



Ag Students Learn on the Job

About two-thirds of the students of agriculture at The University of Arizona had no agricultural background before coming to college. The College of Agriculture's student internship program gives these students, as well as the other third, a chance for hands-on application of some of their classroom learning.

The interns spend a semester or summer working in agriculturally related jobs with private enterprises or public agencies.

Some have tended calves for a 1,000-cow dairy or measured soil moisture in 5,000 acres of cotton. Others have bred sows in Kansas or queen bees in Tucson, or put birth-control implants in lions at the zoo. Interns have planted urban landscapes, pine forests or green house flowers. They have helped legislators study bills or helped future farmers get federal loans.

In fact, each of the 40 to 60 interns a year gets a unique set of experiences, says Dr. Frank M. Whiting, the professor of animal sciences who coordinates the agricultural internship program. He should know; he has visited hundreds of them on the job to see what they are doing and to meet with their supervisors.

Students earn up to eight hours of college credit for full-time work in an approved internship. Most are also paid by their employers. Afterward, interns write reports about what they did and learned.

"For me, the internship was the best college experience I had," Jan Halworth said recently. As a college senior from Tucson, she had no agricultural working experience before her 1976 internship in Tonopah with Conrel Co. (now part of Albany International). She worked on

Photograph: Horticulture student Tracy Johnston, an intern with AAA Landscape and Lawn Service, places stakes to mark where trees will be planted on IBM property in Tucson. (Photos by Ted Bundy.)



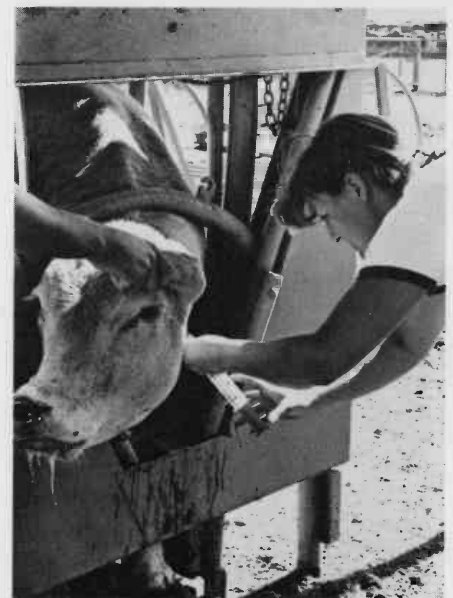
the company's tests of pheromone chemicals for controlling pink bollworms in cotton fields. Pheromones are insects' sex-attractant scents. Halworth placed pheromone traps in the fields and later assessed damage done to the cotton by pink bollworms.

Now Halworth has another perspective. After her graduation, she returned as a company employee, worked with the pheromone product through its registration with the Environmental Protection Agency, and reached an administrative position with Albany International in Buckeye. Now she supervises UA interns who come to work there.

Agriculture senior Nancy Sego from Coolidge interned for Halworth's company this summer. She plans to work in insect-control research after graduation, and the internship has helped convince her that she likes field work better than laboratory work. Besides learning about insects, "I've learned a lot about how cotton is grown," said Sego.

Halworth said, "We try to have an intern every year. From the company's standpoint, we get good employees on the job who are eager to learn as much as they can. We have a chance to look at people we might want to offer a job, or at least we have more people who understand what we're doing. One problem we are having with pheromones is lack of experienced people to use them, so that helps us."

Whiting hears similar enthusiasm for the internship program from many sources. He said, "The students think they're the big winners in this program. The employers, many of them, think they are the big



Top left: Setting a pheromone trap for pink bollworm moths: Nancy Sego, interning with Albany International of Buckeye. Right: On the doctoring crew at Red River Feedlot near Stanfield: interns Leslie Horn (above) and Dianna Amado (below).

winners. But I think the university is the big winner. We can read the students' reports and see how they change their curriculum. Virtually all of them make some changes in curriculum after they come back. On the job, they find there are subjects they need to know more about, and some that they don't need, so they add some courses they hadn't planned to take, and maybe drop some others. When advisers pay attention to what these students are doing, that's one of our best barometers of what potential employers are looking for."

Some interns and their jobs have been:

—**Peggy Briggs**, an animal sciences senior from Mesa, worked at Shamrock Dairy's 1,000-cow Emerald Farm in Chandler for the summer of 1980. She fed and tended calves from their day of birth until they reached about 300 pounds. Births averaged three to four daily during the summer. Briggs doctored calves for pneumonia, overheating and pinkeye and kept records of individual calves and of feed and milk. She sorted out calves ready for weaning, then kept them in weaner pens. Later, she said, "Most of the people at the farm were very helpful and showed great patience with all of my questions."

—In a summer 1979 internship, **Patrick White** used a neutron moisture probe to help plan more efficient irrigation scheduling for the 15,000-acre Phoenix Agro-Invests farm at Aguila. He was a soils, water and engineering senior. He and the farm's irrigation manager, Armando Gill, attended a training session in California and obtained licenses for using a neutron probe, which includes a radioactive element. They selected more than 100 test sites in 5,000 acres of cotton, installed access tubes at them, and periodically checked moisture levels at each point. During the internship, White also tested the fuel efficiency of irrigation pumps, calculated total irrigation applied to wheat, safflower and sugarbeet fields and measured tailwater runoff from cotton fields.

—**Kathi Knox**, a senior this year in the UA race track management program, worked for the 1981 spring semester as a legislative intern for the Arizona House of Representatives. She researched potential effects of bills before the House Environmental Affairs and Agriculture committees. She also wrote summaries of committee meetings for distributing to representatives on other committees. One bill she researched would have banned the use of animal drugs phenylbutazone ("bute") and Lasix at Arizona race tracks. Another would have required that an increasing percentage of the state government's paper purchases be recycled paper. Knox worked closest with committee chairmen Juanita Harelson of Tempe and John Hays of Yarnell.

—**Leslie Horn** and **Dianna Amado** interned together at the Red River Land Co. feedlot near Stanfield the first part of this summer. Horn, a pre-veterinary junior from Pennsylvania, had had little previous experience with livestock. Amado grew up on a southern Arizona ranch. They worked on the doctoring crew at Red River, treating the sick cattle among the feedlot's up-to-40,000 head during their internship. The students were also introduced to other tasks: processing new arrivals, working in the feed mill, keeping office records and riding horseback to check the cattle. Horn said of her co-workers, "These guys have taught us so much. I came in here and didn't even know how to work a chute or find a jugular."

—**Lawson Spicer**, now close to a Ph.D. degree in agricultural biochemistry and nutrition, did two internships as an undergraduate stu-



Lawson Spicer.

dent in 1974 and '75. First, he helped test feed rations in a nutrition laboratory at Arizona Feeds in Tucson. Six months later, he began work for the U.S. Farmers Home Administration office in Douglas. For FmHA, he helped applicants, especially teenagers, with paperwork and arrangements for loans. He visited many borrowers at their homes to see the enterprises being financed.

Spicer's two intern jobs illustrate some types of benefits interns gain. Even before the first job, he was aiming for a career in animal nutrition. "That internship gave me on-the-job training," he said. "I was really able to get a feel for what I hoped I would be doing in the future." The FmHA work "gave me a chance to broaden my horizons by getting to know people in many different areas." It also gave him a specific job offer. He worked for the same office for six months between finishing his bachelor's degree and starting graduate school.

Job offers to interns are frequent, but they are not a primary goal of the program. One-fourth of the fall 1980 employers asked their interns to apply for full-time work after graduation. "The program gives employers a good look at a potential employee for a specified period with no strings attached," Whiting pointed out.

More importantly for many interns, the program lets them check how their chosen field's appeal holds up on a day-to-day working basis. "I'd hate to figure out after a couple of years of vet school that it really wasn't what I wanted to do," said pre-veterinary senior Lisa Dorr of Tucson. She did internships last year tending horses at the University of Vermont's Morgan Horse Farm, then managed the breeding and gestation department at DeKalb Swine Breeders in Plains, Kansas. Both jobs included giving medical care.

"When I started I wasn't sure I wanted to go into veterinary medicine; now I'm sure I do," said Dorr.

Whiting noted, "We've had a few students find from this program that the work in their major field wasn't what they thought it would be. When they find that out, they have a chance to salvage some credits and switch to something else. It's better than finding out they don't like the work after they graduate."

At the beginning of each agricultural internship, the student, his or her academic adviser, the employer and Whiting all sign an agreement about the terms of the arrangement. It specifies the student's responsibilities, the types of operations the student will encounter, the pay rate and the academic credits to be earned.

Whiting recruits most of the employers who hire interns, but some students find their own positions, then apply in advance to get internship credit for the work. Except in those cases, students seeking internships are required to prepare formal resumes. Whiting tries to see that each employer has a selection of three or more applicants and that students apply to at least three employers.

"Unfortunately, we usually have more interested students than openings," said Whiting.

He figures that, in getting to know each student and employer, visiting them on the job and reading their reports, he has learned as much from the program as anyone: "I thought I had a pretty good agricultural background when I came into this job, but I didn't even suspect a lot of what I've learned. . . . I think I've got the best job in the college."



During her internship at Reid Park Zoo in Tucson, Charlotte Fox steadies a sun bear for medical treatment. (Photo by Frank Whiting.)