RACIAL MODIFIERS IV

Bridging Tribal, Technological Worlds

When zoologist Wilfred Denetclaw, Jr., was a student at Fort Lewis College, he found himself confronted by an unusual dilemma: he had to dissect a cat to pass a vertebrate anatomy class. But Navajo culture prohibits touching the dead, an ethic deeply instilled in him as a child on a Navajo reservation in Shiprock, New Mexico. Sooner or later, he explains, "Every American Indian who has grown up in a traditional lifestyle, as I did, has to come to terms with that lifestyle." For Denetclaw that meant telling himself that "the Great Spirit would know why I'm doing it, and it would be okay."

Many factors make it tough for minorities to go into science, but as the story of Denetclaw, who today is a post-doctoral researcher at the University of California at Berkeley, illustrates, American Indians have their own unique set of problems. More than any other group, American Indians find themselves at odds with science and technology, which they often see as threatening their traditional way of life—bringing strip mining and toxic dumps to tribal lands and hordes of anthropologists to dig up burial grounds. Other factors that discourage American Indians include the fact that 25% grow up in poverty, and many attend reservation schools that have been notorious for poor quality education.

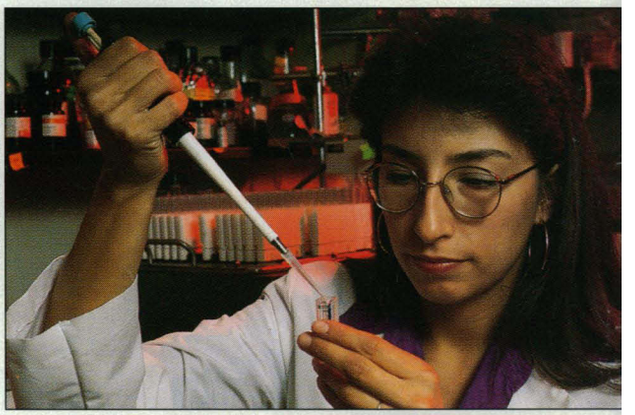
No surprise then that figures from the National Science Foundation (NSF) show that in 1990 American Indians were just as underrepresented as Hispanics and blacks in the scientific work force. American Indians make up 0.8% of the total U.S. population, but as a percentage of the scientific work force, they constitute only 0.4%—barely a presence in science—according to a 1992 NSF report. That translates into a scant 21,900 American Indian scientists and engineers, only 780 of whom have Ph.D.s. Worse yet, a 1991 study of the American Association for the Advancement of Science found "a consistent and nearly complete absence of American Indian faculty members in science and engineering at U.S. higher education institutions."

And even NSF's grim statistics may be overly optimistic, partly because the numbers are so tiny they may not be statistically significant. And there's another reason: Many people claim Indian descent who have "quite dilute Indian blood" so they can benefit from federal grants, says University of California, Santa Cruz, biology professor Clif Poodry, who is half Seneca. The government recognizes people as Indian if they are affiliated with a recognized tribe, but blood requirements for membership range from one-half for Mississippi Choctaw to no blood requirement for Oklahoma Cherokees. "There are some pretty blond Cherokees," Poodry says.

But unlike other minorities, who drop out early, things look good until college: American Indians account for 0.8% of initial college enrollments, the same as their representation in the general population, according to the U.S. Department of Education's National Center for Education Statistics. But those students aren't getting Ph.D.s: American Indians were awarded only 0.2% of all doctorates in science and engineering in 1990.

What calamities befall these science students? The primary one is poverty, says Denetclaw, and this hits hardest as the student climbs the ladder. Denetclaw, as an example, managed to survive his early education, which he describes as "typical of a reservation school system"—replete with outdated materials and poor equipment. But once in graduate school, Indians aren't getting much help: Less than one-third of American Indian graduate students in science and engineering received university support, and less than one-sixth received federal funds in 1990, according to the NSF.

"The Great Spirit would know why I'm doing it."
—Wilfred Denetclaw



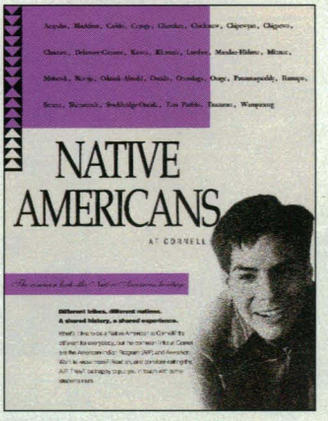
CHRIS HILDRETH/CORNELL UNIVERSITY

But there may be a glimmer of hope for the future. A number of American Indians are figuring out how to bridge the gap between their native traditions and science, says Mary Fadden, a half-Mohawk veterinarian who is enrolled in Cornell's doctoral program in environmental toxicology. Increasingly, she says, American Indians who become scientists are using their science to help other indigenous peoples. For example, American Indians are much more likely than whites to be environmental and life scientists: In 1988, 47% of American Indian scientists were life and environmental scientists compared to 23% of whites, according to NSF.

These choices may reflect a desire "to better manage tribal resources instead of relying on the Department of Energy and the Interior Department," says Fadden, who helps teach a 700-student seminar on the effects of environmental pollutants on Indians at Cornell's American Indian Program; close to 100 Indian students are enrolled.

And as some American Indians do succeed, they are helping others: The American Indian Science and Engineering Society (AISES), for example, has opened 87 college chapters and has distributed $1.5 million in scholarships to students over the last decade. And in 1981, Northern Arizona University biologist Frank Dukepoo founded the National Native American Honor Society, to honor Indian students from grade school to graduate school who get a semester of straight A's. After achieving one such semester, students are more likely to do it again and again. Their example gives Dukepoo hope. "We're not crying cultural shock," he says. "We're saying cultural pride."

–Dawn Levy



Scientific warrior. Mary Fadden *(middle)* teaches in Cornell's American Indian Program (brochure below).