ence and engineering. And a slightly smaller but still significant percentage cited an aversion to the lifestyle associated with careers in science and engineering.

As significant as the factors that led undergraduates to choose other majors, say Hewitt and Seymour, are some of the problems that, while mentioned by both groups, were not cited by the switchers as reasons for dropping out of their major. Poor teaching by graduate teaching assistants (TAs) was one, language difficulties on the part of foreign faculty and TAs another, and large class size and poor laboratory or computer facilities yet others. Many of these complaints will sound familiar because they are frequently seized on by institutions and professional associations brainstorming on how to explain student attrition. But study coauthor Seymour points out that "we've not had one single switcher tell us yet that those problems were part of the set of reasons [for leaving science]."

There is an optimistic side to the Colorado work: Because both of the main factors that distinguish switchers from their nonswitching peers are amenable to change, according to the authors, universities can take some important steps to stop the science "brain drain." For example, the authors observe that those who stay in science seem to develop a study "support network—people who are in the same boat who are willing to work with them"—that helps them get through the rough parts. Universities, Seymour concludes, can take steps to encourage the development of such groups early in the students' careers.

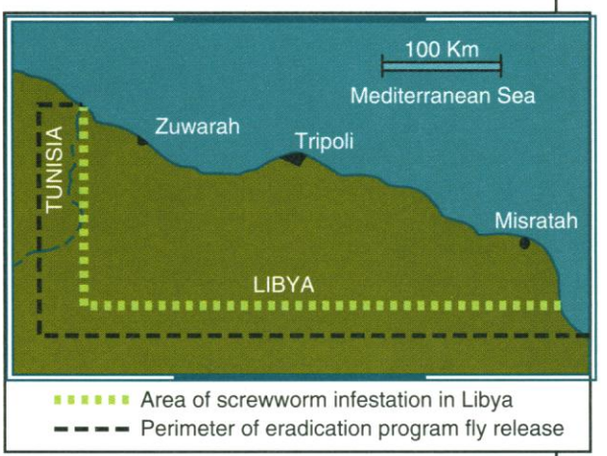
As to complaints about lack of faculty support, the Colorado sociologists posit that many science departments intentionally scrimp on the kind of course and career advising that helps students survive because of a "weed-out" mentality that assumes attrition is actually a good thing, because it leaves them the best and most dedicated students. That outlook, the authors note, is mistaken. As one professor told the authors: "We're not just weeding people out, we're ripping out half the garden."

Of course, institutions will never reduce to zero the attrition rate of undergraduates leaving science for other subjects—nor should they. "They will still have people who are not up to it, and they will still have people who don't work hard enough," notes Seymour. But, she adds, institutions can eliminate the waste of students who are talented enough and willing to work, but who are put off by the institutional barriers. Which is why the Colorado sociologists have plans for a nationwide sampling on this topic. But, they point out, teachers and university officials needn't wait for the larger sample: They can begin listening to students now. ■ BARRY CIPRA

UN Claims Victory in Desert War

Shortly before noon on Thursday, 7 February, four planes carrying United Nations insignia flew low over a large, predominantly Islamic nation, opened their cargo bays, and unleashed a potent biological weapon. If this sounds like recent world history turned on its head, it is no fantasy. The nation being "attacked" was Libya, and the biological weapon being employed was 40 million sex-starved-but-sterile male screwworm flies, whose larvae feast on living flesh. With the world distracted by the Gulf war, forces of the Food and Agriculture Organization (FAO) of the United Nations had started a war of their own, not against Libya's leader Muammar al-Qaddafi but against a cattle pest that had long plagued South America, occasionally killing people as well as livestock, and that had only recently established its first beachhead in Africa. The battle plan was to shower Libya with sterile impostors that would mate with native flies—indeed, mate themselves into oblivion.

Seven months and 1.3 billion flies later, FAO last week declared victory. Screwworms apparently have been wiped off the face of North Africa, more than a year ahead of schedule. No new cases of screwworm infestation in Libyan livestock have been reported since April. Moreover, the FAO's campaign to eradicate the pests cost only about $65 million (Libya kicked in $27 million)—a little over half the originally estimated $117 million.



Biological weapon and target zone.

The sterile insect technique employed by FAO was developed by U.S. entomologists in the 1950s to eradicate screwworms from the United States and Mexico and is currently being used successfully in Central America as well. The strategy is simple: Overwhelm fertile female flies—which mate only once, then die—with an abundance of sterile males. The females don't produce offspring and after about 10 lifecycles, the population dies out.

The pest first showed up in Libya 3 years ago, apparently having hitched a ride on imported South American sheep. It began to spread rapidly. In September 1990 alone, 2932 new cases of screwworm infestation were reported among Libyan livestock and computer models predicted that the pest might migrate south. If that happened, "you could essentially kiss goodbye a great deal of the livestock south of the Sahara," says Patrick Cunningham, director of FAO's screwworm emergency center for North Africa. Even a small number of sub-Saharan livestock lost to the parasite could have crippled the African food supply and might have wiped out some endangered species, says Cunningham. Which is why the FAO began to mobilize last year.

Some deft political maneuvering was needed to enable the U.S. Department of Agriculture (USDA) to supply FAO with the sterile flies, which are bred at a USDA laboratory in Tuxtla Gutierrez, Mexico (see *Science*, 5 July, p. 28). The department is prohibited by law from providing high technology to Libya, but legislation signed by President Bush in March 1990 specifically exempted sterile screwworms from export controls. The idea for the legislation began quietly at the cabinet level and included Secretary of Agriculture Clayton Yeutter and Secretary of State James Baker, says Paula Henstridge of USDA's legislative office. "They realized there was a potential for a very serious problem" spreading through Africa, she says. No longer. But despite its spectacularly successful air war, FAO hasn't planned any parades to celebrate the rout of its opponent, even though, unlike in the other desert war, victory seems complete. ■ RICHARD STONE