WOMEN IN ENGINEERING

Canadian Panel Calls for More

Suppose you were giving a party and you wanted to invite all the female engineering faculty at Canadian universities. How big a space would you need? A football stadium? A moderate-sized hotel? Try a large living room.

At the end of 1990 there were 54 females on Canadian engineering faculties, about 2% of the total of 2438, and the situation hasn't changed much since. (To give a sense of scale, in 1989, the most recent year for which National Science Foundation data are available, 2.7% of U.S. engineering faculty were female.) What explains the dismal Canadian figures? A new report by a blue-ribbon panel of educators, employers, and engineers has cited three principal causes that will sound all too familiar to U.S. engineers (and scientists) who have been struggling to address the problem for two decades: gender stereotyping by parents and teachers, the lack of role models for girls who want to become engineers, and systemic discrimination in universities and in the workplace.

"Systemic discrimination in the classroom and the workplace continue to make it difficult for women to succeed as engineering students and as engineers," said Monique Frize, holder of the Northern Telecom Women in Engineering chair at the University of New Brunswick. Frize was named chairwoman of the 18-member panel dubbed the Canadian Committee on Women in Engineering and appointed by Industry, Science and Technology Canada, a federal ministry. Helping to galvanize the ministry into action was the most horrific example of discrimination against women engineers in the history of any country: the murder of 13 female engineering students at the Ecole Polytechnique in Montreal in December 1989, after they were carefully separated from the male students by a psychopathic antifeminist who didn't think women should become engineers.

That episode was mind-boggling, but the panel's report, *More Than Just Numbers*, offers more persuasive, if less shocking, everyday examples of the antiwomen climate in Canadian engineering. Dozens of women engineers were quoted anonymously offering examples of slights they had endured.

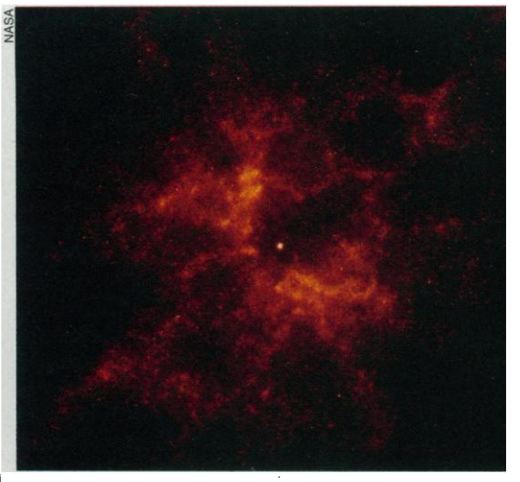
Such discrimination has had its effects not only on the profession itself but also on the ranks of entering students. The panel contends that engineering is "lagging far behind" other professions in increasing the number of female students. Law and medicine, for example, have in recent years attracted equal numbers of males and females in Canada, says the report, while engineering has shown only modest increases. In 1981, 8% of engineering students were female; in 1990, the figure had risen—but only to 14%.

The panel would like to boost that figure significantly: to 25%-35% of all first-year engineering students by 1997. Reaching that goal, the report says, will require a number of steps, including regular visits to elementary and secondary schools by female engineers who can serve as role models, and compulsory programs on sexual harassment for all university students, faculty, and staff. The report also calls for written codes of behavior for engineering students and new editorial guidelines for the notoriously misogynistic engineering student newspapers.

In the absence of measures to change the climate in engineering schools and in the profession itself, some say there isn't much point in attracting more women. One woman, quoted anonymously, complained of discrimination in salary and job assignments and concluded, "All of these have been so disturbing to me that I asked myself whether I am indeed doing anyone a favor by encouraging women to join the profession."

–Doug Powell

Doug Powell is on the staff of the Information Technology Research Centre at the University of Waterloo in Ontario.



NASA

Hot One From Hubble

The space telescope unveils one of the hottest stars on record: the white dwarf in the nebula NGC 2440. The nebula—thrown off during the star's earlier life as a red giant—is set ablaze by extreme ultraviolet radiation from the star. "We use the nebula as a photon counter" for the high-energy radiation, says astrophysicist Sally Heap of the NASA Goddard Space Flight Center in Greenbelt, Maryland. By comparing the result with the star's visible brightness, she and her colleagues took its temperature: 200,000 degrees Celsius or more.

–T.A.

INTELLECTUAL PROPERTY

A New Wrinkle in Retin-A Dispute

Two years ago, the University of Pennsylvania sued an emeritus professor on its medical faculty, Albert Kligman, accusing him of conflict of interest and appropriating the university's rights to Retin-A, a much-ballyhooed antiwrinkle cream Kligman invented. Now, the university is showering Kligman with praise. A recent Penn press release honored him as a "major contributor in his field" of dermatology, "a well-regarded and admired instructor among students," and a "leader among his peers" whose inventions "have long and outstanding implications for medical research and treatment." What made Penn change its tune?

NYT PICTURES

Back in Penn's favor. Albert Kligman.

The short answer is that Kligman and his commercial partner, a Johnson & Johnson subsidiary called Ortho Pharmaceuticals, have agreed to cut the university in on new proceeds from Retin-A. Though neither side will reveal the precise terms of the deal, it could potentially channel millions of dollars to the university's medical school. Just how much will depend on whether the Food and Drug Administration (FDA) approves the drug; its verdict is expected later this year. But the long answer is that what began as a marriage of convenience—Penn supplied Kligman with resources and he provided the university with a link to the world of applied science and some extra income for its medical school—foundered over different interpretation of who should retain control of Kligman's inventions. Without revealing the details, both sides have now made up once again—not agreeing in principle on who should control Kligman's patents, but agreeing in practice that the university will get more of the revenues than either Kligman or Johnson & Johnson originally intended.

So, does the university's renewed love affair with Kligman suggest that it has sold its principles for a small pot of gold? Not precisely, because nobody has ever disputed that Kligman is the intellectual father of Retin-A. In the 1960s, he discovered