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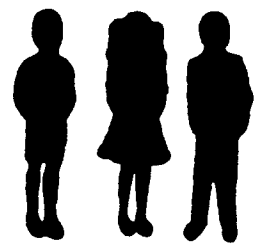
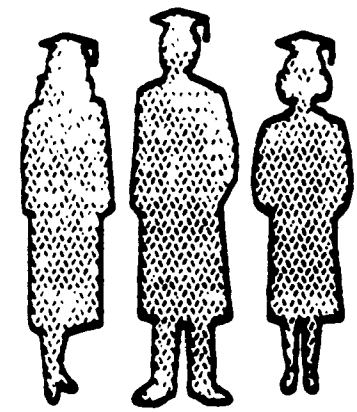
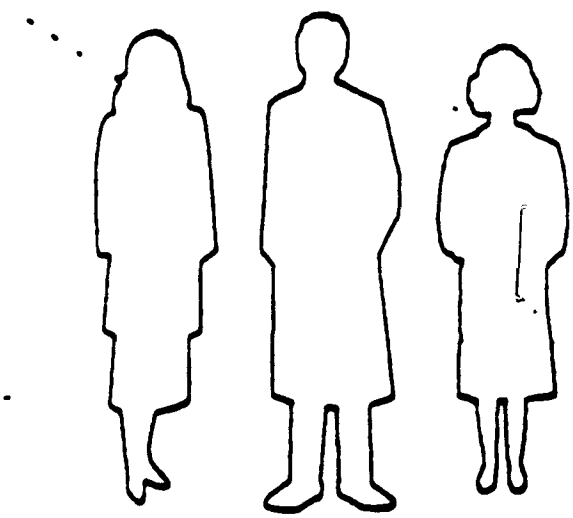
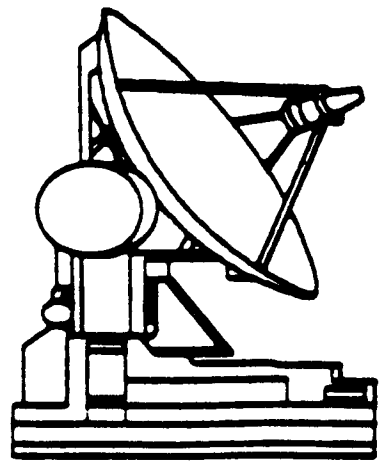
Women, Minorities, And Handicapped In Science And Technology

Report Of The Administrator



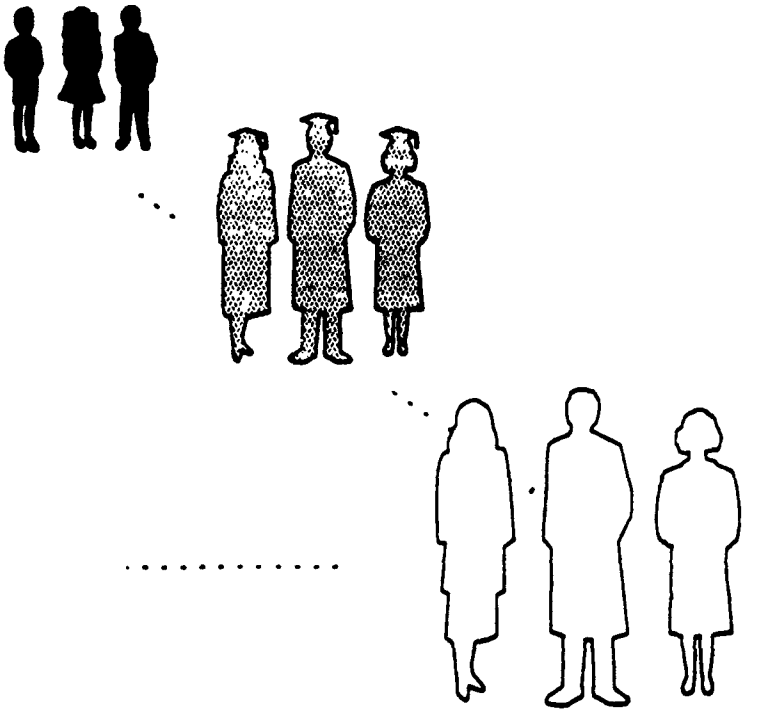






REPORT OF THE ADMINISTRATOR'S WORK GROUP ON WOMEN, MINORITIES AND HANDICAPPED IN SCIENCE AND TECHNOLOGY

U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460



REPORT OF THE ADMINISTRATOR'S WORK GROUP ON WOMEN, MINORITIES AND HANDICAPPED IN SCIENCE AND TECHNOLOGY

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WORK GROUP

MEMBERS

Clarice Gaylord, OARM, Chairperson
George Keeler, ORD, Executive Assistant
Tom Clark, ORD
Eileen Claussen, OAR
Rafael DeLeon, OCR
Tim Fields, OSWER
Margarett Hardmon, Region 5
Clarence Hardy, OARM
Ed Johnson, OIA
Denise Link, Region 8
Clarence Mahan, ORD
Harold Podall, OPTS
David P. Ryan, OARM

ASSOCIATE MEMBERS

Richard Basher, OC
Richard Bright, OPP
Mike Hamlin, OARM
Carolyn Johnson, OARM
Lori May, OAR
Mike Shamaienger, OW (AARP)
Linda Smith, ORD
Joyce Stiles, ORD
Terry Anderson, ORD

EX-OFFICIO MEMBERS

*Ferial Bishop, OPP
*Nat Scurry, OCR

*EPA representatives to the government-wide Task Force on Women, Minorities, and the Handicapped in Science and Technology - Public Law 99-383.

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PREFACE

In October 1988, this Work Group was created by then Administrator Lee M. Thomas to recommend actions and suggest initiatives to improve advancement opportunities for minorities, women, and persons with disabilities in scientific and engineering careers at EPA.

The Work Group drew its membership from a broad spectrum of EPA employees who brought many points of view to the task. In addition to several Assistant Administratorships and Regions, representatives were selected from groups such as Women in Science and Engineering (WISE), the Handicapped Committee, the Office of Civil Rights, the Scientific and Technical Advisory Careers (Sci-Tech) Committee, and the Federal Women's Program (FWP).

To accomplish its objectives, the Work Group met over a four-month period to study and analyze Agencywide personnel data, affirmative action plans, statistical information and other Agency reports covering similar issues. The Work Group solicited Agencywide comments and ideas on the task before it.

In addition to addressing these issues , this document serves as a major vehicle for information transfer. Several excellent intervention projects have been ongoing in this Agency for more than ten years (i.e., Minority Institutions Assistance Program, Adopt-a-School Program, High School Apprenticeship Program) but most have received low visibility and minimum financial and staff support. One objective of this report is to have these programs duplicated throughout EPA's Headquarters, Regional Offices, and laboratory facilities. It is strongly recommended that these programs be expanded to include women, other minorities, and disabled participants.

Ms. Deborah Shapley edited the early versions of the report and the Work Group expresses its thanks and appreciation for her efforts in preparing the final draft.

We also very much appreciate the efforts of Paulette Ellison and Dave Eisner for their research and statistical information contained in Appendix A and B of this report. Their data was essential to the efforts of the Work Group.

Other individuals who lent their considerable expertise in advising and informing the Work Group include Kathleen Herrin (OHRM), Terry Davis (ORD), and Kathleen O'Malley (OHRM).

The Work Group thanks the staff and volunteers who worked so diligently to prepare background papers and a special thanks to Mr. George Keeler who served as Executive Assistant to this Committee.

Clarice E. Gaylord
Chairperson

Washington, D.C.
July 1989

I. Background

In 1987, under Public Law 99-383, Section 8, Congress created a National Task Force on Women, Minorities and the Handicapped in Science and Technology. The Environmental Protection Agency (EPA) is one of fifteen (15) Federal Agencies represented on the Task Force which was charged with "examining the current status of women, minorities, and the handicapped in science and engineering positions in the Federal government and in federally-asssisted research programs." It was asked to "coordinate existing Federal programs designed to promote the employment of women, minorities and the handicapped in such positions," to "suggest cooperative interagency programs to promote such employment," and to "develop a long range plan to advance opportunities" for these groups in Federal programs.

The Task Force held hearings in seven cities around the country and issued an interim report in August 1988 which established six major National goals and thirty recommended actions for Federal agencies, States, academic institutions, and the private sector. The interim report, entitled "Changing America: The New Face of Science and Engineering," identifies serious problems with science education in the United States and predicts severe shortages of scientists and engineers in the future due in part to changing demographics. The report suggests remedial actions that must be taken by the Nation if the problem is to be effectively addressed. The six National goals of the Task Force are summarized below.

Goal #1 Changing America

The Nation should adopt the goal that all children born today, from all backgrounds, have a quality mathematics and science education and the opportunity to participate in the science and engineering workforce to their fullest potential.

Goal #2 PreK-12 Education

The Nation should reform the PreK-12 education pipeline so that our children's mathematics and science competence is better than that of students in countries with whom we compete.

Goal #3 Higher Education

The Nation should increase the number and diversity of students graduating in the natural sciences and engineering. By the year 2000 we should produce enough professionals in these fields, including more from underrepresented groups, to meet the demand for faculty, industry, and Federal personnel.

Goal #4 Federal Research and Development

Federal research and development funds influence the Nation's entire science and engineering effort. They generate new knowledge, and they train scientists and engineers. These funds should be leveraged to help develop a more diverse, world-class generation of scientific and engineering workers by the year 2000.

Goal #5 Federal Employment

The Federal Government should be a pacesetter in developing a work environment that is accessible, equitable, and favorable to attracting and advancing groups now underrepresented in science and engineering.

Goal #6 Influence of Culture

Our Nation's future hinges on having an ample supply of people who achieve in mathematics and science, who are science-literate adults, and who perform technical jobs with world-class competence. The entertainment industry and the mass media--powerful influences in shaping society's values--must participate in reshaping popular attitudes toward science and engineering.

II. Executive Summary

The Environmental Protection Agency (EPA) is facing a critical and potentially crippling shortfall of its technical workforce by the 21st Century. Impending shortages of scientists and engineers, compounded by the relative absence of women and minorities in these fields, threaten the Agency's ability to effectively deal with important environmental problems facing the nation. To turn this situation around, EPA must take immediate, concerted action.

EPA, by definition, is a key federal science agency which is uniquely prominent in addressing national and international environmental issues. As political leaders and the public come to recognize the urgency and global nature of environmental challenges, EPA will be required to respond with high quality environmental research, innovative analysis and sound strategies for public involvement. Therefore, the Agency has a vested interest in assuring that students emerging from the education "pipeline" are math and science literate and that America produces an adequate supply of world class scientists and engineers.

However, the scientific and technical workforce on which the Nation has relied upon for two generations is eroding. Experts now predict that the shortfall for professional scientists and engineers between now and the year 2000 could be as much as half a million. This shortfall stems from several trends:

- slower population growth;
- a decline in the number of American students graduating in key science and engineering fields;
- a decline in the pool of American college-age youth from which future bachelor's, masters', and Ph.D. holders will be drawn (Fig. A1, Appendix A);
- a continuing decline in the number of young people from minority groups, mainly Blacks and Hispanics--groups traditionally underrepresented in science and engineering professions; and
- retirement of senior scientists in government, universities, and private industry who entered the workforce in the 1960's after Sputnik.

These trends are part of larger demographic changes--changes that our Nation's education system, EPA and all employers must face. Nationally, by the 21st Century, 85% of the net new entrants to the workforce will be women, members of minority groups, immigrants, and disabled people (Fig. A2, Appendix A). Again, these groups have not traditionally pursued careers in science and engineering.

Without concerted action by all sectors, the Nation will have difficulty finding enough technical talent to maintain its leadership position in science and technology.

EPA Workforce 2000

EPA will have an increasing demand for scientific/technical professionals by the year 2000. Over one-third of EPA's 15,000 workforce are scientists and engineers, a proportion which has been constant over the last ten years (Fig. A3, Appendix A). With an annual turnover rate of 11%, combined with the fact that EPA's scientific and engineering personnel are older (averaging 50 years of age, compared with the Agency overall average of 39), the Agency stands to lose a significant percentage of its technical workforce within the next ten years. Traditionally, we have replenished

this supply of technical talent with white males, the mainstay of the current labor pool. However, the low numbers of students entering science, the projected high retirement of scientific personnel and the underutilization of women, minorities, and handicapped talent within the Agency are strong indicators that employment demands of EPA will not be met.

EPA needs to enhance its own internal pipeline and utilize its existing resources. One-third of its workforce is comprised of scientists and engineers, and another half has at least some college training in technical fields (Fig. A4, Appendix A). Many of these technically trained employees are women and minorities who would benefit from career development and education enhancement programs aimed at redirecting them back into scientific career tracks. Such a move would enable the Agency to tap into an already available resource.

EPA has not been aggressive in promoting technically trained women and minorities into upper supervisory and managerial ranks. Many in these groups advance to GS 12 positions and then find it difficult to progress past first-line supervisory levels. In fact, 60% of the Agency's GS 11 to 12 scientific personnel are women and minorities. By contrast, 70% of grades 13 to 14 scientists and engineers, 75% of grade 15, and 82% of our senior executive service (SES) are filled with white males. Likewise, the Agency has been promoting laboratory scientists into upper level non-administrative positions for a couple of years (i.e. dual career track program), but women and minorities have not been active parucipants in this program as well.

If current practices and employment patterns continue, it is likely that EPA will miss the demographic challenges of the next ten years. Without substantial adjustments in the way we recruit, develop, and train women, minorities, and handicapped employees, we will have significant shortfalls of qualified technological staff. We need major investments in our current and prospective workers, both internally and externally.

This report outlines six (6) proactive and preventive recommendations the Agency must undertake to: a) lessen the severity of future shortfalls in the relevant labor pool; b) minimize the impact the Agency will experience in these disciplines; and c) strengthen the nation's ability to produce highly qualified, skilled scientists and engineers. These recommendations include:

Recommendation 1

Promote Environmental Commitment

Create an aggressive public awareness and a commitment to environmental issues. The Administrator and senior managers should assume a high profile in inspiring and encouraging youth from all groups to pursue careers in science and engineering fields of concern to the Agency.

Recommendation 2

Support Environmental Education

Expand the Agency's role in improving mathematics, engineering, and environmental science teaching and raising student achievement and awareness of environmentally related programs. The Agency needs to fully support the newly proposed Office of Environmental Education to be located in the Office of External Affairs.

Recommendation 3

Strengthen the External Pipeline

Launch a broad range of initiatives aimed at strengthening the external environmental education pipeline. Request that Congress enact legislation to authorize the establishment of scholarships, fellowships, institutional training grants and research assistantships to encourage more students from underrepresented groups to pursue scientific and engineering degrees.

Recommendation 4

Enhance the Internal Pipeline

Be a pacesetter in developing our own internal pipeline. Higher priority should be placed on hiring, promoting, and training and retaining women, minority and handicapped personnel. Through leadership and example, senior managers can redirect the workforce so as to maximize opportunities for developing the talents of underrepresented groups.

Recommendation 5

Develop an Effective Recruitment and Hiring Strategy

Create opportunities for the recruitment and hiring of scientists and engineers from underrepresented groups. Reward managers and supervisors who effectively recruit, hire, train, promote, and retain women and minorities.

Recommendation 6

Initiate Accountability and Evaluation Systems

Hold supervisors and managers accountable for broadening and diversifying the Agency's scientific workforce. Implement evaluation systems to determine how well programs have contributed to the improvement of the workforce profile.

These recommendations include specific action items contained within the text. By adopting these recommendations, the Agency will strengthen its current and future capability to fulfill its mission of protecting the environment and the health and safety of our citizens.

III. Agency Actions

This section is organized according to the format of the original Task Force report. Each national goal is followed by a Task Force Action, EPA response and EPA recommendations.

GOAL #1 National Change

Goal #1 Changing America

The Nation should adopt the goal that all children born today, from all backgrounds, have a quality mathematics and science education and the opportunity to participate in the science and engineering workforce to their fullest potential.

Task Force Action A

...Create a National Action Council of our country's highest leaders to serve for 5 years to ensure that all sectors actively work to broaden participation in the Nation's science and engineering workforce...

EPA Response

It is essential that the Agency build a National commitment to environmental issues. The Agency has an interest in ensuring that the talent of the present generation of scientists and engineers is used to the fullest and in helping a new generation to emerge, from today's school children, qualified to address the environmental problems of the twenty-first century.

To improve its current scientific workforce, the Agency should assume a high profile on enhancing the future scientific workforce, through actions of the Administrator, key leaders, and outreach programs.

EPA Recommendations

1.A.1 The Administrator should promote environmental commitment and assume a high profile in inspiring youth from all groups to pursue careers in science and engineering fields needed to solve environmental problems. He should articulate these goals publicly and within the Agency, and represent the Agency on the proposed National Action Council.

1.A.2 The Administrator should establish and the Deputy Administrator should chair an EPA advisory committee to oversee Agency actions and report yearly to the Administrator.

1.A.3 The Agency should develop a five-year plan and budget showing how it will broaden the participation of underrepresented groups in science and engineering. Each Assistant Administrator (AA) and Regional Administrator (RA) should be required to submit yearly plans and budgets for review by the Adminstrator's Advisory Committee.

1.A.4 The Agency's proposed programs should be coordinated with those of other Federal agencies, the private sector, non-profit organizations and academic institutions, and include shared use of facilities, funds, and intervention programs.

Goal #2 PreK-12 Education

The Nation should reform the PreK-12 education pipeline so that our children's mathematics and science competence is better than that of students in countries with whom we compete.

Task Force Action A

...Accelerate professionalism of mathematics and science teaching through teacher institutes, workshops, retraining, and participation in Federal research projects...

EPA Response

The Agency should support environmental education and contribute measureably to the improvement of the mathematics and science competence of students throughout the K-12 education pipeline. EPA needs to be concerned about the quality of teacher training and inservice programs in environmental subjects because the quality of teaching, in part, depends on the effectiveness of teachers and the extent to which they are supported by technology and resource materials. Teachers of mathematics and science need to be educated to higher professional standards and they need to update their skills periodically.

EPA Recommendations

2.A.1 The newly proposed Office of Environmental Education (OEE) shall develop plans to improve education in environmental subjects, science and mathematics, especially for students from underrepresented groups. The OEE should develop plans to improve environmental education by providing inservice training of elementary, secondary, and high school teachers, support curricula development in environmental topics, develop environmental education seminars, summer training programs, workshops for education professionals, and provide resource materials.

The OEE shall highlight educational goals and recommend changes; assess Agency actions to improve education; and monitor progress towards Agency educational goals in a five-year plan.

2.A.2 Each AA and RA shall designate laboratory facilities around the Nation which will be responsible for coordinating Agency programs locally to measureably improve math, science and environmental education and increase the number of qualified students emerging from the pipeline.

The Agency can offer student use of laboratory facilities and staff to serve as mentors to nurture individuals through the pipeline, from elementary school to college majors in science and engineering. Workshops for inservice teacher training, summer institutes, and seminars can also be offered.

The role of designated laboratory facilities should be specified in the Agency five-year plan. It should be to focus and coordinate Agency programs for maximum measurable impact on widening and diversifying the pool of candidates.

2.A.3 The Office of Environmental Education, in conjunction with the Science Advisory Board, shall review environmental education in the United States from pre-Kindergarten through higher education. The review should be coordinated with relevant professional societies, foundations,

and educators. In recommending improvements, it should consider Agency support for developing cutting-edge teaching materials on environmental subjects, similar to the National Science Foundation's support for new curriculum materials in physics, chemistry and other disciplines.

The review shall examine effective intervention programs for improving math and science teaching through guidelines issued by the Federal Education In Science Board. It should also incorporate the Mathematical Sciences Education Board guidelines in subsequent Agency plans and programs.

Task Force Action B

...Increase the present workforce of good science and mathematics teachers nationwide...

EPA Response

The challenge of preparing enough scientists and engineers to meet future Agency needs is more than simply sparking student interest in these fields; it calls for financial incentives to entice students to enter environmental education professions to improve the quality of environmental curricula. The Agency presently has no coordinated programs to help improve the teaching of mathematics, science, and environmental subjects in schools.

EPA Recommendations

2.B.1 Seek to have language included in the fiscal 1992 authorizations allowing EPA to offer scholarships to graduating high school seniors who agree to become teachers in environmental studies and related fields.

2.B.2 Encourage staff scientists and engineers to serve on paid time as "mentors" to middle school, high school and college students. One-on-one teaching is key to improving the skills and interest of individual students and assuring they complete the pipeline. Awards could be given for outstanding mentorship; for example, to those who coach an unusual number of outstanding students.

2.B.3 Initiate a program to identify retired or retiring staff scientists and engineers and place them as teachers in schools, colleges and universities with high proportions of students from underrepresented groups. For example, Region III's new program in cooperation with the City of Philadelphia certifies retired Agency scientists and engineers as teachers in the Philadelphia schools system. This program should be replicated in other regions.

Task Force Action C

...Extend effective intervention programs to improve student mathematics and science achievement...

EPA Response

Intervention programs, aimed especially at enriching the mathematics, science and engineering preparation of women, minorities and handicapped students can rebuild confidence and interest in environmental fields, tapping pools of talent that are now underdeveloped. The Agency has several intervention programs at the elementary, middle, high school and undergraduate levels. A partial list appears in Table A1 in Appendix A. Those programs which had some impact on student performance and career choices should be replicated throughout the Agency.

EPA Recommendations

2.C.1 Expand current youth programs aimed at increasing elementary and secondary student and teacher awareness and involvement in environmental activities. Encourage more National environmental poem, poster, and publication contests (e.g. prize money could go to students who agree to study science or engineering courses). Active Agency participation in the 4H Summer Seminars and Boy Scouts' Jamboree should be continued and supported.

2.C.2 Sponsor environmental science clubs, science summer day camps, traveling environmental science vans or circuses which entertain elementary students while instilling an interest in environmental issues.

2.C.3 Support the annual President's Environmental Youth Awards Program which offers national competition and recognition for youth organizations involved in positive environmental community projects.

2.C.4 Expand the number of Agency "Adopt-A-School" programs, particularly in communities to be aided by designated laboratory facilities. The objectives of these programs are to stimulate student interest in science and mathematics; to introduce students to careers in the environment; and to provide students, teachers, and the community with an understanding of environmental issues and their impact on city life. Agency employees offer classroom presentations, field trips, help with student science projects, and serve as role models.

2.C.5 Tap into local talented and gifted programs (TAG) to identify high potential secondary and high school students to participate in Agency programs (i.e., Junior Fellowship Program).

2.C.6 Offer ongoing apprenticeship programs for high school students who show aptitude and interest in the environmental sciences, particularly students from underrepresented groups. Student apprentices should engage in hands-on laboratory work for up to 10 hours a week during the academic year, and more in the summer. Each apprentice must have an Agency scientist or engineer as a mentor who should take some responsibility to improve the student's skills and academic performance, to help find science-related jobs, to encourage college attendance, and to steer them towards major technical fields.

2.C.7 Establish an environmental science category in the Westinghouse Science Competition and other prestigious programs. Each region and laboratory facility shall include local science competitions in its plan. The number of students helped who become prize winners should be a measure of success. An Agency high school and college scientific award category shall be established.

2.C.8 Provide funds (i.e., through IAG or grant) to local junior/high schools for completion of environmentally-related projects (i.e. establish Youth Corps which will provide jobs for inner city youth cleaning up the environment).

2.C.9 Initiate new enrichment programs, such as OSWER's Superfund High School Seniors Pilot Program in which gifted D.C. high school seniors were selected for participation in a one-year Superfund community service project to teach other students about the identification and cleanup of Superfund sites. This intervention program could be replicated by other Agency offices on other environmental topics.

2.C.10 Participate in the ongoing National Young Environmental Scholars Program for talented high school students run by the Washington, D.C. Science Service group, a non-profit organization. These programs provide both summer and academic year lab research and/or accelerated course work experience in scientific subjects at local colleges and universities.

2.C.11 Initiate a Saturday Science Academy program, a weekend science and math enrichment program for elementary or middle school students. Its major goal is to offer laboratory, computer science and mathematics training for students and to improve their quantitative and problem solving skills.

2.C.12 Initiate an Urban Environmental Education Program to increase awareness of environmental issues in urban youth, particularly members of minority groups.

2.C.13 Participate in programs like the Howard University-District of Columbia Metropolitan Consortium for Minorities in Engineering programs (METCON). Representatives from secondary school systems, engineering schools, industrial firms, and government, work to involve parents, teachers, and counselors in helping students choose and understand engineering careers. METCON aims to increase the number of qualified students from minority groups entering college engineering programs and pursuing engineering careers.

Goal #3 Higher Education

The Nation should increase the number and diversity of students graduating in the natural sciences and engineering. By the year 2000 we should produce enough professionals in these fields, including more from underrepresented groups, to meet the demand for faculty, industry, and Federal personnel.

Task Force Action A

...Establish a National Research Scholars Program in Science and Engineering...

EPA Response

The Agency should launch a broad range of initiatives aimed at strengthening the pipeline of students entering environmentally related fields. By providing better support mechanisms and incentives, EPA may ensure that a better quality, highly-trained workforce is available for employment in the 21st Century. The Agency currently has no formal, agencywide initiative, such as a national scholars program, for developing future scientific talent. A major problem is that EPA has no direct authority to offer academic training funds to students interested in environmental careers. The Agency must request that Congress enact legislation to authorize the establishment of scholarships, fellowships, institutional training grants and research assistantships to encourage more students from underrepresented groups to pursue scientific and engineering degrees.

EPA Recommendations

3.A.1 Seek to have language included in the fiscal 1992 and subsequent authorizations for academic training funds to support undergraduate and graduate students in science and engineering fields relevant to the Agency's mission.

3.A.2 Create a National Research Scholars program in Environmental Sciences. Honor students interested in research careers should be given long-term support as they pursue undergraduate and graduate degrees.

3.A.3 Encourage Agency scientists and engineers to teach environmentally related courses in local colleges and universities, and mentor undergraduate and graduate students with the specific goal of bringing more qualified scientists and engineers into the workforce. Staff should be compensated for time spent in improving college teaching of key environmental courses.

3.A.4 Make better use of cooperative education and summer intern programs to encourage early interaction and career guidance of college students. Programs make participants more competitive for future employment at EPA.

3.A.5 Issue travel grants for students and faculty from minority/women colleges and universities to enable participation at major environmental meetings and conferences.

3.A.6 Supplement ongoing research grants and cooperative agreements to encourage and support undergraduate minority and women student participation in research projects. Similar supplemental programs are already ongoing at agencies like NIH and NSF.

Task Force Action B

...Provide stable and substantial support for effective intervention programs that graduate quality scientists and engineers who are members of underrepresented groups...

EPA Response

The Agency must offer incentives and opportunities for enrichment programs to all students. While EPA has several intervention programs, their funding is not stable and they do not reach significant numbers of women, Hispanic, Asian or American Indian students or students with disabilities.

EPA Recommendations

3.B.1 The OEE, in conjunction with the Deputy Administrator, shall review all Agency higher education programs to consider how they can help increase the number and diversity of American students earning degrees in the natural sciences and engineering.

The review should "track" students who have received Agency assistance in the past and evaluate how such aid affected their earning of degrees and career placement. The review should consider students who have "dropped out" from science and engineering majors or from higher education altogether, and propose ways that a larger proportion of them can complete their degrees.

The Task Force recommended that Federal agencies "reproduce" the MARC and MBRS programs of the National Institutes of Health (Appendix C) which have been successful in producing highly qualified minority graduates in biomedical fields and in strengthening teaching and research at minority institutions. Commitment and accountability are key features of these programs. For example, renewal of three-year awards to these colleges depend on their meeting agreed milestones for education improvement.

Programs to be considered for review and expansion should include:

- The Minority Research Apprenticeship Program (ORD). Since 1980, the Andrew W. Breidenbach Environmental Research Center (AWBER) in Cincinnati has conducted an eight- week summer program whereby local high school and college students gain paid research experience and exposure to environmental science careers. Students compete for the program based on grades and interest in the environment. Similar high school programs should be initiated in Regional and field offices, as well as laboratories.

- The Minority Faculty Internship Program (ORD). This program seeks to help faculty from Historically Black Colleges and Universities (HBCU) gain research experience at EPA facilities. It should be expanded to assist faculty from predominantly Hispanic, Asian and from women's institutions. Disabled faculty could be brought into the program as well.

- The Minority Fellowship Program (ORD). This program provides one year of tuition support to students from HBCUs majoring in relevant fields. Summer internships in research laboratories are offered to each fellow at the end of the academic year. This program should be expanded to other underrepresented groups.

- The Cooperative Education Program (Agencywide). This program allows students to attend college on a full or part-time basis while engaging in periods of study-related work at EPA. Students can be non-competitively converted to full-time employees after graduation.

- The Federal Junior Fellowship Program (Agencywide). A career-related, work/study program for baccalaureate and associate degree students, which is based on student's financial need. It also provides for noncompetitive conversion of students to appointments after graduation.

- "2+2" education programs (ORD). Supports two years of high school and two years of community college training in environmental science areas. Upon completion of the program, students are offered entry-level EPA jobs. Programs are ongoing in Hazardous Waste Materials Management and Pre-Engineering areas.

- The discontinued OSWER Training Grant Program in hazardous materials management at minority institutions. It provided curriculum development and tuition support for students in civil and chemical engineering fields. This program was phased out in FY-88 due to lack of Agency funding.

3.B.2 The overall Agency five-year plan should show how Agency funding for mainstream and set-aside programs is enlarging the pool of young scientists and engineers emerging from U.S. colleges and universities and increasing the number from underrepresented groups. It should also show how Agency activities visibly improved the offerings in higher education in key environmental subjects.

Task Force Action C

...Establish a Graduate Research Opportunities Program targeted for minority women and disabled students pursuing advanced degrees in science and engineering...

EPA Response

EPA has twelve research laboratories and thirteen academically based comprehensive centers conducting state-of-the-art research on a number of environmental topics. These facilities should be better utilized to train graduate level research students, particularly students form underrepresented groups. Moreover, to provide direct support to these students, academic training funds are needed by the Agency.

EPA Recommendations

3.C.1 The Agency's Academic Training Committee has recommended a direct line-item in the Agency's budget submission for academic training at the level of $5 million per year. The Work Group supports this recommendation and urges that a coordinated program of institutional training grants be tailored to increase the numbers of students graduating with B.S., M.S., and Ph.D. degrees in science and engineering fields. Further, such a program should be designed to advance students from underrepresented groups.

3.C.2 Initiate an instrumentation and laboratory improvement program to create and maintain effective laboratory infrastructures at women and minority institutions.

3.C.3 Enhance opportunities for graduates and post-graduates students from underrepresented groups by having the Agency require that principal investigators who receive Agency funds actively develop the careers of junior staff working on Federally-funded projects.

3.C.4 Implement a laboratory fellowship program (comparable to the NIH Staff Fellowship program) designed to provide a flexible mechanism for the employment and professional development of promising, new Ph.D. research scientists. Appointments are initially for two years and not to exceed seven years. Such a program could afford opportunities for new researchers to work in close association with leading EPA scientists and would ensure a continuous influx of talent to EPA. Women, minority, and disabled scientists could be given priority consideration for these kinds of appointments.

Goal #4 Federal Research and Development

Federal research and development funds influence the Nation's entire science and engineering effort. They generate new knowledge, and they train scientists and engineers. These funds should be leveraged to help develop a more diverse, world-class generation of scientific and engineering workers by the year 2000.

Task Force Action A

...Within one year, review the Agency research and development budget, and report the impact of the budget on the Nation's science and engineering workforce, especially in terms of representation of members of minority groups, women and people with disabilities...

EPA Response

Of the Agency's $4.6 billion budget in Fiscal 1989, $420 million goes for research and development, of which an estimated $200 million is spent at colleges and universities. These funds support work by scientific and engineering personnel at all levels. The Agency has not considered how this support influences trends in the U.S. scientific workforce, and how it could be leveraged to increase participation by underrepresented groups.

Under Federal contract laws, the Agency collects data on the race and sex composition of contractors, but has no comparable data collection for grants and cooperative agreements.

EPA Recommendations

4.A.1 The Deputy Administrator and his Advisory Committee shall review Agency funds going for research, technical and regulatory support each year. The review should assess the impact on the representation of women, minorities and the disabled in the science and engineering workforce.

4.A.2 The Agency shall officially agree to work collaboratively with other Federal R&D agencies in developing and using standardized data collection systems to track the flow of Federal dollars (via grants, contracts and cooperative agreements) to underrepresented groups. The National Science Foundation, as the lead Agency, will issue OMB approved forms for use by Federal agencies and biennially hold progress review conferences and issue accomplishment reports. OMB will assess how effective each Agency has been in helping to expand the resource pool of science and engineering talent.

Task Force Action B

...Construct a timetable for mainstreaming all special programs for underrepresented groups, with explicit benchmarks and milestones for measurement of progress toward achieving defined objectives...

EPA Response

The Agency's programs to help minority scientists and institutions compete have, in general, not formally determined at what point recipients are fully competitive and should apply for mainstream support. The Agency should evaluate its current programs and develop a strategy aimed at increasing the repesentation of minority groups in major Agency initiatives. (The National Science Foundation, for example, has a spectrum of programs to develop the careers of women scientists, who initially qualify for special grants and later are encouraged to compete for mainstream funds.)

EPA Recommendations

4.B.1 As part of its overall review and reviews of intervention programs affecting PreK-12 and higher education the Agency should address when and how beneficiaries of special programs should be fully competitive for mainstream Agency funds.

Task Force Action C

...Develop a plan showing how Agency research and development programs can bring about a new, more diverse world-class workforce. Each Agency should propose devoting substantial parts of its budgets to this policy goal. The plan should include programs related to preK-12 education, higher education, research and development awards, and employment...

EPA Response

Of the $200 million R&D funds spent at colleges and universities in FY'89, less than $1.5 million went to support research at minority and women colleges. The Agency has not formalized plans to provide a more stable and significant R&D base to these schools. It must support effective intervention programs which have a positive impact on scientific training from pre-K to post graduate levels.

EPA Recommendations

4.C.1 The five-year plan for the Agency, the annual plans of each Regional Administrator (RA) and Assistant Administrator (AA), the overall review of R&D funds impact and reviews of intervention programs, should have budget and target figures for increasing the numbers of underrepresented groups to be brought into the science and engineering mainstream as a result of Agency actions.

4.C.2 The Agency should implement grant programs similar to NSF's Career Access Opportunities in Science and Technology for Women, Minorities and the Disabled. Five-year projects are awarded organizations to focus on instructional and motivational activities in areas of high minority populations. The groups conduct intervention programs and measure the increase in students receiving technological degrees at the end of the five-year grant period. Private-public partnerships are strongly encouraged.

Task Force Action D

...Use federal facilities to provide hands-on laboratory experience to students and teachers at all educational levels...

EPA Response

The Agency's vast research and testing facilities have not been optimally utilized to provide formal research training programs for students and teachers from underrepresented groups. Currently, only a few facilities, such as the Cincinnati, Las Vegas, RTP and Naragansett laboratories, have ongoing programs.

EPA Recommendations

4.D.1 Two of the largest ORD laboratories, Cincinnati and Research Triangle Park, should undertake high profile initiatives to increase the number and diversity of young Americans entering science and engineering fields of relevance to the Agency's mission.

4.D.2 The newly proposed ORD Environmental Research Institute--planned to be a national and international source of expertise--shall include plans to enhance the quality and diversity of scientists and engineers in the field. For example, it should plan cooperative arrangements with women's and minority institutions with the goal of early mainstreaming.

4.D.3 All 12 ORD laboratories shall actively support the National Research Council's Resident Research Associates (RRAs) program which grants competitive awards to outstanding postdoctoral scientists and engineers. ORD shall strive to have as many RRAs from underrepresented groups as possible, to nurture top talent.

4.D.4 The ORD Research Centers could be structured to strengthen research and training at minority institutions. At present, only one HBCU participates. ORD should be encouraged to support a Center of Excellence at a minority and/or womens' institution.

4.D.5 Principal investigators on ORD extramural research agreements should strongly encourage the participation and development of individuals from underrepresented groups. Agency project officers should closely monitor the advancement of scientists and engineers from underrepresented groups. Other forms of leverage should be considered so Agency research funds could influence the composition and diversity of university technical departments and faculties.

Task Force Action E

...Reproduce the Minority Access to Research Careers (MARC) program and Minority Biological Research Support (MBRS) program in the fields of physical sciences and engineering...

EPA Response

Since NIH's MBRS has been successful in strengthening research and teaching at recipient minority institutions over time, EPA should consider duplicating their effort. For example, renewal of institutional awards depend on meeting agreed institutional milestones, including the successful placement of bachelors' students in Ph.D. research programs.

The Agency has elements of the MARC-MBRS spectrum of assistance in its minority student summer internships, the minority institution assistance program and faculty intern program, described elsewhere in the report.

EPA Recommendations

4.E.1 Review the Minority Institution Assistance (MIA) program (which provides grant dollars for the conduct of scientific research) for its effectiveness in increasing the pool of qualified minorities graduating in science and engineering and improving the caliber of training at recipient institutions. The review should recommend strategies for expanding such assistance to institutions with high proportions of Hispanics, Asian Pacific Islanders, American Indians and women institutions.

Task Force Action F

...Direct efforts towards those Federal contractors who utilize scientists and engineers if continued increased minority and female participation in these sectors is to occur...

EPA Response

The Agency's Office of Contract Compliance should continue to monitor the EEO and Affirmative action practices of EPA contractors. Special attention, however, should be given to those contractors engaged in scientific and technical activities. They should be made aware of the Agency's goal toward increased participation of women, minorities and handicapped personnel and held accountable for meeting these targets.

EPA Recommendations

4.F.1 The Agency shall collect data on all research, technical support and regulatory support contracts, to show the composition of scientific and technical workers, by sex and ethnic group. The information should be formatted to meet the needs of the National Action Council, OMB, and Agency requirements outlined in this report.

Task Force Action G

...Increase the number of minority group members, women, and people with disabilities on federal science and engineering-related advisory boards and committees...

EPA Response

Of the 170 scientists and engineers serving on EPA advisory boards, councils and committees, less than 16% are members from underrepresented groups. The Agency currently has not developed an aggressive approach to the search and recruitment of women, minorities, and disabled persons who have the potential to serve on these committees.

EPA Recommendation

4.G.1 Establish a data file of potential scientific and engineering advisors who are women, as well as members from underrepresented groups, indicating their areas of expertise. The Science Advisory Board staff and the Committee Management office shall be responsible for seeing that this data file is utilized in appointments to all science and engineering-related boards and committees within the Agency.

4.G.2 Use several recruitment methods to identify potential reviewers such as (a) advertising in scientific and technical journals; (b) obtaining minority professional resource lists from other organizations such as National Academy of Sciences, American Association for the Advancement of Sciences, NIH, NSF, professional scientific societies, etc.; (c) identifying successful recipients of research grants, cooperative aggreements and contracts in environmental fields; and (d) using professional recruitment organizations to identify potential committee members.

Task Force Action H

...Establish a Federal Coordinating Committee for Science, Engineering and Technology (FCCSET) to provide visibility, coordination, and accountability for Agency achievement of plans...

EPA Response

The Agency has not participated in the past in federalwide efforts to ensure that data collection, monitoring, and evaluation projects are uniform and in compliance with the National Commission's guidance.

EPA Recommendations

4.H.1 Upon creation of the FCCSET, the Agency shall have a liaison responsible for reporting and compliance. Such a person shall also be a member of the Deputy Administrator's Advisory Council.

GOAL # 5 Federal Employment

Goal #5 Federal Employment

The Federal Government should be a pacesetter in developing a work environment that is accessible, equitable, and favorable to attracting and advancing groups now underrepresented in science and engineering.

Task Force Action A

...Review existing Federal Equal Opportunity Recruitment Plans (FEORP) and use them as a guide to develop Agency-specific data for hiring, advancing, and retaining underrepresented groups in science and engineering...

EPA Response

The Agency's current hiring and promotion goal of 52% minorities and women in supervisory and managerial positions extend to all levels in the scientific and engineering categories. Existing FEORPs will be modified to include the 52% goal from entry level to SES in professional categories.

EPA Recommendations

5.A.1 Instead of an agencywide plan, require each Assistant Administrator and Regional Administrator to submit a FEORP for the purpose of developing a highly qualified, competitive workforce through hiring, training, advancement and retention of members of underrepresented groups in scientific and engineering jobs. The revised FEORPs should be coordinated with other Agency plans required in this report.

Task Force Action B

...Include a provision in the FEORP for funding technical aids in order to facilitate the hiring and advancing of disabled professionals who require this kind of accommodations...

EPA Response

Physical and technical needs of disabled scientists and engineers should be closely coordinated with the Agency's Handicapped Committee. Special programs designed to facilitate the employment and productivity of disabled personnel should be described in the FEORP of each AA and RA.

EPA Recommendations

5.B.1 Utilize disabled employees resource lists and others to identify disabled scientists, engineers and technicians as potential employees. All Agency supervisory staff should be committed to and held accountable for the advancement and retention of qualified disabled scientists and engineers.

5.B.2 Formalize a system to assess technical aid requirements when employees are hired. An oversight committee could be appointed to improve availability of the latest technology to help the disabled perform scientific and engineering jobs.

5.B.3 Establish an assigned technical assistant, or buddy system, to assist disabled scientists and engineers as needed.

5.B.4 Provide guidance on handicapped accessibility of new EPA Building (Project 1992).

Task Force Action C

...Offer visible career ladder programs for entrants from underrepresented groups into the science and engineering career fields...

EPA Response

EPA should enhance its own internal pipeline. The Agency loses about 500, or 11%, of its scientific and engineering professional workforce each year, as people retire or take other jobs. The majority, or 65.7%, of those leaving are white males. This trend is likely to continue with retirement patterns expected in the 1990s. Meanwhile, the percentage of scientists and engineers the Agency hires into this workforce is constant but the emerging workforce has a somewhat higher fraction of women and minorities and a smaller fraction of white males. This rate of turnover offers a chance to diversify the participation in this workforce at all levels, through recruitment and development of current talent.

With the exception of the new task forces in some program areas, Agency recruitment has not aggressively focused on identifying and attracting qualified scientists and engineers from underrepresented groups. Besides more aggressive recruitment, the development of current employees is the obvious way to broaden participation in the Agency's scientific and technical workforce in the near term. Active efforts in recruiting and developing current talent will make the Agency a pacesetting employer among Federal science agencies.

EPA Recommendations

5.C.1 The Agency's present recruitment activities should be reviewed to see what resources, personnel and structure are needed to identify and attract qualified scientists and engineers from underrepresented groups. Among actions to be considered are:

- Assure that facilities and laboratories have adequate means to hire members of underrepresented groups in entry level (GS-5/7) science, engineering and technician positions.
- Increase direct hiring authority to facilitate new hires in scientific areas, modeled on the annual Puerto Rico recruitment program.
- Use professional recruiters to assist hiring of members of underrepresented groups in science and engineering jobs.
- Expand participation in job fairs and professional conferences attended by significant numbers of scientists and engineers from underrepresented groups.

S:C.2 Current Agency employees should have additional opportunities to increase their science and engineering competence and to qualify for higher level technical jobs. Among the actions to be considered in Agency plans are:

- Expand the concept of the National Urban/Rural Fellows Program, which gives college students support in academic study leading to a Master's degree in public administration and an Agency position. A similar program could be initiated for Agency employees to complete degrees in science and engineering and improve their competitiveness for higher scientific and engineering positions.

- Expand the Office of Air and Radiation (OAR) short- and long-term training program Agency wide. This job enrichment program for permanent employees enables individuals to enhance their job skills through course work at local colleges and universities. In addition to paying the salary of each participant, the program sets aside $12,500 for tuition, books and expenses during full-time post-graduate educational assignments.

- Initiate a degree enhancement program for EPA employees who possess master degrees in science or engineering . EPA laboratory facilities in conjunction with local colleges could be utilized to offer advanced career related science courses.

- Improve the retention of highly qualified scientists and engineers by expanding the ORD "Career Ladders" pilot program. Career Ladders enable promotion of qualified GS 14-16 personnel while allowing them to remain in technical jobs rather than changing to administrative positions to achieve higher grade levels. This program could enhance opportunities for minorities and women to progress in grade levels without changing their professional specialties.

- Encourage Agency scientists and engineers to participate in professional society activities and strengthen their university ties.

- Expand Intergovernmental Personnel Act (IPA) assignments to offer scientists and engineers opportunities to teach in university settings and strengthen environmental curricula. IPA assignments to women and minority institutions shall be fully funded by the Agency.

- Use retirees to help meet needs for science and engineering personnel, using the Agency annuitant and AARP cooperative programs.

Task Force Action D

...Establish outreach public awareness programs to present science and engineering as prestigious and rewarding careers, and promote the concept that professionals in Federal service can develop their talents to maximum potential without discrimination and with recognition and professional esteem...

EPA Response

The Agency's outreach programs should stress the importance of the environment to the Nation's and the world's future, and the need for more students to enter the field. The Administrator can raise the profile of the issue, and public awareness can be heightened. The Agency can make science and engineering careers appear prestigious and rewarding by a number of actions.

EPA Recommedations

5.D.1 Expand Agency programs with National Professional Engineering Societies for recruiting minority and women engineers and scientists to the Agency. Similiar programs with other societies should be initiated.

5.D.2 Create a public information package regarding availability of scholarships/loans/ fellowships/summer jobs, etc. for women, minorities, and disabled persons.

5.D.3 Implement lecture series on Outstanding Women/Minorities/Disabled Scientists in Environmental Fields. Such lectures will be informative and possibly present role models for members from underrepresented groups.

5.D.4 Initiate a research/essay writing contest for junior and senior high school and freshman/ sophomore college students on some mathematical, scientific or engineering area of concern to EPA.

5.D.5 Participate in local Board of Education Youth Motivation Programs to increase interest in EPA.

5.D.6 Produce an EPA story and coordinate speaker forums with EPA staff during Earth Day activities.

GOAL # 6 Influence of Culture

Goal #6 Influence of Culture

Our Nation's future hinges on having an ample supply of people who achieve in mathematics and science, who are science-literate adults, and who perform technical jobs with world-class competence. The entertainment industry and the mass media--powerful influences in shaping society's values--must participate in reshaping popular attitudes toward science and engineering.

Task Force Action A

...Explain and make readily available videos, recordings, and other entertainment materials that awaken interest in science and engineering, to community groups, libraries, and museums, especially in low-income areas...

EPA Response

The Agency should take a high profile in inspiring youth from all groups to achieve mathematics and science competence and to pursue careers in science and engineering relevant to the environment. The Administrator can perform a leading role through appearances in the media and in schools. The Agency can make careers in science and engineering appealing to students from underrepresented groups and other potential recruits. To play such a role, the Agency will need designated staff to contract for and produce informational materials.'

EPA Recommendations

6.A.1 Designate an office responsible for outreach activities, possibly within the Office of Community Relations, Office of External Affairs, or in the new OEE. The office could produce more environmental science recruitment materials highlighting role models who are women, members of minority groups, and disabled people. Materials , such as braille and captioned videotapes, should be accessible to the disabled.

6.A.2 Sponsor local museum exhibits on outstanding women, minority and disabled scientists in the environmental areas and sponsor environmental exhibits in minority-based institutions.

6.A.3 Expand audiovisual loan programs to educational, industrial, professional, youth and similar groups.

6.A.4 Initiate telelectures on a variety of environmental topics to audiences around the Nation.

6.A.5 Establish a computer bulletin board system to provide a source of information on EPA programs and activities to community groups.

6.A.6 Produce educational television programs on a variety of environmental topics and Agency activities.

APPENDIX A

Text References

Science and Engineering Pipeline from High School Through Ph.D. Degree

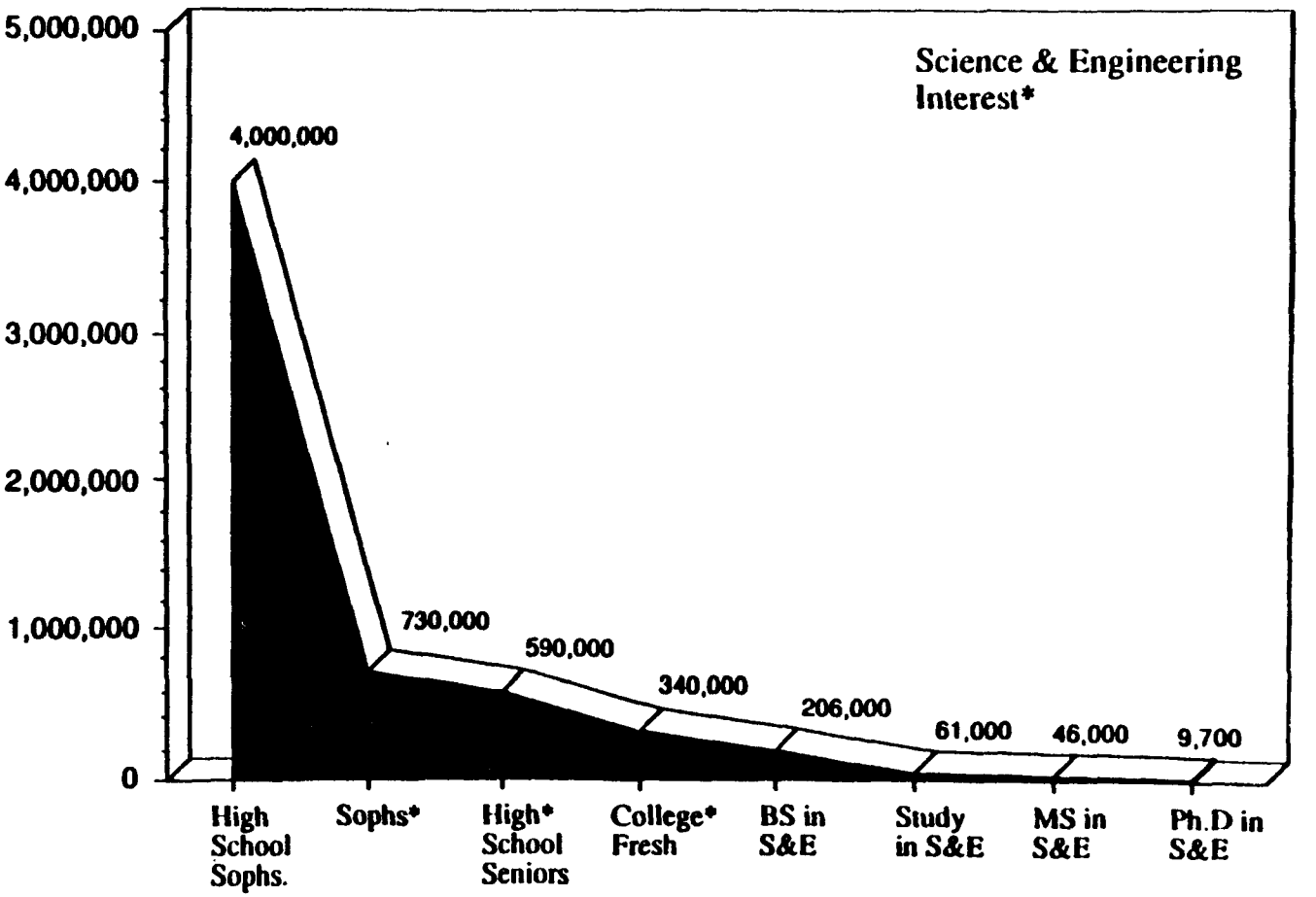
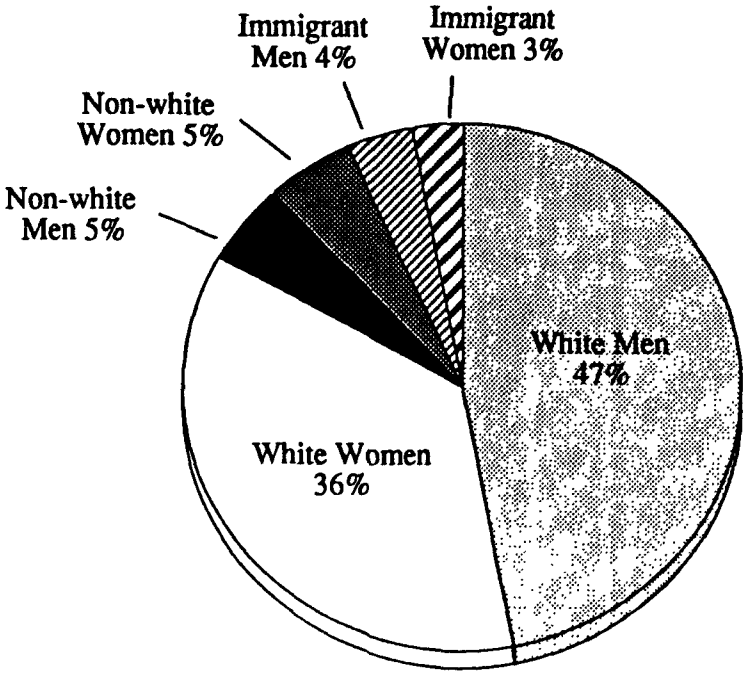


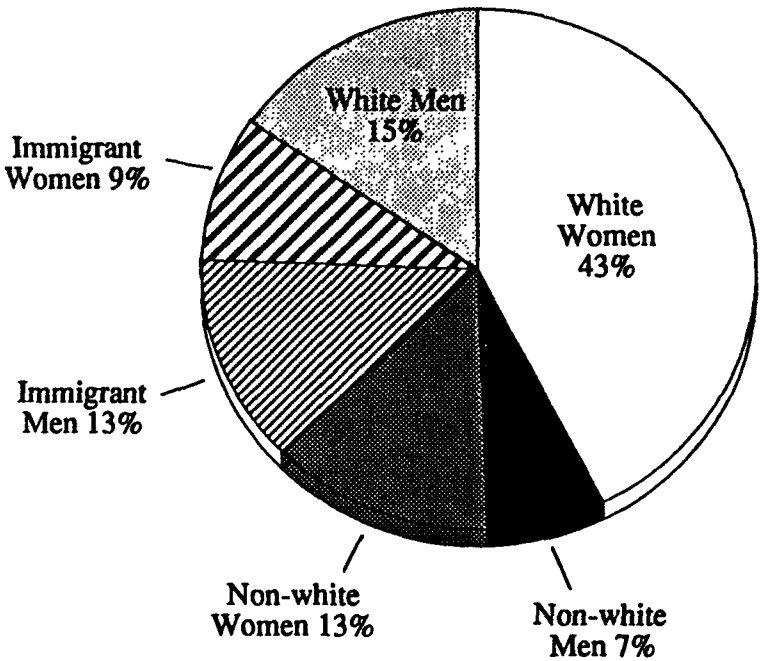
Figure A1

Source: National Science Foundation

The Changing Labor Force, 1985–2000



1985 Labor Force
115,461,000



Net New Workers, 1985-2000
25,000,000

Changing demographics will markedly affect the composition of the future workforce. Of the new workers entering the labor force by the year 2000, only 15 percent will be white men, and the rest either white women, members of minority groups, or immigrants.

Source: U.S. Department of Labor

EPA Professional Scientists and Engineers Historical Trend – FY79 – 88

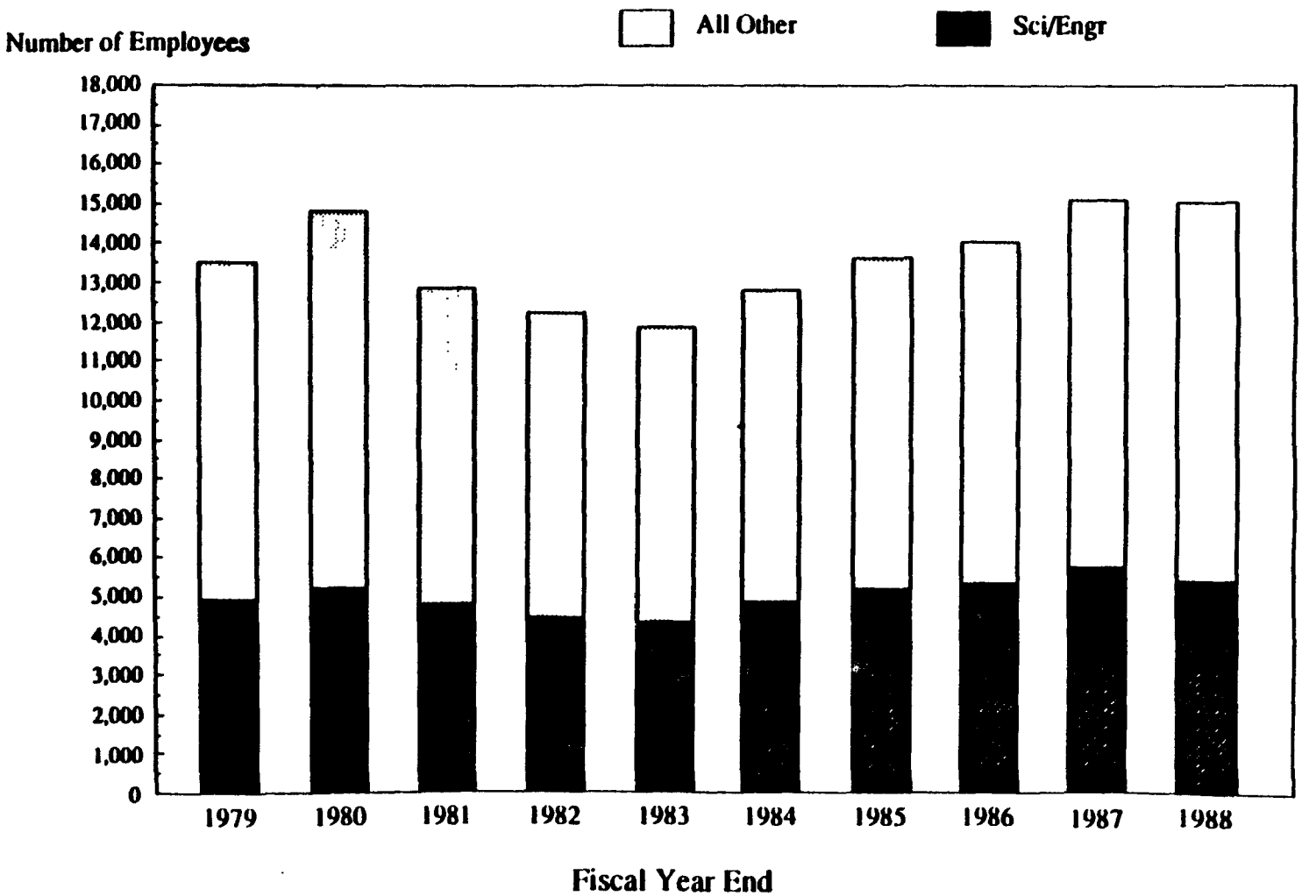
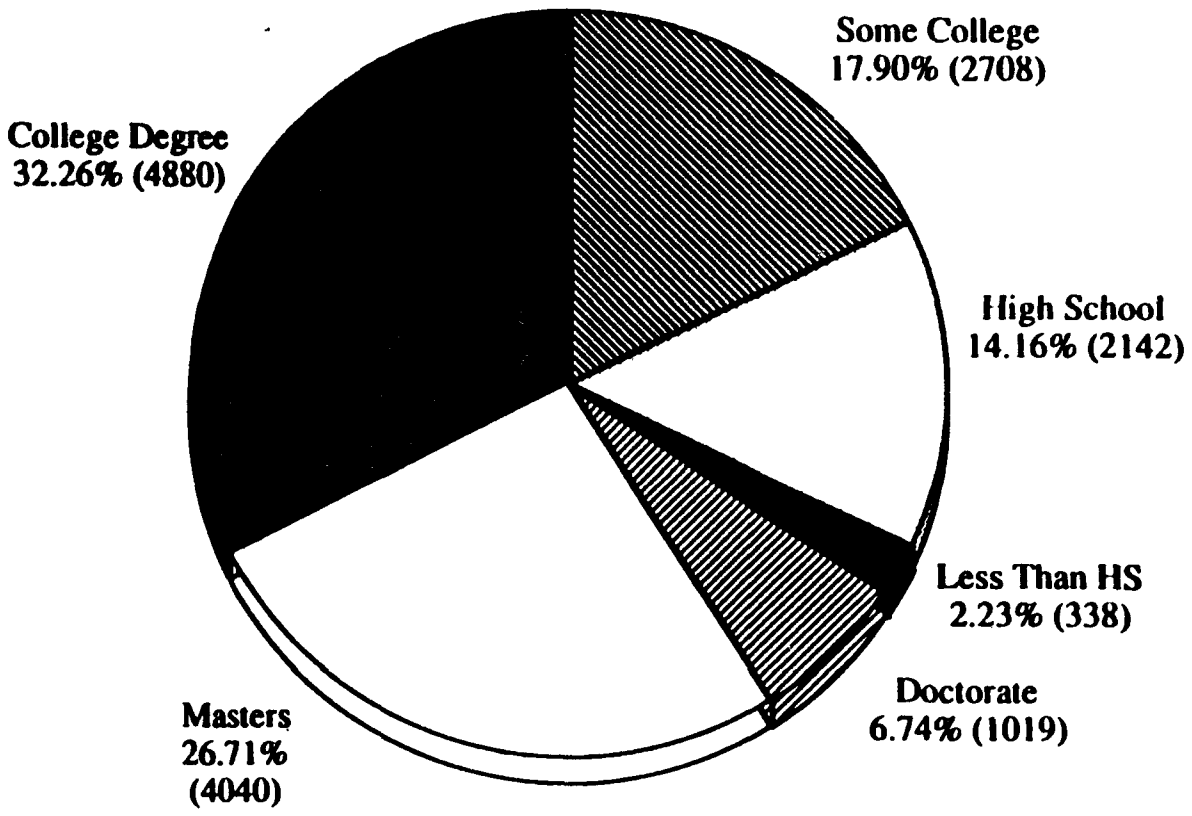


Figure A3

Source: OHRM

66% of EPA Employees Have a College Degree Government-wide is Only 32%

(FYREND88)



(Pop. 15,127)

Figure A4

Table A1. EPA Intervention Programs

I. External Pipeline Programs (Ongoing)

Program	Participants/yr	Organization	Level	Cost	Program Contacts
EPA Youth Pubs/Posters	20,000	HQ and All Regions	Elem/Sec Students & Teachers	$ 15K	OEA/Youth Offices/HQ
4H Summer Seminars	300	HQ	Secondary Students	NA	OEA/Youth Offices/HQ
Boy Scout Jamboree	60,000	HQ, Regions & ORD Labs	Elem/Sec/HS Students	$ 10K	OEA/Youth Office/HQ
Adopt-A-School	2,200	HQ, Regions & ORD Labs	Sec/High Students	NA	HQ/OHRM/Regs. 1,2,3,5,8, CI Lab
President Youth Awards	10,000	HQ and All Regions	Elem/Sec Students	$ 40K	OEA/Youth Office
Research Apprenticeship Program	50/yr	CI Laboratory	Sec/HS & College Students	$100K	ORD/CI Lab
Stay-In-School	750	HQ, Regions & Labs	HS/College Students	$135K	All Programs
*Minority Fellowship	30	HQ	College Students	$100K	ORD/OER/HQ
*Minority Summer Intern	12	Regions/Labs	College Students	$ 75K	ORD/OER/HQ
National Network for Environ. Mgmt. Studies	40	HQ & Regions	College Students	$150K	OPPE/HQ
Cooperative Education	65	HQ, Regions & Labs	HS/College Students	NA	All Programs
EPA Mgmt. Intern	24	HQ	College Students	$ 35K	HQ/OHPM
Research Associateship	50	Labs	Post-Grad	$200K	ORD/ORPM/HQ
*Minority Research Grants Assist.	5 PIs	HQ	College Faculty	$500K	ORD/OER/HQ
*Minority Faculty Intern	40	HQ, Regions & Labs	College Faculty	$120K	OHRM/HQ Operations
			SUBTOTAL:	$1,480K	

*Targeted for Historically Black Colleges and Universities

Table A1 cont'd

II. New External Pipeline Programs (Fiscal 1989)

Program	Participants	Organization	Level	Cost	Program Contacts
Saturday Science Academy	120	Region 4	Secondary Students	$ 10K	Reg. 4/EEO Office
Superfund HS Seniors	10	HQ	HS Students	$ 28K	HQ/OSWER/OERR
"2+2" Education	60	HQ	HS College Students	$300K	ORD/OER
Teacher Certification	NA	Reg. 3	EPA Sci/Engrs	NA	Reg. 3/Human Res. Mgmt. Branch
Engineering Summer Intern Program (pilot)	4	ORD, LV	College Students	$ 20K	ORD-Las Vegas Lab
			SUBTOTAL:	$358K	

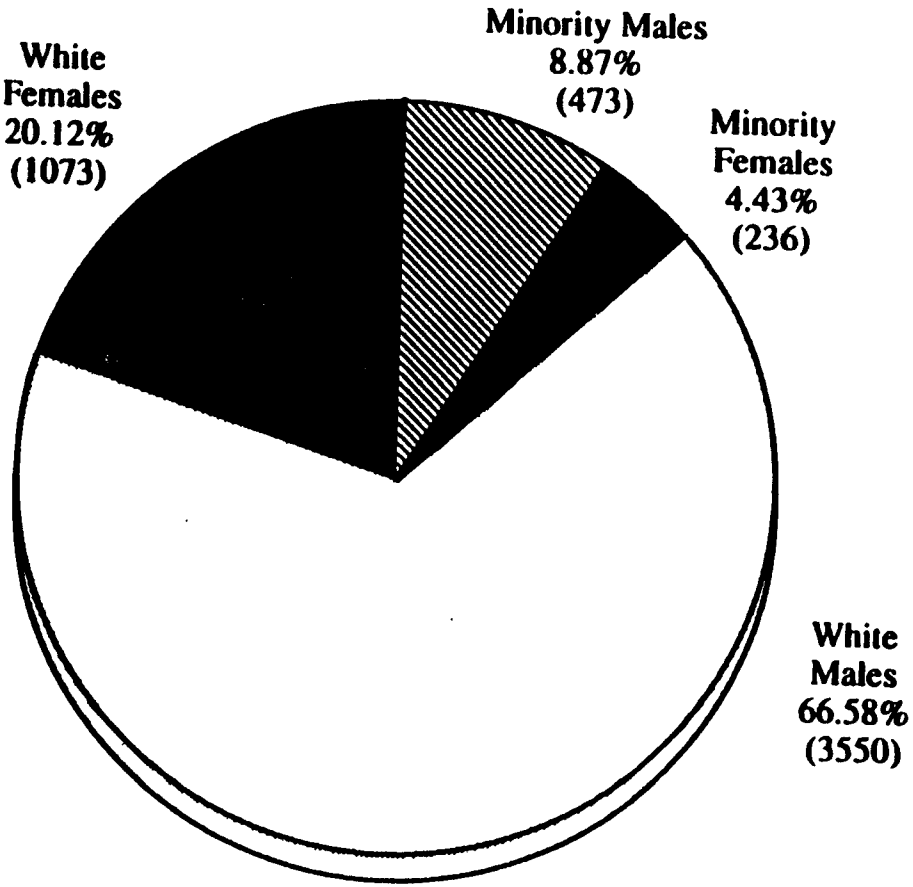
III. Internal Pipeline Program (Ongoing)

OAR's Support Training	15	HQ	Support Staff	$ 60K	HQ/OAR/Office of Prog. Development
ORD's Support Training					HQ/ORD/ORPM
Upward Mobility	100	HQ, Regions & Labs	Support Staff	$300K	All Programs
Greater Leadership Opp. (GLO)	40	HQ, Regions & Labs	Pre-Supvry	$200K	HQ/OHRM
Women Executive Leadership (OPM)	20	HQ	Pre-Supvry	$100K	HQ/OPM Prog/OHRM Coordination
Mid-Level Mgmt. Development	80	HQ, Regions & Labs	Pre-Managerial	$300K	HQ/OHRM
Executive Potential (OPM)	20	HQ	Pre-Managerial	$100K	HQ/OPM Prog/OHRM Coordination
Senior Executive Service Develop.	24	HQ, Regions & Labs	Pre-Executive	$200K	HQ/OHRM
			SUBTOTAL:	$1,260K	
			TOTAL:	$3,098K	

APPENDIX B

EPA Scientific and Engineering Workforce

EPA's Scientific and Engineering Workforce (FYREND 88)

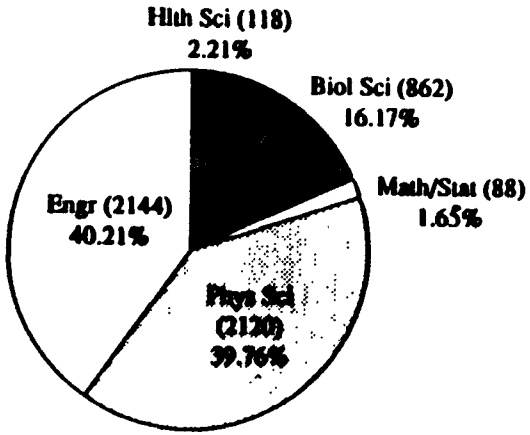


(Pop. 5332)

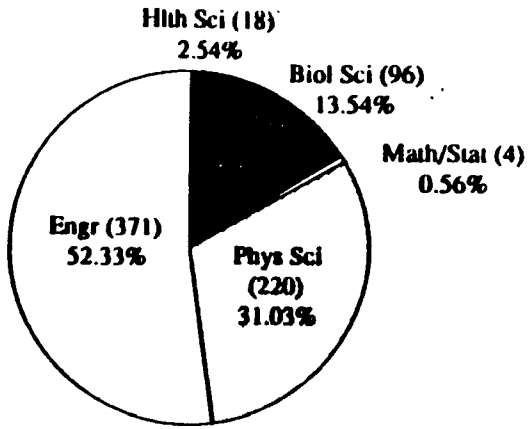
Figure B1

Source OHRM

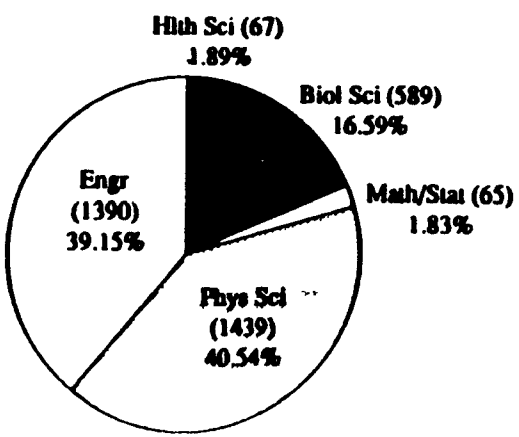
EPA's Scientific and Engineering Workforce by Occupation (FYREND88)



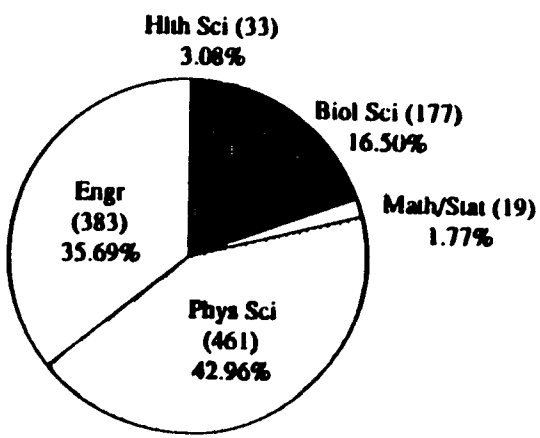
All Sci and Engr
(Pop. 5332)



All Minorities
(Pop. 709)



White Males
(Pop. 3550)



White Females
(Pop. 1073)

Figure B2

Source: OHRM

EPA Workforce Profile (FYREND88)
(Males Only)

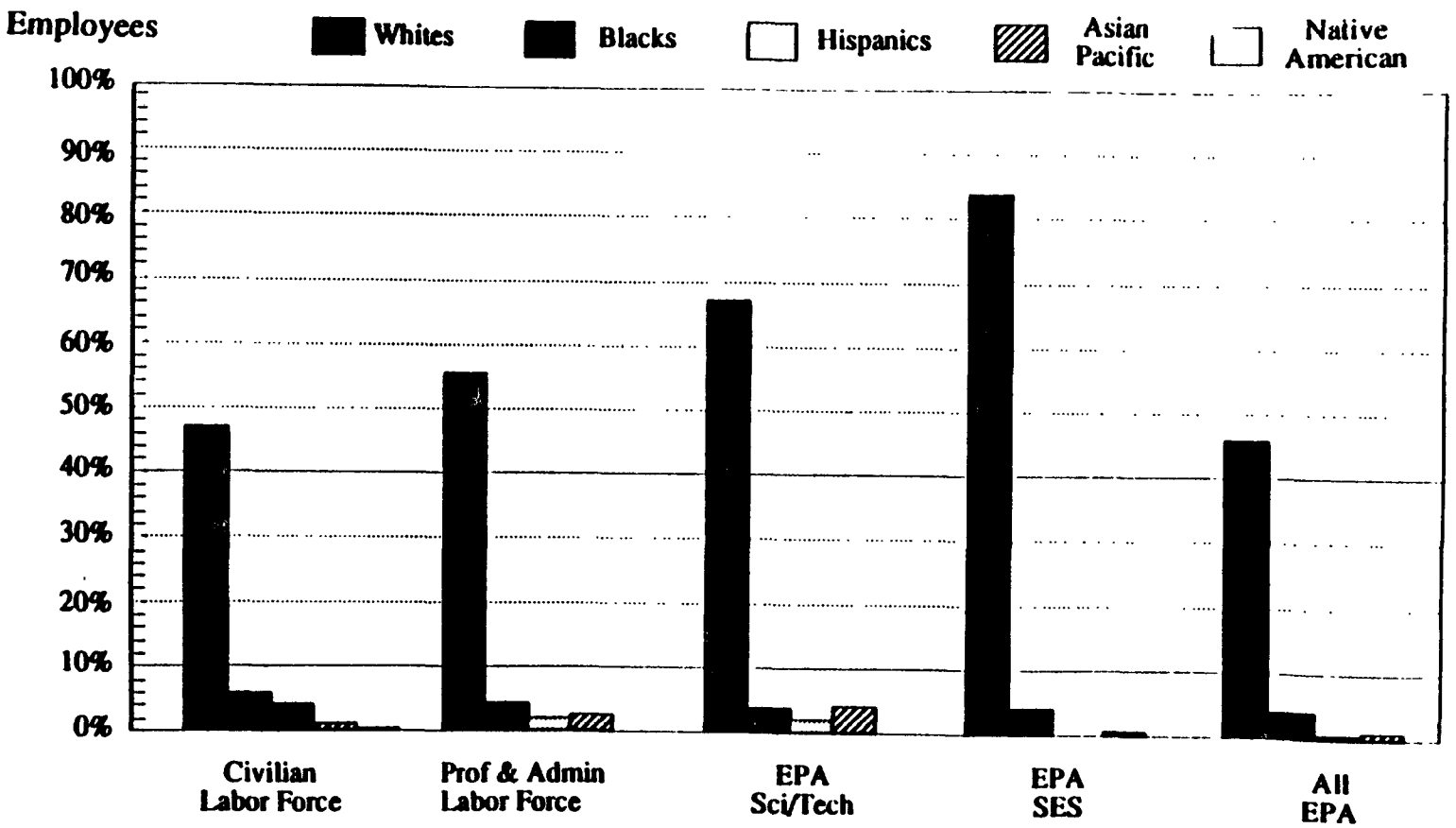


Figure B3

Source: OHRM

EPA Workforce Profile (FYREND88)
(Females Only)

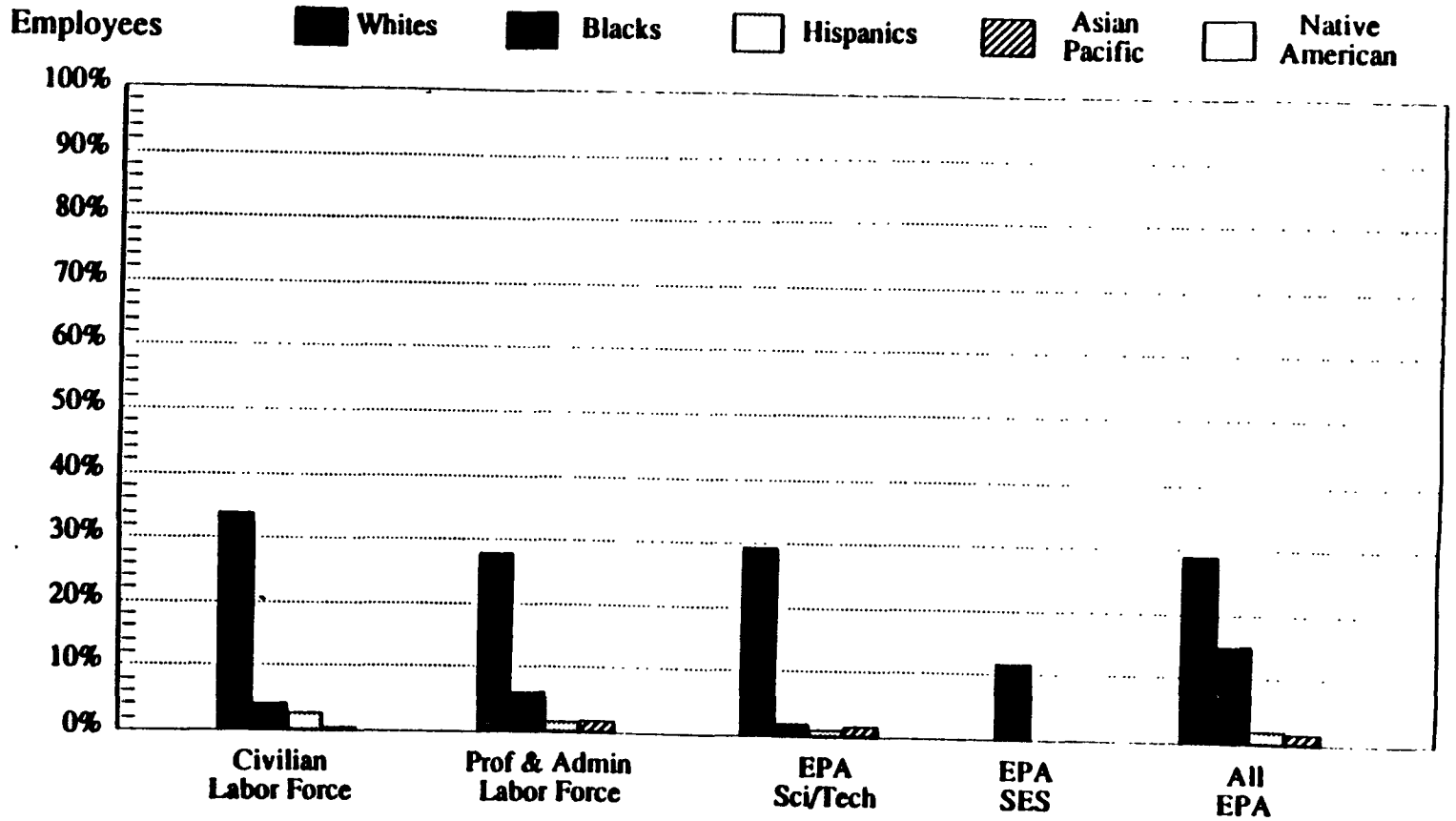


Figure B4

Source: OHRM

Education Levels of EPA Sci/Eng Employees (FYREND88)

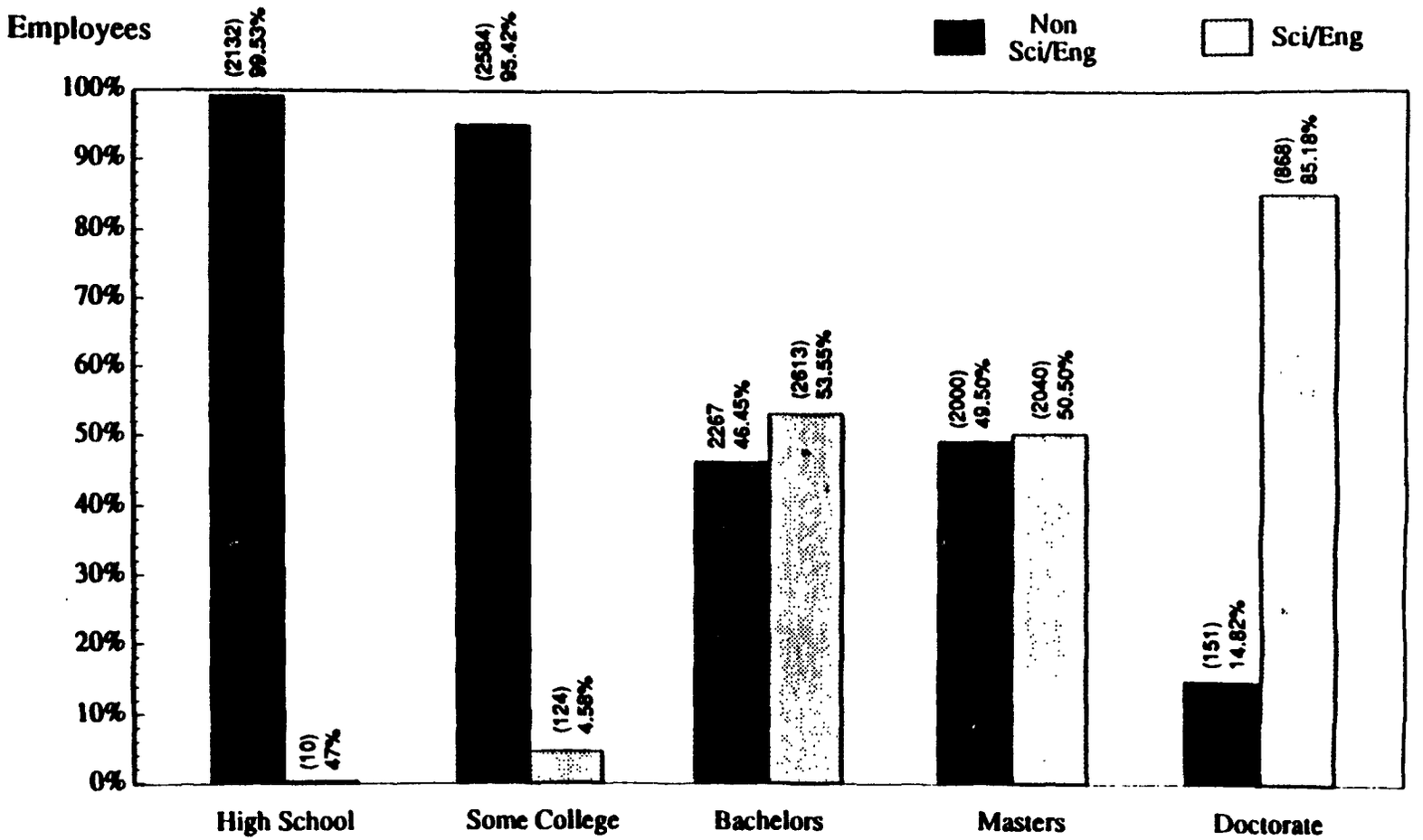


Figure B5

Source: OHRM

Acutal Number of Scientific and Engineering Employees By AASHIP/Region and Rank Order (FYREND88)*

AASHIP	Asian Pacific Islander Females	Asian Pacific Islander Males	Black Females	Black Males	Hispanic Females	Hispanic Males	Native Amer Males	Total Minority	White Females	White Males
ORD	7	27	10	28	3	12	2	89	149	912
OPTS	10	30	18	23	4	1	0	86	122	324
OSWER	2	4	3	4	4	9	0	26	65	121
OAR	1	8	2	6	2	1	0	20	58	325
OW	2	12	2	7	1	1	0	25	48	150
OECM	2	2	1	0	0	2	0	7	9	41
OARM	1	2	2	2	0	0	0	7	1	12
OPPE	1	0	0	0	1	1	0	3	3	24
OPC/AD	0	0	0	0	0	0	0	0	4	5
OIG	0	0	0	0	0	0	0	0	1	7
OEA	0	0	0	1	0	0	0	1	0	0
AA TOTAL	26	85	38	71	15	27	2	264	460	1921

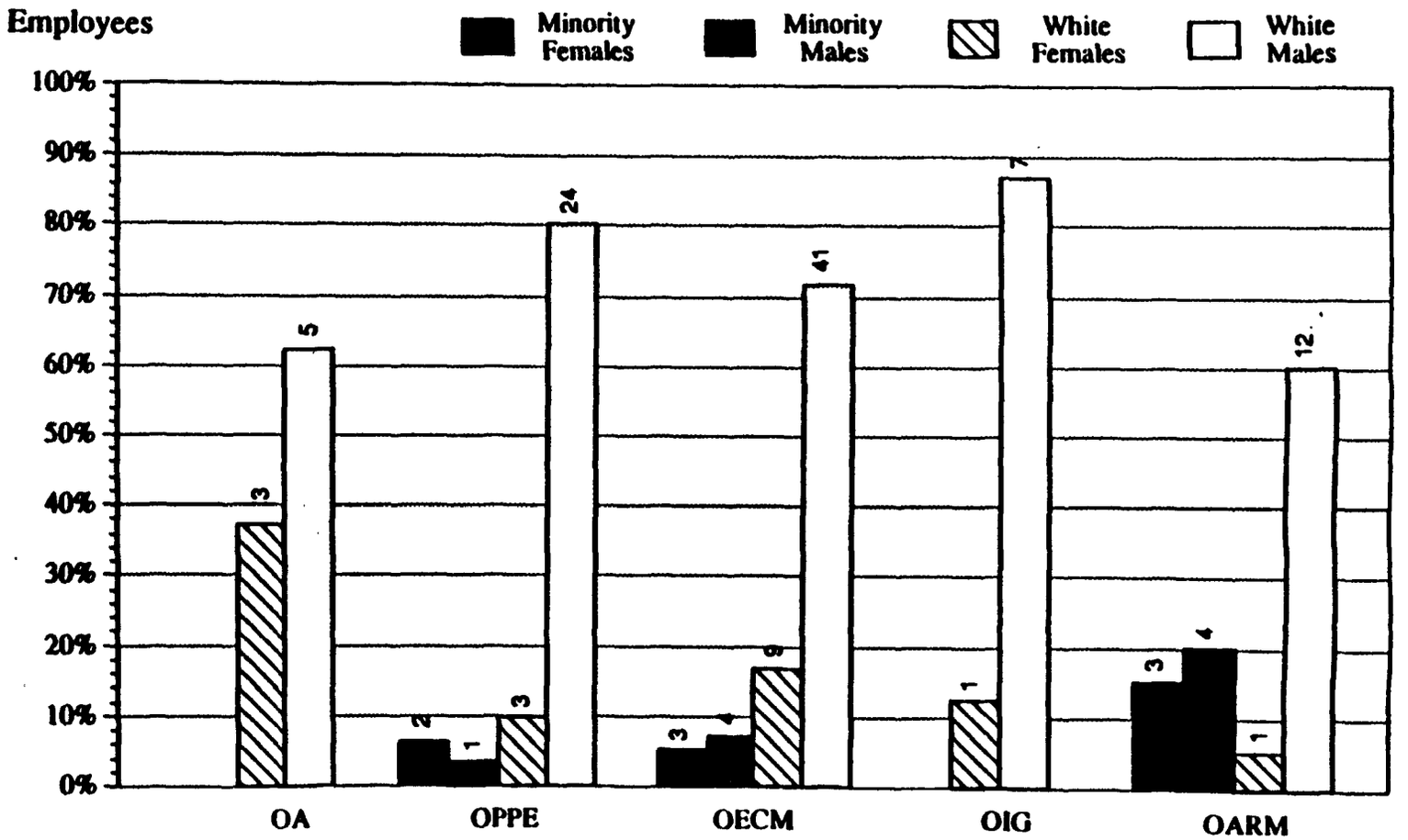
Region	Asian Pacific Islander Females	Asian Pacific Islander Males	Black Females	Black Males	Hispanic Females	Hispanic Males	Native Amer Males	Total Minority	White Females	White Males
REG 4	2	11	30	38	1	10	0	92	94	293
REG 5	9	32	12	18	7	8	0	86	91	264
REG 2	14	29	10	11	6	24	0	94	82	264
REG 3	5	8	9	14	5	5	0	46	82	195
REG 6	2	5	12	10	8	14	0	51	61	198
REG 9	8	16	0	2	1	4	0	31	63	129
REG 1	4	11	3	4	1	2	0	25	61	168
REG 7	1	2	2	3	4	2	1	15	45	155
REG 8	1	2	1	3	3	4	1	15	39	135
REG 10	2	6	0	2	1	2	0	13	21	102
REG TOTAL	48	122	79	105	37	75	2	468	639	1903
EPA TOTAL	74	207	117	176	52	102	4	732	1099	3824

*by Women + Minorities

Table B1

Source: OHRM

Distribution of Women and Minorities
Professional Scientific and Engineering Employees
FYREND88



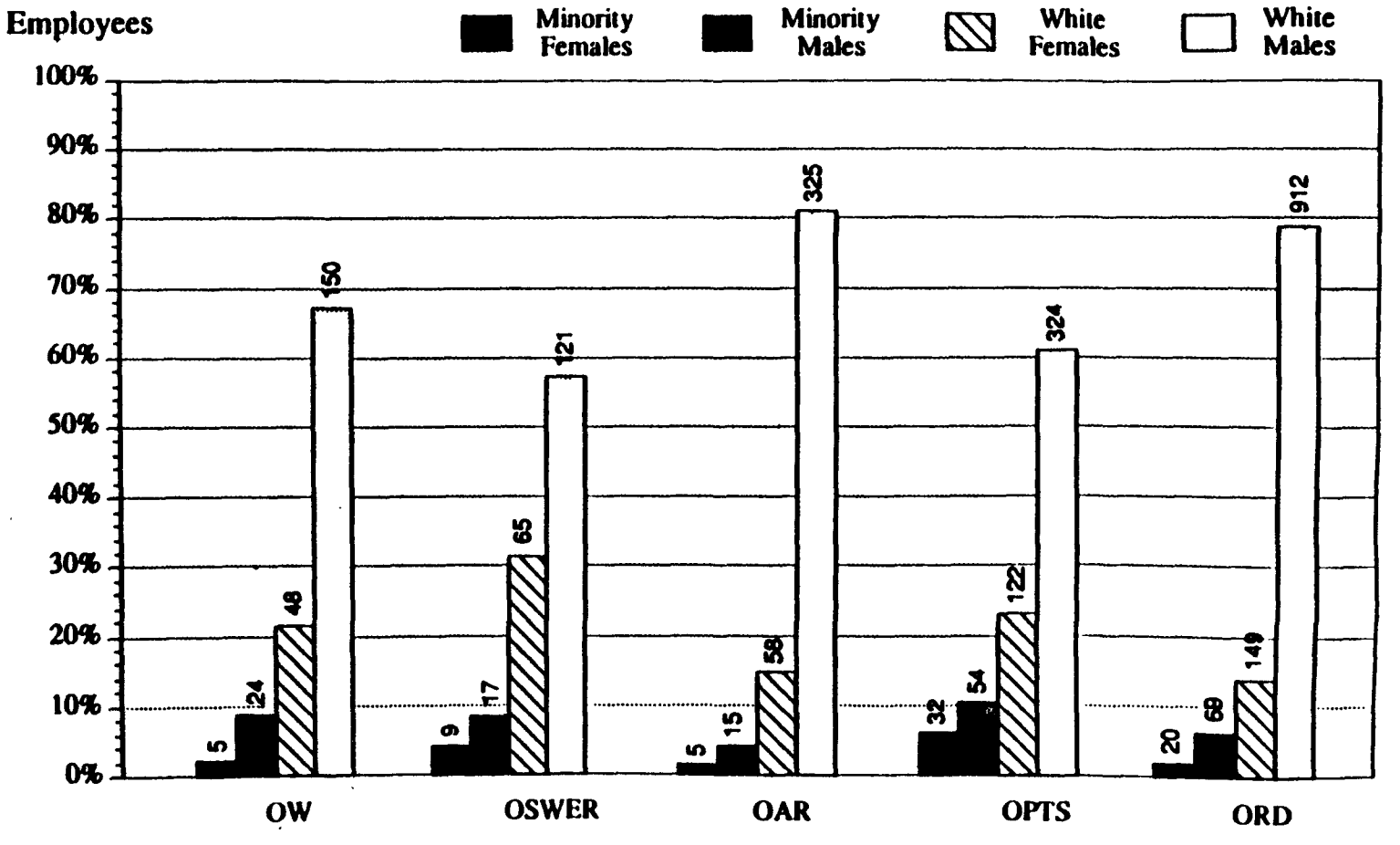
AASHIPS

* OEA, OGC = not significant

Figure B6

Source: OHRM

Distribution of Women and Minorities
Professional Scientific and Engineering Employees



AASHIPS

Figure B6

Source: OHRM

Distribution of Women and Minorities
Professional Scientific and Engineering Employees

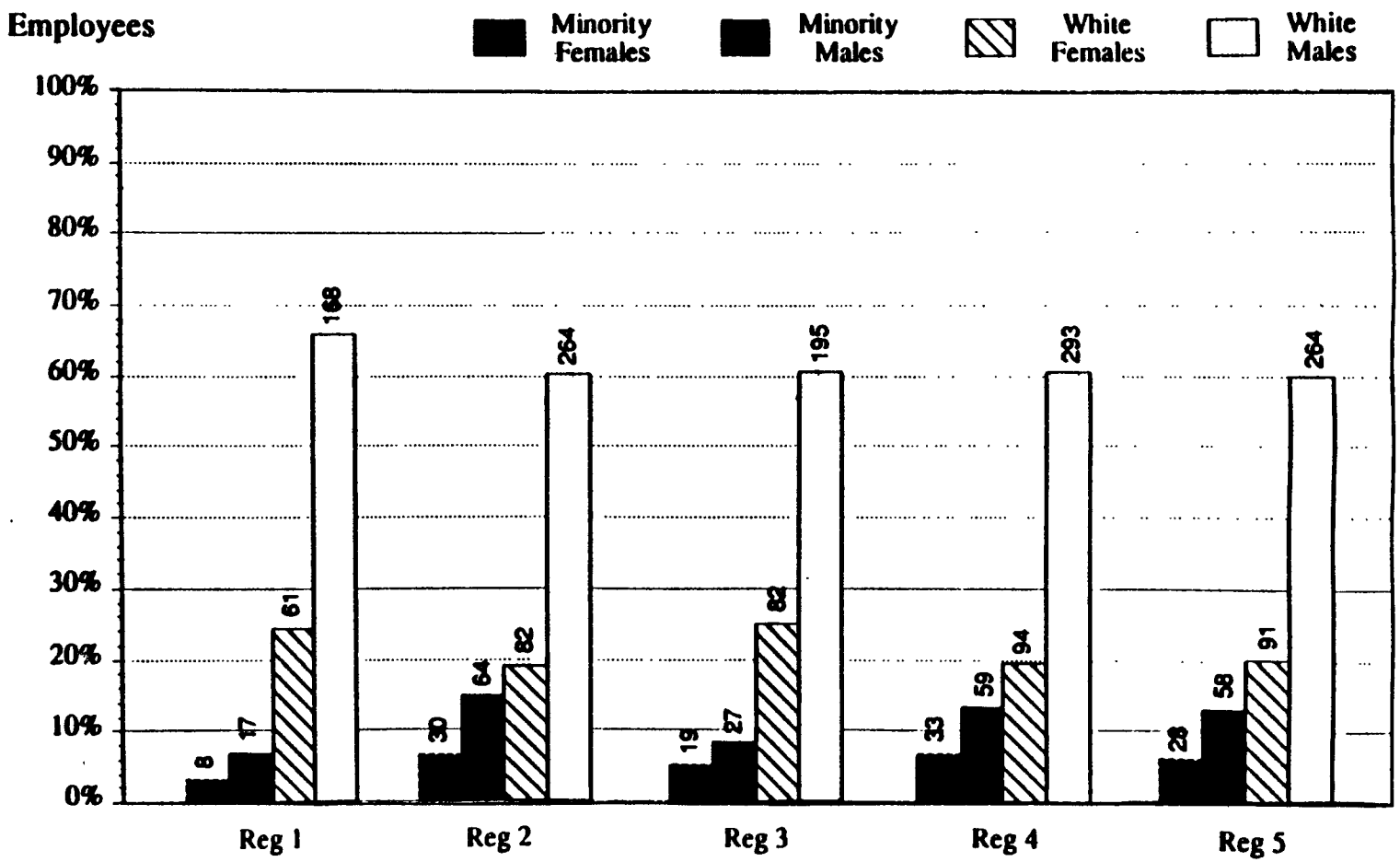


Figure B7

Source: OHRM

Distribution of Women and Minorities Professional Scientific and Engineering Employees

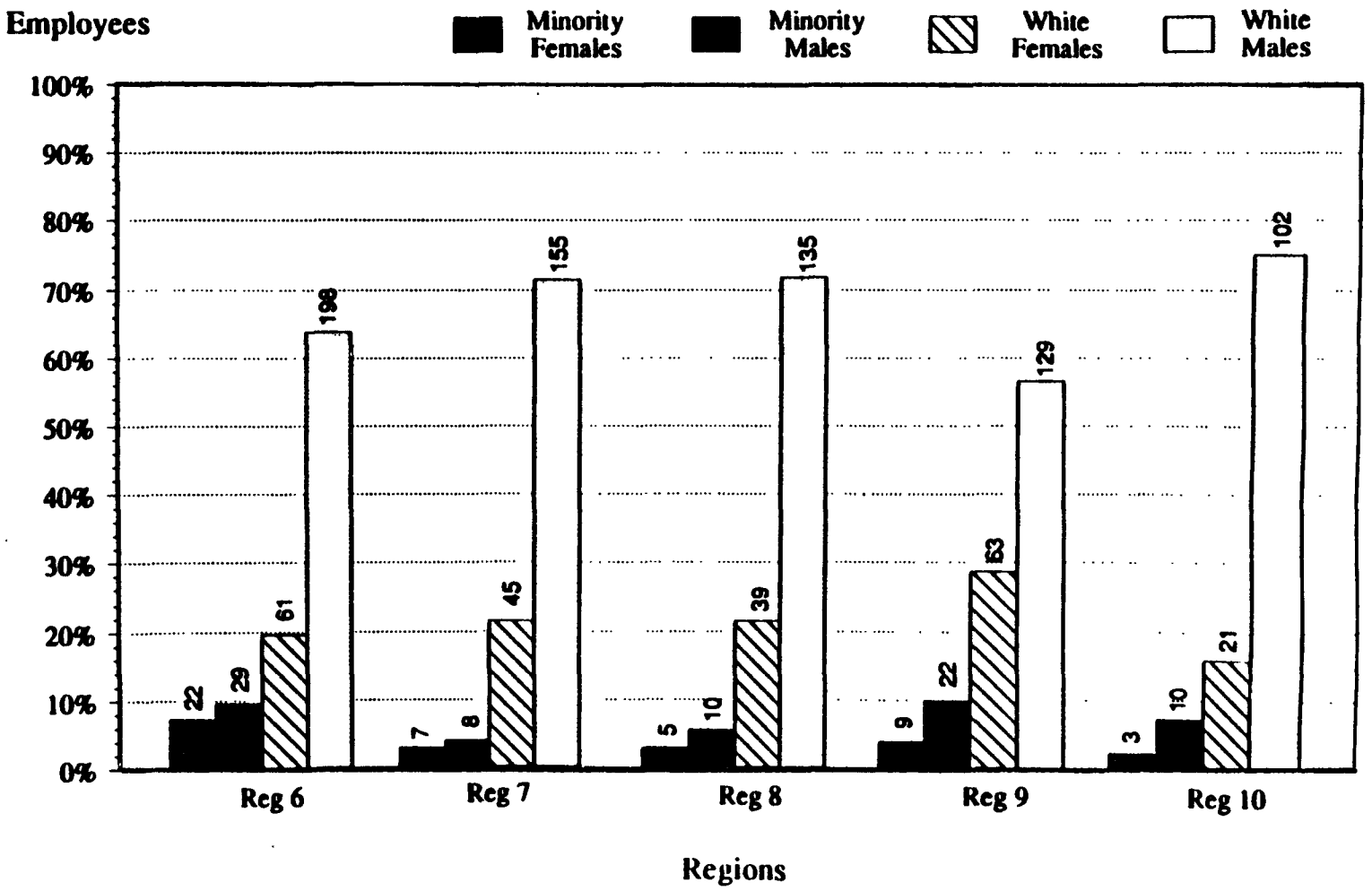


Figure B7

FY 1988 Losses from Major Occupation Groups As a Percent of Average FY'88 Employment

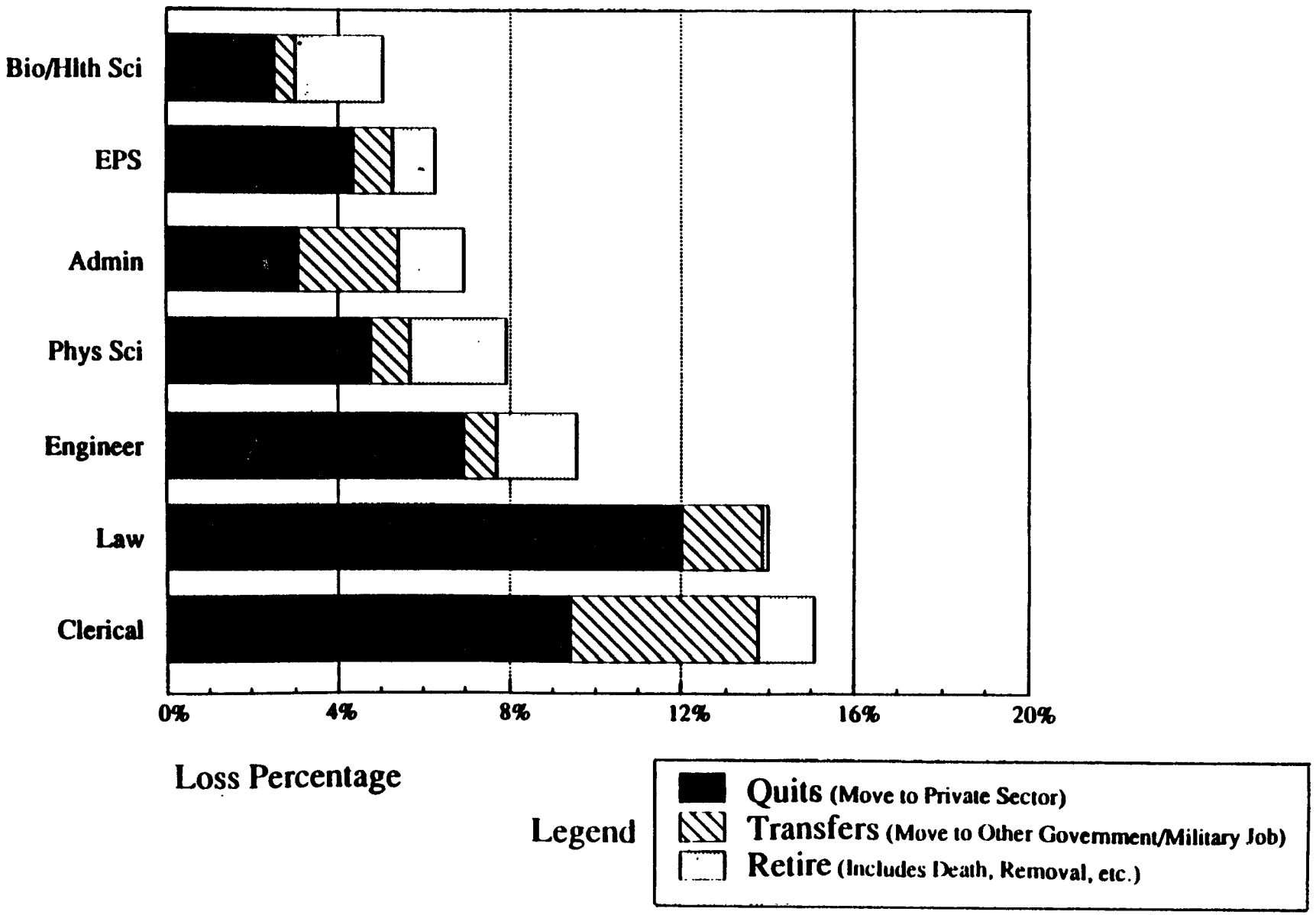


Figure B8

Source OHRM

Status of Women and Minorities in Supervisory Positions in EPA (as of 11/88)

		Minorities		Non-minorities		TOTAL
		Women	Men	Women	Men	
GS-11	#	202	110	575	592	1479
	%	13.7	7.4	38.9	40.0	100.0
GS-12	#	250	262	818	1567	2897
	%	8.6	9.0	28.3	54.1	100.0
Grades 11/12	#	452	372	1393	2159	4376
	%	10.3	8.5	31.9	49.3	100.0
By Races	#	824		3552		4376
	%	18.8		81.2		100.0
		Total Male		Total Female		
By Sex	#	2531		1845		4376
	%	57.8		42.2		100.0

Women and minorities represent 60% of the GS 11 population and 45.9% of the GS 12's.

Source: OHRM

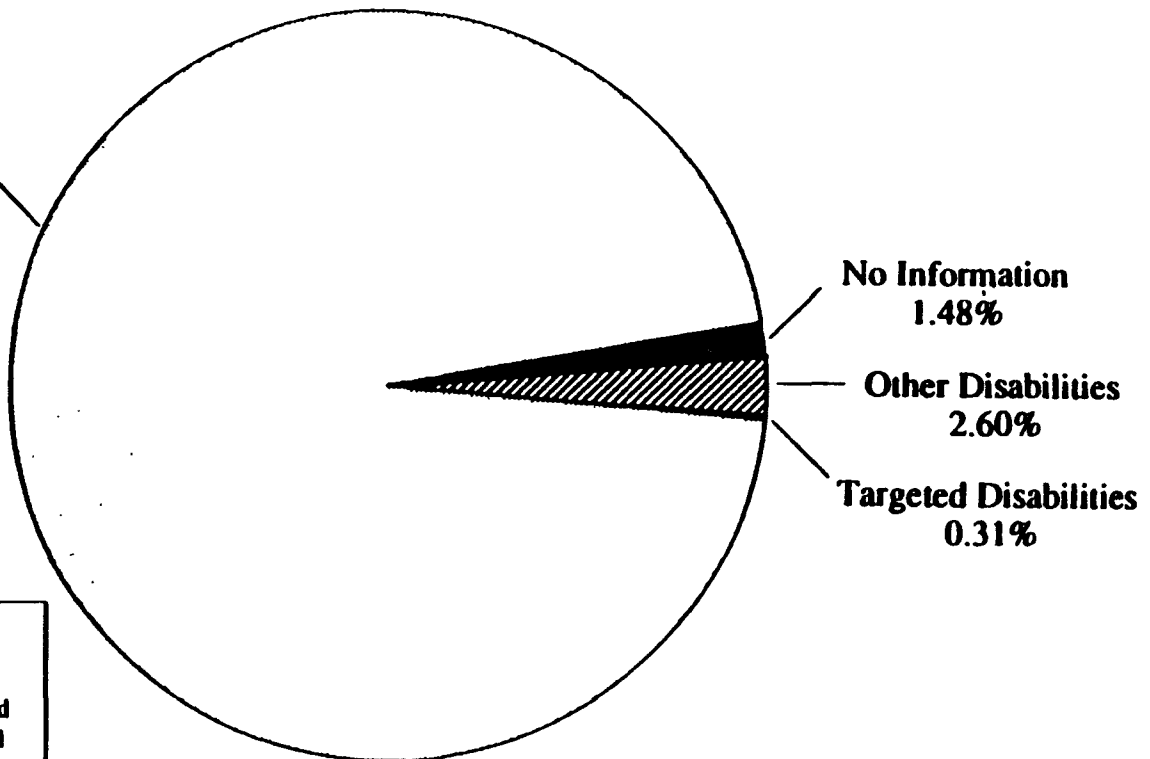
Status of Women and Minorities in Supervisory Positions in EPA (as of 11/88)

		Minorities		Non-minorities		TOTAL
		Women	Men	Women	Men	
GM-13	#	46	55	162	499	762
	%	6.0	7.2	21.3	65.5	100.0
GM-14	#	30	60	211	763	1064
	%	2.8	5.7	19.8	71.7	100.0
GM-15	#	14	32	128	537	713
	%	2.0	4.5	17.9	75.6	100.0
SES	#	1	10	32	202	244
	%		4.1	13.1	82.8	100.0
Across Levels	#	91	157	533	2003	2784
	%	3.2	5.6	19.2	72.0	100.0
By Race	#	247		2536		2783
	%	8.9		91.1		100.0
By Sex		Total Male		Total Female		
	#	2160		623		2793
	%	77.6		22.4		100.0

Women and minorities currently fill 28% of GM and SES positions

Source: OHRM

Persons With Disabilities
Professional Scientific and Engineering Employees Only
FYEND88



Disabilities Legend

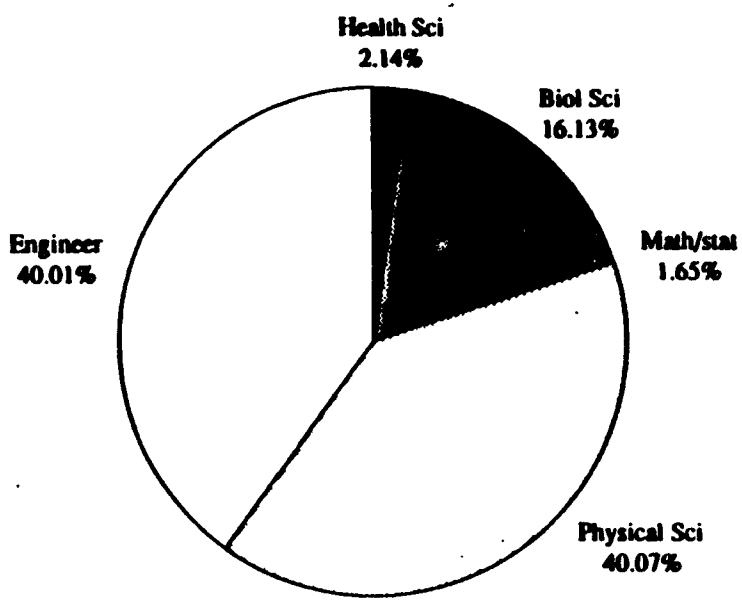
Targeted Disabilities	–	Blind, Deaf, Missing or Distorted Limbs, Paralysis, Serious Mental or Convulsive Disorders
Other Disabilities	–	Minor Disabilities
No Disabilities	–	None of the Above Disabilities
No Information	–	No Disability Information Provided

(Pop. 5456)

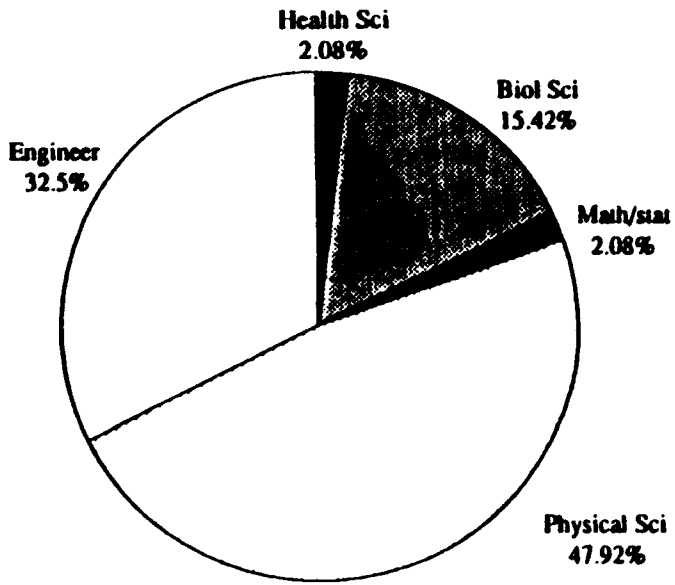
Figure B10

Source: OHRM

Distribution of Professional Scientific/Technical Employees and Persons With Disabilities (FYEND88)



All Scientific And Technical Employees
(Tot. Pop. 5456)



All Persons With Disabilities
(Tot. Pop. 240)

Figure B11

Source OHRM

APPENDIX C

National Institutes of Health Minority Institutions Program Support

Minority Access to Research Careers (MARC)

The National Institutes of Health (NIH) help minority institutions train greater numbers of scientists and teachers in biomedical disciplines through four different mechanisms:

1) *MARC Honors Undergraduate Research Training Program*

This undergraduate research training program is intended to assist minority institutions in training greater numbers of scientists and teachers in health-related fields. The program has three objectives: to increase the number of well-prepared minority students who can compete successfully for entry into graduate programs leading to a Ph.D.; to aid the development of a strong biological sciences curriculum; and to strengthen biomedical research training programs.

Support. Selected institutions are given support for junior and senior level honor students. The honors program is aimed at significantly improving the research training capabilities of minority institutions. Funds are available for research equipment and supplies essential to the program, and for stipends, tuition fees, and limited travel costs for the trainees. Each institutional grant has a maximum support period of 5 years.

2) *MARC Predoctoral Fellowship Program*

The MARC Predoctoral Fellowship Program provides support for research training leading to the Ph.D. degree in the biomedical sciences for selected students who are graduates of the MARC Honors Undergraduate Research Training Program.

Support. An annual stipend is provided as a subsistence allowance to help a MARC fellow defray living expenses during the training period. Also, funds are provided per 12-month period to the sponsoring institution to help defray training expenses such as full tuition, fees, research supplies, equipment, travel to scientific meetings, and related items.

3) *MARC Visiting Scientist Award*

The purpose of this award is to provide support for outstanding scientist-teachers to serve as visiting scientists at qualifying institutions. The primary intention is to strengthen research and teaching programs in these institutions' health research fields for the benefit of students and faculty by drawing upon the special talents of scientists from other institutions. The visiting scientists benefit through the added experience gained by involvement in innovative science education and research development programs.

Support. Fellowships are awarded for periods of 3 to 12 months. The stipend is determined by the nominees' current salary at the institution at which they are employed. Any sabbatical pay or other salary support for the proposed period in residence is taken into account. An additional travel allowance may be provided equivalent to round trip coach air fare between the visiting scientist's home institution and the sponsoring institution.

4) *MARC Faculty Fellowship Program*

This program provides opportunities for advanced research training for selected faculty members of 4 year colleges, universities and health professional schools with substantial enrollments of ethnic minorities. Institutions can nominate faculty to apply for the MARC fellowship to support a period of advanced study and research training in graduate departments and laboratories as candiates for a Ph.D. degree or for postdoctoral research training in specific areas of the biomedical sciences.

Support. Individuals may receive up to 3 years of support. The amount of the stipend awarded is commensurate with the salary that the individual would normally receive from the institution up to a maximum of $25,000. Upon completion of the training, fellows are expected to return to their sponsoring institutions to do research and teaching so as to assist minority students in preparing for research careers in the biomedical sciences.

Minority Biomedical Research Support (MBRS) Program

The purpose of the Minority Biomedical Research Support (MBRS) Program is to further the NIH's commitment towards ensuring ethnic minority groups an equal opportunity to pursue careers in biomedical research. The program has 2 major goals: to increase the number and quality of minority health scientists; and to strengthen the capability of eligible minority institutions to provide health career opportunities to their students and to conduct research in the health sciences.

The program has 4 grant mechanisms for carrying out its objectives: 1) the traditional MBRS Program Project grant; 2) the undergraduate college grant; 3) the thematic grant; and 4) the supplemental grant for shared instrumentation.

Support. Through institutional awards, the MBRS Program provides for academic year and summer salaries and wages for faculty, students, and support personnel needed to conduct a research project. Other cost categories suppported include: equipment, supplies, travel, and alterations and renovations.

For further information on either program, please call NIH's Office of Grant Inquiries, at (301)496-7441.

APPENDIX D

Acronyms

AA	=	Assistant Administrator
AARP	=	American Association of Retired Persons
AWBER	=	Andrew W. Breidenback Environmental Research Center
DA	=	Deputy Administrator
EEO	=	Equal Employment Opportunity
EPA	=	Environmental Protection Agency
FCCSET	=	Federal Coordinating Committee for Science, Engineering and Technology
FEORP	=	Federal Equal Opportunity Recruitment Plan
FWP	=	Federal Women's Program
FY	=	Fiscal Year
GLO	=	Greater Leadership Opportunity
GS	=	General Schedule
HBCU	=	Historically Black Colleges and Universities
HQ	=	Headquarters (EPA)
MARC	=	Minority Access to Research Careers
MBRS	=	Minority Biomedical Research Support
MIA	=	Minority Institution Assistance
NIH	=	National Institutes of Health
NSF	=	National Science Foundation
OAR	=	Office of Air and Radiation
OARM	=	Office of Administration and Resources Management
OC	=	Office of Comptroller
OCR	=	Office of Civil Rights
OEE	=	Office of Environmental Education
OHRM	=	Office of Human Resources Management
OIA	=	Office of International Activities
OMB	=	Office of Management and Budget
OPP	=	Office of Pesticide Program
OPPE	=	Office of Program Planning and Evaluation
ORD	=	Office of Research and Development
OSTP	=	Office of Science and Technology Policy
OSWER	=	Office of Solid Waste and Emergency Response
OW	=	Office of Water
PRE K-12	=	Prekindergarten Through Twelfth Grade
R&D	=	Research and Development
RA	=	Regional Administrator
RRAs	=	Resident Research Associates
SAB	=	Science Advisory Board
SES	=	Senior Executive Service
WISE	=	Women in Science and Engineering