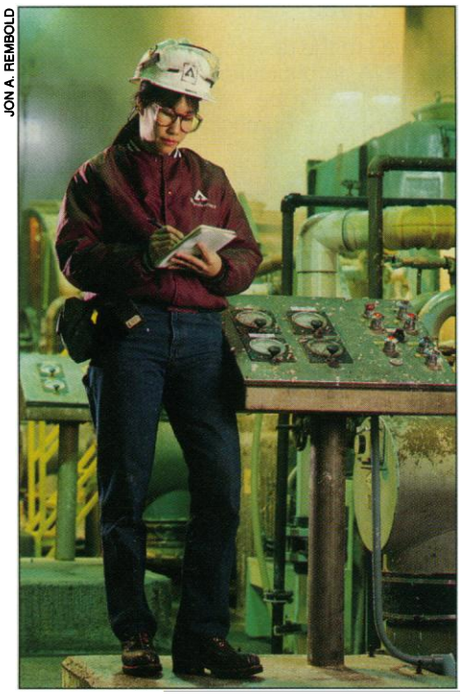
# Women Struggle to Crack the Code of Corporate Culture

**Industry offers technically trained women climates ranging from Arctic chill to tropical warmth.**

Female researchers once entered industry in a trickle, but that trickle has become a flood. Historically, women with advanced degrees in science headed almost automatically to academia. In recent years, however, increasing numbers of women have earned degrees in fields with commercial applications, such as engineering, chemistry, and computer science. In addition, a traditional women's stronghold—the biological sciences—has become the basis for one of the hottest young industries, biotechnology. As a result, from 1979 to 1989, while the number of female science and engineering Ph.D.s in academia was doubling, the number employed in industry more than quadrupled —to 19,000—according to the National Research Council (NRC).

What do these women find as the doors of industry swing open to them? The answer is that there is no one answer. In some firms, women are isolated in a male-dominated climate that prevents them from feeling at home—and from becoming the boss. At others, women fit right in among scores of technically trained female counterparts and have less trouble getting to—or at least near—the top. Every female scientist or engineer contemplating an industrial career would love to know how to find the welcoming environments and avoid the hostile ones. How can she tell them apart?

Unfortunately, there isn't a host of good data from which to draw conclusions. The sociologists who study women in science generally concentrate on the academic world, while management gurus tend to consider all professionals rather than focusing on those with scientific training. But *Science* found clues in a handful of studies on women in corporate R&D, plus scores of interviews with corporate women scientists themselves.



JON A. REMBOLD

**Sore thumb.** Mechanical engineer Cass Tang says that because of her gender she always stands out on the job.

These reports suggest that a female researcher should keep a sharp eye on at least three factors as she canvasses the job market in industry. The first is numbers: Where there are plenty of women researchers, being female and a scientist is simply part of the norm instead of cause for comment. The second is age—the age of the company and of the industry to which the company belongs. Many anecdotes suggest older industries are more likely to have an entrenched old-boy network that may not be receptive to female outsiders. Conversely, in some new sectors (biotech, for example) the "old-boy network" was built only over the past decade—and women helped build it.

The final factor is the attitude of the company itself. Companies exhibit a wide spectrum of attitudes toward females in research—from firms that do little more than avoid lawsuits to those that are actively trying to find and keep women scientists in their ranks. Our informal survey offers some tips on what the most progressive companies look like.

One of the hallmarks of women's experience in older industries is isolation and the feeling that they stand out. Take Cass Tang, 35, a mechanical engineer who designs and builds paper processing plants for the Weyerhaeuser Corp. Like most women engineers, Tang, now based in Longview, Washington, has grown accustomed to being the "first woman" in a series of industrial jobs. She works with mostly male colleagues, some of whom are uncomfortable traveling with her on business because they fear wives or co-workers will suspect an affair. In meetings and at plant sites, Tang is always conscious of being different. "Just by simple dress—you have a more colorful outfit on—you attract attention. You're smaller than the rest of the people, your voice is higher, you're younger. You stick out like a sore thumb."

Weyerhaeuser, where Tang works, is almost a century old, reflecting the venerable forest products industry of which it is a part. The company, and the industry generally, tend to have an older, largely male staff. Only about 14% of managers are women, and Tang's co-workers have an average age of 53. Along with numbers like that almost always goes a cadre of older male managers who make crucial decisions about hiring, firing, and promotion.

Age isn't the only variable that matters. As in academia, there's tremendous variability from discipline to discipline. And Tang's discipline—engineering—tends to have relatively few women. In 1992, according to the Bureau of Labor Statistics, only 8.5% of the engineers working outside of academia were women; in the biological and life sciences, the comparable figure was 34%. So perhaps it isn't surprising that in a recent survey of women engineers, Catalyst, a nonprofit research and advisory organization that supports women in business, found many who echoed Tang's general feeling of isolation, as well as her experience of awkwardness in business travel.

### Paying the price

Isolation can be unpleasant, but it isn't the only price female scientists in industry may pay for being outsiders in the corporate culture. If women—or members of any other group—are isolated, they may be slow to learn the "unwritten rules" that lead to corporate success. Consider Ph.D. chemist Elise Hershenhart, 36, whose first corporate job was at the Alcoa Technical Center in Pittsburgh. When she was hired, Hershenhart was one of a handful of technically trained women in the company, although Alcoa was pushing to hire more. While at the company, Hershenhart says, she made enemies and compromised her chance for success by breaking rules—rules that, as a newcomer from the academic world, she didn't even know existed. "I didn't get told things, things I should have known—but how was I supposed to know? I inadvertently made people angry," she says.

What were Hershenhart's sins? Some of her actions could actually be construed as signs of eagerness. For


## Traveling Without Maps

If at first you don't succeed, try again—perhaps other people's perceptions of success will change along with your efforts. That's what happened to Arati Prabhakar, 34, the first woman to earn a Ph.D. in applied physics from the California Institute of Technology. By the time her degree was awarded in 1984, she wasn't feeling like a success. Prabhakar had struggled in the program and rather than following a career in research, she went to Washington as a Congressional fellow at the Office of Technology Assessment (OTA). Recalls Prabhakar: "One faculty member said he didn't understand why we wasted time educating women if they were going to do something like that."

But the reaction to her at Caltech is different now. The Congressional fellowship provided a springboard to a career at the interface of technology and policy, and Prabhakar is now director of the Microelectronics Technology Office at the Defense Advanced Research Projects Agency (DARPA—which is now dropping the D to become ARPA). Last year, she was invited to Caltech to talk about her work. The moment richest in irony, says Prabhakar, was when Caltech president Thomas Everhart shook her hand and said, "Caltech is really proud of you." Says Prabhakar: "I didn't know whether to laugh or cry."

Prabhakar's trajectory shows that for female scientists there are alternatives to the traditional career path in academic research, if they're willing to travel without maps. "No one I knew had traveled this path before," recalls Prabhakar. "It really was considered radical, and I didn't know where I'd end up."

Prabhakar says she gained the confidence to make bold moves from her mother, who had made a very bold one—uprooting the family from New Delhi to Chicago when Prabhakar was 3. But that confidence took a beating at Caltech. After a promising start as an undergrad at Texas Tech University and internships at AT&T Bell Labs and Lawrence Livermore National Laboratory, she arrived at Caltech "where I went from being the top of my class, like everyone else in the program, to being in the middle of my class—on a good day." She had a tough time in class and realized she was inadequately prepared in physics. In the lab, studying electronic defects in semiconductor materials, she was no happier. To make matters worse, her department didn't offer a friendly environment for women. When she joined one research group, a man in the group said, "Welcome to the group. Women don't last here very long."

Prabhakar says she might have quit without a degree had it not been for her advisor, applied physics professor Tom McGill. McGill convinced her that even if she didn't pursue a career in research, a Ph.D. would open doors. So she soldiered on to get her Ph.D.—and doors opened. One of them was at OTA, where she wrote a background paper on microelectronics R&D.

Though Caltech folks thought her career move was "crazy," she got noticed by the microelectronics researchers she was interviewing. "When you're female and Indian from Caltech," she says, "people remember you." And though she hadn't enjoyed research at Caltech, she did "delight" when she "could get an answer and feed it back to someone in industry who was having a problem with the materials. I found I appreciated science when it was useful, but I didn't enjoy the research for its own sake."

RICK KOZAK

**By dint of application.** Arati Prabhakar, the first woman to receive a Ph.D. in applied physics from Caltech, is a key manager at ARPA.

Work at OTA led to an offer from DARPA. In the 7 years she's been there, the total budget for electronics research (including Prabhakar's department) has jumped from $40 million to $650 million a year, and Prabhakar has had a hand in shaping U.S. microelectronics research. She says, "I love what I'm doing, and everything's fitting right into place." But for everything to fit, Arati Prabhakar had to go an unorthodox route—and wait for the definition of success to change with her.

–Ann Gibbons

example, if she was interested in a certain chemical process, she would offer her expertise to the group working on that process. Unfortunately for her, in the particular corporate culture where she worked, her action was considered an inappropriate intrusion on the turf of other units. She also made the mistake of sometimes correcting colleagues in public—quite politely, she says—and of failing to acknowledge a sponsor.

After 4 ½ years at Alcoa, Hershenhart's career had stalled. And so she left for a job as a quality-control manager at the Millipore Corp.'s manufacturing plant in Taunton, Massachusetts. Despite being the only woman manager there, she says she's thriving. And she credits her success in large part to the fact that the rules are clearer in her new setting. "It's a more bottom-line kind of success. We make outright money. It's clear if you made a mistake and cost the company a million dollars, or if you're improving the quality."

All workplaces have unspoken, deeply entrenched codes of conduct like the ones Hershenhart broke. But women scientists who go on in academics have years of training to familiarize themselves with the unwritten rules of university life. The industrial culture is different, however, and it may be harder for women to find someone to explain how to crack the code, says economist Myra Strober of Stanford University, who studies gender segregation in the workplace. "Most of the people who know the 'unwritten rules' do not transmit that information to women, either because they're hostile to women, or because they're just more comfortable with men," she says.

Strober's expert opinion is backed up by a couple of studies. One survey of Ph.D. scientists and engineers in R&D at 18 major companies, by Nancy DiTomaso of Rutgers University, found that women were less likely than men to discuss their work with someone in the company outside their own lab. And the Catalyst study found that women engineers tend to try to prove themselves by dint of hard work alone—instead of networking and building visibility. The same conclusion is echoed by Karel Czanderna, a Ph.D. materials scientist at Eastman Kodak Co. in Rochester, New York, who surveyed women's attitudes while building a new network of female researchers at Kodak: "I've read on hundreds of survey cards that women have a feeling of being isolated, especially in the technical community."

**DU PONT**

Women make up...

**0 of 9**
R&D VPs

**3 of 40-50**
lab/technology directors

**915 of 7360**
engineers, scientists, and managers in the research and technical community (12%)

**AFFYMAX**

a biotech/pharmaceuticals company in Palo Alto (215 employees)

Women make up...

**2 of 10** directors and VPs (but neither in science)

**12 of 50** Ph.D. researchers (24%)

**34 of 65** technicians (52%)

If the combination of a traditionally male discipline and an elderly industry can create a chilly environment for women, the converse—a youthful industry plus a scientific discipline populated by plenty of women—can raise the temperature rapidly.

Consider molecular biologist Judy Abraham, 39. A decade ago, Abraham left the hotshot academic enclave of Cold Spring Harbor to work at a small California biotech company, Scios Nova. Unlike Cass Tang at Weyerhaeuser, as Abraham followed her career path she has never been the "first woman." Her graduate class at the University of California, Berkeley, was half women; at Cold Spring Harbor, she was one of many younger women researchers. At the Mountain View research labs of Scios Nova, 40% of the 35 Ph.D.s are women, and few employees of any kind are over 50. For Abraham, life as a woman scientist in industry "has been very free of discrimination. No one here really has to pay much attention to gender," she says.

### Women write the rules

Scios Nova is by no means unique: At 6-year-old Synaptics Pharmaceuticals in Paramus, New Jersey, about 25% of the Ph.D.s are women; at 3-year-old Ariad Pharmaceuticals in Cambridge, Massachusetts, it's more than 40%. Indeed, in biotech generally employees are making up the rules of the corporate culture as they go along, says Strober. At Scios Nova several senior women were involved in the company's formative years, so the "unwritten rules" are congenial to women.

It's not just that women are helping write the rules; it's also that their co-workers are younger, and therefore more accustomed to having female colleagues. "We're in a transition time. Age does make a difference—I can see a real difference, and a cutoff point at right around my age, 40," says Karen Talmadge, Ph.D. molecular biologist and director of market research at Scios Nova. That pattern cuts across the industrial lines. Software testing manager Beth Langston, 32, of SAS Institute in Cary, North Carolina, believes computer science is "one of the career fields where women are more likely to be treated for what they can do than for their sex. There are not as many stereotypes to break—we're making the stereotypes." That's due partly to demographics. SAS is 17 years old, and the average age of its workers is 33. Half the professional staff and 42% of managers are women.

ROBERT FRAHER/MILLIPORE

**Better chemistry.** Chemist Elise Hershenhart is happier at her new job, where the rules for success are clearer.

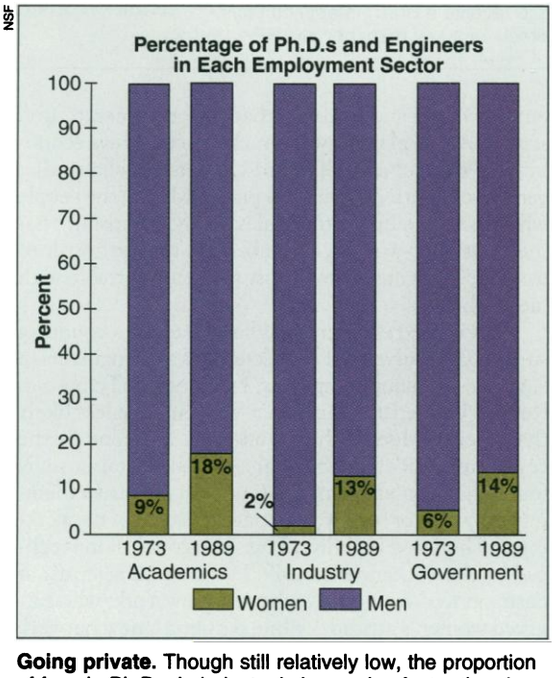
Not that software firms like SAS are paradise: Only 15% of vice presidents and directors are women, and Langston says she was sexually harassed shortly after joining the company. But she says the company's response to her harassment complaint—both formal and informal—cinched her approval of the workplace. Officially, the human resources person called the offender on the carpet; unofficially but equally important, Langston felt that colleagues—both male and female—took her side. It's easier to change such inappropriate behavior in a young workforce, agrees Rosemary Chang, Ph.D. applied mathematician at Silicon Graphics Co. in Mountain View, California. "You don't have to change people's lifelong beliefs. You can just socialize them as to what's appropriate."

Of course, not every woman has the luxury of joining up with a brand-new industry like biotech or software development. Some female researchers have academic training that doesn't fit those fields. Is the situation then hopeless? Not at all. The fact is that even in a large company in an industry that isn't spanking new, the attitude of management—particularly top management's dedication to creating a woman-friendly environment—can make a big difference.

In fact, corporate cultures vary so much that Felice Schwartz, founder of Catalyst, has designed a five-point scale to rate companies. Those that do no more than follow antidiscrimination laws get a Schwartz ranking of one. Companies that try to be fair, but make little effort fundamentally to change their culture, get a passing grade of two. A rating of three is reserved for a few paragons (one example, according to Schwartz, is IBM) where managers are trying hard to shake up the prevailing culture. Scores of four and five would signify something like a truly level playing field—but are "off today's charts," says Schwartz.

Even without the existence of fours and fives, various companies are making strenuous efforts to reinvent the corporate environment for women. Some campaigns come from the grassroots, like the new Eastman Kodak women's forum, which emerged from the ranks of employees and was later endorsed by management. In that forum, and the others springing up elsewhere, regular meetings and electronic bulletin boards help members establish connections with women—and progressive

NSF




**Going private.** Though still relatively low, the proportion of female Ph.D.s in industry is increasing faster than in academics or government.

# Work and Family: Still a Two-Way Stretch

In the late 1970s, Ph.D. pharmacologist Geraldine Henwood was rapidly ascending the corporate ladder at a major pharmaceutical company, earning a promotion and new opportunities practically every year. But her family life was progressing rapidly, too: By 1984 she had five children under the age of 8. In 1977, when her first child was born, Henwood's company had what was considered an enlightened benefit: New fathers were given a day off to assist at the birth. Since most women quit when they got pregnant, there was no day off for new mothers. After Henwood pointed out to senior management that giving birth was at least as difficult as helping, the company changed its policy.

The corporate world has come a long way since then. Today, progressive companies are testing an array of creative programs to help ease the work-family crunch, from onsite day care to flex-time to lengthy leaves. But although wistful academics may imagine industry offers short and predictable hours, corporate researchers say that, like their academic colleagues, they struggle to balance work and family. If corporate hours are sometimes shorter, they are frequently more rigid. And although industrial scientists needn't watch a strict tenure clock, their careers are still expected to race forward during precisely the years in which they are likely to have young children. For researchers in industry, having children is "one of the pivotal issues that still separate men's and women's career experiences," says Arlene Johnson of the Families and Work Institute.

DUANE HALL

**Caring environment.** The child-care center at SAS Institute, a North Carolina software firm.

In the culture of industrial research, the trouble frequently starts with pregnancy. Johnson's ongoing study of corporate women scientists and engineers has found that many felt they faced a no-win situation: Have a baby before promotion—and possibly lose the promotion—or have the baby afterward and manage a newborn plus heavier job responsibilities. The issue is so touchy that many women felt uncomfortable discussing it with bosses or co-workers. In one focus group Johnson held, women described a colleague up for promotion who managed to hide her pregnancy for a staggering 7 ½ months.

After the baby is born, the choices don't get easier. In corporations, as at universities, the career track was designed "for men's clocks," as Johnson puts it. Employees are expected to put in long hours during their thirties—a tough pattern for active parents to follow. As a result, women with children are sometimes at a disadvantage in climbing the career ladder: In a study by Nancy DiTomaso of Rutgers University, industrial women scientists without children reported working an average of 10 hours more each week than women with children.

For some women, the situation comes down to a choice almost as tough as Sophie's: job or children. "In some cases it *is* a choice," insists Judy Giordan, Ph.D. chemist and vice president of research at Henkel Corp. outside of Philadelphia. But Giordan has little sympathy for those who want to turn corporate culture upside-down to eliminate such choices. "If the job requires that you travel and put in long hours, and you don't want to because of family, then I'm sorry, you shouldn't expect it. Life is a series of choices."

Kathleen Mullinix, 48, of Synaptic Pharmaceuticals in Paramus, New Jersey, one of the few women CEOs at high-tech companies (see story on p. 406), agrees that choices do have to be made. "The counsel I would give is not a popular one, but I've been there, and I believe it: I don't think you can have it all. I have three kids, and I went through many years underachieving professionally because of decisions I made relative to wanting to have a family." But Mullinix, who worked as a tenured researcher at the National Institutes of Health for many years, is living proof that such choices don't have to impose final limits on a woman's career. As her children grew up, Mullinix's career took off; before founding Synaptic she had already become vice provost of Columbia University.

All this is not to say companies aren't fighting to change the corporate culture that surrounds having children. Many firms have "family-friendly policies," with generous maternity leaves, job-sharing options, part-time work, etc. Still, the value of every policy depends on the supervisor who implements it, and professional women sometimes find that not all programs work as well as advertised. Eastman Kodak Co. in Rochester, New York, has flex-time, part-time, and job-sharing options and often turns up on lists of "best companies" for working mothers. But when Kodak manufacturing engineer Cynthia Martine, the only woman out of 25 engineers in her group, wanted to work 4 days a week after her son was born, management said it was essential that she be on site full-time—so she is.

Women in industry, like their academic counterparts, are finding a variety of strategies to cope with the touch choices families impose. Henwood managed by staying up late and relying on a supportive husband. Karen Talmadge, Ph.D. biologist and director of market research for a small California biotech firm, Scios Nova, says both her career and children are thriving, despite her long and irregular hours, thanks to a babysitter who can stay late, and a husband who "actually shares fifty-fifty." Mineralogist Karen Pinckney of Corning Corp. in Corning, New York, has predictable hours and so relies on a downtown day-care center for her 8-month-old son. Software developer Gail Cramer, 30, takes her 5-year-old son to work with her at SAS Institute in Cary, North Carolina, where he spends the day at SAS's onsite Montessori child-care center.

Companies like Corning aren't motivated solely by altruism or political correctness. Firms with a strong research orientation are conscious of the need to find—and keep—top scientists of both genders. Of four companies cited as especially progressive in a 1990 survey of nearly 200 large companies by the Families and Work Institute, three have a strong R&D component: Corning, IBM, and Johnson & Johnson.

Today Henwood's old company has maternity leave plus an optional unpaid leave of up to a year. But by the time Henwood had her sixth child, in 1989, that wasn't relevant to her any more, because she was setting her own policy at Bio-Pharm Clinical Services, the company she founded in Blue Bell, Pennsylvania. At Bio-Pharm, employees with sick children get a day off—and when new ones arrive, mothers get standard maternity leave.

–E.C.


## Our Thinking Is Difficult to Change

"I used to ride my bicycle every day for an hour to go to school," says population geneticist Tomoko Ohta, "and an hour to go home. It was very different then." Indeed it was. When Ohta, now 59, was a girl, her bicycle ride took her through rice fields and pine trees in Aichi Prefecture, outside Nagoya. Now the same terrain is home to the automobile manufacturing giant Toyota. And over the same period, the landscape of Japanese science has also changed—but perhaps not as much.

Today, Ohta heads the department of population genetics at Japan's National Institute of Genetics. When she was a student, the idea that a woman could hold such a position would have seemed almost laughable in Japan, and to get there she had to achieve a number of firsts or near-firsts. "I was almost the first girl student to enter a big university," she says of her entry into the University of Tokyo, where she studied cytogenetics and horticulture. And her status imposed a special responsibility. "I felt very *ishikishi* (self-conscious). I felt I had to do something."

Ohta lived up to that promise. After university, she went on to graduate studies, although lack of money prevented her from finishing her doctorate until she was 34. By that time she had moved to North Carolina State University, where she received a Ph.D. in population genetics for research on a probability-based model of how certain unique genetic features can survive in a population.

DENNIS B. GRAY

**Studied neutrality.** Tomoko Ohta helped develop the "neutral drift" theory of evolution.

Her interest in this aspect of evolution led her back to Japan and to the National Institute of Genetics. Built in the shadow of Mt. Fuji on the site of a wartime airplane factory, the institute was established in 1949. At the institute, Ohta met population geneticist Motoo Kimura, who became a key scientific influence. At the time, Kimura was looking for evidence to back up his new idea for explaining evolution on a molecular scale. Ohta's early work at the institute estimating the rate of amino acid substitution in enzymes helped Kimura formulate his "neutral mutation-random drift hypothesis" of molecular evolution, which he proposed formally in 1968.

The "neutral theory," as it came to be known, prompted a decade of stormy debate among geneticists, because it held that most molecular evolution was due to random processes rather than positive Darwinian selection. Today, despite some murmurs of discontent, the idea is generally viewed as an improvement on classical Darwinian theory, since it provides for the first time testable, quantitative predictions about the rate of molecular evolution.

Ohta's career has been closely linked to Kimura's work; she's spent much of her time defending and supporting the neutral theory. She has also had to defend her own spin-off from Kimura's idea, which she calls the "nearly neutral" theory of molecular evolution. The theory attempts to clarify how natural selection and random drift occur at the molecular level, and her goal has been to link understanding of molecular evolution to the overall phenotypic evolution of organisms.

In spite of her own success, Ohta believes many barriers to women in science remain in Japan. "Young lady scientists choose a very hard way if they want to become professional scientists," she says. "Until graduation from university, boys and girls are very equal." But after that, she says, barriers appear when women need to "be hired to do professional work. That is very difficult. And then to get promoted and do their own work is a second barrier." In addition, women are still subject to social pressures to get married and have children, which are often seen as incompatible with a career.

Although there have been reforms—outlawing outright gender discrimination in hiring, for example—the culture is slow to change, Ohta says. "People are not changing," she says. The reason: "How we think is very difficult to change."

**–Toomas Koppel**

men—in other parts of the company. "What we talk about is business," says chemical engineer Julie England, one of the founders of the new women's network at Texas Instruments Inc. in Lubbock, Texas. England uses the network as a "sounding board" for solving work-related problems that may have no direct connection to gender.

Like networking, mentoring is an experience often crucial to corporate success, but also an area in which women sometimes lose out—because the senior personnel who do the mentoring are male and may not be as comfortable mentoring women. Some companies are trying to seed the growth of mentoring, too. Corning assigns new employees a "coach," from another area of the company, to offer advice on everything from what to say in a performance review to the management style of senior bosses.

That kind of effort pays off for female researchers—and for the company as a whole. Women in industry generally have higher rates of attrition than those of their male counterparts, perhaps in part because of isolation from senior mentors. In the mid-1980s Corning had a 5-year attrition rate of 16% for professional and managerial women in the technology group; the comparable rate for men was only 7%, according to human resources director John Fox.

To keep trained women on board, Corning—which now rates the uncommon grade of three from Schwartz—established not only a mentoring program, but also flexible scheduling and special training for managers. Those programs led to a sharp drop in attrition for both men and women—but the results were most dramatic for females. Today, the 5-year attrition rate for women in the Corning technology group is 3.5%—not much more than the 2.5% for men.

Often such changes must originate at the top, where the tone for corporate culture is set, management experts say. And female researchers at Corning agree that one of their strongest allies is chief executive officer Jamie Houghton.

The same is true at Xerox Corp., where only about 10% of Ph.D. researchers are women, but a high-level council investigates women's issues and reports to senior management, including CEO Paul Allaire. Such efforts, coupled to pilot programs on flex-time and family leave, put Xerox on the track for a hefty four rating, says Schwartz—though she emphasizes that the company isn't there yet. Researchers give credit to


## Scandinavian Fairy Tale

To American scientists struggling with two-career marriages, the story of Elisabeth Lindner-Olsson and Anders Olsson may sound a little like a fairy tale. That's because these two chemical engineers live in Sweden—one of the world's most advanced countries for women's rights and support of working parents. Living in a "family-friendly" society has helped them hold demanding jobs at the Bioscience Center of Kabi-Pharmacia, a Stockholm-based biotechnology company, while spending lots of time with their two small children—starting with 14 months at home, shared between the parents, after each child's birth. Helped by benefits like those, the Olssons have managed something many young scientists yearn for: having rewarding careers "without getting completely obsessed about work," as Olsson says.

When their first child was born, 3 years ago, they were both happily entrenched in challenging jobs. Lindner-Olsson, then 33, was leading a 12-person team developing industrial-scale mammalian cell culture methods, a program she had been recruited to start in 1985. Olsson, then 32, had finished a Ph.D. in engineering and had joined a team developing Pharmacia's prototype automated DNA sequencer for the market.

They wanted their child to have at least a year at home before starting day care, so they decided to take long leaves: 9 months for her, 5 for him. In Sweden, long leaves are common—particularly for mothers—since federal law grants new parents the right to 1 year of fully paid leave, which they can split however they choose (and to which they can add up to 6 months of unpaid leave).

Lindner-Olsson was initially concerned about being away from the lab for so long, but "it really went very smoothly," she says. A colleague took over her day-to-day work, and by keeping in close contact with co-workers she took part in important lab decisions. By the time their second child was born last summer, she was leading a second group but still decided to take an 8-month leave (her husband took 6 months).

Olsson's decisions were more novel than his wife's. While it's common for men in his company to take 2 or 3 months, his leaves were considered long, especially since, by the time their first child was born, he was leading his own group. Still, he says, while there were "a few raised eyebrows...when it came down to it, it was no big deal. And many people reacted very positively, especially younger men. They were glad to see that it could be done."

It helped, Olsson adds, that the work atmosphere is collegial and noncompetitive. Each group of 20 or so Ph.D. and graduate researchers has a head, but there is no hierarchy within the team. Another important factor, he says, is that "we're expanding, so there's room for everyone."

In spite of the welcoming climate in Sweden, not all obstacles to women have been breached, and Lindner-Olsson is one of the few top female managers in engineering. Asked what helped her beat the odds, she laughs and says, "You have to choose the right husband. Seriously, if you don't share [housework and child care], you can just forget it." Olsson insists he won't be an absentee father. "It's not only a matter of sharing the responsibility.... It's also a man's right to take care of his children. It's a matter of living a full life. Work isn't everything."

**–Patricia Kahn**

TOMAS SODERGREN/BLACK STAR

**Leaning for support.** Elisabeth Lindner-Olsson and Anders Olsson divide care of their two children, aided by Sweden's "family friendly" policies.

*Patricia Kahn is a science writer based in Germany.*

Allaire for crisscrossing the country with the message that Xerox aims to be the employer of choice for technical women. "Culture is changed by people at the top," says Linda Brandt, chair of the women's council. "And our CEO is a very modern man."

But for each of these shining examples, there are many more that remain stuck at a one on the Schwartz scale—and a few who may even rate zeroes. And though some companies are trying hard to change, their efforts haven't yet made it possible for women to get to the corporate suites where they could begin to change policy themselves. At Du Pont, for example, only about 5% of top professionals and managers are women. In a 1992 Catalyst survey of 1000 companies, only 6% of members of boards of directors were women. Even at a company like Scios Nova—a model in some respects—only one of six top officers is a woman.

Scios Nova reflects its industry. Biotech has a healthy proportion of women working in the labs, but when the CEOs assemble, women are scarce: At the annual gathering of biotech chief executives in California last year, there were about 130 men—and three women, according to Kathleen Mullinix, CEO of Synaptic Pharmaceutical Corp. in Paramus, New Jersey, who was one of the three. One analysis of 35,000 high-tech companies, by CorpTech Inc. of Woburn, Massachusetts, found that fewer than 4% had female CEOs. Numbers for well-established older industries aren't readily available, but they're no doubt worse. Of course, universities don't offer women much more room at the top: Of all full professors in the United States in science and engineering in 1989, a mere 8% were female, according to the NRC.

The true bottom line for a woman with a Ph.D. who finds herself poised between industry and academics is that both sectors have a long way to go before they attain a "truly level playing field." But women evaluating the options available before the Schwartz ranking of five is achieved should keep in mind three factors that help determine where a company falls on the spectrum: numbers, age, and attitude.

**–Elizabeth Culotta**

**AT&T BELL LABS**

Women make up...

**12 of 279**
Ph.D.s in upper management (4%)

**86 of 938**
Ph.D.s (9%) (includes both researchers and management)