At U. of Southern California, a Support Network Helps Women in Science and Engineering

By ALVIN P. SANOFF

When Jean Morrison gave birth to her first child 11 years ago, there were no science colleagues at the University of Southern California with whom she felt comfortable discussing the challenges of combining motherhood and a career as a geochemist. She feared that taking time off would be viewed negatively by her male colleagues on the faculty and could imperil her ability to win research grants. So she continued with a full teaching load, maintained her service obligations, and persisted with her research.

It was an exhausting and unsatisfying experience. "I mucked through it myself and made a lot of mistakes," she recalls.

Today female faculty members in USC's science and engineering programs have more support and more options, thanks to a program called Women in Science and Engineering, which Ms. Morrison directs. The six-year-old program, known as WISE, is the product of a $20-million gift by an anonymous donor. The endowment generates about $1-million annually. The money is used primarily to help hire more female professors in the sciences and engineering, but WISE also devotes substantial resources to helping women at all stages of their academic careers, from undergraduates on up.

WISE offers research grants of $3,000 to about 15 to 20 female undergraduates annually. It helps pay the salaries of about six postdoctoral students. It provides child-care subsidies for graduate students and faculty members who use the university's child-care center. And that is just a partial list of its programs.

The program's breadth and substantial resources set it apart, say those familiar with similar programs at other institutions. "It is a great program," says Donna J. Nelson, associate professor of chemistry at the University of Oklahoma, who has studied the role of women faculty members in the sciences and engineering at research universities. "WISE is doing the right thing by spreading resources among all levels."

Since the program began in 2000, USC has more than doubled the number of women faculty members in the sciences and engineering — from 15 to 35. The sharpest jump in hiring has occurred at its Viterbi School of Engineering, where the number of women faculty members has climbed from three to 12 out of a total faculty of about 160. All but one of the school's eight departments now has at least one female member. "When we started, six of the departments did not have women," says Hanna Reisler, a chemistry professor who is chairwoman of WISE's advisory board.
While the number of women in the sciences and engineering remains modest, USC is proud of its results, considering the competition for promising young scholars. In 2004, according to the National Opinion Research Center's annual survey of doctorates, women earned 1,598 doctorates in the physical sciences — about one-quarter of those awarded — and slightly more than 1,000 in engineering, or 18 percent of those awarded. That's a vast improvement from 30 years earlier, when women earned only 8 percent of doctorates in the physical sciences and 1 percent of those in engineering.

But many of today's newly minted Ph.D.'s prefer private industry to the academy. "Women tend to self-select out of faculty positions," says Susan L. Forsburg, professor of biological sciences at USC. "If they see that the life of a professor is incompatible with other values, they won't pursue that path." Ms. Forsburg says that in many respects industry is more open to women than higher education.

Part of the problem is that some male faculty members in the sciences and engineering still hold negative stereotypes of women. "I think a lot of men view women as not as aggressive and feel they won't generate overhead funds, won't publish as much," and won't enhance the university's reputation sufficiently, says Amy L. Rechenmacher, assistant professor of civil and environmental engineering at USC. She says that after a search committee she served on interviewed four finalists, including one woman, a male member of the panel said the group needed to be cautious about recommending the woman because she had a family. "I told him that was inappropriate," she says. "All the candidates had families."

"Raising awareness and shattering age-old stereotypes takes an organized effort like the WISE program," she says.

In part because of programs like WISE, attitudes in academe are gradually changing. As a result, talented female scholars in the sciences and engineering are in demand. "There is a market for talent out there, and you have to be prepared to bid for that talent," says James E. Moore II, chair of USC's department of industrial and systems engineering. "USC has two cards to play: its reputation and the additional resources from WISE that it can bundle with university resources."

Thanks to WISE, USC is able to offer employment packages that are more generous than the university could otherwise provide. "We ask candidates what would it take for them to come to USC, and we help the dean of the school involved come up with that," says Ms. Morrison, who also serves as associate vice provost for graduate programs. WISE provides additional money beyond salaries — for lab equipment and travel, for example — "and that is a strong incentive for a dean to encourage departments to hire outstanding women," she says.

Samantha J. Butler, assistant professor of biological sciences, says the university's ability to make a better offer than another institution played a key role in her decision to come to USC. "They paid for hundreds of thousands of dollars worth of equipment," she says.

Maria C. Yang, an assistant professor in industrial and systems engineering, says that when she visited USC to interview, she met with Ms. Morrison and Ms. Reisler. "Here were two people not even in engineering who were interested in telling me about programs for women faculty," she says. "I had never experienced this before."

Ms. Yang became pregnant shortly after arriving at USC. But unlike Ms. Morrison several years earlier, Ms. Yang was able to consult with numerous female colleagues. As a result, instead of trying to do it all, she chose to take a semester off from teaching but continued with her research. "In engineering, having a child if you are untenured can be risky," says Ms. Yang. "I was concerned about how male
colleagues would view it. This was new territory for engineering since I was the first untenured woman in the school to ask for maternity leave."

The WISE program is trying to change the procedure for obtaining maternity leave. Currently, faculty members must first gain approval from their department chair. "When it comes to covering teaching responsibilities, even the most sensitive chair is going to be conflicted," says Suzanne Edmands, associate professor of biological sciences. WISE would like faculty members to be able to bypass their chairs and go directly to their deans, who would have a less personal stake in the decision.

When Ms. Edmands adopted a child, she didn't take time off. Instead, after consulting with her female colleagues, she asked for and received a one-year tenure extension.

One of WISE's most important activities is a monthly brown-bag lunch for female science-and-engineering faculty members. That provides an opportunity for women to get to know one another and form support groups with colleagues in other scientific disciplines. "Even if you are the only woman in your department, you don't feel isolated," says Ms. Reisler.

Speaking of her experiences at another institution, Ms. Forsburg says, "When you are the only woman in a room, you can say something, and they don't hear you. But at the lunches, we get to be in a room with people who understand what we are saying and what our experiences are, and who try to improve the situation for everyone."

Ms. Rechenmacher, who was on the faculty at the Johns Hopkins University before coming to USC, says she felt largely on her own at Hopkins. But at USC, the lunches have enabled her to meet a group of people who can answer any questions or help her find someone who can. "Academia is a dog-eat-dog world," she says. "If you are given wrong advice, you can go in the wrong direction, and it can cost you tenure. It is nice to have people whom you can ask, 'What do I do?'"

Despite the WISE program's success, its leaders are not ready to declare victory. Ms. Reisler wants to change the institutional culture so that hiring women becomes an important measure of a department's success.

WISE has met its initial target of doubling the number of female faculty members in the sciences and engineering, and now the program has a new goal. Ms. Morrison would like to see the number of women rise to 60 in the next five years. She also wants to assure that younger faculty members are promoted and tenured, and that USC does not lose women to other institutions.

That is in keeping with WISE's long-term approach. "We never felt we had to go for the quick fix," she says. "If there were a quick fix, everybody would have done it."

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