by the company. But officials also check to see if slated layoffs hit minorities especially hard; if so, some minorities are retained—even if they have low seniority.

That strategy works: From 1991 to 1993, about one-third of the professional and technical workers at McDonnell Douglas lost their jobs or retired early, as the number shriveled from 109,123 to 74,000. But the company doled out the pain to all ethnic groups. In 1991, for example, 4.4% of the company's professional employees and 11.9% of its technical employees were black; today, those figures are 4.5% and 11.1%, respectively.

Of course, saving one job means losing another, and preventing one type of discrimination opens companies up to charges of fostering another type. McDonnell-Douglas now faces several age discrimination suits from employees over age 55 who lost their jobs in massive layoffs; the company recently agreed to settle a batch of these suits, for a total of $20 million.

But while some businesses have managed to hold onto their minority workers, the centerpiece of most companies' diversity programs was until recently the recruitment of new employees from schools, and the money crunch has undeniably gutted those efforts. Although contractors are still required to make a "good faith effort" in recruiting minorities, the government allows plenty of leeway in times of crisis—such as funding high school educational programs instead of making new hires, says Thomas Williams, solicitor general at the Labor Department.

"Most companies will continue their efforts to diversify. But only at a slower pace."

—sociologist Sheila Tobias

Yet companies say they still seek minority candidates for the handful of new job openings. For example, Martin Marietta hired nine new college graduates in technical fields so far this year, including two minority members. That record compares with 14 minority hires out of a total of 128 new employees in the past 2 years.

So despite the drastic downsizing in high-tech industries, workforce analysts say that the gains of the 1980s are not likely to be wiped out. "Most companies will continue their efforts to diversify," predicts sociologist of science Sheila Tobias. "But only at a slower pace."

–Calvin Sims

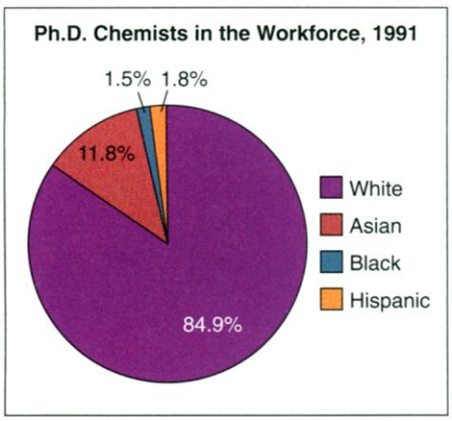
Calvin Sims is a business and technology writer for The New York Times.

INDUSTRIAL EFFORTS

Minority Networks Forge Bonds in Chemistry

Jesse Hipps, a black industrial chemist at E.I. Du Pont de Nemours & Co., has a tale to tell about why minorities are so rare in industrial chemistry—and how to solve the problem. Back in the 1980s, Hipps noted that the small Ohio firm he worked for had 12 or so white interns —but no minorities. The personnel manager said there were no minority chemistry students to be found. But within 2 months Hipps had brought the manager to a meeting of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE). The contacts they made led to the hiring of two talented black chemists. "It is amazing how important a black network is," says Hipps.

Indeed, minority scientists say such networks are playing a vital role in diversifying industrial chemistry, which—like most scientific professions—is filled with white faces. About 40% of the industrial R&D workforce consists of chemists and chemical engineers, according to the latest survey by the Industrial Research Institute. But very few of these are underrepresented minorities (see chart).



Rare elements. Minority chemists are still scarce in the workforce.

These days, companies have slacked off on their minority recruiting efforts because there are so few jobs, so networks such as NOBCChE try to keep up the momentum of minority recruitment. Their aim is to get minority students into, and through, the educational pipeline. They mentor students, offer scholarships, hold job fairs, and provide advice all along the way.

Take the case of Tommie L. Royster, a black chemist at Eastman Kodak Co., who got his job after meeting Robert Young, now director of diversity initiatives for Kodak's imaging group, at a NOBCChE meeting in 1987. But NOBCChE helped even after Royster got the job. When he first began work, he was worried about co-workers who thought he'd been hired solely because he was black. "These are the kind of experiences that I couldn't talk about with people at Kodak, but I could share with the people at NOBCChE," says Royster. "Just having people to talk to about these issues helps."

Experiences like Royster's show that recruitment programs are not always enough to ease a minority Ph.D. into the overwhelmingly white corporate world. Although big companies like Kodak and Proctor & Gamble long ago established minority programs, "success" in hiring usually means that major divisions have moved from having no minority chemists to having one or a few. "It's like changing the course of a river by throwing in one stone at a time," says Young.

Networks such as NOBCChE, now 2000 strong, are trying to connect those individual stones together. The 20-year-old Society for the Advancement of Chicano and Native American Scientists (SACNAS), is another minority organization in which chemists are well-represented, and the 15-year-old American Indian Science and Engineering Society (AISES), has expanded to more than 1400 members (see p. tk).

Their efforts continue to pay off, says Dick Pierce, educational program director for AISES, citing improved college graduation rates for AISES student members. Moreover, he says, since AISES began, more than 1000 American Indian scientists have gotten jobs in industry via contacts made at their annual meetings. When it comes to adding color to chemistry, minority networks can make a big difference.

–Karen Fox

With reporting by Ivan Amato.