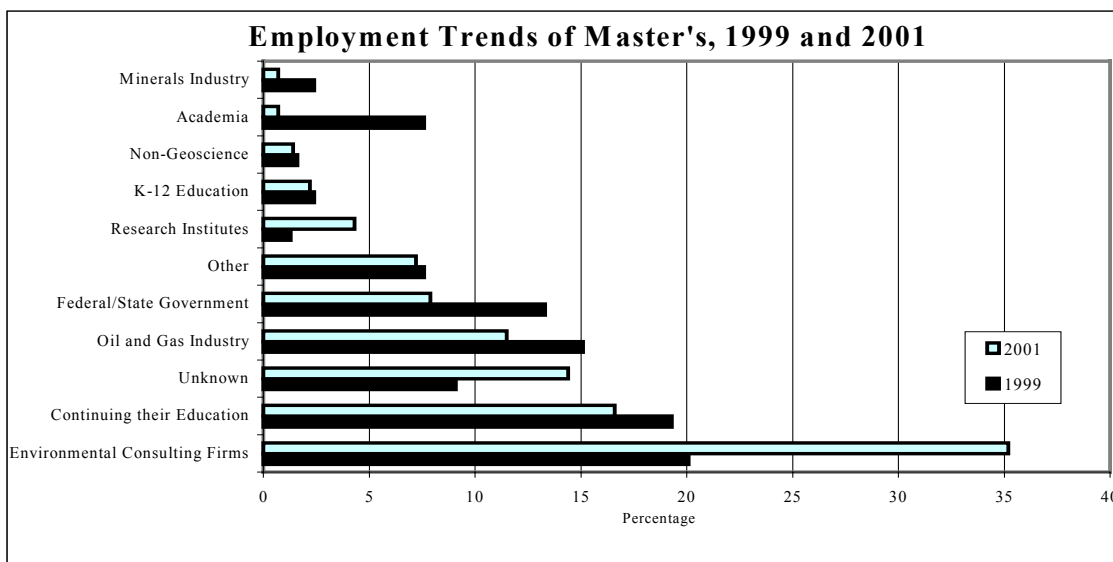
Due to a lower response rate by departments reporting on their students' post-graduation plans, the apparent changes between 1999 and 2001 should be viewed cautiously. The trends, however, indicate reasonable tendencies. There was a slight decrease in the percentage of bachelor's graduates finding work in the oil and gas industry, but increases in K-12 education and federal and state government. Those continuing their education absorbed the largest percentage of bachelors, followed by environmental consulting (see Figure 6).

Figure 6



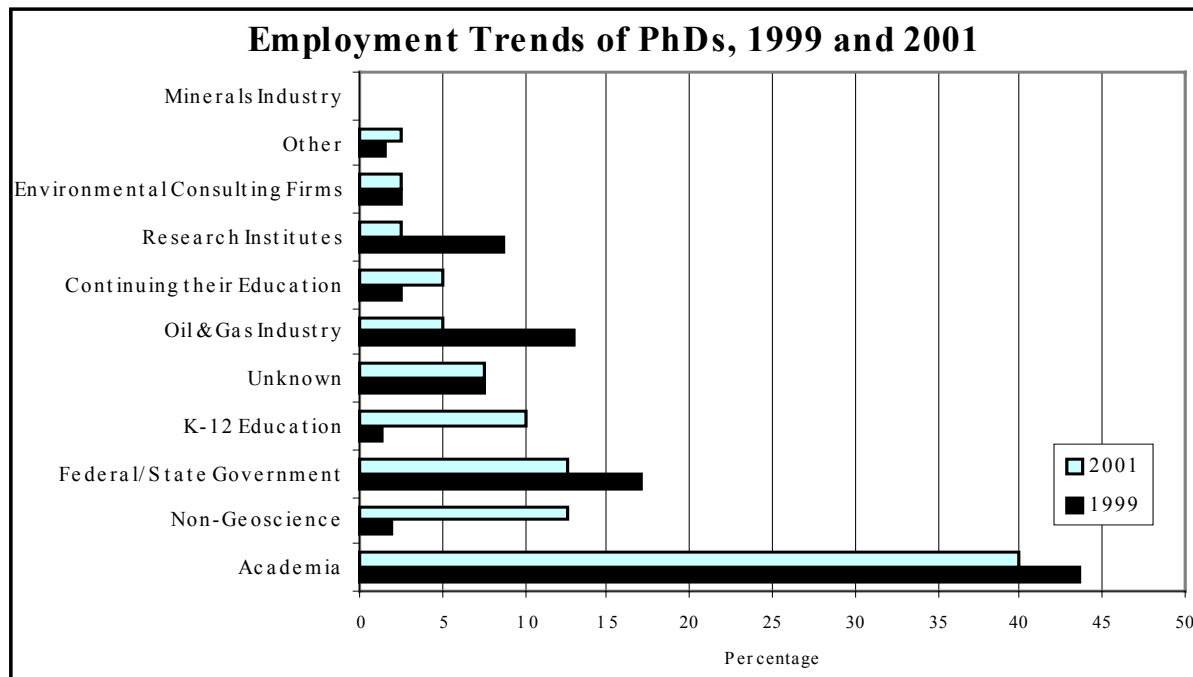
Similarly, there was an increase in the percentage of master's graduates who went into environmental consulting. Decreases should be noted in the oil and gas industry and federal and state government. Of particular interest is the decline in those pursuing a higher degree (see Figure 7).

Figure 7



An increase was seen in the percentage of PhDs going into K-12 education. Also of note is the increased percentage of PhDs who found work in non-geoscience fields. Decreases occurred in the percentage going to the oil and gas industry, research institutes, federal and state government, and academia (see Figure 8).

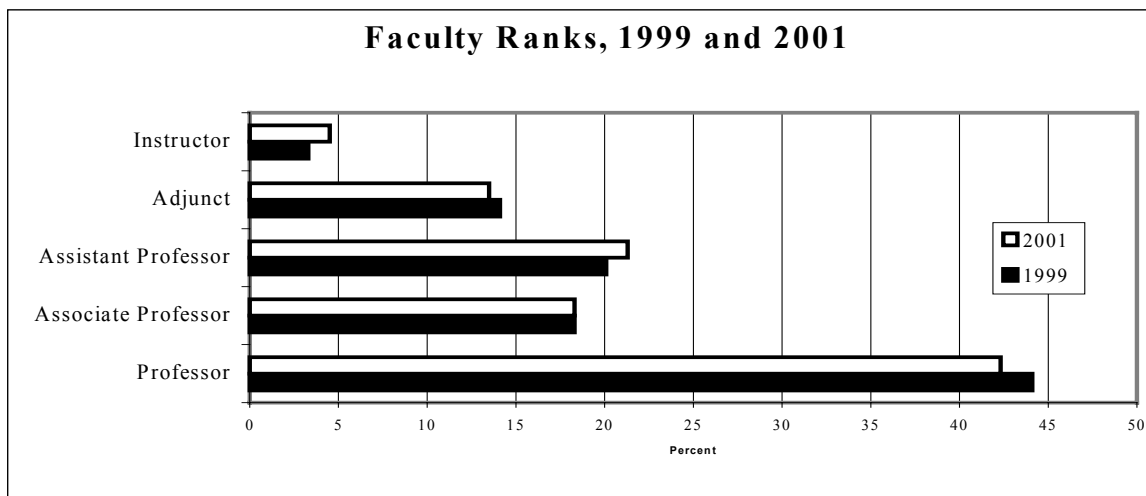
Figure 8



Faculty Ranks

There appear to be no significant changes in the faculty rank distributions, with only slight increases at the instructor and assistant-professor levels and a slight decrease among professors and adjunct appointments (see Figure 9).

Figure 9



Faculty Teaching Specialties

Faculty teaching specialties change only gradually from year to year. Over a greater period of time, however, more interesting changes can be seen. Figures 10 and 11 show how the faculty teaching specialties have changed from 1989 to 2001, as indicated in the 28th and 40th editions of the Directory of Geoscience Departments.

Figure 10

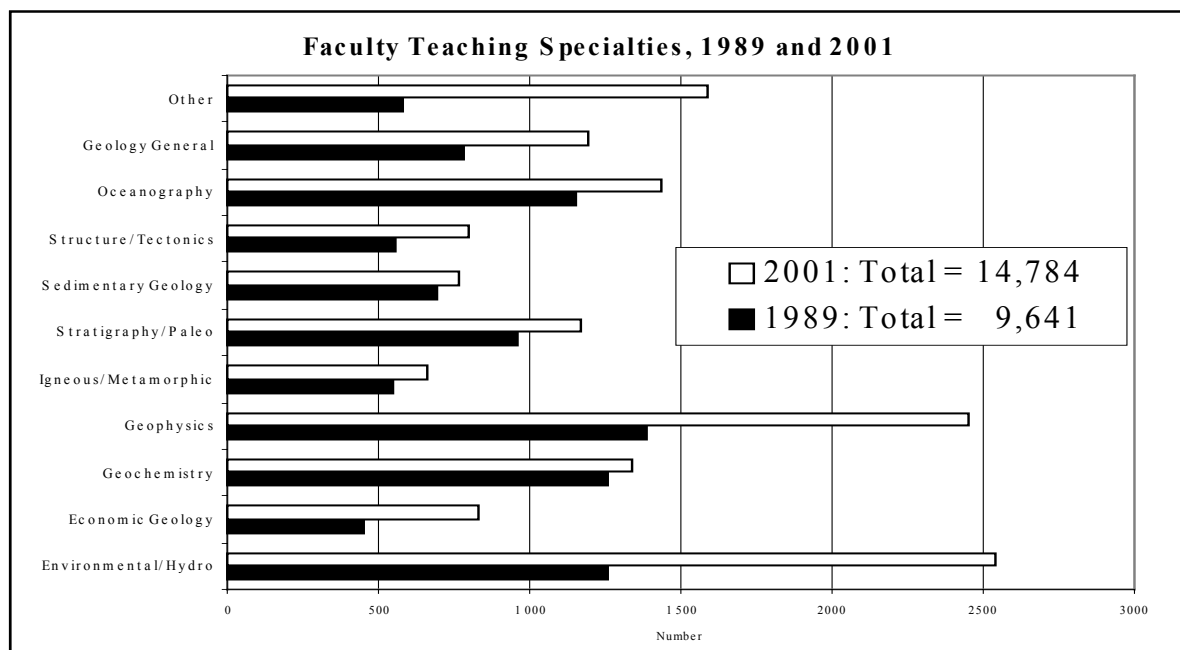
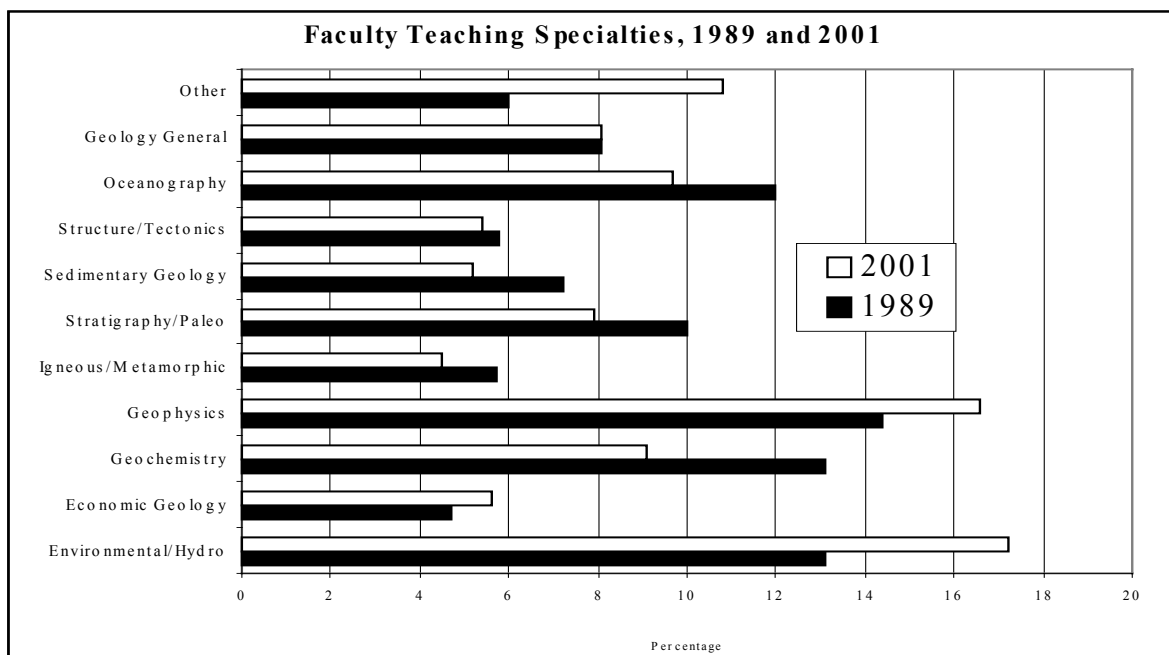


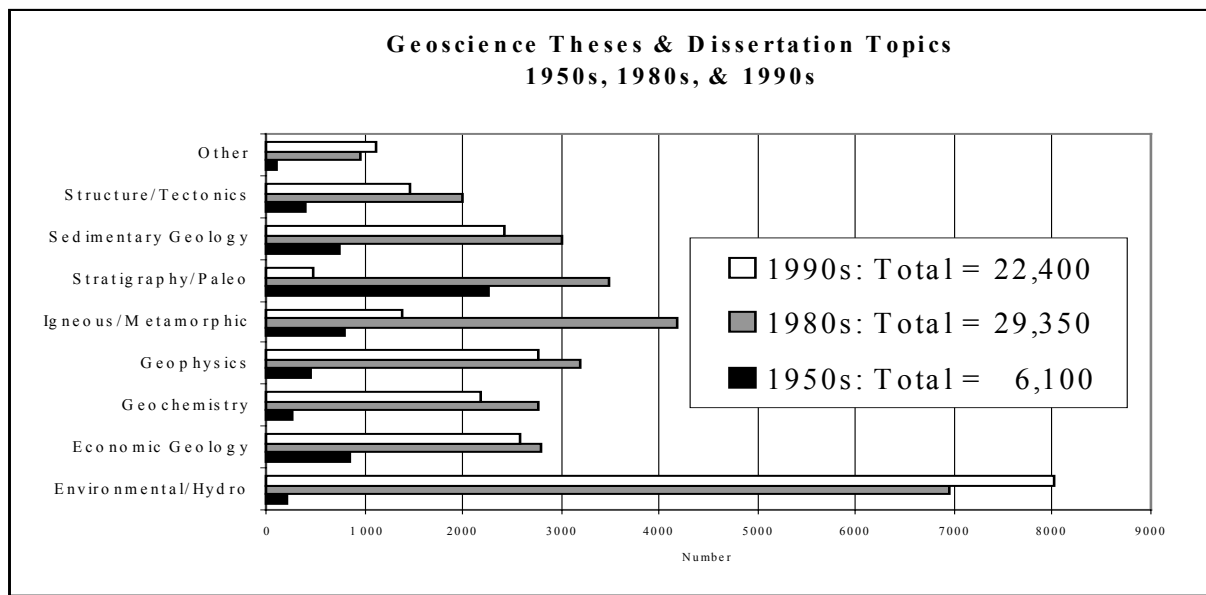
Figure 11



Geoscience Theses and Dissertation Topics

Another measure of academic changes over time is a comparison of geoscience theses and dissertation topics. AGI's GEOREF Information Services has compiled the numbers of master's theses and PhD dissertation topics since the 1950s. Figure 12 compares those numbers and topics for the 1950s, 1980s, and 1990s.

Figure 12



Research Support

Research funding support fell in all categories from 1999 to 2001 (Figure 13). Note, however, how the percentages of funding support changed as well (Figure 14).

Figure 13

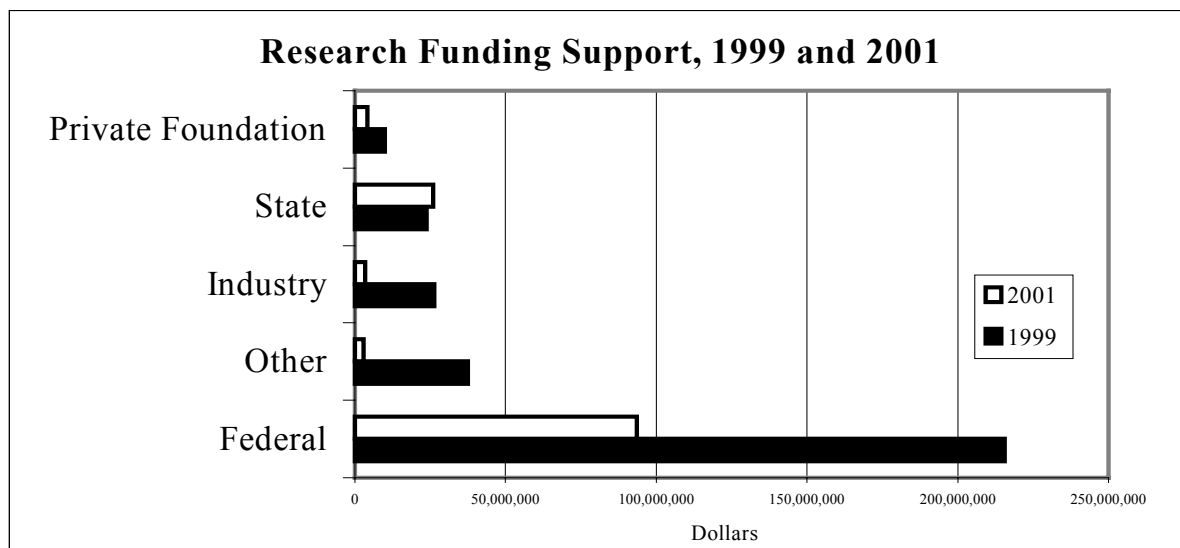
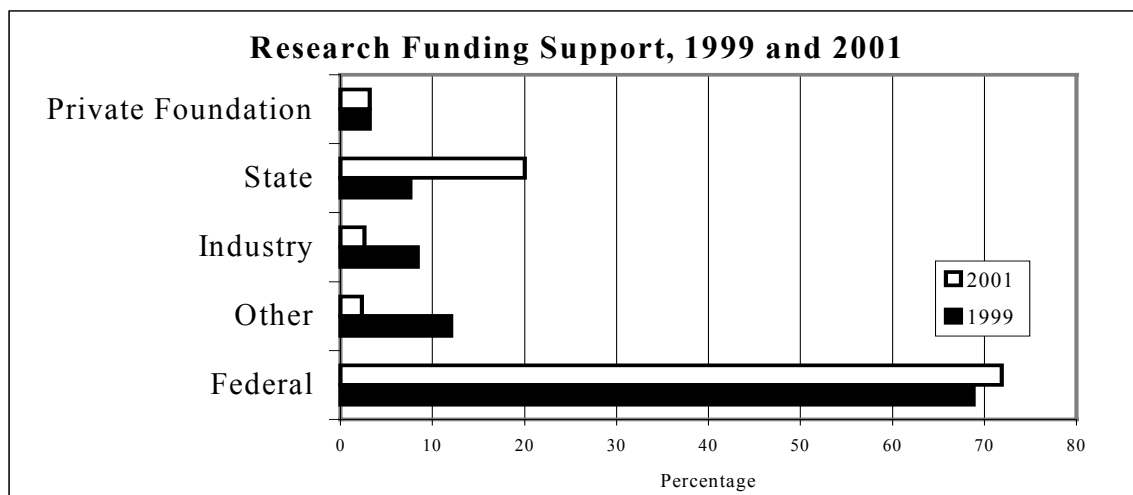


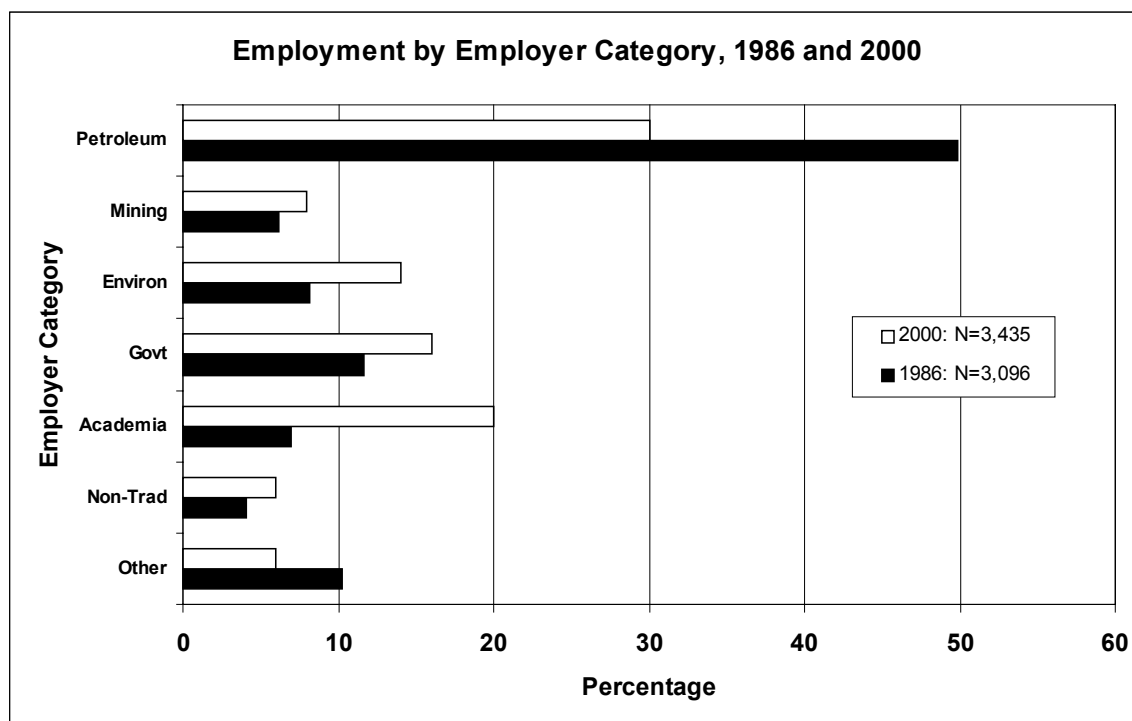
Figure 14



Addendum

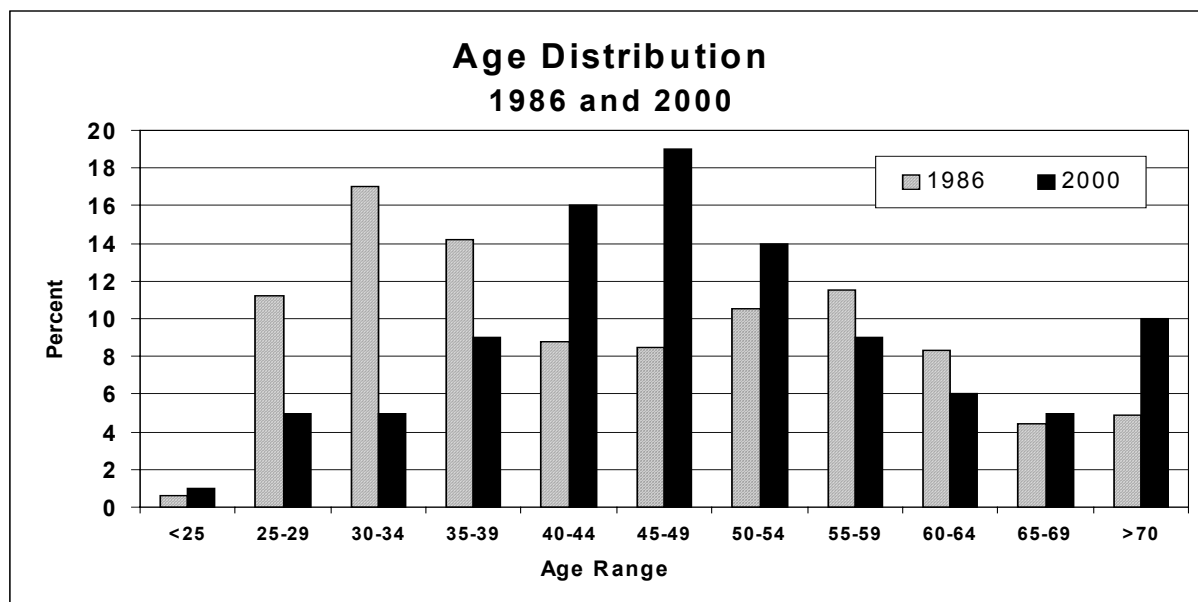
AGI recently conducted a *Demographic and Compensation Survey of North American Geoscientists*. Results from that survey were compared to an earlier AGI survey, *North American Survey of Geoscientists (1986)*. Figure 15 documents the changes that have occurred between 1986 and 2000 in the distribution of geoscientists by employment sector.

Figure 15



Aging of the workforce remains a factor across all sectors (see Figure 16). The demographics suggest that the workforce is aging at such a rate that the coming wave of retirements over the next 5 to 10 years will severely strain the projected pipeline levels. In other words, it is likely that there will be more geoscience jobs available than there are geoscience students to fill them. Companies may well have to meet their needs by hiring from other physical sciences.

Figure 16



Moreover, it should come as no surprise that women (see Figure 17) and ethnic minorities are poorly represented in all employment sectors. The levels of female and ethnic-minority participation are but a fraction of their already low presence in student geoscience populations.

Figure 17

