

EDUCATION

Laboratories Train Scientists

Through contact with scientists during summer work in laboratories, hundreds of young people crystallize their specialties toward careers in science and technology.

See Front Cover

By SHIRLEY MOORE

► HUNDREDS of America's newest teen-aged scientists are being incubated each year in summer jobs in the laboratories of foresighted industries, universities and Government agencies.

The growing number of such summer programs for students has revolutionized traditional ideas of youthful vacations. As one youngster put it, "Instead of spending our summers, we're investing them!"

Embryo scientists have been turning up in such impressive assignments as "classified" secret work for Boeing Aircraft at Cape Canaveral, Fla., Dow Corning Corporation, Midland, Mich., and Melpar, Falls Church, Va., and working on electronic equipment for Redstone Arsenal, Huntsville, Ala. It is especially interesting to note that none of these boys had yet entered college and two of them had just completed their junior year in high school.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows young Betty Coder at work in the laboratories of the Institute of Home Economics of the U. S. Department of Agriculture's Agricultural Research Service.

In addition to these examples of what today's high school students can do, other surprising trends and facts on student-scientist jobs have been discovered in a study recently completed by SCIENCE SERVICE's

Science Clubs of America. A detailed survey was made of the high school students and college freshmen and sophomores who have been finalists in the National Science Fair or winners in the Science Talent Search for the Westinghouse Science Scholarships and Awards, both activities of SCIENCE SERVICE.

Results of the survey show that every summer more employers are offering mutually valuable employment to these young science students. After some years of beating against age and formal training restrictions that barred them from such vacation employment, the teen-agers are proving outstanding science students make outstandingly competent employees able to make valuable contributions in their fields.

Many new scientific jobs are now being opened to students. Projects assigned to them are of increasing importance and responsibility, and salaries are rising in proportion to their proven ability. Restrictions are gradually becoming flexible enough to allow even a ninth grader of unusual talent to look forward to a summer of work on a significant research project.

As a matter of fact, about 70% of the scientific jobs reported by the students surveyed were held by youngsters who had not yet entered college and whose ages ranged from 14 to 18, either at the time of the survey or when they originally held the jobs.

Profitable Projects

In some instances, a student was paid to continue work he or she had started as a science fair or Science Talent Search project. For example, Stephen H. Caine of Shreveport, La., now a senior in high school, designed and built a corrosion control demonstrator during his junior year. His idea was to devise a supplement to the regulation textbook and lecture instruction given to employees of the oil and gas industries to inform them on the corrosion that occurs in supply pipes and methods of protection against such corrosion. His project won first place in his local and state science fairs and a fourth award at the National Science Fair in Los Angeles last May.

The Texas Eastern Transmission Corporation, which has 6,000 miles of buried steel gas transmission pipe lines to protect from corrosion, invited Stephen to build his demonstrator for them last summer.

He was given an assistant at the company's shops to help in the construction, and duplicates of the demonstrator were adopted as standard equipment in the company's training program for engineers and technicians in their various offices and districts.

Joel Frederic Lubar, formerly of Silver Spring, Md., is another example of a student who was given an opportunity to continue work in his own field. In 1955 Joel won first place in the local and regional science fairs and went to the National Science Fair at Cleveland, Ohio, with his telescope exhibit. That summer, after the completion of his junior year in high school, he worked at the Cumberland Optical Company in Silver Spring, Md., grinding, polishing, correcting and figuring optical surfaces.

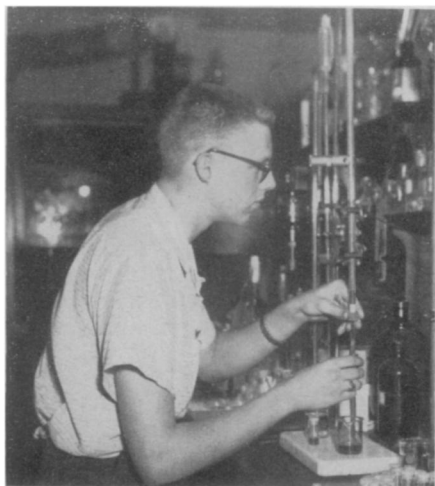
Continuing Awards

The following year, he won a fourth award in the National Science Fair at Oklahoma City and an honorable mention in the Science Talent Search with the help of his Cassegrainian Newtonian telescope and photographs taken through it.

That summer he was employed at the Warner and Swasey Observatory at Case Institute of Technology, East Cleveland, Ohio, to plot stellar positions, take astronomical photographs, and participate in observing and in spectral analysis. He returned to the same position again last summer.

Then there is Suzan Lynn Hopkins, who investigated an antibiotic in the digestive system of earthworms as her winning project in the National Science Fair, and spent the summer of her junior year as a bacteriologist at the Infectious Disease Laboratories of the University of Iowa, continuing her investigations. This past summer she was employed by Eli Lilly and Company in Indianapolis, Ind., as a biochemist working on purification procedures for new antibiotics. She is now a pre-medical student at the University of Iowa.

Several youngsters who want to be doctors or medical technologists report jobs as lab-



ENTOMOLOGIST—*Leland N. Edmunds Jr., 18, was a student trainee in the Insect Physiology Laboratory of the U. S. Department of Agriculture at Beltsville, Md.*



METALLURGIST—*James S. Foster, 20, was a summer employee in the physical metallurgy section of the International Nickel Company, Inc., at its Huntington, W. Va., laboratory.*

oratory technicians in hospitals and testing centers. A future zoologist spent his senior summer doing specialized work on black-birds for the U. S. Fish and Wildlife Service.

Such summer job opportunities range all the way from the exceptional case, when a company invites a local student to work with them because of his or her unusual accomplishment that is applicable to their work, to full scale permanent programs such as those which have been in operation for some years at the National Bureau of Standards, Washington, D. C., and at the Westinghouse Research Laboratories, Pittsburgh, Pa.

Last summer, for instance, there were 240 student scientists and engineers at the National Bureau of Standards, representing more than 50 colleges and several high schools. Of the college students, 100 had worked at the Bureau during previous summers. Fourteen high school graduates, all winners in the Science Talent Search or the National Science Fair, were working there for the first time.

Return Trips Made

Advancement in grade and salary is offered to returning students, and the Bureau's program of lectures and demonstrations by eminent scientists is open to them.

The Westinghouse Electric Corporation employs new student scientists each summer, in addition to the returnees who come back year after year. They are assigned to important projects at Westinghouse installations, including the Bettis Atomic Power Division near Pittsburgh, a national center for atomic reactor research and development.

The University of California Radiation Laboratory invites ten outstanding science students to accept summer fellowships each year to work under the distinguished faculty of the Laboratory, including Drs. Glenn Seaborg and Edward Teller.


Many companies, such as Aerojet-General Corporation and Hughes Aircraft in California, have organized their own versions of summer programs to encourage and develop promising young science manpower.

To describe even a fair sampling of all of these programs and the capable young people they are employing would require a full-length book, rather than a brief report. However, even brevity and a purely arbitrary choice of examples does not obscure the heartening picture of leading industries, universities and agencies working out creative ways of solving the serious shortage of scientists both for themselves and for the entire nation.

List of Potential Employees

Organizations wishing to receive the list of 1958 Science Talent Search winners and honorable mentions, available now, and the catalogue of National Science Fair finalists, to be issued in May, for use in planning summer employment programs, may do so by enclosing a stamped, self-addressed envelope for each with their request to Science Clubs of America, 1719 N Street, N.W., Washington 6, D. C.

Science News Letter, March 29, 1958



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