

A DEVELOPMENT PROGRAM FOR CALTECH

A Statement by L. A. DuBridge

Among the colleges and universities of America there are a few which by reason of circumstance, of history and of experience must play especially key roles. These are the institutions which have already shown a capacity for scholarly leadership and which, through the accomplishments of their faculties and graduates, have rendered outstanding service to the nation.

The launching of Explorer I, a joint venture of the Army Ballistic Missile Agency and the Caltech Jet Propulsion Laboratory, is but one recent and unusually spectacular example of the way in which the nation has been served by Caltech. JPL, operated under contract with the U.S. Army, is managed by Caltech and many of its key scientists and engineers are Caltech products.

Their splendid achievement was not, however, a flash in the pan. It was the result of the Institute's 30 years of basic research in aeronautics and jet propulsion. Success was directly attributable to the fact that JPL has one of the best and most experienced rocket technology groups in the country.

Other Caltech groups, with equal dedication to excellence, have greatly advanced our knowledge—and thereby served our country—in such fields as electrical engineering, biology, chemistry, physics, seismology, aeronautics and others.

The achievements of the past are, however, but the threshold to the future. The coming 50 years will see

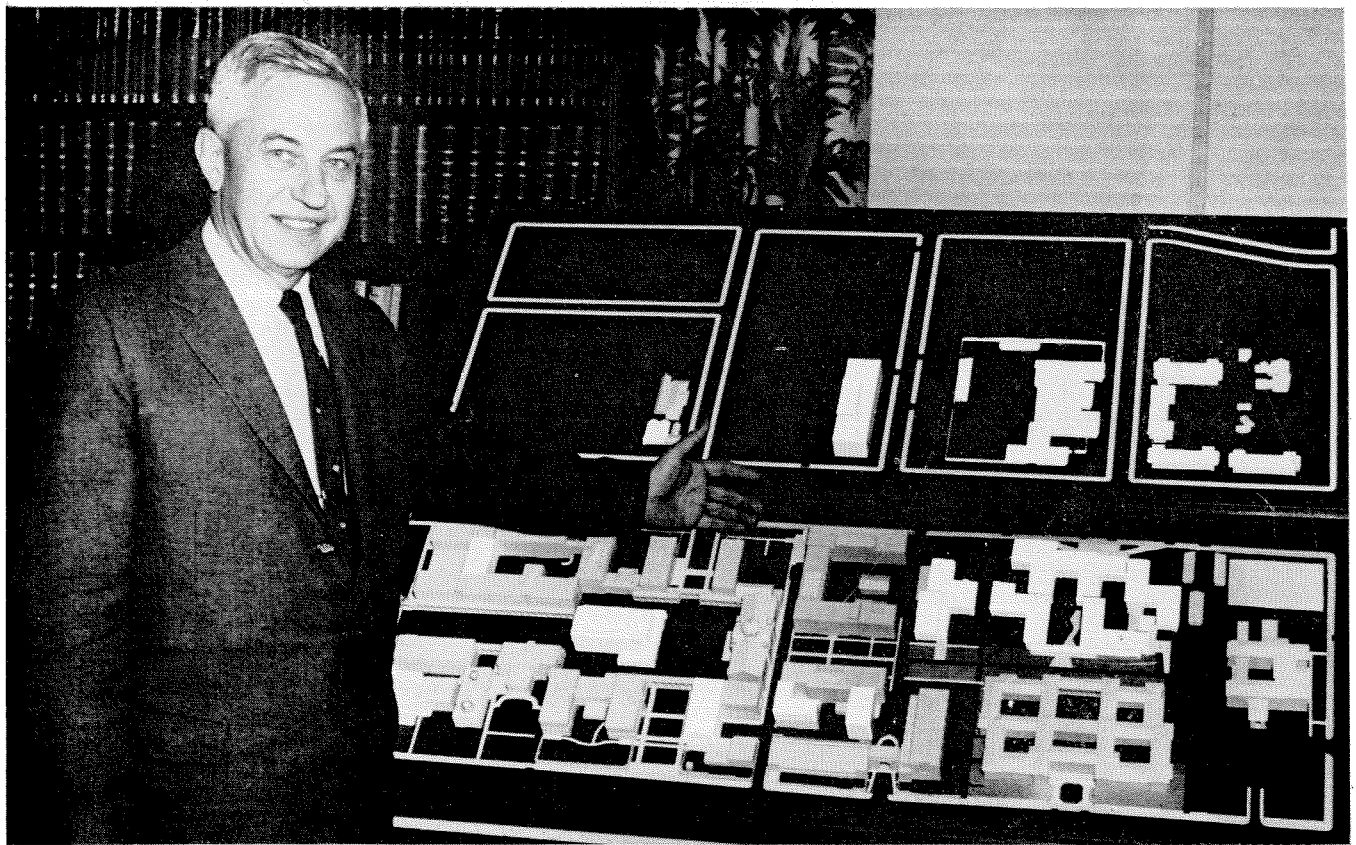
undreamed of advances in knowledge and its applications. But the demand for superb intellectual leadership will increase. There will be a need for *more* scientists and engineers; there will be an even more urgent need for *better* ones.

Indeed, this future is already upon us, and it is not surprising that Caltech ranks high among the institutions that are being asked to provide intellectual leadership—leadership in research and in education.

Surely, Caltech must respond—and you may be sure that it is eager to respond.

But what does it take for this institution to continue its excellence and its alertness? There are three very simple things we must do: We must maintain a faculty unequalled in any institution of its kind in the country; we must maintain the finest student body that it is possible to attract; and we must maintain the resources and facilities to make both faculty members and students effective in their work.

I think we can say without fear of contradiction that we have as fine a student body as any institution in the country. We also have a top-notch faculty. I must add, however, that our position of maintaining a top-notch faculty is a precarious one. We have, in the last few years, failed to attract some of the best scientists and engineers in the country whom we wished very much to add to our staff. We failed because our resources and



President DuBridge and a model of the Caltech campus. Proposed new buildings are in white.

our facilities and our funds were not adequate to attract them to this institution in comparison with opportunities which they found available elsewhere. We have also failed to keep some first-class young faculty members on our staff when they found more attractive opportunities elsewhere. We can maintain and increase the strength of our faculty only by increasing the resources and facilities which today are not yet quite adequate to maintain our leadership.

Our resources, of course, have not been standing still. During the past ten years Caltech has doubled its endowment. The annual income from all sources—endowment, tuition, gifts, governmental contracts, etc. (not including the great Jet Propulsion Laboratory and other off-campus projects)—has also doubled.

The gifts which we receive annually for current purposes—for scholarships, for general operations, for research—have climbed from \$300,000 in 1947 to over \$2,000,000 in 1957.

Government contracts, which support many campus projects in basic science and engineering, have also climbed to about \$2,000,000 per year.

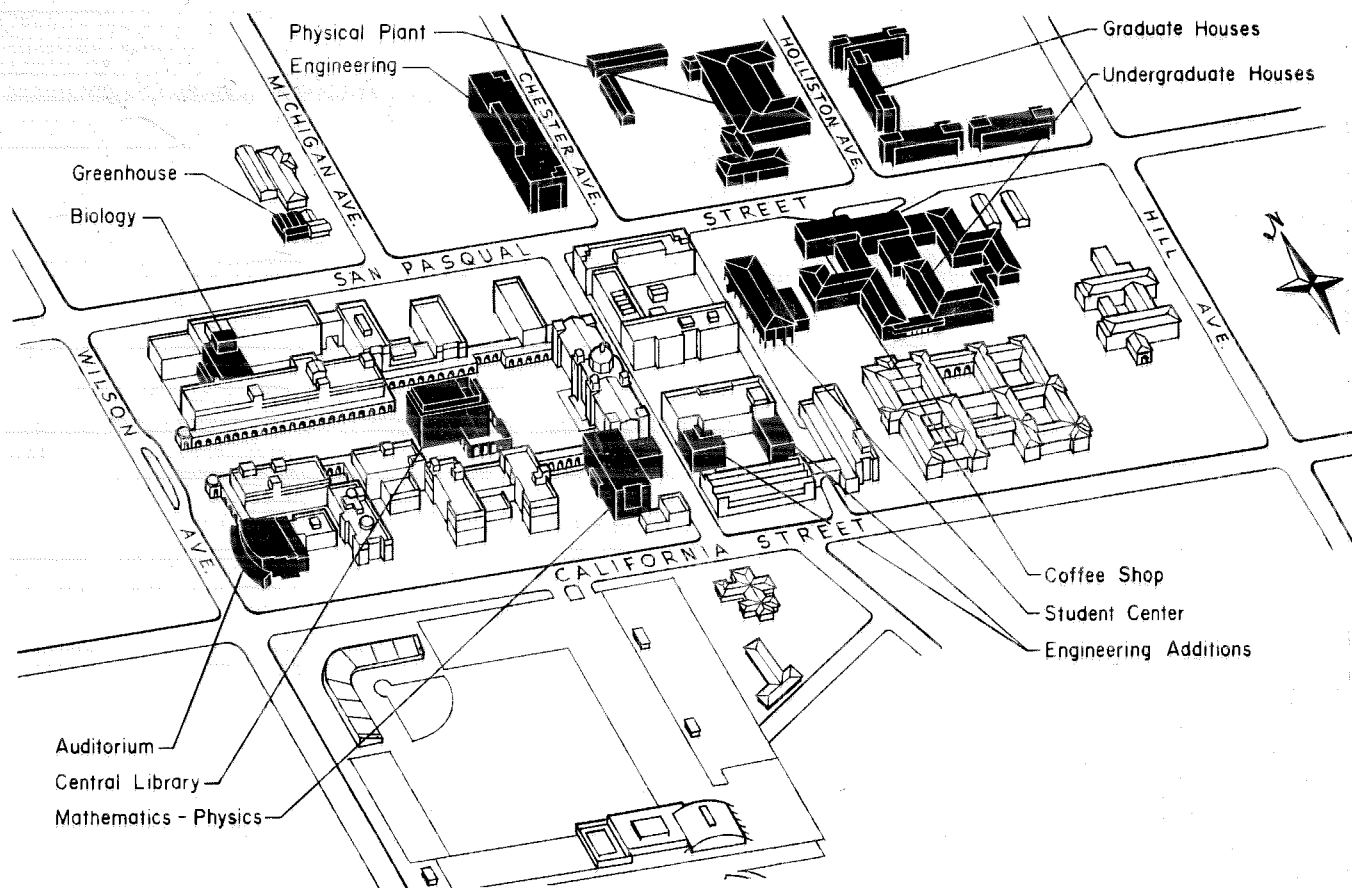
Tuition fees today supply only about one-eighth of our total income even when we exclude off-campus operations. Our tuition fees have been increased 50 percent in the last three years, and I think there is no doubt but they will soon go up substantially again. We must ask the students to bear a portion of the increasing costs; but at best the total income from tuition will be a small fraction of our annual budget.

We have received many important bequests for general endowment funds. In recent years we have also received gifts and bequests for three major buildings: the Norman Church Laboratory for Chemical Biology, the Eudora Hull Spalding Laboratory of Engineering, and the Scott Brown Gymnasium and Alumni Swimming Pool. There have been several smaller structures too, such as the Earhart Plant Research Laboratory and the Archibald Young Health Center.

All these things are fine, but they have proved far from adequate. Our financial resources have barely kept pace with inflation and our physical facilities are inadequate to keep us going ahead; we may be left standing still—or even falling behind.

As to the size of the student body, we do not intend to change substantially the number of freshmen that we admit to Caltech, but—with our present faculty and the resources that we can see ahead—we could admit a few more junior and senior transfers from junior colleges and liberal arts colleges. We could also substantially increase our number of graduate students with the facilities that we can now foresee. We would, therefore, increase the number of degrees that we grant—bachelors, masters and doctors—and thus help to supply scientists and engineers of high caliber which the country so sorely needs. We should be moving forward to do this, though quality rather than numbers is our primary goal.

We must also, as I have said, expand our facilities to retain our fine faculty, and we must attract new



Map showing the \$12,700,000 worth of new buildings that Caltech needs.

faculty members to maintain our quality and expand and give new variety to our offerings. We must keep up in the many new fields that are now developing—the fields of electronic computers, nuclear energy, applied mathematics, solid state physics, low temperature physics, virus research, chemical geology and many other areas that are just coming of age.

We have a fine student body but we have woefully inadequate facilities to house them. An essential element of our educational program is lost when we lose the residential character of our college. We have almost no facilities for housing graduate students today and yet I can foresee the day not many years hence when we will have almost an equal number of graduate and undergraduate students.

We can, I am sure—in the future as well as in the past—obtain current support for our research programs and for our general educational budget. Foundations, corporations and government agencies are anxious to forward scientific and engineering research in this country; I am sure that, as new ideas and new programs in the research field come along, we can find support for them from the National Science Foundation, the Office of Naval Research, the Atomic Energy Commission and the Public Health Service, as well as the various private foundations. But these sources of support do not do two very vital things: They do not pay faculty salaries, and they do not build dormitories and libraries and laboratories. To meet these needs, the

Institute must substantially increase its capital resources. And this must be done *now*.

Accordingly, the trustees of the California Institute of Technology have embarked on an intensive two-year campaign to secure an additional \$16,100,000 in new capital funds.

To succeed in this venture we shall need to tap, on a scale we have never before attempted, all possible sources of funds. We plan to approach every individual we can find in California and elsewhere who can possibly give us a few hundred dollars or more.

We shall approach every corporation in the nation of any size that can make a grant to our program; we shall approach foundations, both private and public; we shall approach such agencies of government as can make capital grants; and we shall approach the alumni.

In this campaign, we are going to try to tell the story of Caltech to every corner of the nation. We are not going to be modest, but we are going to try to tell the truth.

Advance subscriptions to a total of over \$3,000,000 have already been secured. We now turn to individuals, foundations and corporations with the urgent request that the remaining \$13,000,000 be promptly provided to enable Caltech to proceed without delay with its urgent tasks of education and research.

The buildings which we believe constitute the minimum requirements for our program in the next few years are shown on the following pages.