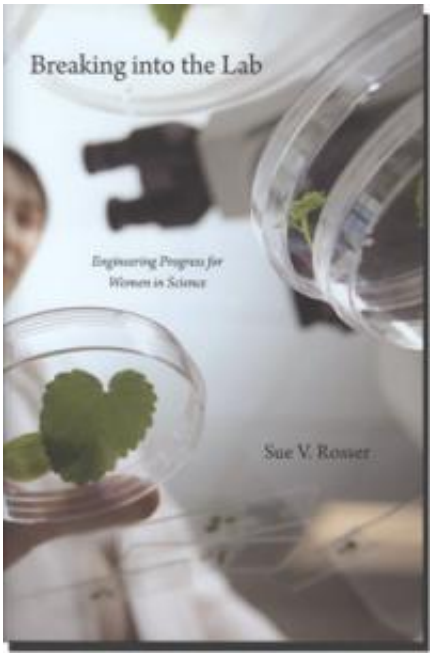
Provost explores challenges still faced by women in science

March 16 2012



"Breaking into the Lab" by SF State Provost Sue Rosser.

While much has improved for women scientists and engineers in the last 30 years, SF State University Provost and Vice President for Academic Affairs Sue Rosser says many of the barriers she faced as a junior researcher remain, albeit less overtly and expressed in a different language.

In her new book, "Breaking Into the Lab," Rosser uses examples from

her own career as well as interviews with successful women scientists to take a candid look at the inequities that can keep women from holding tenured science positions at elite institutions of higher education -- and what can be done to improve the situation.

Since 2000, women have earned more U.S. bachelor's degrees in science and engineering than men, but the numbers begin to decline after that first degree. Fewer women go on to earn a master's degree, and in 2008 women earned only 40.7 percent of science and engineering doctorates received by U.S. citizens and permanent residents.

These are troubling statistics, Rosser says, at a time when the United States is struggling to maintain its competitive edge in science and engineering research worldwide, and when a diversity of backgrounds and perspectives are needed for innovation and technological development.

Rosser's interviews with women scientists revealed that many women face lingering barriers in starting and sustaining their careers.

While some of the inequities women face today may be different than the ones Rosser faced early in her career, many of the same issues persist. The book discusses the "micro-inequities" that remain a challenge for women at all career stages, from few options for child care and the difficulties of being married to another academic, to more subtle discouragement that keeps women researchers from publishing, pursuing tenure or rising to administrative positions.

Rosser hears from younger women who know that it's illegal for their potential employers to ask if they are married or plan to have children, "but it's very common to be asked in an interview, 'well, what are your plans for the future?'" Rosser said.

In some respects, Breaking Into the Lab reads as a how-to manual, with clear and specific "dos and don'ts" for women researchers and their mentors detailed at the end of each chapter. The advice focuses on negative behaviors -- Rosser warns good-intentioned mentors against promoting women to administrative positions too early, for instance -- as well as positive ones, such as providing informal opportunities to "talk with the guys."

Rosser said mentors in particular "sometimes do things that they think might be helpful but end up hurting an individual, and that was the reason to lay out some of these situations that are fairly subtle."

In fields where women still are not represented in large numbers, such as computer science and engineering, she noted that women's mentors "themselves all had male mentors, and their fellow grad students or postdocs were all men, which is not at all uncommon in those fields still. When they themselves become a professor, they just really haven't thought about or experienced these issues".

"This results in the woman getting a different education experience than she perhaps needs or that her male peers are getting from that same individual," Rosser said.

One troubling difference that Rosser focuses on in the book is the "patent gap" between women and men. In all disciplines, sectors and countries women obtain patents at rates far below that of their male peers in the science, technology, engineering and math fields.

"The U.S. and other countries are moving away from basic research to technology transfer, and that's where the money is," Rosser noted. "Women are being left out of this new world where the money and action is."

While researching the patent gap for the book, Rosser discovered that "men are getting somehow mentored into patenting and start-up companies, and the women are not. … This is not so different from back in the '60s when men were mentored to write grants but women were not."

Provided by San Francisco State University