

TRAVELING TUTORS

The Caltech YMCA is now running three off-campus tutoring programs, involving about 90 Caltech students. The oldest of these, the program at Jordan High School in the Watts section of Los Angeles, began four years ago and now utilizes the services of nearly 40 undergraduate and graduate students. A second tutoring project, at the Westside Study Center, helps Pasadena school children from the first through the tenth grades. The third program began in January at Pasadena's Washington Junior High School.

Every Tuesday and Thursday evening, two or three carloads of assorted physics, math, engineering, biology, and humanities majors brave the freeways and take the 45-minute ride to Jordan High. There the tutors congregate in a classroom converted into a dispatch center, where they are put in touch with the students who are in need of help in a particular subject. Math and science tutors are most in demand. The Caltech students usually do not stick to one subject week after week, but range from algebra to geometry to chemistry. One undergrad holds a music class. The Jordan students are not forced to attend these evening sessions, but they are quite interested in improving themselves and come of their own volition. The turnout averages about two or three students to a tutor. The sessions last about an hour.

Much of the tutoring time is spent going over homework problems or showing the students how to do problems they missed on a test. At Jordan there are two distinct groups of students—those who need help to keep up with their work, and those who are eager to learn what they normally would not get as a part of their regular curriculum. Working with this group is exciting, since these are the potential leaders of the community, and the help and encouragement they get from the program may not only sustain their interest in high school but may also motivate them to go on to college and advanced fields of study.

In order to work with these bright and highly motivated students, five Caltech undergraduates have organized a course in computer programming. This eight-week course, handled on an informal basis, attempts to explain some of the principles of programming and its applications to a group of about ten Jordan High students, selected on the recommendation of their math teachers. More important, there is a "laboratory session" at Caltech's Booth Computing Center every Saturday afternoon. Here the students get an opportunity to run programs on the new IBM 360/50 computer system. The specific system used is a shared-time remote-console setup using Caltech's own shared-time CITRAN processing system. With the fairly firm grasp of the CITRAN language they now have, the Jordan students are working on individual projects, such as a program to study the growth rate of bacteria as a function of food and other variables, and one to enable the computer to play a game, such as three-dimensional tick-tack-toe or blackjack, against a human opponent.

The new Washington Junior High program is radical in its approach to tutoring. The students are tutored *during* class hours, so that the teachers are available for consultation. The entire resources of the school are at the disposal of the tutor, including the audio-visual aids equipment. Some of the Caltech students will be involved in creating instructional tapes that can be used by individual students on the school library's tape recorders. Each tutor works with *one* student.

Occasionally, after hours, a group of the tutors get together with Burton Housman, associate secretary of the Caltech Y, to discuss the philosophy of tutoring and its role in the community. Students agree that tutoring is a crutch, although unfortunately a necessary one. Tutors, like doctors, would like to do themselves out of a job, but at present they can only treat the symptoms.

—David Lewin '70

