Gaining Standing—by Standing Out

"If you want to participate in a profession at the highest level, you have to be good and put your uniqueness to an advantage. There are few black women in physics, so people remember Shirley Jackson." The speaker should know, because she *is* Shirley Jackson, professor of physics at Rutgers University. The audience: a group of young women at a meeting last November at Trinity College in Washington, D.C., where the focus was on how women can succeed in science.

Throughout her career, Jackson had little choice about standing out. In 1964 she was one of 45 women and a handful of blacks in the 900-member freshman class of the Massachusetts Institute of Technology (MIT). But rather than being inhibited, Jackson learned to exploit her visibility, for herself and, later, as she rose through the ranks, for other female and black scientists. "I believe in public service," Jackson says now. "If you do a good job, you can both advance your own situation and accomplish something for people who have been typically left out."

Not that it's been smooth sailing. When Jackson arrived at MIT from Roosevelt High School in Washington, D.C., where she had been valedictorian, she was unprepared for the loneliness. "The irony is that the white girls weren't particularly working with me either." The white women refused to sit at the same table with Jackson in the cafeteria and made it plain they didn't want her in their study groups. "I had to work alone," recalls Jackson. "I went through a down period, but at some level you have to decide you will persist in what you're doing and that you won't let people beat you down."

Despite the social isolation, Jackson thrived academically and worked in a materials science lab where she had "a very good time." By the time she had graduated, she'd learned to survive at MIT so well that she was offered fellowship support to stay on and earn a Ph.D. in physics, which she did, with an emphasis on high-energy particle physics theory. In what would become her trademark combination of self-help and help for others, she made time to lobby the university to admit more minorities. From MIT she pushed on to Fermilab in Illinois and CERN in Geneva for postdocs, where she got used to being one of the few women and the only black person at meetings. In situations like that, "if you give a physics paper, it had better be good—because people will remember."

When Jackson gave a paper, it usually was good. She did well in the arcane world of particle physics, but the pleasure she had experienced in the materials science lab at MIT stayed with her. When she was offered a job as a condensed matter theorist at AT&T Bell Laboratories, in 1976, she accepted. At Bell Labs she combined her interests, bringing the perspective of a theoretical particle physicist to the study of gases, films, and semiconductors.

The courage of the outsider has been a great asset to Jackson. Yet while an independent style enabled her to survive alone in the MIT cafeteria, it had drawbacks in the collaborative world of research. "I was still pretty much of a loner. I tended to do my own thing, and that's not always the best way to do things in science. That's why when women are isolated—or blacks or any minority— it can be very destructive."

In recent years, Jackson has worked to change to a collaborative mode. Last year she moved to Rutgers, in part so she could share her ideas with students. "I wanted to have graduate students, to build my own research groups." She's been invited to join influential committees in her field, as well as the National Academy of Sciences Committee on Women in Science and Engineering. One membership gives her particular satisfaction: Last June, after 15 years as a term member, she was elected a life member of the MIT Corp. (the board of trustees), thereby becoming a permanent insider at an institution where she once was as far as anyone could be from the inner circle.

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Outside in. Physicist Shirley Jackson, once shunned in the MIT cafeteria, is now an MIT board member.

scientists exhibit when they feel their objectivity is being questioned. "Saying there is no such thing as value-free science is a very threatening statement to scientists," argues Solow. But even those scientists who do understand the feminist arguments often remain skeptical. Analysis of cultural context is a waste of time, says one physicist familiar with the feminist literature, who requested anonymity. "Newton's laws work," he says, "and that's the only thing I need to know about Newton."

But that physicist, and those like him who interpret the feminist critique as "science-bashing," is missing the point, says biologist and feminist scholar Anne Fausto-Sterling of Brown University. "All of us who are working in this area have moved beyond the kind of critique that says wrong science is being done." The point, she says, is that science can be improved by the recognition that cultural context does influence one's perspective. "It ought to be part of the scientific method," adds Elizabeth Potter, director of women's studies at Mills College in Oakland, California, "to look for social assumptions."

If such views were more broadly recognized, how would they change science? One change advocated by many feminists is an increase in diversity among scientists, since people with different cultural experiences may bring different perspectives to their work. Another approach is advocated by Keller, who believes that, rather than bringing diversity to science from outside, researchers ought to release a diversity of perspectives from within—by freeing themselves from confining assumptions. "My aim," she says, "is to restore to science the best that science is capable of. That doesn't mean through women, it means to create a context in which everyone can make use of the full range of human potential." But the first, and most challenging, step toward such goals is for the feminist philosophers of science to get mainstream scientists to listen to their provocative premises.

–Marcia Barinaga