A new U.S. commission on women, minorities, and people with disabilities offers a strong call to action. But translating similar words into deeds in the past has proven to be quite difficult

Diversity: Easier Said Than Done

DIVERSITY

Can the scientific workforce look like society at large? A national commission says that should be the goal, but the National Science Foundation is struggling to find a formula to boost careers of women scientists (p. 379), and some contrarian scholars argue that women may not want parity in some fields (p. 380).

▶CALL TO ARMS

NSF IN FLUX

The Capitol Hill hearing room was filled with women. And that was exactly the point. On 13 July the congressionally mandated Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology Development (CAWMSET) issued a set of recommendations that included a call to make the U.S. scientific workforce reflect the overall employment pool. The country has a long way to go: Less than a quarter of U.S. scientists and engineers are women, while African Americans and Hispanics fill just 8% of the slots, a third of their representation in the general population. But the sea of women who gathered in a congressional hearing room as the preliminary report was unveiled, each one a high achiever in government, industry, or academia, testified silently to one of its key points: Women are more than capable of helping maintain U.S. scientific leadership if cultural, employment, and educational obstacles are removed.

"The report documents the barriers that keep minorities, women, and people with disabilities from participating proportionally in science and engineering—from discrimination and bias to financial constraints and family responsibilities," said Elaine Mendoza, chair of the commission and CEO of the Texas software company Conceptual Mindworks Inc. The commission's goal, she said, "is to achieve real, measurable progress toward a scientific enterprise empowered by its best [minds], rather than the traditional [labor force]."

To do so, the commission called for more federally funded college scholarships for the needy; improved elementary and secondary science and math education for all students; a stronger commitment to diversity by industry; a campaign to improve the public image of science; and an ongoing panel of government, industry, and academic officials that would flesh out the commission's proposals and monitor progress toward achieving them. (The full report, available at www.nsf.gov/od/cawmset, is due out at the end of the month.)

Star power. Actress Danica McKellar, who has a math degree from UCLA, was part of an all-star cast at the report's unveiling that included Rep. Connie Morella, seated left, and commission chair Elaine Mendoza, right.

What Needs to Be Changed

Here are the major recommendations from the CAWMSET report:

- Adoption and implementation of high-quality state education standards in math and science, teacher training, and facilities
- Aggressive intervention to prepare students for postsecondary education
- Expanded federal support for college scholarships and fellowships
- Holding employers accountable for the career development of underrepresented groups
- Coordinated effort to improve the public image of scientists and engineers
- A public-private body to continue the commission's efforts

But whether such efforts will be sufficient to create a diverse talent pool is not at all clear. Some scientists argue that parity may not be an appropriate goal (see p. 380). And, although committed to improving the status of women and minority scientists, the National Science Foundation (NSF) has found that there is no single formula, or consensus, on how to do so (see p. 379).

Created in 1998, CAWMSET owes its existence to the persistence of Representative Connie Morella (R–MD). Her initial idea for a panel on women was shot down repeatedly in Congress until Morella broadened the focus to include other underrepresented groups (*Science*, 30 April 1999, p. 727). The commission's membership—nine women and two men appointed by Congress, the White House, and the National Governors Association—reflects its original emphasis on women. And last week's press briefing was dominated by discussions about the cultural stereotypes and the hostile climate that prevent women from pursuing scientific careers.

"I still remember my ninth grade teacher coming up to me after I had gotten an A on a science test and saying, 'I didn't think someone like you would do well on that test!' " recalls Danica McKellar, 25, who as a teenager played the girl-next-door Winnie Cooper on the popular television series *The Wonder Years* and then went on to earn an undergraduate mathematics degree from the University of California, Los Angeles. "What kind of encouragement is that?" asks the actress, who maintains a Web site to help students with their math homework (danicamckellar.com) and who is also a spokesperson for Figure This!, a federally funded series of math challenges for the family.

But are nurturing teachers and a rigorous curriculum enough to produce the in-

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creased number of high-tech workers needed for the labor pool? "Parity makes a nice goal, but it lets you ignore a lot of other issues that are pretty important," says Susan Fitzgerald, program director for the James S. McDonnell Foundation and a director of the Association for Women in Science. "Why are there so many more women in the life sciences than the physical sciences?" she asks. "Is it because of inherent differences in career interests, or because there are more opportunities? And if the IT job market is so hot, why has the percentage of women getting degrees in computer science fallen by a third since 1985?"

Commission members also emphasize the importance of having industry step up to the plate. The report recommends that employers "be held accountable for the career development of their employees" from underrepresented groups and that they report annually on their progress. Mendoza believes that industry is ready to take that step, citing the work of such companies as IBM and Xerox.

But not even the most progressive companies are willing to share workforce data with the world. The Industrial Research Institute (IRI), whose members represent most of the research-intensive companies in the United States, conducts a biennial survey of the number of women and minorities in senior scientific slots. "We started it in 1993 after one HR [human resources] director asked his peers if anyone had a female vice president and nobody raised his hand," recalls IRI's Robert Burkart. "We've done it every 2 years since then and, yes, there has been some progress, more for women than for minorities," says Burkart. "But I can't share those numbers with you," he adds quickly. Companies participate, he says, only because they know "the results will be kept within the fold."

CAWMSET plows much of the same ground as a 1988 report, also mandated by Congress, which was one of the first to highlight the impact on science of the growing number of women and underrepresented minorities in the U.S. workforce (*Changing America: The New Face of Science and Engineering*). The executive director of that commission says she welcomes the latest report, because it reinforces the point that the problems are so hard to solve. "We as a society haven't made as much progress on this topic as we might have," says Sue Kemnitzer, who runs engineering education programs at NSF. At the same time, Kemnitzer says the key reasons for broadening the talent pool haven't changed. "It's not right to waste talent. Diversity also improves the science and maximizes our chances of solving some of our biggest problems."

—JEFFREY MERVIS

DIVERSITY

▶ NSF IN FLUX

NSF Searches for Right Way to Help Women

With targeted programs a political no-no, the National Science Foundation is betting that letting everyone participate will mean greater progress for women

How should the government advance the cause of women scientists when programs that target a particular group are out of favor? The National Science Foundation (NSF), armed with a mandate to ensure the health of academic science, is grappling with that prickly problem, but its latest moves have divided agency ranks and raised concern among activists.

The agency has long believed that the best way to assist women scientists is to give them research or training support at key points in their careers. Over the past 2 decades, it has run a series of such programs that are open only to women. But with a rising political and legal tide against programs restricted to one group, NSF scrapped that approach last year. It is planning to replace it with a new effort, called ADVANCE, that is still on the drawing board. Although the guidelines won't be completed before fall, the initiative is expected to provide grants to academic institutions, rather than individuals, and support comprehensive projects designed to lower gender barriers.

Deputy NSF director Joseph Bordogna acknowledges that past efforts, in the form of grants to individuals, have benefited hundreds of women scientists. But he says they haven't changed the landscape sufficiently. The new program, he claims, has the potential to have a greater impact by funding long-term, campuswide activities aimed at increasing participation by women in science. It is also more likely to pass political muster. "We want something that works," he says. "But we also want to expand our efforts to include the entire U.S. population. That's only right, after all."

At the same time, nobody even pretends to know whether ADVANCE will work any better than its predecessors. "ADVANCE will be the fourth or fifth change in direction for NSF in the past decade," says Catherine Didion, executive director of the Association for Women in Science (AWIS) in Washington, D.C. "But have any of them been allowed to run long enough to show whether they are effective?"

There are also inside skeptics. Mary Clutter, head of NSF's biology directorate, has been involved in agency programs to support women since the 1980s and sees individual research grants as an essential tool. "ADVANCE is not a direction I endorse," she says. "But times change, and maybe it's the right way to go." Claudia Mitchell-Kernan, vice chancellor for academic affairs at the University of California, Los Angeles, who recently completed a 6-year term on the National Science Board, NSF's oversight body, has similar doubts. "I think that a targeted approach is more likely to produce a desired result than a general approach," she says. "But targeted efforts are suspect now, for political reasons, and NSF's lawyers have been steering us away from such programs."

The debate reflects "a fundamental split in the scientific community," according to Sue

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Target audience. NSF is revising programs to boost the number of women and minorities in science to include the entire workforce.