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Broad National Effort Urgently Needed To Maximize Potential of Women Scientists and Engineers in Academia [1]

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Press Release from the National Academies [2] WASHINGTON -- Women face barriers to hiring and promotion in research universities in many fields of science and engineering -- a situation that deprives the United States of an important source of talent as the country faces increasingly stiff global competition in higher education, science and technology, and the marketplace, says a new report from the National Academies. Eliminating gender bias in universities requires immediate, overarching reform and decisive action by university administrators, professional societies, government agencies, and Congress. "Women are capable of contributing more to the nation's science and engineering research enterprise, but bias and outmoded practices governing academic success impede their progress almost every step of the way," said Donna E. Shalala, president of the University of Miami, former secretary of the U.S. Department of Health and Human Services, and chair of the committee that wrote the report. "Fundamental changes in the culture and opportunities at America's research universities are urgently needed. The United States should enhance its talent pool by making the most of its entire population." The report offers a broad range of recommendations, including the following important steps. Trustees, university presidents, and provosts should provide clear leadership in changing the culture and structure of their institutions to recruit, retain, and promote more women -- including minority women -- into faculty and leadership positions. Specifically, university executives should require academic departments to show evidence of having conducted fair, broad, and aggressive talent searches before officials approve appointments. And departments should be held accountable for the equity of their search processes and outcomes, even if that means canceling a search or withholding a faculty position. The report also urges higher education organizations to consider forming a collaborative, self-monitoring body that would recommend standards for faculty recruitment, retention, and promotion; collect data; and track compliance across institutions. University leaders, the report adds, should develop and implement hiring, tenure, and promotion policies that take into account the flexibility that faculty members may need as they pass through

various life stages -- and that do not sacrifice quality to meet rigid timelines. Administrators, for example, should visibly and vigorously support campus programs that help faculty members who have children or other caregiving duties to maintain productive careers. At a minimum, the programs should include provisions for paid parental leave, facilities and subsidies for on-site and community-based child care, and more time to work on dissertations and obtain tenure. Forty years ago, women made up only 3 percent of America's scientific and technical workers, but by 2003 they accounted for nearly one-fifth. In addition, women have earned more than half of the bachelor's degrees awarded in science and engineering since 2000. However, their representation on university and college faculties fails to reflect these gains. Among science and engineering Ph.D.s, four times more men than women hold full-time faculty positions. And minority women with doctorates are less likely than white women or men of any racial or ethnic group to be in tenure positions. Previous studies of female faculty have shed light on common characteristics of their workplace environments. In one survey of 1,000 university faculty members, for example, women were more likely than men to feel that colleagues devalued their research, that they had fewer opportunities to participate in collaborative projects, and that they were constantly under a microscope. In another study, exit interviews of female faculty who "voluntarily" left a large university indicated that one of their main reasons for leaving was colleagues' lack of respect for them. If academic institutions are not transformed to tackle such barriers, the future vitality of the U.S. research base and economy is in jeopardy, the report says. The following are some of the committee's key findings that underscore its call to action: > Studies have not found any significant biological differences between men and women in performing science and mathematics that can account for the lower representation of women in academic faculty and leadership positions in S&T fields. > Compared with men, women faculty members are generally paid less and promoted more slowly, receive fewer honors, and hold fewer leadership positions. These discrepancies do not appear to be based on productivity, the significance of their work, or any other performance measures, the report says. > Measures of success underlying performance-evaluation systems are often arbitrary and frequently applied in ways that place women at a disadvantage. "Assertiveness," for example, may be viewed as a socially unacceptable trait for women but suitable for men. Also, structural constraints and expectations built into academic institutions assume that faculty members have substantial support from their spouses. Anyone lacking the career and family support traditionally provided by a "wife" is at a serious disadvantage in academe, evidence shows. Today about 90 percent of the spouses of women science and engineering faculty are employed full time. For the spouses of male faculty, it is nearly half. If implemented and coordinated across public and private sectors as well as various institutions, the committee's nearly two dozen recommendations would improve workplace environments for all employees while strengthening the foundations of America's competitiveness. A brief overview of several recommendations follows. Universities University leaders should incorporate the goal of counteracting bias against women in hiring, promotion, and treatment into campus strategic plans, the report says. And leaders, working with the monitoring body proposed by the report, should review the composition of their student enrollments and faculty ranks each year -- and publicize progress toward goals. Universities also should examine evaluation practices, with the goal of focusing on the quality and impact of faculty contributions, the report says. In the past decade, several universities and agencies have taken steps to increase the participation of women on faculties and their numbers in leadership positions. But such efforts have not transformed the fields, the report says. Now is the time for widespread reform, the committee emphasized. Professional societies and higher education organizations The American Council on Education should bring together other relevant groups -- such as the

Association of American Universities and the National Association of State Universities and Land-Grant Colleges -- to discuss the formation of the proposed monitoring body, the report says. In addition, honorary societies should review their nomination and election procedures to address the underrepresentation of women in their memberships. The report also recommends that scholarly journals examine their processes for reviewing papers submitted for publication. To minimize any bias, they should consider keeping authors' identities hidden until reviews have been completed. Government agencies and Congress Federal funding agencies and foundations, in collaboration with professional and scientific societies, should hold mandatory national meetings to educate university department chairs, agency program officers, and members of review panels on ways to minimize the effects of gender bias in performance evaluations, the report says. Furthermore, these agencies should come up with more ways to pay for interim technical or administrative support for researchers who are on leave because of caregiving responsibilities. Federal enforcement agencies -- including the U.S. Equal Employment Opportunity Commission (EEOC); U.S. departments of Education, Justice, and Labor; and various federal civil rights offices -- should provide technical assistance to help universities achieve diversity in their programs and employment, and encourage them to meet such goals. These agencies also should regularly conduct compliance reviews at higher education institutions to make sure that federal antidiscrimination laws are being upheld, the committee said. Discrimination complaints should be promptly and thoroughly investigated. Likewise, Congress should make sure that these laws are enforced, and routinely hold oversight hearings to investigate how well relevant laws are being upheld by the departments of Agriculture, Defense, Education, Energy, and Labor; EEOC; and science agencies, including the National Institutes of Health, the National Science Foundation, the National Institute of Standards and Technology, and NASA. The study was sponsored by the Office of Research on Women's Health at the National Institutes of Health; Eli Lilly and Co.; National Science Foundation; Ford Foundation; and the National Academies. The Academies comprise the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council. They are private, nonprofit institutions that provide science, technology, and health policy advice under a congressional charter.

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