UNITY and DIVERSITY

THE ACADEMIC PLAN OF THE
UNIVERSITY OF CALIFORNIA
1965 – 1975

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PREFACE

THIS ACADEMIC PLAN of the University of California for 1965–75 is a condensed version of the Plan developed by representative committees of the University faculty and staff, first approved by The Regents of the University in July, 1961, and since modified as necessary. It is intended as a guide for the orderly attainment of the University's objectives during the next ten years, in California's proud tradition of academic excellence. It is published here for the benefit of the members of the University community, to encourage both understanding and constructive criticism of the University's aims.

As new facts and circumstances become known, every plan must be changed. But this does not lessen our obligation to search the future with the best vision we possess. The University is committed to careful and imaginative planning so that we may anticipate and meet more effectively the many challenges which lie ahead.

Most formidable of the challenges facing the University immediately is the challenge of massive growth. Recent growth in the enrollments, faculties, physical facilities, and responsibilities of the University has been dramatic, and will continue to 1975 and beyond. But the demands of growth come not just from increased numbers; knowledge itself is growing at an accelerating pace under the impetus of research at this and other major universities. To maintain first-quality teaching and research in the midst of such growth in both numbers and knowledge is, in the long view, the greatest challenge of all.

The Plan presented here has been shaped by the judgment and interests of the University faculty, by the distinguished traditions of the University's past, by the agreements reached in formulating the 1960 *Master Plan for Higher Education in California,* and by the expected future needs of the state and the nation. As our planning progresses within and among the campuses, the University Academic Plan can be made more specific. It is certain to be changed, not only as circumstances change, but also as time brings more information and refined judgments on the choices among alternatives. Just now this Plan reflects our thinking about the future of the University of California.

CLARK KERR,
President of the University

UNITY and DIVERSITY

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1965 – 1975

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CAMPUSES AND FACILITIES OPERATED BY THE UNIVERSITY

This map illustrates the geographical spread of the University's services to the State. In addition to the facilities shown on the map, the University operates Agricultural Extension Service Offices (•) in fifty-six of California's fifty-eight counties.

THE ROLE OF THE UNIVERSITY

The University of California is the state university and land-grant institution of the State of California. Established by the Organic Act of 1868, confirmed in its mission by the Constitution of the State, the University in less than a century of existence has become a center of intellectual and artistic activity that rivals the best in the world. As such, it is responsive to the needs of its state and of society and to the traditions of free inquiry that have governed great Western universities since their medieval origins.

Universities today play a vital role in the preservation of free societies. They are the principal centers for the discovery and publication of new ideas; they preserve the heritage of the past for future generations; they maintain precious freedoms to explore all points of view; they instruct the young and the mature alike in the most fundamental conceptions and advanced skills known to our civilization. Increasingly, their contributions are being recognized as basic to the vitality of our culture, the prosperity of free economies, and the very survival of freedom.

For many years, the University of California has provided through its faculties an outstandingly high quality of instruction, research, and public service in intellectual and artistic fields. Its eminence in these areas was recognized by the *Donahoe Higher Education Act of 1960*, which established in law the principal agreements arrived at in the *Master Plan for Higher Education in California, 1960–1975*. It is against this background that the University has developed this Academic Plan to make clear the path that must be followed if the University is to continue fulfilling its role with distinction.

Achievement of distinction in the years immediately ahead will be conditioned by five overriding imperatives:

Growth

The State of California is faced with a burgeoning population and with dramatically rising demands for college and university education. To help meet these demands, the University accepts responsibility to accommodate all qualified applicants in appropriate fields of study, within the limits of the staff and facilities that are made available. Existing campuses are being expanded; new campuses are being developed following careful long-range plans; inappropriate or needlessly duplicative activities will be avoided; the summer months will be incorporated into the regular academic calendar; and the University will continue to cooperate with the state colleges in developing jointly awarded doctoral degrees.

Diversity

The University will strive deliberately to foster diversity among its campuses, so as to present the broadest possible range of high-quality educational opportunities to the people of California. The expansion of knowledge in our time is so rapid that not even the most massive of the University's campuses can expect to achieve the highest standards of teaching and graduate instruction in all of the basic fields of knowledge. Each campus will be encouraged to develop clusters of especially strong departments and supporting research organizations, building on present centers of strength, which will earn international distinction. Each will also be encouraged to develop variety in its educational methods.

Balance

In the University as a whole, an appropriate balance must be achieved and sustained among the basic academic disciplines: the humanities and arts, the social sciences, and the natural sciences. No precise calculus of the worth of each field is possible or necessary; all are vital to the continued vigor of our society's intellectual and cultural life. The University must retain its independence of passing intellectual fashions, and see that its faculties and students are enabled to pursue their inquiries energetically in all of the principal fields of knowledge. At the same time, the University must remain free to respond to periodic changes in the intellectual creativity of different disciplines, and to the inconstant needs of society for academic training and research. Only by such a shifting set of human judgments can balance in the best sense be maintained.

Perspective

A great university has a duty to the future as great as its duty to the present. It must do more than serve the immediate society which provides its support: it must preserve the heritage of the past; it must try to open new doors. Intellectually it must be both more conservative of established values and more bold in trying innovations than may be fashionable at any given moment. It must maintain scholars in studies which a layman might consider archaic. It must support novel explorations which most people consider speculative. In the interests of future generations it must take the long view and may often have to defend the unpopular.

Freedom

The essence of a great university is an atmosphere of freedom. Originality and creativity cannot long breathe any other air. Both within its halls and in its outside contacts the University must sustain this atmosphere if it is to serve its society well. Neither immediate benefits, nor the desire to allay criticism, nor honest exasperation with troublemakers must tempt the University of California to impair the right of responsible scholars to search and to discuss what they find.

Responsibility

Responsibility is the other side of the coin on which freedom is written. Self-restraint, mutual tolerance, and shared concern for the good of the whole community are the obligations of freedom. Without these qualities in its members, the University of California's freedoms of teaching and inquiry become meaningless; with them, the University will continue to meet its challenges as one of the world's great centers of learning.

INSTRUCTION

Instruction is basic to all of the University's activities. The University henceforth will especially emphasize advanced undergraduate, graduate, and professional instruction in accordance with Master Plan agreements. However, it will continue to offer the full range of lower division, upper division, graduate, and postdoctoral programs on each of its general campuses. Excellence in teaching at all levels will remain one of its central concerns.

Undergraduate Instruction

The education of undergraduates has occupied an important place in University life since its inception, and this major obligation must continue to be met with skill and devotion. Under the Master Plan agreements, the proportion of lower division students will be gradually reduced from about 50 per cent to about 40 per cent of all undergraduates in the University. This will not mean that lower division instruction, or all undergraduate instruction, is given short shrift. On the contrary, the University is taking concrete steps to continue improving its undergraduate programs.

Over the past several years, new and vigorous efforts have been launched to encourage educational innovation and reform on the University's campuses, with a strong focus on better instruction for undergraduates. The Riverside and Los Angeles campuses have undertaken major faculty studies of revised undergraduate curricula with substantial support from The Regents' Opportunity Fund. Experiments with new and imaginative teaching methods on other campuses have been promised similar assistance. Last April, the All-University Faculty Conference voted to hold this year's conference on the subject of educational reform.

The expected change to a year-round University calendar on the quarter system has added further impetus to the re-evaluation of educational programs and to experiments with new ones. As President Kerr wrote to the campuses in July 1964:

> Conversion to the quarter system . . . is a major opportunity to review and possibly reform undergraduate instruction, to take a careful look at what we are doing now and to see if it can be done better, to provide the opportunity for experimentation with new and unconventional programs, and to build into the curricula of each campus enough flexibility so that transfers among campuses may be made freely and equitably.

At Los Angeles, the College of Letters and Science already has voted sweeping curricular changes that will help students to concentrate on fewer courses in each term and to progress by a greater variety of learning methods with equal credit. At Berkeley, a number of changes are underway. For example, the Biology Council has approved a new, integrated biology course designed as introductory work for students majoring in any biological science. Plans are being made for new upper division courses focusing on genetics, evolution and other broad problem areas which cut across traditional fields of biology. Such a course in general ecology has been offered successfully for several years. A course in contemporary natural science, to be taught jointly by a physicist, a chemist, and a biologist, is being planned for 1966 to meet the special needs of nonscience majors. A new introductory course in physics, emphasizing modern physical concepts, has recently been developed and is now being offered at Berkeley, Santa Barbara, and San Diego. In addition, small, experimental curricula are being discussed tentatively in other fields—such as an entire undergraduate program organized around the study of successive historical eras. At Davis,

the College of Agriculture is planning to consolidate its offerings in fewer, broader curricula. Opportunities for undergraduates to participate in research may soon be expanded on all campuses.

The newer campuses at Irvine, San Diego, and Santa Cruz have made intensive plans to use their rare opportunity of starting afresh, to experiment with challenging innovations in undergraduate teaching and learning. At Santa Cruz, undergraduates will study in residential "colleges" of 200 to 1,000 students, organized so as to make the campus seem small as it grows larger. Greater use will be made of small seminars and of independent study under careful faculty supervision. Curricula will be designed to serve students' needs more than to reflect faculty interests. At San Diego, 180 freshmen already have been admitted to the first in a somewhat different system of colleges, each of which will include both undergraduate and graduate instruction in a broad field of knowledge. A "cluster" of four such colleges, located together physically, will offer a substantially full university curriculum. At the new Irvine campus, emphasis will be placed on strengthening connections among the traditional academic disciplines and on imaginative uses of the many new instructional aids—such as computers, programmed teaching sequences, and language laboratories—which allow faculty members to adapt instruction more closely to individual students' learning rates and abilities.

Other avenues are being explored to bring students and faculty new opportunities for intellectual exchange. On several campuses, plans are being laid for greater use of residence halls in intellectual and cultural activities, which may thus be more closely integrated into students' daily lives. In Regan Hall at Davis, for example, a seminar series conducted by graduate resident assistants has been received enthusiastically by both residents and other students on the campus. At Riverside, three "language houses" have been established in the residence halls—a Maison Française, a Casa Hispana, and a Deutsches Haus. Directed by faculty members of the Department of Foreign Languages, these houses have separate lounges equipped with special reading materials and language recordings; their members speak the foreign language of the house at meals, in social gatherings, and at special outings, films, and lectures organized for their benefit. A variety of residence hall programs is being planned by other campuses.

Greatly expanded programs of arts and lectures on the campuses and systematic sharing of artistic performances through the Intercampus Cultural Exchange have recently added great breadth to the educational opportunities of University undergraduates. Several years ago the University inaugurated its Education Abroad Program (described below under International Studies and Programs), which proved so successful that it has now been expanded to include five universities in as many countries. To meet the needs of especially gifted students, the University is continuing to encourage the creation of honors courses and special teaching programs in its various schools and colleges.

Graduate Instruction

Graduate instruction, already a major function of the University, will become even more important. The dramatic growth of new knowledge which characterizes this century has come largely from the leading universities, and the University of California must continue to emphasize advanced education for the scholars and scientists who will produce the discoveries of the future. Such education is intimately bound to the process of research itself, and requires the best in faculty and facilities. Each campus of the University will develop graduate programs as required by the increasing demand for graduate instruction, and as the necessary staff and facilities are available to assure that the University's standards of quality can be maintained.

Under the *Donahoe Act of 1960,* the University "has the sole authority in public higher education to award the doctoral degree in all fields of learning, except that it may agree with the state colleges to award joint doctoral degrees in selected fields." The University now is working with the California state colleges to develop jointly awarded doctorates in selected fields. The University looks forward to continued arrangements of this kind, within the framework of the standards which are applied to doctorates awarded solely by the University.

Professional Instruction

Education for the professions has long been an important function of the University. This function was reaffirmed by the *Donahoe Act*, which established the University as the state's sole agent for instruction in law and for graduate instruction in architecture, medicine, dentistry, and veterinary medicine, with authority to offer instruction in other professions including the teaching profession. As the elements of fundamental knowledge become increasingly important to all professional fields, the University's commitment to professional education will grow even more significant. The University will continue to offer professionally oriented curricula in subject areas which are intellectually substantial, worthy of graduate study and research, and of broad public value and concern. These curricula will include liberal education as well as training for professional competence and, like other University programs, will emphasize not routine procedures but basic knowledge, scholarship, and research. A special chapter of this plan discusses specific professional fields in more detail.

Postdoctoral Study

Postdoctoral and postprofessional studies also are increasing sharply in their importance and extent. Because of the rapid expansion of knowledge itself, mature scholars and professional men are under new pressures to update their education and skills or risk obsolescence. Such men frequently can make substantial contributions to the teaching and research programs of the University and many bring with them fellowships and research grants from outside sources. Their study and research in turn place demands on University space and facilities, particularly in the natural sciences.

Study and research at these advanced levels are of increasing importance to the state and the nation, for the accelerating pace of science and technology affects our economy and national security alike. Moreover, the major universities of the country are uniquely capable of providing the level of instruction necessary to keep pace with the growth of knowledge. For these reasons, continued expansion of postdoctoral work at the University must be expected, and we must plan now to meet the demands that will result.

New Technological Aids

Recent years also have seen the development of new technological aids to instruction that promise in some situations to make possible better instruction, to lighten the teacher's burden of routine, and to improve the variety of learning opportunities that the University makes available to its students. Among these aids are language laboratories, self-teaching devices, and televised instruction.

As with all University instruction, the use of such aids in teaching any course is a decision of the individual faculty member and his academic department, subject to supervision and review by the Academic Senate. To assist faculty members in evaluating these devices the University provides trained staff, facilities, and occasional experimental projects.

The verdict of history is not yet in on the utility of these technological advances for University education. Plans are under way for systematic tests of advanced teaching aids, e.g., on the new University campus at Irvine. On the present evidence, however, there appear to be several areas of exciting promise:

LANGUAGE LABORATORIES. Command of foreign languages is increasingly important today; the University graduate of tomorrow will find himself in contact with people of other nations and cultures throughout his professional life. In learning to speak and understand a foreign language, nothing takes the place of hearing the language spoken by an expert and of practicing it oneself. Electronic language laboratories, which help students in such learning while relieving instructors of much routine vocabulary drill, have revolutionized the teaching of spoken language in recent years.

In a modern language laboratory, compact individual booths equipped with headphones and instrumental consoles allow each student to draw in privacy on a wide range of recorded language materials by the turn of a knob. Using individual tape recorders, students can practice conversation and play it back for comparison with the speech of experts. From a consolidated control desk, an instructor or his assistant can check on each student's progress and counsel him individually or can talk directly to an entire class at once.

Advances such as these are not only efficient and effective, they are necessary if the University is to supply its share of the language training so badly needed in the contacts of Americans with other peoples around the globe.

SELF-TEACHING DEVICES. Behavioral scientists in the University and elsewhere are developing a new way to present information to students. This method allows largely self-administered lessons, yet actively involves the student in his learning and makes possible the systematic improvement of each lesson on the basis of the errors students make.

Such presentations, or "programs," divide each learning task into small, sequential steps by which the student is led gradually from what he knows to what he does not know. Because he must respond actively to questions as he goes along, the student has a constant check on his own progress. Some such programs are used in so-called "teaching machines," whereas others constitute "programmed textbooks"; in either case, it is the sequence of steps in the program itself that is important. Many programs are highly efficient teaching instruments. In addition, the analysis of student responses is providing University psychologists with valuable information on how humans learn complex intellectual subjects.

As experience with such programs grows, they may be especially helpful in teaching the remedial and other preparatory courses which the University must now provide to many freshmen at considerable demand on its teaching faculties. If programmed instruction can reduce the amount of valuable faculty time necessary to teach such elementary courses satisfactorily, it will prove a major asset to the University's undergraduate instruction. Use of programs to supplement other methods in teaching languages, some mathematical subjects, and broad intellectual skills such as "critical thinking" may in the future prove to be most important.

COMPUTER-AIDED INSTRUCTION. Such instruction is closely allied to self-teaching devices. The incorporation of a digital computer into the student-instructor dialogue can create a "trialogue" with great possibilities for more effective instruction. In the next decade new developments in computer technology will do much to provide new vistas in education. Currently under study are new means of interaction between a student and a computer, designed to exploit the capabilities of the computer in hitherto unrealized ways. For example, it is now possible to sketch a structure on a screen and, with a computer's help, learn within seconds what the performance of that structure might be if actually built. Obviously, this has implications for teaching engineering design which were not dreamed of a few years ago. Development of peripheral equipment to enhance such man-machine relationships may prove a major asset to University instruction in fields such as engineering and the sciences.

TELEVISION. Instruction by closed-circuit television has been used on several campuses of the University since 1959. The television camera, because it can magnify such objects as microscope slides and complex chemical apparatus for simultaneous viewing by many students, has proved especially useful in the physical and life sciences. In large-enrollment courses, several classes frequently can be combined for a single televised lecture and subdivided later for small-group discussion, with resultant improvement in instruction. Television also allows students to watch in safety dangerous experiments (e.g., those involving high radiation) and to observe field-research projects by remote telecast.

Broadcast television is being used by University Extension to reach thousands of persons with credit courses and noncredit seminars, conferences, and lectures. Especially in the biomedical sciences, where University researchers are called on to keep physicians informed of new research discoveries and improved techniques, the graphic demonstrations and large audiences made possible by radio and television have proved extremely valuable. University concerts, dramatic performances, and other artistic events also are enjoyed by much larger audiences through this medium.

Television also helps in bringing the work of University scientists and scholars before California citizens. By periodic television reports of academic teaching and research on its campuses, the University can communicate the knowledge and achievements of its faculties to a broad range of viewers. Televised discussions of the University's aims, policies, and organization can help to build greater understanding of the University by the citizens who make its work possible.

In addition, television may in the future prove valuable as a means of sharing instructional programs among University campuses, either by "live" telecasts or by videotaped lecture-demonstrations. As modern business and industry have proved, closed-circuit television also can be used effectively to permit discussion of research problems and administrative policies among persons in widely separated locations. Spread over one of the nation's largest states, the University of California must look to such possibilities for future assistance in sustaining the necessary contacts among its many faculties, campus staffs, and students.

Investigation of such new instructional devices as television will continue to be a part of the University's planning, and revised policies will be issued as they become necessary. At present, expansion of campus facilities for television is contemplated only where planning indicates that televised instruction:

1. Will make a unique contribution to the academic program.
2. Will improve the quality or efficiency of instruction.
3. Will assure fuller use of present facilities.

RESEARCH

The primary responsibility of the University is the education of its students. A second major responsibility is research, which is intimately connected with University teaching, especially at the advanced graduate level. Instruction and research leading to the doctor's degree are carried on by students and faculty at the boundaries of existing knowledge. Classroom discussions, laboratory experiments, and library study frequently are affected by newly published books and journal articles, and sometimes by discoveries still unpublished. Helping talented students to develop into productive scholars who will make the great discoveries or artistic contributions of the future requires that these students have the chance to work closely with our ablest faculty members in the process of uncovering new knowledge. From such associations, a student acquires some of his professors' capabilities for independent scholarly work. The professor, for his part, receives a good measure of his creative inspiration from his contact with young minds responding to new ideas. This fruitful, reciprocal interplay of research and graduate instruction has proved a potent source of both new discoveries and advanced learning throughout the history of universities.

Basic research also creates many of the new discoveries and insights without which a free society cannot grow—or even survive. Isolating a new chemical element, synthesizing a gene molecule, or posing a new economic theory may sound to many persons like esoteric activities, unrelated to their daily lives. But such basic research achievements underlie practical changes of immeasurable importance to all of us. Creation of atomic devices, involving many scientists now at the University, is only the most dramatic recent example of this fact. It is clear today that our principal hope for human security and progress lies in the dedicated pursuit of fundamental knowledge wherever it leads.

In addition, research discoveries that directly serve our economy and national security flow from the libraries and laboratories of the University. "Fundamental" and "applied" research are not distinct and mutually exclusive activities, but are closely related and essential parts of a university's work. In agriculture, industry, medicine, and many other areas, University research has made possible major advances through the application of basic knowledge to urgent and immediate problems. The benefits in economic prosperity and human lives have never been adequately calculated.

The University's Responsibility for Research

The University of California has long been a major center of advanced research in this country. In 1960, the *Donahoe Act* designated it as California's "primary state-supported academic agency for research." At the same time, the expanding population of California has greatly increased the need for new knowledge to help maintain industrial growth and employment for the state's residents.

The University affirms its commitment to play an essential role in the intellectual and economic growth of California, both by training creative new researchers and by actively encouraging the research activities of its faculty. The resources must be found to assure that University faculty has time for both teaching *and* vigorous research programs.

Financial Support for Research

Financial support of research programs will remain an important concern. Funds to support University research now come mainly from three sources: the state, private individuals and agencies, and the Federal government.

STATE FUNDS. These play a fundamental role in supporting research by University faculty and graduate students, since monies for academic salaries, development of campuses, libraries, laboratories, and many kinds of research equipment are provided mainly by state appropriations. The research funds allocated to academic departments and the basic support for organized research units are supplied in large part by the state. Some state funds also are available for the general support of research, and are administered with the advice and counsel of the Committees on Research of the Academic Senate. These funds, though comparatively small, are highly important, since they are available to all fields without restriction and thus make possible support of many research projects that otherwise might never be undertaken. These funds have enabled the development of studies in subjects ranging from vitamins and cyclotrons to prime numbers and ballads. Out of some initial studies supported in this way, great research programs have later developed.

PRIVATE GIFTS. These gifts usually are restricted to a specific field. The Miller Research Professorships in Science at Berkeley are an example, having been made possible by the bequest of a former Dean of the College of Commerce. Medical research has been an especially favored recipient; for example, during recent years, nearly $2.5 million has been donated or pledged to support the Jules Stein Eye Institute at the Medical Center in Los Angeles.

PRIVATE SUPPORT. Such support includes the grants of philanthropic foundations. Indeed, the influence of such foundations has been of the greatest importance in such areas as the reform of medical education, the introduction of interdisciplinary studies, and the involvement of universities in world affairs. For example, the Ford Foundation's grant for non-Western area studies, largest single private grant in the University's history, is supplying $4 million over ten years to support individual and group research in African and Near Eastern studies at UCLA, and in Chinese, Japanese, South and Southeast Asian, Slavic, and East European studies at Berkeley.

THE FEDERAL GOVERNMENT. The government is the largest supporter of research at the University of California. Table I indicates the magnitude and scope of this support in selected fiscal years from 1951–1952 through 1961–1962.

Federal support for research is restricted largely to the physical and biomedical sciences, agriculture, and engineering, with very small support for the social sciences, and virtually none for the humanities. In addition to research in fields of national interest, Federal funds help to support graduate and postdoctoral education, chiefly in these same fields. The preponderance of Federal support for the university research goes to about twenty institutions in this country, of which the University of California is one.

Because of the imbalance created by Federal support of research, the research funds controlled by the University must be directed primarily toward supporting new projects, small projects, young faculty members unknown to granting agencies, and fields neglected by Federal grants.

Administration of Research Programs

Research in the University is administered through the regular academic departments, through the Agricultural Experiment Station, and through organized research units called institutes, centers, laboratories, and so on. Organized research units are created to facilitate interdisciplinary research involving faculty members from different academic departments. This device has proved so valuable to University faculty members that the number of such units has increased markedly in recent years. As the growth of knowledge brings to light new problems that cut across the traditional academic disciplines, these interdisciplinary units will continue to have obvious advantages for University instruction and public service as well.

The Necessity of Flexibility

In today's rapid advance of knowledge, new ideas and discoveries frequently create research opportunities that cannot be foreseen. The University's research policies must be kept flexible so that these opportunities can be pursued and exploited as they appear. Specifically, the University must:

- Maintain the greatest possible flexibility in the allocation of research funds.
- Assure the availability of enough faculty positions to staff promising new fields of study as they appear. We must avoid having unduly high percentages of academic staff members frozen at the tenure ranks, particularly on campuses that are at or near their staff ceilings.
- Maintain flexibility of administrative arrangements, involving both traditional departments and interdisciplinary units as appropriate.
- Continue careful scrutiny of the quality and vitality of academic departments and organized research units.

Optimum Use of Resources

The University's policies must guide carefully the allocation of its resources so they can be used most effectively. The multicampus structure of the University is especially important here. The University must:

- Concentrate each specialized research program on one or a few campuses, rather than try to develop all specialties on each campus. Of course, qualified faculty members from all campuses must also have access to specialized research facilities located anywhere in the University. University campuses already are complementing efforts in this way, as in the specialization of non-Western language area studies under the Ford Foundation grant mentioned above.
- Foster greater equality of faculty opportunities for research specialization as the smaller campuses grow and broaden their offerings. All campuses must be encouraged to develop actively their centers of strength.
- Allocate its resources where the potentialities are greatest. Research funds cannot be apportioned by a simple formula. Intelligent judgments must be made, considering the importance of research for advanced teaching, the facilities and outside support available, and the possibilities inherent in each field at a particular time. Some fields in which research promises to be highly productive (like virus research at the present time) must be expected to have lower teaching loads and heavier research support than others in which research is in a more steady state.
- Find additional ways, such as the recent creation of an Institute for Creative Arts, to encourage creative activity as well as critical and historical scholarship in artistic fields.

As research in the University continues to grow in importance, every effort is being made to assure that its benefits for advanced instruction are fully realized. An expanded role for organized research units in University teaching is now under study by the University-wide Academic Senate Committee on Educational Policy; this may hold exciting possibilities for the further enrichment of graduate education.

Table I

UNIVERSITY OF CALIFORNIA

Total University Expenditures, Sources of Financing, and Details of Federal Funds Expenditures, selected fiscal years

	Fiscal Years							
	1951-52	1953-54	1955-56	1957-58	1958-59	1959-60	1960-61	1961-62
Total University Expenditures								
Organized Research	$ 16,901,438	$ 21,004,040	$ 26,043,342	$ 34,951,598	$ 39,409,981	$ 47,539,706	$ 59,169,089	$ 69,590,435
All Other	48,744,217	60,359,335	75,789,932	99,887,621	110,786,168	125,723,857	149,006,935	165,757,518
Total	65,645,655	81,363,375	101,833,274	134,839,219	150,196,149	173,263,563	208,176,024	235,347,953
Special Federal Research Contracts--AEC	46,322,915	53,932,740	73,247,479	114,306,650	132,677,790	159,506,897	184,033,678	224,970,623
Grand Total	$111,968,570	$135,296,115	$175,080,753	$249,145,869	$282,873,939	$332,770,460	$392,209,702	$460,318,576
Sources of Financing Expenditures								
Federal Funds	$ 7,235,764	$ 8,709,609	$ 12,110,236	$ 17,920,744	$ 21,320,266	$ 29,112,719	$ 36,841,527	$ 48,600,641
State of California	45,148,035	54,157,933	61,872,104	84,772,071	91,387,326	95,758,385	117,179,719	129,347,266
Auxiliary Enterprises	2,081,277	2,172,239	2,938,368	3,782,185	4,487,013	6,886,562	11,073,576	12,769,794
Other (1)	11,180,579	16,323,594	24,912,566	28,364,219	33,001,544	41,505,897	43,081,202	44,630,252
Total	65,645,655	81,363,375	101,833,274	134,839,219	150,196,149	173,263,563	208,176,024	235,347,953
Special Federal Research Contracts--AEC	46,322,915	53,932,740	73,247,479	114,306,650	132,677,790	159,506,897	184,033,678	224,970,623
Grand Total	$111,968,570	$135,296,115	$175,080,753	$249,145,869	$282,873,939	$332,770,460	$392,209,702	$460,318,576
Details of Federal Funds Expenditures								
Federal Contracts (excluding major AEC project)	$ 5,009,134	$ 6,014,672	$ 7,355,274	$ 8,467,987	$ 9,684,221	$ 13,592,450	$ 15,306,082	$ 16,948,444
Federal Grants	1,006,435	1,441,671	2,805,715	7,163,150	9,213,395	13,095,073	19,014,725	28,633,033
Federal Appropriations (2)	1,220,195	1,253,266	1,949,247	2,289,607	2,422,650	2,425,196	2,520,720	3,019,164
Total	7,235,764	8,709,609	12,110,236	17,920,744	21,320,266	29,112,719	36,841,527	48,600,641
Special Federal Research Contracts--AEC								
Los Alamos Scientific Lab., New Mexico	32,471,923	28,640,119	33,517,810	48,836,784	49,761,844	53,613,276	65,635,645	75,868,257
Medical Biological Research	890,632	1,072,927	1,141,272	1,531,424	1,601,857	1,583,546	1,750,377	2,229,506
Lawrence Radiation Laboratory	12,960,360	24,219,694	38,588,397	63,938,442	81,314,089	104,310,075	116,647,656	146,872,860
Total	46,322,915	53,932,740	73,247,479	114,306,650	132,677,790	159,506,897	184,033,678	224,970,623
Grand Total	$ 53,558,679	$ 62,642,349	$ 85,357,715	$132,227,394	$153,998,056	$188,619,616	$220,875,205	$273,571,264

(1) Includes gifts, endowments, University Extension, student fees and miscellaneous sources.

(2) Includes Hatch Act Funds for Agric. Research, Morrill-Nelson Funds for instruction, Smith-Lever Funds for Agric. Extension work.

PUBLIC SERVICE

The historic central functions of universities are the advancement of knowledge through research and the transmittal of knowledge through instruction. These are the University's distinctive services to its society and they are increasingly vital for that society's vigor and survival. In the excellence of its instruction and research, therefore, lies the ultimate test of the "public service" of the University.

Because of these central functions, however, the University has become a reservoir of rare and valuable talents, of advanced knowledge and expertise, of relatively detached and analytic perspectives. It is natural that the community should look to this reservoir for help in many areas beyond the classroom and the research laboratory.

As a tax-supported institution, and one dedicated to the welfare of man, the University attempts to respond to such requests in every appropriate way that it can. Moreover, the University benefits in its turn from such service—through increased public understanding and support, direct financial assistance for its basic programs, and new insights and incentives for its faculties. But it must always face the difficult dilemma that such services compete with instruction and research for the time and the funds that always seem so limited. The University cannot forget that some public services are performed quite as well by other agencies, and that a high quality of teaching and learning is its primary reason for being. It must concentrate on those activities that require its faculties' special abilities and knowledge, their long-range view of problems, and their relative detachment and objectivity. Finally, it must remember that academic freedom is at the heart of every great university and that creative minds cannot be pressed into routine service without destroying their creative power.

Within this context, the remarkable breadth and variety of the University's public services are a tribute to its faculties and to the citizens and groups that have supported their efforts so generously. Without this mutual interplay of support and respect such activities within a great university would not have been possible.

Improved Research Service for the State

For many years the University has provided state agencies with valuable research services in special fields. Most notable of these, of course, has been agriculture. The University's Division of Agricultural Sciences currently is engaged in more than eighty research contracts or agreements with state governmental units in agriculture, conservation, education, public health, water resources, and other areas of direct public concern. This service has long proved its value for both the state and the University.

The University has recently moved to expand its research services directed to California's public problems through a new Committee for Coordination of Research for State Agencies. This committee is compiling an inventory of research now being done by the University for state agencies, and is formulating suggested policies to govern such research activities. In cooperation with state officials, the committee will act as a study group to determine the range and nature of research problems facing the state and to suggest ways of allocating specific problems or approaches to the University and to state units. It will seek ways by which the University can help to anticipate public policy problems and begin work on them within a broad context before they become subjects of narrow community pressures. The committee will also consider new ways for the University to organize the varied talents of its faculties and staff for assistance

on complex public problems and to reduce unnecessary delays in responding to legitimate state requests for research help. Later, a series of joint State-University Research Committees may be formed to deal with specific aspects of the state's need for research.

In these ways, the University hopes further to coordinate and expand its already considerable contribution to research on the immediate community problems of California's citizens.

Here are some of the ways in which the University already gives direct service to the public needs of local communities, of the State of California, and of the nation:

Direct Applications of Basic Research

Apart from its long-range, unforeseeable importance, much research conducted in University departments and organized research units is almost immediately applicable to the health, prosperity, and security of this country. In the physical sciences, for example, the most fundamental new knowledge of atomic nuclei, cosmic rays, and chemical processes is of great concern to our nation's space program and its military security. In biological science, many of the most basic discoveries of recent years have been triggered by the search for cures and preventives of disease. Even the study of other countries' languages and customs becomes more significant every year for our international relations.

This immediate importance of much basic research accounts in part for the great growth of University research projects supported by contracts and grants of the Federal government, private foundations, and industrial corporations. Through such projects the University makes direct contributions to many levels of government, to business and industry, to agriculture, to labor unions, professional groups, and to other legitimate interests within the community.

Service by Research Centers and Institutes

There is no clear dividing line between "basic" and "applied" research. But some research units of the University take complex, immediate human problems and activities as their subjects of specific study, whereas others focus on less immediate and less practical concerns. Such groups as the Air Pollution Research Center at Riverside, the Cancer Research Institute at San Francisco, the Water Resources Center at Los Angeles, the Center for the Study of Higher Education at Berkeley, and many similar units bring a variety of research disciplines to bear on questions of great immediate concern to society—frequently with clear and specific results. A recent report of the Institute of Governmental Studies at Berkeley, for example, has provided the basis for a general community re-examination of land use and filling regulations around the shores of San Francisco Bay.

The research interests of such units are, of course, close to those of governmental and private agencies, which have contributed greatly to their support through research contracts and grants. The work of these units, calling heavily on the time of the University faculty members involved, threatens in some cases to compete seriously with the work of the academic departments, and must be carefully regulated. Within reasonable limits, however, such organized research groups stimulate and support faculty research interests while making possible major public service contributions by the University.

Individual Faculty Consultants

Public service of the University also is carried on by individual members of its faculties who act as consultants to agencies on problems within their areas of expertise. University faculty members sit on advisory boards and commissions of the Federal government and serve on occasion as advisers to the state or to local communities. By making such services as this possible the University performs a significant public function.

Agricultural Research and Extension Services

Of all the states in the Union, California is clearly the leader in agriculture and the complex of industries that serve it—by any measure of farm income, productivity, diversity of agricultural enterprises, or contribution to the over-all economy. Thus this state is a major factor in the nation's world leadership of food production, and its $3.2 billion annual cash farm income is the prime foundation stone in the California economy.

This dynamic agriculture rests solidly on a foundation of research applied to the production of foods and fibers. The University of California's Division of Agricultural Sciences has played the major role in building that foundation. It has been estimated that the real economic returns to the state each year from the University's research findings surpass all of the monies that have been expended for that research in all the years since the University's founding. In agriculture this is clearly and dramatically true.

Besides the professional Schools of Forestry and Veterinary Medicine and the Colleges of Agriculture, the Division of Agricultural Sciences includes the Agricultural Experiment Station and the Agricultural Extension Service, through which the University conducts systematic experiments on problems of California farms and ranches, and maintains a steady flow of information to farmers of the state concerning that research and the uses that can be made of its results.

As the land-grant institution of California, the University since 1915 has operated the Agricultural Extension Service in cooperation with the local County Boards of Supervisors and the United States Department of Agriculture. Headquarters of the AES are located in Berkeley, with major regional offices at the Davis and Riverside campuses. With coordination from these centers, trained AES field staffs are at work in nearly every county of the state, conducting local field tests and demonstrations of new crops, production and marketing procedures, soil and water management, weed and insect pest control, livestock breeding and care, use of machinery, and many other farm activities. A statewide staff of extension specialists in specific agricultural research fields assists the county staffs, and in many cases local farm problems are referred to the Agricultural Experiment Station for intensive study. In addition, a broad program of publications, films, lectures, exhibits, radio and television presentations, telephone consultations, and 4-H Club activities for farm youths is employed to make the research capacities of the University widely available to farmers and other rural residents of the state.

Research in agriculture which relates to specific geographical regions is undertaken at several field stations located in appropriate agricultural areas. The Imperial Valley Field Station near El Centro engages in research on field and vegetable crops and livestock management. Field and vegetable crops are also studied at the Westside Field Station in Fresno County. Also in the San Joaquin Valley, stations near Lindcove and Reedley study citrus, grapes, and tree fruits. Emphasis is upon subtropical horticulture at the South Coast Field Station near Santa Ana.

Range improvement and management problems with sheep and cattle are studied at the Hopland Field Station in Mendocino County and the Sierra Foothill Range Station near Marysville. A small Deciduous Fruit Field Station at San Jose serves very specialized purposes with deciduous fruits, strawberries, and walnuts. The Antelope Valley Field Station near Lancaster engages in research on dryland production of cereals and under irrigation, research on field, vegetable, and horticultural crops. At the far northern part of the state at Tulelake, a small station engages in research on certain field and vegetable crops adapted to this region.

Field stations have been strongly supported by the local agricultural industries and serve as the primary contact with the University by many people. Several have been only partially developed and need additional physical facilities and staff to be fully effective. The station program now covers the major agricultural areas of the state.

As agriculture becomes increasingly complex, mechanized, and involved with special fertilizers, pest controls, and service industries, the demands for research and the communication of its results will grow as well. The University will continue working to meet those demands.

University Extension

The University of California Extension is a major statewide instructional arm of the University, by which its intellectual and cultural resources are made available to California citizens all over the state. Since its beginning in 1891, University Extension has grown to remarkable proportions in both the number and the variety of its programs. It now records more than 223,000 registrations annually in scores of California communities. Its offerings include degree-credit courses for part-time students; noncredit courses, lectures,

and discussion groups for adults; public affairs conferences for citizens and community leaders; continuing education programs for professional groups; correspondence courses; educational films, radio broadcasts, and television programs; and special dramatic, musical, and artistic performances available to the public. Most of the costs of Extension activities are supported through direct fees paid by those using its services.

CHANGING EMPHASES. In recent years the programs of University Extension have undergone significant changes. There is a steady shift from introductory college work toward advanced undergraduate, professional, and graduate instruction. Increasingly, well-educated adults have sought out its programs for further professional and intellectual stimulation, until today over 80 per cent of its enrolees have completed some years of college. There is a growing demand for conferences of community leaders, for interdisciplinary study, and for programs with statewide impact.

Changes of this kind are not surprising. As an important link between the University and the citizens of the state, University Extension is vitally affected by current changes in society, in technology, and in the progress of knowledge itself. The dramatic shifts toward urban work and residence, increased leisure time, emphasis on social welfare, closer relations among nations, and other social trends that we are experiencing today all influence the amounts and kinds of Extension instruction that our California communities need. Advances in the automation of industry, the emergence of space technology over aircraft production, the rapidity of new scientific discoveries, and the development of new forms of communication change both the demands and the methods available for continuing education of professionals. The explosion of man's knowledge resulting from systematic research, in which the University of California has played such a major role, requires greater efforts to communicate that knowledge and its implications to broad sectors of society. The University's own increasing emphasis on advanced instruction and research must necessarily affect the role which University Extension can fulfill most productively.

As a consequence, the present trend of Extension activities can be expected to continue. Continuing professional education for engineers, lawyers, teachers, business executives, physicians, paramedical specialists, and members of other established and emerging professions will be an increasingly important part of University Extension work. Efforts to communicate the fruits of University research to the public, to bridge the widening gap between expert and layman, will be intensified. Conferences of community leaders with University faculty members and other specialists on problems of our state and national communities will be conducted in growing numbers. Informational programs on contemporary issues in local, national, and international affairs will be further developed. Course offerings, lectures, and artistic performances designed to enrich Californians' cultural lives will be a significant continuing focus of Extension activity.

In doing its work, University Extension will make every use possible of new and promising media of instruction. Television and radio programs already are well-established California institutions. Imaginative use of radio and televised instruction for the staffs of outlying hospitals is now being tested by University educators in the health sciences, and such techniques promise many fruitful applications in other fields. The possibilities inherent in "teaching machines" and other self-instruction devices may turn out to enrich greatly the time-honored practice of correspondence study through Extension, and these will be thoroughly explored.

Because of the demands upon it, University Extension will have to concentrate on those tasks in which its special resources are most urgently needed. The California Coordinating Council for Higher Education has recently recognized the "unique statewide character" of University Extension and has endorsed its emphasis on advanced intellectual and cultural programs. The University will continue to work with the Council in coordinating its extension programs with those of the state's other educational institutions.

ORGANIZATION. Like other University operations, University Extension has recently been reorganized to conform with changes in the structure of the Academic Senate. Each campus Extension Director is directly responsible to the Dean of University Extension, who has line control over budgets of Extension offices on the various campuses. Campus Directors also have a staff relationship to Chancellors. The Office of the Dean has functions which include planning, program analysis and evaluation, personnel performance

assessment, and liaison with governmental agencies and private organizations on state and national levels. The Dean's Office also organizes and administers programs which: (1) address prime issues of concern and importance to the development of the state; (2) experiment and demonstrate new ideas, and (3) draw upon resources of the various campuses in joint program efforts.

FACULTY PARTICIPATION. Academic standards in Extension programs continue to be a responsibility of the Academic Senate, acting through its University-wide and divisional Committees on University Extension. All course offerings and instructors for such courses must be sponsored by the appropriate academic department or departments, and degree-credit programs must be approved by the appropriate Academic Senate committees.

OFF-CAMPUS FACILITIES. Continued use will be made of University Extension Centers with classrooms, laboratories, and library facilities for instruction in off-campus locations. The recently inaugurated Daytime Program at the San Francisco Extension Center has proved highly successful, and program expansion is planned there to reach an even larger audience. The Downtown Extension Center in Los Angeles has recently been relocated on University-owned property at 11th & Grand Streets. Schools and other public buildings, as well as private homes, provide locations in almost 230 communities in the state.

Liaison of University Extension and Agricultural Extension

Historically, University Extension and the Agricultural Extension Service have had different origins, management, sources of support, and methods of operation. Each has its own special functions and constituencies, and these need not be merged for purposes of administrative tidiness. Nevertheless, both services are actively engaged in extending the University's resources to the people of California, and some possibilities of their cooperative efforts are now being actively explored.

To allow for coordination of efforts, joint program development occurs in areas of overlapping interests. County Directors of AES and Campus Directors of University Extension serving similar geographic areas are familiarizing themselves with each other's programs and schedules. They plan periodic, informal meetings and will assist each other in publicizing events and in recruiting instructors. Twice each year the University Dean of Agriculture, the Director and top staff of the AES, and the Dean and principal staff members of the University Extension will meet to discuss problems, plans, and policies of statewide scope. Other staff officers of the two services will meet regularly to work out cooperative policies agreed upon. Experimental joint programs are already being planned, and their results will serve as guides to future cooperative programming.

A CHALLENGE TO CULTURAL LEADERSHIP

In 1780, John Adams later to be the second President of the United States, wrote from Paris to his wife, "I must study politics and war that my sons may have liberty to study mathematics and philosophy. My sons ought to study mathematics and philosophy, geography, natural history and naval architecture, navigation, commerce and agriculture in order to give their children a right to study painting, poetry, music, architecture, statuary, tapestry, and porcelain."

Cultural Growth in America

In these words he foreshadowed what was to become the basic course of America's cultural development: a gradual progression from preoccupation with the immediate necessities and exigencies of life to concern with satisfying the emotional, spiritual, and esthetic desires of individuals in a far more complex society. The provision of essential needs and then of comforts broadened out to include recognition, development, refinement, and fulfillment of esthetic wants.

As late as the nineteenth century, a devotion to art or music was generally viewed as the ornamental but trivial pastime of the dilettante, the "idle rich"; it was properly scorned by the practical man of affairs, and completely beyond the ken of the "average man." Recently, the average man and his fellows have lined up by the tens of thousands for a glimpse of the borrowed Mona Lisa or the Metropolitan Museum's latest Rembrandt. Poetry has become respectable; art (notably including contemporary art) is sometimes even lucrative; opera is almost mass-attended. Robert Frost and Carl Sandburg are near-best sellers; recordings of classical music sell in large numbers; the Metropolitan sells thousands of prints of its famous paintings and replicas of statues, vases, and other objets d'art; elaborate and expensive centers for the performing arts are being built or planned in New York, Washington, Los Angeles, and elsewhere; even relatively small cities establish symphony orchestras and art galleries.

All of these developments, of course, grow out of interrelated economic and cultural trends. The nation has enjoyed a long period of economic growth, with a concomitant growth and spreading out of leisure. Industrialization, which contributed importantly to the increased wealth and leisure, also stimulated more rapid urbanization and more widespread concern with education, both of which are significant factors in the burgeoning cultural interest throughout the nation.

Central Role of the City

The importance of the city in the development of the cultural arts was such that so long as cities remained reasonably well integrated physically (even though largely unplanned) the quest for culture involved no great problems (other than those of financial support). Downtown areas were naturally the locations of the "opera houses" (those in small towns presented motion pictures rather than operas), concert halls, galleries, and the like. Downtown business and professional leaders assumed an additional responsibility—that of elevating the community's esthetic tone and interests.

But the breakup of industrial, commercial, and residential patterns caused by the automobile brought great problems to the old downtown areas. Their hegemony in many fields—including the cultural field—has been seriously challenged. In some localities, a fight is being waged to preserve the influence of the central city; efforts in this direction include urban renewal projects and the construction of great and impressive centers for the arts. It is probably still too early to say where the balance will ultimately rest insofar as provision of guidance in the quest for culture is concerned, but the chances are that there will continue to be much diffusion and decentralization of cultural activity. Within this new pattern, universities can and must assume an important role.

The Need for Leadership

At the present time, imaginative leadership in cultural activities seems to be greatly needed in our increasingly dispersed society. At the same time, such leadership is not being sufficiently provided by suburban communities. Universities are often richly equipped to fill the lack: to supply ideas and imagination, organizational and directive abilities, and physical facilities for developing and presenting a rich cultural fare to their existing and potential audiences—these include students, faculty, and interested residents of the immediate campus community, and (via television and FM radio) residents of a large surrounding region.

In providing such leadership, in filling its present and potential role as a cultural center for the surrounding community, the University will add a new dimension to the land-grant idea of service to society which has led to such great contributions to agriculture, business, labor, and the professions. As leisure becomes a highly important concern in American life, the fruitful use of leisure becomes part of the public-service mission of the University.

What the University Can Provide

If the University is to assume leadership in this new endeavor, what, specifically, should it provide? Two sorts of needs, one intangible and one tangible, suggest themselves. The intangible one is a need for ideas. Given the nature of the University's operation and objectives, the ideas will and should in many cases be experimental. Though in many of their aspects universities are not as revolutionary or even radical as they have often been assumed to be, in this area experimentation is not only possible, but desirable. New forms and techniques in painting, sculpture, music, and the theater which could not be considered as commercial ventures can be tried out under University auspices. Many of them will be discarded; a few may help to determine the new directions in which the creative arts will develop. Sometimes, indeed, an experiment proves itself within a short time—as, for example, the production of "Spoon River," initially presented by University Theatre at UCLA, which went on to a successful run in New York.

The tangible need which the University can fill is for *facilities* and financial provision to maintain them. What the specific facilities are will depend on the size of the particular campus and the size and resources of the community it serves, among other factors. A large campus probably should provide at least the following, sometimes in multiple and variant units: an experimental theater; a concert hall or halls (one of which should be a large auditorium); an art gallery; museums associated with the research and teaching programs of appropriate academic departments, such as anthropology; lecture halls suitable for events open to the public as well as for classes; television and radio studios; conference facilities; and a student center with music practice rooms, studios, lofts for painting and sculpture, etc. Adequate parking must be planned near the facilities used for events open to the public.

Some of these facilities would be included as normal and necessary adjuncts of the educational program of any university deserving the name. However, if a university is to exercise the leadership that is needed in the cultural life of the community, the provision of facilities must not be limited to what can be strictly justified as projections of a traditional curricular operation.

Growing University Cultural Facilities

University of California campuses are beginning to acquire some of the kinds of facilities mentioned above. Freeborn Hall at Davis, the

Humanities Building at Riverside, Campbell Hall at Santa Barbara, Hertz Hall at Berkeley, and the Theatre Arts Building at UCLA are examples. The Theater-Auditorium at Berkeley, part of the Student Center complex, is approaching the construction stage, and a student cultural center with an art gallery wing is in the planning stage. Other facilities will be added as campus long-range development plans are carried toward completion.

It goes without saying that there is no point in providing such facilities without planning also for the necessary budgets to maintain and operate them and to expand them as needed. Private gifts and endowment funds can play a particularly important role in this connection. Later, as the value of the University's contributions in the cultural area becomes more widely recognized, it is quite likely that public support will be made increasingly available. An analogy with scientific research may prove accurate here: much of the early development work on the cyclotron was supported by gifts from private sources; as the research made possible by the cyclotron proved its value, government support for it was made available in impressive amounts.

Emphasis on Artistic Creativity

In addition to facilities and support for cultural activity, the University needs to place increased emphasis on the humanities generally and on the creative arts particularly. In the arts, universities have in the past been more hospitable to the historian and the critic than to the creator. Yet it is the creativity of science that has given science its prestige in the University. Perhaps an emphasis on creativity will do the same again for the humanities, though there may be less new to create there than has recently been true in science and the tests of value are far less precise. A very important role remains for the historian of past ages of creativity and for the critic of contemporary productions. But universities must find ways also to become centers for pure creative effort if they are to play an active role in the creative flowering that this nation is now experiencing.

One approach to this problem is the University's Institute for Creative Arts, established early in 1963 with non-state funds. Appointments to the Institute free creative artists on the faculty for a year of full-time work in painting, sculpture, music, writing, or other fields. The first annual appointments to this Institute were made for the academic year 1963–64. Reports made by the appointees at the close of the year indicate that a substantial and varied body of creative work was accomplished in the released time afforded by the grants.

Intellectual and Cultural Events Open to the Public

In addition, on each existing University campus a special faculty committee (usually called the Committee for Arts and Lectures) sponsors an annual series of concerts, lectures, plays, films, and exhibitions of painting or sculpture that are open to both students and the general public at low admission charges. In some cases, the artists themselves are University students or faculty members; in other cases, distinguished talents from all over the world lecture or perform under University auspices.

For example, a program of intercampus arts exchange has been operated by the University for some time, making possible the exchange among campuses of collections of student and faculty work and bringing to the campuses loan collections from museums and other outside sources. An All-University Student Art Festival has been held annually for the past three years. A "Great Artists" concert series is conducted which by block booking has helped to bring outstanding concert attractions to all the campuses. A Faculty Lecture Series has brought distinguished scholars on the University's faculty to campuses other than their own for public lectures and group discussions.

Although chosen primarily for their educational value to University students, most such events are of great interest to others as well. For example, groups from neighboring schools and colleges frequently make special campus visits to tour University art galleries or see Shakespearean plays performed. Some concerts and dramatic performances attract as many members of the adult community as students, and some persons travel long distances to hear and see outstanding artists perform. Tickets for major events usually are

sold out well in advance. At Berkeley during 1963–64, for example, the Committee for Arts and Lectures arranged a total of 473 events (232 free); these drew a total attendance of 246,560.

The Regents provide partial support for such activities directly from the University's Opportunity Fund, so that educational value as well as popular appeal can determine the committees' selections. A University-wide coordinating committee assures that both student-faculty performances and visiting artists are available to all campuses. The All-University Concert Series and intercampus art exchanges are among the activities now regularly sponsored by this group.

The University plans to continue such activities that enrich the cultural opportunities of all Californians while adding breadth and depth to the intellectual and artistic experiences of its students.

GROWTH OF THE UNIVERSITY

In the ten years from 1954 to 1964 the University of California grew from two general campuses to eight, dramatically expanded its programs of research and graduate education, and more than doubled its enrollments from about 35,000 students to over 71,000. Such growth, startling as it is, will be continued in the period just before us.

The State of California is pledged to provide opportunity for higher education to as many of its qualified young people as possible. This means that places must be found somewhere in the state's educational system for increasing numbers of students. The University is committed to require high academic promise for admission to its classes, in accordance with the Master Plan, and to emphasize advanced education and research over beginning college work. As California's population continues to expand rapidly, however, this commitment will not free the University from the pressure of great numbers. Projections of demand on the University through 1975 clearly show a continued rise in the numbers of highly qualified students to be accommodated.

If present projections of demand prove accurate, it will not be possible for the University to accept all qualified freshman applicants and at the same time reduce its lower division enrollment to 40 per cent of undergraduates, the proportion recommended by the Master Plan. Thus some qualified applicants may have to be turned away. Moreover, as individual campuses reach their maximum enrollments, not every student admitted to the University will be able to attend the campus of his first choice. Berkeley reached its maximum enrollment of approximately 27,500 students in the fall of 1964, and Los Angeles is expected to reach that mark in 1966. To prevent over-enrollment at Berkeley this fall, it was necessary to suggest the voluntary redirection of many students who applied there. More than 1,000 students voluntarily accepted redirection and made application to other University campuses. Orderly arrangements have been worked out for redirecting students in future years to campuses with unfilled spaces and for limiting admissions fairly at the campuses which have reached their enrollment ceilings. Undergraduate admission standards are identical on all the general campuses of the University, and standards and requirements for degrees are to be kept comparable also.

Enrollment Projections

Official estimates of University enrollment have been worked out in cooperation with the State Department of Finance, on the basis of the Master Plan agreements concerning all segments of California higher education. These estimates indicate that by 1975 fall enrollments on the nine campuses of the University will total more than 116,000 students, including over 43,000 at the graduate level alone.

Table II gives estimated total fall enrollments of the University and each campus for 1965, 1970, and 1975. These figures are based on the assumption that a number of the campuses will be on year-round, quarter-system operation with a regular summer term during much of this period. Since the summer term is expected to relieve some of the pressure on the fall term, estimated fall enrollments are lower on most campuses than would be the case without a summer term. Also, four-term operation at Berkeley and Los Angeles will mean that fewer students must be redirected to the newer cam-

TABLE II

ACTUAL ENROLLMENTS, 1961–1964, AND ESTIMATED FOUR-TERM ENROLLMENTS, 1965–1975

University of California

	University	Berkeley	Los Angeles	Santa Barbara	Davis	Riverside	San Francisco	San Diego	Irvine	Santa Cruz	Education Abroad Program
Actual											
1961 Fall	54 265	23 713	18 874	4 130	3 500	1 979	1 913	156	–	–	–
1962 Fall	58 616	25 092	20 189	4 865	4 116	2 173	1 976	205	–	–	–
1963 Fall	64 682	26 756	21 890	5 938	4 956	2 641	2 040	283	–	–	178
1964 Fall	71 267	27 431	23 724	7 879	6 444	3 109	2 120	560	–	–	*
Budgeted**											
1965 Fall	80 660	27 500	26 020	9 887	8 384	3 800	2 219	1 350	1 000	600	
Estimated***											
1970 Fall	97 775	27 500	27 500	11 175	10 700	7 125	2 525	4 500	3 850	2 900	
1975 Fall	116 150	27 500	27 500	13 925	13 775	10 000	2 600	7 425	8 075	5 350	

* Included in campus totals.

** Fall 1965 campus enrollment budget estimtaes.

*** These estimates assume a "quarter system" with year-round operation on certain campuses. This results in slightly lower fall-term enrollments than would be expected under the two-term, semester system or under three-term, "quarter system" operation without a summer term (see Appendix). The estimates are taken from the official "Estimates of Four-Term Enrollments, June 1964."

puses; hence, expected enrollments at the latter will be substantially smaller if the summer term is instituted. (The Appendix contains fall enrollments expected if financial support for year-round operation is not made available.)

As Table II indicates, enrollment growth between fall 1963 and fall 1964 continued high in the University, exceeding 10 per cent over-all. Increases were unexpectedly high at two campuses—over 30 per cent at Davis and at Santa Barbara. Such dramatic increases in a single year place great strain on existing staff and facilities and suggest that enrollment pressures on the University may build still more rapidly than had been thought.

Plans for Growth

To accommodate these enrollments—among the highest anticipated by any university in our country's history—systematic plans are being worked out for the expansion of present University campuses and the establishment of new campuses as the need arises.

All campuses of the University except the San Francisco Medical Center will be developed as general campuses offering undergraduate instruction in the arts and sciences as well as graduate and professional programs. The San Francisco campus will gradually broaden its offerings to include possibly some advanced under-

graduate and certainly more graduate study in the biological sciences and related disciplines. Specialized branch facilities will be attached to some general campuses.

For planning purposes, enrollment limits have been set for each general campus of the University. As recommended by the Master Plan, Berkeley, Los Angeles, and the new campuses at San Diego, Irvine, and Santa Cruz each will be limited to 27,500 students. Davis and Santa Barbara will be planned for 15,000, and Riverside for 10,000 students.

New campuses have been established to provide for orderly growth in the educational opportunities offered by the University. To assure adequate lead time for planning, each was established with a minimum interval, usually four years, between acquisition of the site and admission of the first students. Irvine and Santa Cruz are scheduled to open in fall 1965. San Diego, already operating graduate programs in science and engineering, admitted its first undergraduates in the fall of 1964.

As additional new campuses become necessary, patterns of population growth and other considerations will be scrutinized carefully. Attempts will be made to space new-campus openings some years apart, to acquire land at the chosen sites well ahead of time, and, in some cases, to establish special research facilities at the sites as local bases from which to plan. A center in the San Joaquin Valley, for graduate programs in agricultural and health sciences, has been proposed to the Coordinating Council for Higher Education. Recent studies of the Council suggest that the University can best serve the state by locating its next general campuses in the Los Angeles metropolitan area and in the great San Francisco Bay Area. Another potential area for a future University campus is the North Sacramento Valley.

Growing Need for Faculty

In maintaining the quality of its instruction and research, the most difficult single task facing the University as it grows is attracting and retaining talented faculty members in ever increasing numbers. The University now employs the equivalent of about 4,741 full-time teaching faculty members; to meet the expected increases of enrollments, it must employ the equivalent of more than 8,300 full-time teaching faculty members by 1975. Development of large graduate programs will require faculties of special distinction, will necessitate many small classes, and will mean more faculty time spent on independent research. The problem of recruiting enough qualified scholars and scientists for these programs is especially imposing.

Moreover, the University's responsibility as the state's primary publicly-supported academic agency for research cannot be ignored. Basic university research is demanding, time-consuming, and often expensive. Its conduct on a large scale will require continued expansion of University research staffs in scarce scientific and scholarly specialties, not necessarily producing similar increases in the staff available for teaching.

Growth and Use of Academic Facilities

A drastic expansion will also be necessary in the University's facilities for teaching and research as its enrollments and research responsibilities increase.

To help assure economy and efficiency in this expansion, a long-range physical development plan has been drawn up for each present and proposed campus of the University. These plans are reviewed periodically for their appropriateness to the needs of the future, and no physical construction on a campus is approved unless it accords with the campus physical development plan. That plan must be based on an academic plan projecting programs, organizations, and enrollments for the specific campus. Academic planning precedes planning of facilities.

A number of improvements have recently been made in the current use of University classrooms, laboratories, offices, libraries, and other spaces. Mathematical standards have been developed that combine projected needs for more faculty and staff members with rates of daily and weekly use for each type of space. These standards are now being applied by each campus in planning for the most efficient use of present facilities and in gauging future requirements. In addition, the University is taking every appropriate means of using its facilities more efficiently, including centralized scheduling

TABLE III

ESTIMATED NEEDS FOR FACULTY, 1964–65 TO 1975–76

Based on Four-Term Enrollments*

University of California

	Total University	Berkeley	Los Angeles	Santa Barbara	Davis	Riverside	San Francisco	San Diego	Irvine	Santa Cruz
1964–65 Budget	4 741	1 608	1 505	448	432	249	361	104	21	13
1975–76 Estimated	8 327	1 902	2 144	960	855	600	433	514	552	367

	Total University
Total new faculty needed by 1975 because of enrollment increases	3 586
Replacements needed due to attrition, 1964–65 to 1975–76 (at 4.2% annually)	3 020
Total additional faculty needed by 1975	6 606

* Figures refer to full-time equivalents of regular faculty appointments plus lecturers and teaching associates. Please note that these figures are not simply derivable from estimated fall enrollments, since faculty needs will be determined by average annual enrollments. Also, projections of these needs must take into account the fact that faculty appointments are based on nine months while future enrollments will involve 12-month operations.

of general-purpose classrooms, fuller use of afternoon class hours, reshaping of some course schedules for fewer but longer classes, more use of facilities during academic interims, and year-round operation of full programs.

It should be recognized that, by the nature of good teaching and research, the facilities in which they are conducted cannot be used as heavily and continuously as those housing more routine activities. It is false economy to crowd student schedules or to harry creative scholars with undersized classrooms and inadequate research space; the quality of learning and teaching must inevitably suffer. Also, as different campuses of the University reach different stages of their development, the kinds of space they need and the rates of use that are feasible will vary. And as rapid growth requires the estimation of future needs that later will change, some temporary dislocations must be expected between the demands on a campus and the facilities available.

In the variety of ways noted, however, the University is taking careful steps to avoid haphazard expansion, to maintain a harmony between academic needs and physical facilities, and to achieve every possible economy in its physical growth.

The University Libraries

Access to scholarly books, manuscripts, and other documents is absolutely essential to University teaching and research in all fields of knowledge. The University of California's libraries are thus a major resource for all of its academic programs and must be given continued major attention as those programs grow.

In 1961, the University adopted a ten-year plan of library development. The large and excellent collections at Berkeley and Los Angeles will be expanded to three million volumes each by 1971 and will be kept current as significant new publications appear in all

major disciplines. Another three million volumes will be assembled by 1971 among the other campuses of the University. Basic libraries of 75,000 volumes each will be available at San Diego, Irvine, and Santa Cruz by the time those campuses begin general instruction. To avoid duplication, each campus library will develop unique collections related to its specialized academic programs. As each campus library reaches its maximum size, acquisition of new volumes will be accompanied regularly by transfer of a like number of volumes to intercampus storage libraries located at Los Angeles and the Richmond Field Station.

To the scholar, however, the ready availability of books and documents matters far more than their sheer numbers. To make its collections as useful as possible, the University will continue to intensify library cooperation among its campuses. The catalogs of the two major collections at Berkeley and Los Angeles have been reproduced and made available on all campuses. Speedy interlibrary loans and reference services are facilitated by modern photo-reproducing equipment, teletype connections among University library offices, and regular intercampus buses. Both faculty members and students are accorded University-wide library privileges under appropriate regulations, and intercampus visits for scholarly study and research in specialized areas are being encouraged.

In addition, cooperation is being expanded with libraries at other universities and with outstanding private collections such as those at the Huntington Library in Los Angeles. As recommended in the Master Plan of 1960, the University also makes provision for the use of its library facilities by faculty members from other institutions of public higher education in California.

For practical reasons, of course, each campus of the University must assemble strong basic collections of books and materials fundamental to general instruction and research. It is especially important that the newer campuses' basic collections develop rapidly enough to support first-rate academic work from the start. In acquiring new materials, the University's libraries must balance the principles of University-wide diversity with local and practical needs.

Each campus library will be encouraged to build unique collections of highest distinction, based on valuable gifts or on educational policy decisions. For example, the Bancroft Library at Berkeley, containing rare books and manuscripts on Western America, Mexico and Central America, and Colonial Latin America, is unique in the United States and will remain so within the University. The Clark Library at Los Angeles, housing rare collections in English literature, is an equally good example. Los Angeles is developing a major academic emphasis in advanced African and Middle Eastern studies and will assemble unusually strong collections related to these two areas of the world. All campuses will base special collections on their outstanding strengths in specific disciplines—as in agriculture and veterinary medicine at Davis, subtropical horticulture and desert ecology at Riverside, the health sciences at San Francisco, and oceanography and marine biology at San Diego. Each campus, including the new ones at Santa Cruz and Irvine, will identify other areas of knowledge appropriate for their special attention and will develop distinctive library collections accordingly.

A University of California Library Research Institute was established this year. It will conduct basic studies into the problems of research libraries, will help to enrich advanced education for librarianship, and will develop specific methods for the improvement of the University's library system. Among the subjects of special interest to the Institute are new electronic and mechanical methods of information storage and retrieval; the nature of actual library use by faculty, students, and others; the range of services that can usefully be performed by library staff (such as subject analysis, abstracting, translating, and literature searching); the comparative costs and efficiency levels of existing research libraries; and the possibilities of new cooperative acquisition, distribution and communication programs within and between library systems. Faculty members from a number of University departments and campuses will be regularly involved in the work of this institute, which will have a director located at the School of Librarianship in Berkeley and an associate director at the School of Library Service in Los Angeles.

By means such as these, the University hopes to add both breadth and depth to its research library holdings, while making them more accessible to all of its faculties and students. Across the United States there is growing recognition that the vast increases in printed scholarly materials, and in the problems of financing and storing

them, make cooperation among libraries imperative. The University of California, with nine campuses that by 1971 will house approximately 10,250,000 volumes, has an opportunity through imaginative and coordinated effort to create a reservoir of human knowledge unsurpassed in any university in the world.

Ancillary Facilities and Services

Facilities and services not directly related to instruction—such as parking, food service, health care and hospitalization—also are necessary to the efficient operation of the University. As recommended in the Master Plan, however, the costs of operating these facilities and services are covered by fees charged to students and others using them. Efforts are being continued to reduce as far as possible the portion of construction costs for such facilities that is charged to state funds.

Stages of Development

As Table II indicates, the Berkeley campus substantially reached its 27,500-student maximum enrollment in fall 1964; Los Angeles is expected to do so in fall 1966. Already, a large share of increasing University enrollments is falling to the Davis, Riverside, and Santa Barbara campuses, each of which will have approximately doubled its 1961 enrollment by fall 1965. After 1965, a major portion of enrollment expansion will begin to affect the three newly established general campuses at San Diego, Irvine, and Santa Cruz—each of them only a year or two old by that time.

Thus, the years 1965–1975 will be extremely difficult ones in the University's growth, when the new campuses are still young and Berkeley and Los Angeles already have reached their maximum enrollments. After 1975, great problems will still confront the University. But if the present plan can be approximated reasonably, the University by 1975 should have an adequate base for further growth.

Year-Round Instruction

To make the best possible use of its buildings and equipment, the University plans to extend its full academic programs to include the summer months, heretofore reserved primarily for short-term programs and special supplemental or remedial courses. Besides permitting greater use of classrooms and laboratories, this plan will allow earlier amortization of residence halls, student activities buildings, and similar facilities. By making more courses available in a twelve-month period, it also will enable some students to finish their undergraduate study in three years, thus adding a full year to their working lifetimes.

After full discussions by academic, administrative, and student bodies, The Regents have scheduled the beginning of year-round operation on one or more campuses for 1966, subject to the availability of the funds necessary to maintain University quality in all programs. Studies of other universities now operating year-round show that first-rate institutions of higher education can operate on any one of several year-round schedules. The University, in consultation with other California institutions through the Coordinating Council of Higher Education, has settled on the "quarter system." This system, involving four approximately equal instructional periods in a year, will allow maximum coordination with California schools and colleges and with other universities.

The change to a new calendar will not be without its difficulties. Studies are presently being made of the impacts to be expected from such a change on each campus, and actual year-round operation will be tried out on one or two campuses before extension to the whole University, so that problems encountered may be anticipated before other campuses adopt the plan. In the change from the semester to the quarter system, however, all faculties are being encouraged to seize the opportunity for a new look at traditional semester-long courses and their combinations in major curricula.

Year-round operation will not mean less expensive operation in the short run; just the contrary. More students will be on campus in a year, more courses will be offered, more teachers and other staff will be needed, and the wear on many facilities will be greater than at present. It is already apparent that having greater numbers on campus in a year will require augmenting present faculty offices, laboratories, and other facilities; how much has not yet been determined. Moreover, experience at other universities indicates that summer enrollments cannot be expected to equal those in other terms. Thus, although it will be more efficient in the long run, the

new calendar will not solve all problems and will require additional state support immediately for expanded University service to California residents.

The Regents have made it clear that provision of this expanded service is contingent upon the availability of funds to maintain University programs on a year-round basis without sacrifice of quality. With the encouragement of the State Senate, the State Department of Finance, and the Coordinating Council for Higher Education, the University has projected its enrollments and staff needs on a four-term basis (see Tables II and III), and is making extensive plans for the transition to a four-term calendar. The appendix contains comparable projections of enrollments and staff needs expected if funds to support a summer term are not forthcoming. Comparison of these figures with those in Tables II and III reveals the major alterations in some campuses' plans that will be necessary if plans for year-round operation in the University must be cancelled.

FACULTY

The quality of any university depends directly on its faculty. The University of California is proud that its faculty is a distinguished one. At present, that faculty includes twelve Nobel Prize winners and eighty-seven members of the National Academy of Sciences. Over the years, 535 members of the University faculty have received Guggenheim Fellowships, an internationally respected award for outstanding scholarly or artistic accomplishment. For 1964, of 312 Guggenheim awards made in the United States and Canada, 33 were made to faculty members of the University of California—more than to the faculty of any other university.

Continuing Excellence

The University is resolved to maintain the level of excellence of its faculty during the present period of growth. In the years immediately ahead, however, the competition for talented teachers and scholars will become increasingly keen—especially for individuals of outstanding achievement or promise in whom the University will be most interested. To assemble the additional faculty members that the University must have to meet its obligations will be a prodigious task and one on which the future distinction of the University turns.

This task is first of all a responsibility of the individual University departments which are in closest touch with the leaders and the promising young talents of their respective disciplines. Strong and continuing relations must be maintained between University departments and the leading graduate schools of the nation. When departments fail to recruit academic personnel who meet University standards, it is the task of each campus administration, in close cooperation with the Budget Committee of the Academic Senate, to remedy the deficiencies.

Among the critical factors in attracting and retaining top-flight faculty members are the following, to which the University will give continuing emphasis:

SALARIES. The University of California's faculty salary scale until recently was generally comparable to those of other leading American universities. In the past few years, however, the University has not kept pace in this regard with its principal competitors. It is important that this deficiency be redressed, and that in the future the University maintain and improve its ability to pay competitive salaries for faculty members of outstanding talent.

FRINGE BENEFITS. Retirement plans, health benefits, moving expenses, assistance in obtaining housing, and similar advantages can be powerful factors in the decisions of potential faculty appointees. Limited progress has been made recently in improving such benefits for faculty, but the University must continue to augment its efforts in this area.

RESEARCH OPPORTUNITIES. Competent research scholars and scientists require time and facilities for their research, and the University must continue to provide these at a high level by adjusting teaching loads, allowing sabbatical leaves, and reducing extraneous duties wherever possible. Libraries, laboratories, and opportunities for field research must be excellent, not merely adequate. In addition, existing discrepancies in research opportunities among campuses and disciplines within the University must be reduced. Newer campuses must be assisted in building the facilities and programs necessary for active research in all appropriate fields, and disciplines such as the humanities and social sciences, which have less access to extramural grants must be given special consideration in

the allotment of University funds. Faculty members of all campuses must be granted generous access to research facilities and programs where they already exist.

INTELLECTUAL CLIMATE. Prospective faculty members will continue to be attracted to the University by its reputation for scholarly excellence and by a high degree of faculty self-government, academic freedom, and opportunity for free exchange of ideas among colleagues. These are deeply rooted in our tradition and must be preserved. Where possible, an intellectual community within the faculty must be supported by enabling faculty members to live close to campus and by making early provision for a faculty clubhouse or commons at each new and emerging campus.

Maturation of the Faculty

The University has been growing in numbers of students and faculty members, with brief fluctuations, since its founding in 1868. As the older campuses of the University reach the maximum enrollments set by the Master Plan, great care must be taken in the necessary process of stabilizing the size of their faculties. After living so long in an atmosphere of growth, the faculty of a campus could become demoralized by abrupt and arbitrary transition to constant numbers of students and academic staff. This is especially true in view of the heavy concentrations on the larger campuses of faculty members in senior ranks and in top salary ranges. Ways must be found to assure a reasonable continuing flow of new, especially younger, faculty members into University departments on these campuses. The University will explore systematically such devices as balancing age distributions within departments to spread retirements evenly over the years, recruiting most replacements at the instructor and assistant professor ranks, and allowing free transfer of senior faculty members to newer campuses when both the campuses and the professors desire it.

Faculty Responsibility in University Government

Since its founding, the University has had a tradition of extensive faculty partcipation in University government. The Regents and the President of the University have delegated to the Academic Senate, composed of all regular members of the faculty, the authority to determine standards of admission, courses of instruction, and requirements for academic degrees. In addition, Senate committees advise The Regents and the President on educational policy, budgets, academic and administrative appointments, and faculty promotions, privileges, and tenure.

The University will continue and, where possible, strengthen faculty participation in its government. At the same time, faculty members must be spared unnecessary administrative burdens so that they can devote their major attention to teaching and research. Departmental and administrative committees, which form the bulk of faculty committee assignments, will be expected to minimize their demands on faculty members by emphasizing policy formation rather than execution. The University must provide assistance to committee members for fact-finding and clerical work and must adjust other duties for faculty members carrying heavy committee assignments.

STUDENTS

The University of California welcomes to its campuses students who represent a rich variety of backgrounds, interests, and beliefs. It values most in its students open minds, intellectual curiosity, and honest devotion to the search for truth.

The University requires excellence in ability and achievement of students for admission to its classes and sets high standards of performance in all of its degree programs. In turn, it is pledged to share with each of its students the best education that a distinguished faculty can provide.

Admission to the University

The Master Plan recommendations concerning undergraduate admission policy have been adopted for all campuses of the University:

UNDERGRADUATE ADMISSION:

1. The University will select first-time freshmen from the top one-eighth (12½ per cent) of graduates of California public high schools. Graduates of private and out-of-state secondary schools who are residents of California will be held to equivalent levels. Special admission involving exceptions to this rule will not exceed two per cent of all freshman admissions in any year.

2. The University will require a minimum of 56 units of acceptable advanced standing credit before considering the admission of applicants ineligible for admission as freshmen because of inadequate grades in high school, except for admissions into curricula that require earlier transfer.

   Exceptions may be granted through special procedures to not more than two per cent of all students who apply for advanced standing in any year.

3. Undergraduate applicants who are legal residents of other states must stand in the upper half of those otherwise eligible.

4. Assuming that additional junior college capacity is developed as expected, the University will reduce the proportion of students in its lower division to about 40 per cent of all undergraduate enrollments by 1975.

GRADUATE ADMISSION:

The University's admission policies at the graduate level are not expected to change substantially in the near future. The University will continue to admit qualified applicants for graduate study, whether from California or from other states and countries, consistent with the availability of staff and facilities on individual campuses.

The Search for Talent

The pressure of numbers must not preclude the University's sustaining active and systematic programs to attract students of outstanding ability. Scholarship and fellowship funds, and special programs to interest gifted high school students, must be expanded. Honors courses, independent reading courses, and similarly challenging projects must be given increasing attention.

Students learn much from one another—sometimes more than they learn in the classroom, library, or laboratory. It is therefore vital to its educational interest that the University seek out and select talented students from a broad range of backgrounds, in-

terests, and viewpoints. A diversity of ideas and perspectives within the community of actively curious students is an educational instrument with few equals. The University will seek to encourage the growth of such communities on each of its campuses.

Academic Climate of the University

The University of California is many things, but first and foremost it is an academic institution—dedicated to free inquiry, deliberate discussion, and scholarly standards of accuracy in all of its activities. Its faculties include some of the nation's best minds; their presence and participation in graduate and undergraduate instruction lends great excitement and the highest standards of learning to University classes. In addition, frequent visiting lecturers, symposia, and artistic events on the campuses help to create a climate of intellectual stimulation that is a basic part of the University's value for its students.

University students have responded remarkably well in most cases to this climate of learning, and many have gone on to distinguished careers in California and other parts of the world. Alumni of the University today are among the state's leaders of business, industry, labor, government, education, and the other major enterprises of our community life. Ralph Bunche, Glenn Seaborg, and Earl Warren are only a few of the distinguished University graduates who have contributed outstandingly to the public affairs of this and other nations.

The University plans to continue fostering such a climate on its campuses, in the belief that it is vital to the University's reason for existing.

The Effects of Growth

As the University's campuses continue to grow in size of enrollments, faculties, and research responsibilities, one effect may be less frequent personal contact between students and teachers. The University must take steps to assure that *all* students have numerous opportunities for close intellectual and personal acquaintance with faculty members during their undergraduate careers, through small discussion classes, tutorial arrangements, individual consultation, or voluntary faculty participation in extracurricular campus events. Where possible, especially on the newer campuses, special arrangements will be made for the creation of close and continuing faculty-student communities of learning, as in the "colleges" planned for Santa Cruz and San Diego.

At the same time, students will be expected to approach their education in the University as self-reliant, maturing individuals. Greater personal responsibility for independent study and writing by undergraduates as well as graduate students can be expected as part of a University education in the future.

Extracurricular Student Activity

Active, responsible, and representative student government is a long-standing tradition within the University of California. The Associated Students organization on each campus administers a large and diverse program of student activities, in some cases involving complex physical facilities and many employees. The University is proud of this tradition, and expects to continue it. In addition, student leaders will be encouraged to continue and refine their gathering of reasoned student opinion on matters which affect students in their University affiliation.

The University attempts to keep students well-informed on its policies and carefully considers student comments and questions about its affairs. Each Chancellor and his staff maintain frequent communication with student leaders on matters of campus policy. In addition, the President regularly consults with members of the student body on each campus and responds to their specific questions. Discussions of University-wide issues are held several times each year with the student body presidents and with student editors from all campuses. The California Club, a University-wide honorary society composed of students who have participated with distinction in campus activities, makes periodic reports to the President on topics of importance to the University. In addition, open meetings are held at least once each year on every campus, in which any interested student may ask questions of the President about University affairs.

In turn, the University expects that its students will act responsibly as members of the academic community, abiding by University policies once they are established.

Students are encouraged to form and to participate in a broad variety of both organized and informal groups centered about interests which they share—in ideas, in the arts, in academic and professional specialties, in social and athletic activities, and in other areas of interest. The number and strength of such groups—ineluding quite small groups which may be very important to their members—are indices of alert, vigorous, and active student life on a campus. The personal associations and the intellectual or artistic experiences gained in such activities can contribute richly to students' University education.

University-wide Student Privileges

A variety of privileges enjoyed by University students on their own campuses are now available to them on other University campuses as well. These privileges include:

- Cashing of small checks.
- Use of student union facilities and equipment.
- Use of gymnasia and other recreational cultural facilties.
- Care at the student health center.
- Use of libraries, including withdrawal privileges when students are at home for Christmas and other vacations.

Every student holding a current University registration card may exercise these privileges where available on any University campus, under whatever conditions apply locally. Membership in a University-wide student body thus carries tangible services and conveniences for students on each of the University's campuses.

Aid to Disadvantaged Students

Many talented students who might profit from a University education never reach its classrooms because of handicaps from their social and cultural backgrounds. Some are inadequately prepared for University study; others simply lack the motivation to seek University admission because of racial, economic, occupational, or other disadvantages of their families. In December 1963, The Regents allocated $100,000 from the University's Opportunity Fund for programs to identify, aid, and encourage such talented but disadvantaged students to pursue a University education. These funds are being matched by contributions from University faculty, staff members, and students.

At Berkeley, a Special Scholarship Program already has been set up and an intensive summer institute was held on the Berkeley campus in 1964 for approximately thirty-four carefully selected students from East Bay high schools. At Los Angeles, University students have contributed their time and effort to special tutorial work with disadvantaged youngsters, and a special counseling office has been set up for disadvantaged students admitted to the University to help them avoid dropping out of school prematurely. Other campuses of the University are considering similar programs also.

Off-Campus Speakers

The University encourages its students to hear, discuss, and make reasoned evaluations of any and all viewpoints on social and intellectual issues. This is in the best American tradition. The University has confidence in its students' ability to judge all viewpoints fairly if presented with the opportunity to discuss them fully. The Regents therefore have approved the use of University facilities by off-campus speakers under the following conditions:

Any off-campus speaker may be allowed to speak on a campus of the University in accordance with the policies set forth in the University regulation on the "Use of the University Facilities." Whenever the respective Chancellor considers it appropriate in furtherance of educational objectives, he may require any or all of the following:

1. that the meeting be chaired by a tenure member of the faculty,

2. that the speaker be subject to questions from the audience,

3. that the speaker be appropriately balanced in debate with a person of contrary opinions.

Student Residence Halls

The University plans to continue its present policy of providing residence halls for a substantial portion of its student body. So long as student waiting lists for campus residences remain long and Federal housing loan funds are available at favorable interest rates, it seems advisable to borrow for residence hall construction.

At Berkeley and Los Angeles, the present plans are to provide campus living accommodations for approximately one quarter of the students enrolled. Davis, Riverside, and Santa Barbara already are near their present goals of housing half their students, although this proportion may fail in the coming period of rapid enrollment growth. At Santa Cruz, which at present is some distance from a major population center, a high proportion of students will live in "residential colleges" designed to integrate academic learning experiences with other parts of student life.

On all campuses, increased efforts will be made to enrich the intellectual and cultural opportunities of students through their residence halls. The University encourages instruction in residence halls where practicable, informal faculty associations with student residence groups, and student-sponsored lectures, concerts, and artistic events in residence hall common rooms.

To help in such efforts the University is now conducting an intensive study of the contributions which residence halls can make to students' education. Consideration also is being given to graduate students' needs for University housing and to possible ways of meeting them.

Student Activities Buildings

In the new union buildings at Berkeley, Davis, and Los Angeles, University students are demonstrating by intensive use the value and importance of such facilities. Student centers are now being planned for Riverside and Santa Barbara. As the other general campuses of the University grow in size, they also will need suitable centers for student activities and recreation.

Under the Master Plan agreements, such enterprises are not financed from state funds. Sponsorship by The Regents makes it possible to obtain loan funds for union facilities but, as in Berkeley and Los Angeles at present, compulsory student fees cover both operation and amortization costs. Thus students are providing these facilities for themselves.

University Alumni

The University of California regards its alumni as integral members of the University community and values their continued interest and support. The University realizes that both the interests of individual alumni and the programs of service of organized alumni associations form an indispensable part of University life. The University encourages the formation of an independent alumni association on each campus and assists the associations in their efforts to render service.

Alumni associations conduct a variety of programs which include the publication of magazines for alumni information and continued education, the support of scholarships and other projects supported by alumni contributions, alumni conferences and meetings, and a variety of other traditional activities.

The University recognizes that individual alumni interests and loyalties are most identified with individual campuses. However, alumni associations are encouraged to provide opportunities for alumni to understand the value and importance of the University as a whole.

THE UNIVERSITY'S CAMPUSES

The University of California now conducts instruction and research on seven major campuses situated throughout the state and in 1965 will admit its first students at two additional sites. Through these campuses are supervised scores of University research installations and extension activities located in still other California communities.

In the period 1957–1959 The Regents made a series of basic decisions: to establish at Davis, Riverside, San Diego, and Santa Barbara campuses of general university scope and to create two completely new general campuses, later located at Irvine and Santa Cruz. These decisions marked a major turning-point in University history. They expressed the University's commitment to a continued major role in meeting the state's rapidly growing needs for academic instruction, research, and public service. With the established general campuses at Berkeley and Los Angeles, and the Medical Center in San Francisco, the new and expanded campuses promise to provide Californians with university-level educational opportunities unsurpassed anywhere in the nation.

Within a broad framework of University-wide policies, each of these campuses is encouraged to develop its own special strengths, traditions, and concerns. Plans for each campus are proposed by its staff on the basis of its traditions, the interests of its faculties, and the needs and opportunities of its geographic location.

The statements that follow in this section do not purport to represent the educational philosophies or detailed plans of the campuses. Some of the specific new programs suggested are not yet fully planned; they may be changed and supplemented in the continued deliberations of the faculties, administration, and Regents. They are included here to give some idea of the particular place of each campus in the development of the total University.

The organized research and service units listed after each campus description are, of course, deeply involved in the provision of opportunities for graduate study. The facilities and programs of many such units are major resources for the student research that is so important a part of good graduate instruction. Opportunities which these units create for advanced research by faculty members are basic to the intellectual vitality of University teaching in a number of fields. In addition, from such research regularly flow new discoveries and published studies that are of great service to local communities, to the state, and to the nation.

Berkeley

The Berkeley campus was the first permanent site of the University of California, occupied in 1873 just five years after the University's charter. Since that time it has grown into one of the world's greatest centers of research and teaching in the natural sciences, the humanities, the social sciences, the arts, and the major professions. Its present teaching and research programs comprise 14 colleges and schools, as well as over 60 organized research centers, institutes, laboratories, and other units touching on every major field of human knowledge.

During fall 1964, Berkeley almost exactly attained its planned maximum of 27,500 students; 27,431 enrolled, including 9,663 in the Graduate Division.

The Berkeley campus will continue to strive for excellence in all basic disciplines and will seek to attain leadership in new fields of study as they emerge. Opportunities for exchange of ideas among leaders in many diverse disciplines will be emphasized. Increasingly, graduate study and research will become preeminent in Berkeley faculties' activities, with 12,000 graduate students expected on the campus by fall 1975.

PRESENT TEACHING PROGRAMS:

- College of Agriculture
- College of Chemistry
- College of Engineering
- College of Environmental Design
- College of Letters and Science
- School of Business Administration
- School of Criminology
- School of Education
- School of Forestry
- School of Law
- School of Librarianship
- School of Optometry
- School of Public Health
- School of Social Welfare

RESEARCH UNITS:

- Agricultural Experiment Station
- Archeological Research Facility
- Bancroft Library
- Botanical Garden
- Cancer Research Genetics Laboratory
- Center for Operations Research
- Center for Study of Higher Education
- Computer Center
- Donner Laboratory
- Education Field Service Center
- Electronics Research Laboratory
- Engineering Research—General Services
- English Research
- Ernest O. Lawrence Hall of Science
- Experimental Phonetics Research
- Forest Products Laboratory
- Hydraulic Laboratory
- Institute for Basic Research in Science
- Institute for Human Learning
- Institute of Business and Economic Research
- Institute of Governmental Studies
- Institute of Human Development
  - Child Study Center
- Institute of Industrial Relations
  - Center for Labor Research and Education
- Institute of International Studies
  - Centers for
    - Chinese Studies
    - Japanese Studies
    - Latin American Studies
    - Slavic and East European Studies
    - South Asian Studies
    - Southeast Asian Studies
- Institute of Personality Assessment and Research
- Institute of Social Sciences
  - Center for the Study of Law and Society
  - Survey Research Center
- Institute of Transportation and Traffic Engineering (University-wide unit)
- Institute of Urban and Regional Development
  - Center for Planning and Development Research
  - Center for Real Estate and Urban Economics
- Jepson Herbarium
- Laboratory of Chemical Biodynamics
- Laboratory of Marine Biology
- Laboratory of Radio Astronomy
- Lawrence Radiation Laboratory (Berkeley and Livermore)
- Linguistic Research
- Management Science Center
- Museum of Paleontology

Museum of Vertebrate Zoology
Naval Biological Laboratory
Optometry Research
Regional Cultural History Project
Robert H. Lowie Museum of Anthropology
Sanitary Engineering Research Laboratory
Scientific Photography Laboratory
Sea Water Conversion Laboratory
Seismographic Stations
Space Sciences Laboratory
Statistical Laboratory
Structural Engineering Materials Laboratory
Tropical Biogeographical Research
Virus Laboratory
White Mountains Research Station
Zoology Research—Fisheries

PROPOSED PROGRAMS:

Center for Urban Social Problems
Field Station for Research on Animal Behavior
Library Research Institute
Operations Research Center

Los Angeles

In less than half a century, the University of California, Los Angeles, has grown from a small "normal school" to a large, complex, and cosmopolitan general campus of the University. Its programs include undergraduate and graduate studies and research in all of the major arts, letters, and sciences, as well as excellent professional schools in a variety of fields. Among its special prides are programs in the health sciences, the fine arts, language and area studies, and science and engineering programs geared to the challenge of electronics and aerospace technology.

The recent growth of UCLA has been dramatic; in fall 1964 it enrolled 23,724 students, including 8,140 at the graduate level. Within the next few years the campus is expected to reach its maximum enrollment of 27,500 students and to emphasize advanced admissions thereafter, stabilizing at 12,000 graduate students and 15,500 undergraduates by about fall 1973.

The Los Angeles campus development will be especially responsive to its setting in one of the world's great urban population centers to the continuing vigor of the literary and artistic communities nearby, to southern California's heavy concentrations of science-based industry, and to the intercultural influences of Latin America.

PRESENT TEACHING PROGRAMS:

College of Agriculture
(to be terminated 1966)
College of Engineering
College of Fine Arts
College of Letters and Science
School of Business Administration
(to be terminated 1970)
Graduate School of Business Administration
School of Dentistry
School of Education
School of Law
School of Library Service
School of Medicine
School of Nursing
School of Public Health
School of Social Welfare

RESEARCH AND CLINICAL UNITS:

African Studies Center
Agricultural Experiment Station
Air Pollution Research
Archeological Survey
Biotechnology Laboratory
Brain Research Institute
Bureau of Business and Economic Research
Business Administration Research Division
Cancer Research Institute
Cardiovascular Research Laboratory

Center for International Security Studies
Center for Medieval Renaissance Studies
Center for Research in Language and Linguistics
Cyclotron Laboratory
Exceptional Children Research
Institute of Ethnomusicology
Institute of Geophysics and Planetary Physics
Atmospheric Research
Space Sciences Center
Institute of Government and Public Affairs
Institute of Industrial Relations
Institute of Library Research
(UCLA and Berkeley)
Institute of Transportation and Traffic Engineering
Jules Stein Eye Institute
Laboratory of Ethnic Arts and Technologies
Laboratory of Nuclear Medicine and Radiation Biology
Latin American Studies Center
Law–Science Research Center
Marion Davies Children's Clinic
Molecular Biology Institute
Mythology–Folklore Studies Center
Near Eastern Studies Center
Neuropsychiatric Institute (with State Department of Mental Hygiene)
Nuclear Reactor Laboratory
Oral History Program
Psychology Clinic School
Real Estate Research Program
Russian and East European Studies Center
Space Sciences Center
UCLA Computing Facility
UCLA Teaching Hospital
University Elementary School
Water Resources Center
Western Data Processing Center
Western Management Sciences Institute
Zoology Research–Fisheries

PROPOSED NEW PROGRAMS:

Committee for International and Comparative Studies
Physical Rehabilitation Unit
Reed Neurological Research Center
School of Architecture

Santa Barbara

Santa Barbara State College in 1944 became an undergraduate college of the University, and in 1958 became a general University campus. Besides a College of Letters and Science, it now incorporates professional Schools of Education and Engineering, and a growing Graduate Division. Santa Barbara is headquarters for the University Education Abroad Program, coordinating students' year-long study programs in Centers at the Universities at Bordeaux, France; Goettingen, Germany; Tokyo, Japan; Padua, Italy; Madrid, Spain; Bogota, Colombia; Edinburgh, Birmingham, and Sussex, United Kingdom; and Hong Kong.

Enrollment at Santa Barbara in 1963–64 was 5,938. In the fall of 1964, it was 7,879—a 33 per cent increase over the previous year. Enrollment is expected to reach 13,925 by 1975, and the planned maximum of 15,000 shortly thereafter. The number of graduate students will increase even more rapidly, from 624 in the fall of 1964 to about 2,875 in the fall of 1975.

As it grows, the campus will develop additional new programs based on its strategic coastal location, the needs of the University and the State, and the interests and talents of its faculties.

PRESENT TEACHING PROGRAMS:

College of Letters and Science
School of Education
School of Engineering

RESEARCH UNITS:

Computer Center
Institute of Environmental Stress

PROPOSED NEW PROGRAMS:

Bureau of Educational Research
Channel Islands Field Station
School of Business Administration
School of Fine Arts

AREAS IN WHICH NEW PROGRAMS ARE UNDER STUDY:

Community Research Training Project
Developing Nations
Engineering Research
Experimental Ecology
Institute of Religious Studies
International Relations
Mass Communications
Medium Energy Nuclear Physics
School of Law
Space Biology

Davis

Conceived in 1905 as the University Farm, the Davis campus has attained international recognition as a locus of research and teaching in agriculture. Its Agricultural Experiment Station has contributed many basic and economically important advances to the farming, food processing, and marketing industries of California and other states. The campus has included a College of Letters and Science since 1951. In 1959 Davis was designated a general campus of the University with its own Graduate Division and with plans for programs in many fields of knowledge. However, the long-established College of Agriculture and School of Veterinary Medicine will continue to play prominent roles in campus life. The campus's strong programs in many areas of biological science will continue to be a special source of pride.

In 1962 a College of Engineering was established; it includes a Department of Applied Science, Davis-Livermore, which makes use of the staff and facilities of both the Davis campus and the Lawrence Radiation Laboratory sixty miles away at Livermore to provide graduate degree programs integrating mathematics, physics, chemistry, and engineering for advanced nuclear studies.

Enrolling 6,444 students in fall 1964, Davis will enroll about 13,775 in fall 1975 and will reach its expected maximum total enrollment of 15,000 shortly thereafter.

The Davis campus will continue its evolution into a general University campus. Its new School of Law will begin admitting students in 1966. A medical school for the campus is now being planned in detail, and other professional schools will be established as the need for them becomes apparent. Located in the populous Sacramento Valley and nearest of the University's campuses to the state capitol, the Davis campus must expect to develop into a major institution offering programs in many fields and having a special emphasis on relations with state governmental agencies.

PRESENT TEACHING PROGRAMS:

College of Agriculture (including Home Economics)
College of Engineering (including Applied Science, Davis-Livermore)
College of Letters and Science (including Education)
School of Law (opening fall 1966)
School of Veterinary Medicine
International Training in Agriculture

RESEARCH AND CLINICAL UNITS:

Agricultural Experiment Station
Agricultural History Center
Agricultural Toxicology and Residue Research Laboratory
Agronomy Grasses Research
Animal Breeding Genetics Research
Computer Center
Crocker Nuclear Research Laboratory
Ecological Research Facility
Electron Microscope Laboratory
Food Protection and Toxicology Center
International Agriculture Center
Institute of Governmental Affairs
Laboratory of Fine Arts and Museology

National Center for Primate Biology
Radiobiology Laboratory
Soil Science–Kearney Foundation Research
University Arboretum
Veterinary Clinic
Vegetable Crops: Produce and Handling Research

PROPOSED NEW PROGRAMS:

Agricultural History Museum
Comparative Oncology
Graduate School of Business Administration
Institute of Ecology
School of Medicine

Riverside

The Riverside campus was established in 1907 as the Citrus Experiment Station. Since then, the Citrus Research Center and the Agricultural Experiment Station at Riverside have contributed to basic research in virtually every aspect of agriculture represented in southern California. The College of Letters and Science opened in 1954 and soon attained national notice for the excellence of its undergraduate instruction. Since 1959 Riverside has been under development as a general campus of the University, with an established Graduate Division and important organized research units. Both the Philip L. Boyd Desert Research Institute and the University-wide Air Pollution Research Center are administered by the Riverside campus. A full-fledged College of Agriculture was created at Riverside in 1961.

In fall 1964, Riverside enrolled 3,109 students, of whom 682 were in the Graduate Division. By 1975, the campus will reach its planned enrollment maximum of 10,000 students.

As it grows, Riverside will continue to have strong undergraduate and graduate programs in Letters and Science and will also continue to be the University's main headquarters of agricultural research and instruction in southern California. Professional schools and special institutes will be added in areas directly related to existing programs.

PRESENT TEACHING PROGRAMS:

College of Agriculture
College of Letters and Science
Graduate Division

RESEARCH UNITS:

Air Pollution Research Center
Citrus Research Center and Agricultural Experiment Station
Dry-Lands Research Institute
Latin American Society and Culture Research Program
Philip L. Boyd Desert Research Center

PROPOSED NEW PROGRAMS:

Institute of Geophysics and Planetary Physics (Riverside Branch)
School of Administration
School of Engineering
School of Veterinary Medicine

San Francisco

The University of California San Francisco Medical Center stems from the creation in 1864 of Toland Medical College, which became a department of the University in 1873. Today the Center comprises one of the world's largest and most active concentrations of research and professional instruction in the health sciences. Its present programs include Schools of Medicine, Dentistry, Nursing, and Pharmacy as well as teaching programs in a variety of paramedical specialties and in allied biomedical fields. Graduate and postdoctoral training in health sciences are increasingly emphasized, and organized research units at the Medical Center are working intensively on a broad range of basic medical problems.

Because of the critical demand for physicians and other health scientists, and because of the ever more central role played by both in our community, state, national, and international well-being, the Medical Center must continue to grow and expand almost every phase of its activities. In the fall of 1964 the entering medical school

class was increased from 100 to 128 students per year. Total enrollments will expand from about 2,120 in fall 1964, to 2,600 by fall 1975. The numbers of postdoctoral research fellows and trainees will continue to increase during that period. The academic graduate programs and professional graduate education for nurses will be expanded. An already extensive record of community service in Continuing Education in the Health Sciences will certainly experience further growth. In 1963–64 over 18,000 persons were direct participants as students in these programs and an estimated additional 200,000 audited these courses by means of radio or television. In the future the Medical Center may begin formal instruction at the upper division level in biomedical and related fields.

PRESENT TEACHING PROGRAMS:

School of Dentistry
School of Medicine
School of Nursing
School of Pharmacy
Graduate Division

RESEARCH AND CLINICAL UNITS:

Audio-Visual Center
Biomechanics Laboratory
Cancer Research Institute
Cardiovascular Research Institute
Dentistry Clinic
Francis I. Proctor Foundation for Research in Ophthalmology
George Williams Hooper Foundation
Hormone Research Laboratory
Laboratory of Radiobiology
Langley Porter Neuropsychiatric Institute
Metabolic Unit for Research in Arthritis and Allied Diseases
Radioactivity Research Center
Radiological Research Laboratory
Vivarium
University of California Hospitals

PROPOSED NEW PROGRAMS:

Biophysics
Biostatistics
Computer Center
Cooperative Programs with School of Public Health
(e.g., Occupational Medicine, Toxicology)
Cooperative Programs with School of Social Welfare
Developmental Biology, Mental Retardation and Oro-Facial Anomalies
Genetics
Graduate School of Health Sciences
Human Disabilities
Metabolic, Nutritional and Endocrine Diseases
Neurological Research Institute
Periodontal Research
Primate Research

San Diego

The San Diego campus of the University of California had its origin in the closing years of the nineteenth century when zoologists at Berkeley set out to establish a marine station on the Pacific. They settled at San Pedro, and in 1903 the San Diego Chamber of Commerce and a group of interested citizens led by the Scripps family paid the expenses of moving their laboratory to Coronado. From this the San Diego Marine Biological Association was formed to which the City of San Diego donated 170 acres of land at La Jolla. In 1912 the laboratory and buildings erected by the association were transferred to the jurisdiction of the University of California and eventually became the Scripps Institution of Oceanography.

With Scripps as a nucleus, the University of California, San Diego, was established as a general campus of the University in 1958. Beginning with a small, distinguished faculty and a few graduate students in the natural and physical sciences, the campus began its expansion into a major unit of the University. The academic plan, as presently conceived, envisions a general campus based on a college concept. There will be three clusters each having four colleges enrolling about 2,300 students each.

The colleges will be organized and designed academically and physically, so that it will be possible for a student to obtain approximately two-thirds of his total University experience, both academic and extracurricular, within his own college.

Each college will include both undergraduate and graduate students and will vary from the others in academic emphasis so that a cluster of four will offer very nearly a full university curriculum. Undergraduate instruction will be administered by the college, graduate study by campus-wide academic departments. Eventually the three clusters will share central facilities, such as a major library, administration building, and auditorium.

Revelle College grew out of the Institute of Technology and Engineering, established in 1958 and renamed the School of Science and Engineering in 1959. The enrollment of Revelle College during 1963–64 reached 283 graduate students. By the fall term of 1964–65, the enrollment was 560—379 graduate students and 181 freshmen, the first undergraduates at UCSD. It is expected that by 1975 the first cluster of four colleges will be complete, with an enrollment of approximately 7,425.

Several major organized research units (noted below) are located on the San Diego campus. A four-year School of Medicine has been established and will represent the third such school established by the University. An entering class of about 32 students will be admitted in the fall of 1968.

Future professional and graduate programs are contemplated in the humanities, social sciences, engineering, law, and business administration.

PRESENT TEACHING PROGRAM:

Revelle College
Graduate Division
School of Medicine (students will begin in 1968)
Scripps Institution of Oceanography

RESEARCH UNITS:

Applied Oceanography Group
Computer Center
Institute of Geophysics and Planetary Physics
(San Diego branch)
Institute of Marine Resources
Institute for Radiation Physics and Aerodynamics
Institute for the Study of Matter
Marine Life Research Group
Marine Physical Laboratory
Physiological Research Laboratory
Sea Water Conversion Facility
Space Sciences Laboratory
Visibility Laboratory

PROPOSED PROGRAMS:

Business Administration
Engineering Sciences
Graduate School of Marine Sciences
Graduate School of Oceanography and Earth Sciences
Humanities
Institute for Humanistic Studies
Law
Music, Drama, and Fine Arts
Social Sciences

OTHER FACILITIES:

Thomas Wayland Vaughn Aquarium Museum

Irvine

The University of California, Irvine, is now taking shape amid gently rolling hills in Orange County, southeast of the Los Angeles metropolitan area. Designed as a major general campus of the University, Irvine from the first will place heavy emphasis on integration of the traditional academic disciplines, and on interdisciplinary study by faculty and students. Academic buildings clustered by disciplines will be situated radially around a central campus "core" containing the main library, auditorium, student center, and administrative headquarters.

The campus will admit its first students in fall 1965, and by fall 1975, will enroll 8,575 in undergraduate, graduate, and professional programs. A maximum enrollment of 27,500 students has been set, as for the other general campuses.

Initially, the campus will include a College of Arts, Letters, and Science; a Graduate School of Administration, combining study of administrative processes in business firms, government agencies, and educational institutions; a School of Engineering, with emphasis on systems management and electronics engineering; and Public Policy Research Organization. Later, additional professional schools and organized research units will be developed in accord with the needs and opportunities of the burgeoning metropolitan complex in southern California.

Irvine faculties will be encouraged to develop imaginative new uses of television, computers, language laboratories, and other modern electronic and mechanical instruments in their instruction and research. They will explore ways to involve organized research units actively in the process of instruction wherever possible. In addition, strong efforts will be made to use independent study techniques, programmed instructional materials, and other means of fostering students' individual responsibilities for their study.

INITIAL PROGRAMS:

College of Arts, Letters, and Science
Graduate Division
Graduate School of Administration
Interdisciplinary Program in Communications and Information Sciences
Public Policy Research Organization
School of Engineering

PROPOSED PROGRAMS:

Architecture
Interdisciplinary Program in Energy Conversion and Management
Law
Medicine

Santa Cruz

The Santa Cruz campus will admit its first students in the fall of 1965. It is planned as a large general campus of the University, expected eventually to reach an enrollment of 27,500. Santa Cruz will be organized around a series of undergraduate residential colleges—semiautonomous units eventually numbering 20 to 30 and enrolling between 250 and 1,000 students each. Here, most students will live, dine, pursue much of their recreation, and receive a significant portion of their course instruction. Every commuting student also will be enrolled in one of the colleges, and will have easy access to its facilities and programs. Each college will have a resident provost, a number of faculty fellows, and academic facilities of its own. Each will also have a slightly different academic emphasis, but all will provide broad liberal studies and will cooperaate with other colleges, with academic disciplines, and with professional schools of the campus in using central library, lecture, and laboratory facilities. By this distinctive plan the University hopes to retain much of the intimacy of the small-college atmosphere as the total campus becomes large.

In the early years of the Santa Cruz campus, emphasis will be on developing its undergraduate colleges. By 1975, enrollments are expected to total over 5,350.

By that time the campus will have well-established graduate and professional programs and organized research units. Because of its proximity to the Defense Language Institute at Monterey, active programs in comparative languages and literatures are expected. The natural setting of the campus suggests programs in the conservation of natural resources. The Lick Observatory at Mount Hamilton came under the administration of the Santa Cruz campus on July 1, 1965.

INITIAL TEACHING PROGRAMS:

Undergraduate colleges
Divisions of the Humanities, Social Sciences, and Natural Sciences

PROPOSED PROGRAMS:

Business Administration (perhaps related to Engineering or other technical studies)
Engineering
Landscape Architecture
Natural Resources

PROFESSIONAL EDUCATION

Education for the professions—those public-service occupations that require substantial intellectual or artistic learning of their practitioners—is a traditional task of the University. It is a task that assumes added significance as the state's population grows, and as each of us depends more on the expert knowledge and personal integrity of professionals for a variety of specialized services.

The Master Plan in 1960 recognized the University's sole responsibility among California public institutions for advanced education in a number of professions—including architecture, dentistry, law, medicine, and veterinary medicine—and its shared responsibility for others, including the teaching profession. The Master Plan recommended that the University periodically study the state's needs and resources in professional fields and plan the steps necessary to help avoid critical shortages of professional personnel. The statements that follow are based on studies begun before the Master Plan's formulation and on reports by committees and individuals commissioned since.

In education for the professions, as elsewhere, the University is planning for diversity—for a rich variety of specific programs, curricular emphases, instructional methods, and purposes served. Where two or more campuses have professional curricula in the same field, they are encouraged to experiment with differing approaches, and to coordinate their plans regularly. Variety may prove more difficult to create in some professional fields than in other academic areas, because of the guidance which associations of practitioners seek to give to education in their professions. The University welcomes the advice of such groups but reserves the right of its faculties and of The Regents to shape its educational policy. Moreover, a diversity of programs among the campuses is already being made possible in some fields by the rapid growth of highly specialized subfields within them. In engineering, for example, it now appears probable that new specialties and shifts of demand among existing specialties will continue to appear. On some campuses, cooperative programs building on present strengths may be possible; e.g., professional training for business administration at Davis and Riverside may develop strong ties with programs in agriculture.

Specific Fields

New Schools of Dentistry, Public Health, and Library Service have been established at Los Angeles in recent years. In these fields and in Social Welfare, Forestry, Optometry, and Criminology the University's existing programs and facilities, with expansion when appropriate, should adequately meet the foreseeable needs through 1975. In other professional fields, however, special plans are necessary.

AGRICULTURE. Graduate and advanced undergraduate study and research will receive primary emphasis in education for agriculture at the University of California, but lower division undergraduate instruction will still be offered. Graduate enrollments will expand more rapidly than undergraduate enrollments. The increasingly complex problems of California agriculture will require a gradual increase in the University's research staff. This increase can be expected to meet undergraduate and graduate instructional needs as well, except in fields such as veterinary medicine and forestry, where especially rapid enrollment growth is in prospect.

The School of Veterinary Medicine, located at Davis, currently graduates only between one-third and one-half of the veterinarians annually admitted to practice in the state, and it is seriously limited in the faculties and facilities needed to provide specialized post-graduate instruction for veterinarians. It is essential that major additions be made to the staff, budget, and facilities of this school so that it can make its proper contribution to its profession in the state.

The School of Forestry at Berkeley now serves statewide needs for training and research through its Forest Products Laboratory and four major field stations. The University will consider development of the Fall Creek Tract on the Santa Cruz campus.

A major strength of the University's Division of Agricultural Sciences lies in the cohesive and coordinated character of its statewide teaching, research, and extension programs. Continuing this emphasis, each campus involved will develop its agricultural role in accordance with its specific scientific resources and the agricultural needs of its geographic area.

The Berkeley program will continue to emphasize teaching and research in the basic physical, biological, and social sciences. The Davis campus will remain the University's principal center of teaching and research in agriculture. As broad programs in Letters and Science are developed there, the land requirements of agricultural research must be kept in mind. The new College of Agriculture on the Riverside campus will be encouraged to develop as the principal center for agriculture in southern California. Its strong programs in plant sciences will be supplemented in other specialties as necessary to exploit developments in the basic sciences and to meet the special needs of southern California agriculture. Agricultural programs now offered at Los Angeles will by 1967 be transferred, principally to Riverside, where the necessary land and other resources can be made more fully available in the future.

In the San Joaquin Valley, which contains more than half of the state's irrigated land, the Division of Agricultural Sciences has set up at Fresno a new regional headquarters for its Agricultural Extension Service and is developing several major field stations in cooperation with the agricultural industry. As the San Joaquin Valley becomes increasingly important to the agricultural production of the state, the University will need to respond quickly and fully to this development.

ARCHITECTURE AND PLANNING. There is an immediate need to establish additional facilities in architecture and in city planning to supplement those in the College of Environmental Design on the Berkeley campus. Projections indicate that the enrollment demand in the Department of Architecture at Berkeley will, by 1975, be more than double the capacity of the new architecture building, Wurster Hall, and enrollments in Berkeley's Department of City and Regional Planning also will soon pass the building's capacity.

To relieve these demands in the near future, additional programs in architecture and in city and regional planning must be established within the University.

By 1975, the University must contemplate the further creation of another advanced program in architecture, an additional department of landscape architecture, an organized research program in urban development, and a master's degree program in urban design.

The Davis campus, building on its faculties' experience in landscape horticulture and park administration, may develop new programs concerned with special urban-agricultural problems, with uses of growing materials about the home, and with multiple uses of wild lands.

BUSINESS ADMINISTRATION. Enrollment growth in business administration programs suggests the need to establish new programs in this field at most of the other campuses of the University, and to expand gradually the graduate programs at Berkeley and Los Angeles. The undergraduate program at Los Angeles will be phased out.

Undergraduate programs in business administration, building on the experience of Berkeley and Los Angeles, will emphasize broad foundation courses in business and the liberal arts over narrow vocational specialization. Preparation will be directed to the student's total future career rather than to his first job, and will recognize the requirements of possible graduate study in the field.

Graduate programs at Berkeley and Los Angeles will continue to stress advanced education for business executives, preparation for prospective college and university teachers, and research. New grad-

uate programs developed eventually at other campuses will explore cooperative arrangements with allied disciplines such as agriculture, applied science, the behavioral sciences, economics, education, engineering, public administration, and health administration.

EDUCATION. Programs preparing teachers for the public schools are now offered on the University's campuses at Berkeley, Davis, Los Angeles, Riverside, and Santa Barbara. Under the Master Plan of 1960, teacher education is a function shared by the University and the state colleges. The University will continue its services in this important area, expanding them and developing new facilities as needed. Teacher education in the University will remain a joint responsibility of the academic departments and the campus schools and departments of education. Broad and deep competence in basic academic subjects will be stressed, and wherever possible courses offered by academic departments will be used for teacher education. In addition, to prepare teachers for the requirements of today's schools, internships and other experimental approaches will be encouraged.

The University also is engaged in special instructional programs for principals, superintendents, and other key administrators of schools and junior colleges. The long-neglected area of basic research into the educational process is receiving increased attention on several University campuses. The University will continue its efforts to develop both new leadership and new knowledge for the schools and colleges by such activities, by University Extension offerings designed for professional educators, and by intensive institutes or workshops on its campuses.

ENGINEERING. The demand for well-trained engineers is expected to continue increasing through 1975, with the needs of the State of California growing more rapidly than those of the nation as a whole. Engineers and engineering scientists with graduate training are expected to be in special demand in the future.

However, much more information is needed about this professional field, which is so vitally affected by the rapid changes in modern technology. For this reason, The Regents have undertaken long-range study of needs and programs in engineering education, headed by Regent Donald H. McLaughlin, one-time dean of engineering on the Berkeley campus. The study is being conducted for The Regents by the Engineering Advisory Council of the University, an advisory group of distinguished engineers representing all major segments of California industry, in close cooperation with the engineering deans and faculties of the University's campuses. When The Regents have considered the results of that study, much better plans for engineering education and research in the University should be possible.

The University's colleges of engineering at Berkeley and Los Angeles are nearing their maximum desirable enrollments. Thus immediate attention must be given to the development of engineering education at other campuses. The new College of Engineering at Davis and the School of Engineering at Santa Barbara will help to narrow the deficit of engineers expected in the middle 1960's. However, more facilities will be required by 1970, and each general campus of the University must be expected eventually to have programs in this field.

Coordination of the University's engineering programs will be further strengthened. Beginning undergraduate courses must be made sufficiently comparable to ease transfers among campuses and from junior colleges. Duplication of teaching specialties and research facilities will be kept to a minimum, and intercampus use of faculty members and special equipment will be encouraged. In addition, each campus will seek to develop cooperative engineering research programs with private industry and with academic disciplines allied to engineering.

As complementary programs of engineering education are worked out among the three segments of higher education in California, the University will continue to emphasize preparation of engineers in design, research, development, executive leadership, and planning and production theory.

HOME ECONOMICS. The University will continue to offer programs in home economics as a traditional part of its responsibility as a land-grant institution. Present and future programs will stress specialized training rooted in the natural and social sciences and will utilize joint faculty appointments with other disciplines wherever possible so as to reduce duplication of courses and staff specialties.

New graduate programs will be developed only in relevant specialized fields which are appropriate to University education. The Davis and Santa Barbara campuses will provide professional work in this area.

LAW. Rapid growth in California's facilities for legal education will be necessary. The proportion of lawyers in the state's population has fallen in recent decades, although all available evidence indicates that more, not fewer, lawyers are needed to serve a community as its economy becomes more complex, urban, and industrial. Projections of the need for lawyers reveal that the state's bar must double by 1980. Surveys of attrition and immigration of lawyers indicate that most of the additional lawyers needed must be trained within California. This means that the state's law schools, and especially its public law schools, face the greatest period of growth in their history.

The University's law schools at Berkeley and Los Angeles must be expanded as rapidly as possible to capacities of 1,000 students each. The Hastings College of the Law in San Francisco, affiliated with the University, will expand its facilities and enrollments. The new law school at Davis will admit its first class in 1966. A second school in southern California must be established before 1975, following further studies of enrollment pressures and population trends within the state.

MEDICINE. The need for physicians is growing fast, along with California's population. The University's two Schools of Medicine at San Francisco and Los Angeles now graduate a total of about 172 physicians each year; this total will be expanded to more than 250 per year by 1970. A new medical school now being established on the San Diego campus is expected to admit a class of 32 in 1968. But these plans will not meet the expected needs of the state. Moderate projections of need show a probable additional deficit of 350 physicians per year in California by 1971. Since there is little hope that the state's private medical schools can expand enough to fill this deficit, the University must plan to establish at least two and possibly three more medical schools by that date. Preliminary planning for a new medical school with a probable class size of 100 has been inaugurated on the Davis campus. The University is exploring an affiliation agreement with the California College of Medicine at the County Hospital in east Los Angeles.

Research in the biomedical sciences has made dramatic contributions in recent years and continues to be a basic tool of medical schools in improving the cure and prevention of disease. As they train more medical practitioners, the University's medical faculties must also continue actively to carry out medical research on a broad front and to provide advanced instruction and research experience for graduate students in biomedical fields.

It is also increasingly important for medical faculties to conduct intensive post-M.D. programs for interns and residents in the various clinical specialties, and to help practicing physicians stay abreast of the rapid advances in medical knowledge through refresher courses and seminars. These needs too will grow rather than diminish, and the University must see that they are met.

NURSING. The University's task in nursing education under the California Master Plan is to prepare instructors and leaders for the professions and to encourage the state colleges and junior colleges in developing their undergraduate nursing programs. As programs are established in the state and junior colleges that can meet the needs of the state for staff and public health nurses, the University's undergraduate nursing curricula will be reduced gradually to a few selective exemplary programs. Increasing emphasis will be placed on the development and expansion of graduate and continuing education programs to prepare the faculty and other leaders needed for California and the Western region.

PARAMEDICAL SPECIALTIES. The University's San Francisco Medical Center and Los Angeles Center for Health Sciences offer between them curricula in:

Dental Hygiene	Occupational Therapy
Dental Technology	Orthoptic Technique
Exfoliative Cytology	Physical Therapy
Medical Illustration	Prosthetics
Medical Technology	X-Ray Technique

Both campuses also offer internships in Hospital Administration and courses in Hospital Dietetics, the latter in cooperation with Departments of Nutrition at Berkeley and Los Angeles.

The University anticipates expansion of paramedical curricula at San Francisco and Los Angeles but no immediate creation of such curricula at San Diego. In accordance with the Master Plan agreements, the University will emphasize advanced academic programs for teachers, researchers, and administrators in paramedical specialties. These programs will be integrated with and supervised by the basic scientific and clinical departments of the Schools of Medicine, Dentistry, and Public Health. The need for highly trained technicians can be expected to grow at least as fast as the need for physicians.

INTERNATIONAL STUDIES AND PROGRAMS

As an internationally known center of learning and public service, the University of California has an acknowledged obligation to seek and communicate knowledge about the affairs of men everywhere. The University contributes to and benefits from advances in science, technology, and education in many other nations. The University's stake in the survival of our free society requires that it help to build international understanding with the unique resources at its command.

Thus the University in a broad range of its activities must strive to encourage international perspectives among its students, its faculty members, and the society it serves.

Education in World Affairs

All students at the University of California can benefit from greater exposure to accurate information on foreign countries and on major issues in international relations. The University will encourage its faculties to provide courses in such subjects for increasing numbers of students, including those in professional and scientific fields, who are very likely to work with people of other nations during their professional careers. The social sciences and humanities will be encouraged to increase the international content of many basic courses.

Education Abroad Program

Since 1962–63, a new international dimension has been added to education for undergraduates at the University of California. Eighty students from the University campuses at Berkeley, Davis, Los Angeles, Riverside, and Santa Barbara spent that year in study at the 500-year-old University of Bordeaux in France under the University of California's Education Abroad Program. The program proved so successful that new centers were created the following year at famed George August University in Goettingen, Germany, which has numbered 11 Nobel Prize winners among its faculties, and at the University of Padua, Italy, one of the oldest universities in the Western world. In the third year, centers were created at the University of Madrid and at the bilingual International Christian University near Tokyo, Japan. New centers for smaller groups of students were established on three continents for the academic year 1965–66. Three programs were established in the United Kingdom at the University of Edinburgh, the University of Birmingham, and the University of Sussex at Brighton. A Latin American Center was created at the University of the Andes in Bogota, Colombia, in cooperation with the University's Regional Latin American Center. A new center began its program at the Chinese University of Hong Kong with five undergraduate students and four graduate students, the first graduate students to be included as participants in the Education Abroad Program.

Upper division students from all University campuses are eligible for the program if they have the requisite language skills, grade averages, serious purpose, and personal flexibility to live and study in a foreign culture. During 1965–66, 315 University students are taking part in the program. In the European centers, students are enrolled in an intensive, six-weeks' language course before enrolling

for the balance of the academic year in their universities' regular classes. Besides the lectures and seminars taken by the native students, University participants receive special tutorial sessions from young instructors. While abroad, the California students eat in student cafeterias and live in student residence halls or in private rooms in the nearby communities. Academic programs concentrate mainly on the humanities and social sciences, but opportunities are developing in mathematics and the natural sciences. Courses taken are supervised by University faculty members so that students make normal, or near normal, progress during their study abroad toward a University degree.

The Education Abroad Program is administered for the whole University by the Santa Barbara campus. Students enrolled are provided with inexpensive transportation and housing and are advised by University staff members at the study centers on academic problems, travel, and cultural opportunities. Costs to both the University and the students themselves are kept close to those necessary for study at home.

With enthusiastic support for the program both in California and abroad, the University plans to establish a summer session in Caracas and is currently exploring possibilities of broadening the program to include a center in Chile.

Training for Foreign Service

The University of California will continue to offer a great variety of opportunities for specialization in foreign-area studies and in international relations. However, faced with demands for highly educated specialists in many areas of the world, the University must place its major emphasis on the preparation of scholars and scientists in the basic academic disciplines. The scholar firmly grounded in his field is far better able to understand and interrelate the problems of a foreign area than a narrowly trained area specialist would be. Thus, in recruiting new faculty members, the University will continue to place primary emphasis on competence in a basic discipline, but it will also give strong consideration to special knowledge of important foreign areas. Candidates for the Ph.D. in many fields will be urged to consider dissertation subjects that promise both contributions to their disciplines and growth of knowledge about international affairs.

Special groups with important but nonacademic aims will continue to request foreign-area training assistance from the University. It must continue to respond as it has done in training Peace Corps volunteers at Berkeley, Los Angeles, and Davis. But eagerness to serve must be balanced by regard for a minimal disruption of regular teaching efforts, for adequate financing arrangements, and for careful planning guided by the University from the start. As University Extension develops closer ties with the faculties of the campus academic departments, it can perform a valuable service by using its staff and organization to lift from these faculties' shoulders the nonacademic aspects of such special-service programs and to free them for fuller attention to academic tasks.

Language Study

More than 125 languages or major dialects are taught on campuses of the University, and intensive instruction in 25 languages is available to selected University students through special arrangements with the Defense Language Institute at the Presidio of Monterey. The University will develop language instruction on a complementary basis among its campuses. Intercampus exchanges will help to make all language offerings within the University available to students and faculty members from each campus. Widely used languages such as French, German, Russian, Italian, and Spanish will continue to be offered on all general campuses, and each campus will strive to develop language-learning programs related to its other areas of competence and interest.

Research Concerning Other Nations

The drastic and momentous changes occurring daily in world affairs demonstrate our critical need for more knowledge of other nations and of our relations with them. Only our universities can supply this knowledge on the scale required, and they can do it only if they receive greatly increased support for research on foreign areas and international problems. The University will continue to work with

the private foundations that now make possible many of its international programs. But it also must find ways to help the state and Federal governments see their obligation to support increased research about the rapidly changing world in which we live.

Foreign Students and Scholars

The University of California is greatly enriched by the presence each year on its campuses of more than 3,000 students and hundreds of visiting faculty members and research scholars from foreign countries. These visitors stimulate and sharpen Americans' interest in world affairs and also acquire deeper understandings of the United States in the course of their University work. The University must continue to attract well-qualified faculty scholars from other countries on both visiting and regular appointments, and will encourage its departments to plan regularly for such appointments among their allotted faculty positions. Students from newly emerging countries, carefully selected in cooperation with established interuniversity selection teams, will be welcomed along with those from long-independent nations. Although most will be invited for graduate or advanced undergraduate work, some of these students will require beginning undergraduate study because of few opportunities in their homelands. Many talented foreign students will be expected to make up deficiencies in California junior colleges before transferring to the University, as do California residents. However, to meet special needs, the University will study possible special counseling and course arrangements separate from regular degree programs.

Assistance to Other Nations

Through some fifteen programs located in eleven different countries, University of California faculty members are helping to plan or to strengthen foreign educational institutions, while gaining valuable international experience in their fields. Most such programs are financed almost entirely by foundations or Federal agencies, and involve little or no state money. The University will continue to encourage such assistance when it provides mutual enrichment of research and instructional programs, and when financial support is available. Experience shows, however, that long-term relationships on broad programs are far more valuable than brief and specific consultations, and that more adequate research funds must be provided to allow full use of these programs' opportunities. In addition, ways must be found to minimize the professional sacrifices undergone by University faculty members serving in foreign institutions, so that more talented scholars will be willing to add this experience to their careers.

University Organization for International Programs

Coordinated, complementary diversity is the key to the University's organization of its international programs. Berkeley will build on its strength in the study of such areas as China, Japan, South and Southeast Asia, and the Slavic countries; Los Angeles on its excellent programs of African, Near Eastern and Latin American studies, and its extensive library collections on world affairs. Each new and emerging campus will develop its own areas of strength. Santa Barbara coordinates all University programs of study abroad. Davis will be the chief center for international agricultural programs, whereas Riverside will later emphasize studies of emerging nations with predominantly agrarian economies. Santa Cruz will develop studies relating to the South Pacific peoples. All campuses' libraries, research facilities, and instruction will be open to intercampus use.

Administration of the University's international programs will continue to rely mainly on existing agencies. The University Dean of Research is responsible for over-all coordination of the University's foreign research and instruction projects. A person designated by each Chief Campus Officer gives general guidance to that campus's international programs and is available for intercampus consultations. The University's general policies regarding organized research units and development of new instructional programs apply in the international area. Special advice is available to campus departments and chancellors from the Institute of International Studies at Berkeley and the Institute of International and Foreign Studies at Los Angeles.

In its international assistance programs, however, the University will explore the advantages of administering international assistance programs as a "consortium" of campuses, with a University-wide committee coordinating the various responsibilities for individual projects. By this means it may be possible to lessen the demands which international assistance makes upon the normal programs of individual campuses and to call upon the full range of the University's resources as they are needed. It is hoped also that programs so administered could more easily be allocated special funds to assure that a basic research focus is included. With support from the Ford Foundation, this approach is being tested through the University's broad program of assistance to the University of Chile, as part of the State of California's aid to the Chilean nation and people. This program, like other international assistance efforts undertaken by the University, will be evaluated in light of its contribution to the basic instruction and research programs of the University's campuses.

UNITY AND DIVERSITY

The strength and greatness of the University of California stem from both unity and diversity. It is one great university, but encompasses a rich mosaic of diverse campuses, traditions, and academic disciplines. As it has grown from one campus to many, its forms of operation have changed.

Decentralized Administration

In recent years, with nine major campuses in operation or being intensively planned, the University has undertaken a drastic transformation of its administrative structure. Before 1958, most administrative employees on the campuses were supervised directly by University officers from the central headquarters located at Berkeley. Since that time, the great bulk of day-to-day operating responsibility and authority has been delegated to the chancellors of the respective campuses, who report directly to the President of the University. The President, as executive head of the University in all its units, is appointed by The Regents and is responsible directly to them. He is assisted by a small central advisory staff of University officers and analysts, who concern themselves with research, planning, and the coordination of the campuses' activities within the policies of The Regents. A few departments with statewide programs (such as University Extension and the Division of Agricultural Sciences) or statewide service functions (such as the University Press) are administered as University-wide units. The President meets monthly with his cabinet (Vice-Presidents, University Deans, the Treasurer of The Regents, and the Secretary of The Regents) and with the President's Council of Chief Campus Officers to discuss and review University affairs of general interest.

In December 1958, there were 1,026 persons employed in University-wide administration. Approximately 70 per cent of these were transferred to the campuses in the process of decentralization, of whom more than three-quarters came from the University-wide offices of architects and engineers, accounting and purchasing. By December 1960, the total number of University-wide administrative persons had dropped to 306. Four years later, in October 1964, although this number had increased to 405, the proportion of University-wide administrative employees to the total administrative employees on the campuses had declined slightly.

The percentage of University expenditures which represents all General Administration also continues to decrease, despite the addition of research and planning functions, new-campus development, and regular coordinative meetings among campus representatives. These expenditures, representing in the current year only 2.55 per cent of the total University budget (excluding atomic energy projects), continue to compare quite favorably with those of other major public universities in the nation.

Academic affairs also have been concentrated in the campuses, subject to University-wide supervision through the Assembly of the University Academic Senate. Superseding the old northern and southern area divisions are Senates located on each campus which send their elected representatives to the University-wide Assembly. Each campus also has its own Graduate Division, headed by a Dean responsible to the Chancellor.

By steps such as these the University is seeking that delicate balance in its affairs which will best contribute to orderly progress while bolstering the freedoms of its campuses, scholars, and students to develop individually. Experience shows that there is much to be gained from both unity and diversity in the University enterprise.

Unity

The unity of the University is one of its principal assets. In appointing new faculty members, in negotiating research contracts, or in purchasing goods and services its campus staffs speak as members of the total University, backed by its strength, stability, and good faith. Expert, University-wide staffs in research, planning, budgeting, and other areas help each campus to foresee and meet its own needs—especially important in this period of rapid growth. The new and emerging campuses just starting their growth are enabled to build on the University's experience and its tradition of quality. As they build, they already are receiving specific assistance from other campuses in the use of libraries and research laboratories, temporary services of experienced faculty, and models of established policies and procedures. The staffs of all campuses learn from comparisons among their differing academic and administrative traditions.

Pressures on academic schools and departments to proliferate programs are reduced by the complementary specialization among University units. In some fields, intercampus and interdisciplinary groups of scholars enrich the cooperation and communication so important to modern research. Uniform policies of appointment, promotion, compensation, tenure, and academic freedom assure all University faculty members of equitable standards and of the personal financial security necessary for imaginative teaching and research.

Students at each University campus may use the libraries, the health services, the career placement services, and the athletic, recreational, and cultural facilities of all campuses, under regulations applicable locally.

Finally, the coherence of University policy assures Californians that the concerns of the state as a whole are being considered along with the needs of local communities. The coordination among its programs allows a maximum of economy and efficiency in the University's activities. And as all campuses share the same standards of faculty employment and student admission, there is assurance that newer programs will be created in the tradition of excellence for which the University is internationally known.

Diversity

Diversity is no less important to the University's excellence, however. The faculty of each campus exercises its own particular genius in designing courses, curricula, and research programs, unfettered except by the Academic Senate's informed guidance as to quality. This is in the best tradition of free scholarship.

Each general campus will have programs in most of the traditional fields of knowledge, but they will not simply be carbon copies of each other. Each faculty is encouraged to experiment with new and distinctive methods of organizing, teaching, and examining in its courses. Major differences of emphasis are being planned among new campuses—for example, in the residential college plan of Santa Cruz.

Differences such as these are vital to the University's service to the people of the state. They allow it to provide many different types of educational opportunities, suited to the various needs of California youth. A broader spectrum of intellectual skills and expertise can be developed in the University's faculties, to be called on for advice and help with the state's growing problems. As each campus also develops its own individual character, vision of excellence, and sense of history, its students, faculty, and staff are better able to engage imaginatively in the enterprise of discovering knowledge.

Diversity is important also because of the startling growth of specialized knowledge which prevents even the largest campus from encompassing all significant fields of study. Each University campus will build upon its present strengths for advanced, specialized programs of particular distinction not duplicated elsewhere and will seek to establish new programs especially appropriate to its geographic location, local community needs, and faculty interests. Coordination within the total University makes it possible to avoid excessive duplication among campuses and to offer a full range of University-level subjects.

Mutual Acceptability of Basic Courses Among Campuses

For a variety of reasons, a marked increase must be expected in coming years in the numbers of students transferring among Uni-

versity campuses. Attempts are being made to allow such transfers with a minimum of delay and discontinuity in students' programs.

The College of Letters and Science on each general campus of the University requires that its students complete certain general courses or "breadth requirements" in addition to studying intensively in a major field. These breadth requirements vary slightly among campuses, but all share a common objective: to assure that students have a broad acquaintance with the major fields of knowledge. Usually such requirements are substantially completed in a student's first two college years.

The other schools and colleges of the University (such as the Colleges of Engineering, for example) also require early completion of certain basic courses in preparation for advanced undergraduate study. These, too, are largely similar in content and purpose among comparable units on differing campuses.

University policies hopefully will soon provide that a student completing all or a substantial part of the basic course requirements in a particular college or program on one campus will be viewed as having completed a similar portion of such requirements in the comparable units on other campuses. Students who change their educational objectives must, of course, usually expect some delay while they meet the special requirements of a new field of study.

These policies will become increasingly important as students must be redirected among University campuses because some campuses have reached their maximum enrollments. A redirected student will frequently be able to transfer back to the campus of his original choice after completing the early college years. It must be possible for him to continue his undergraduate degree program without undue loss of time resulting from slightly different basic course requirements. As many more students enter the University in advanced standing from California's public junior colleges and other accredited collegiate institutions, similar coordination of basic requirements will be essential.

Continued, Cooperative Planning

By means such as these, the University is pursuing that balance of internal unity and diversity which will allow it best to fulfill its many functions in harmonious coordination. Each of its campuses will be allowed the greatest flexibility and initiative in developing its own specialized programs, architecture, and locally oriented interests—consistent with the statewide, national, and international responsibilities of the the total University. But its obligations to the youth of the state, to the citizens who contribute so much to its support, and to the imperatives of the worldwide search for knowledge will not be neglected in any major area of endeavor. These obligations will require continued, systematic planning and consultation among all parts of the University, and a continued discourse in good faith between the University and the citizens of California. This Academic Plan of the University of California is one contribution to that discourse.

PLANNING FOR A WORLD OF CHANGE

A plan is a forecast of action. As we know from the history of human forecasts, they are far from perfect. A plan that attempts to look more than a few short steps ahead must surely be changed before all of those steps are taken. As the philosopher Abraham Kaplan has written recently, human planning is not like the program of a computer, requiring only the push of a button to carry it out; it is more like a pregame strategy, after which we must *play* the game.

Our plans fall short, but still we cannot spare ourselves the attempt to plan, even with that knowledge. We know from recent events that the most constant thing in the world of today is change itself. For the University, the task is not only to make its own plans in a way that allows for change. Universities themselves are powerful instruments for change and are affected in turn by the broad shifts in social needs and traditions which they help to create.

Thus the place of the university in society is itself changing in fundamental ways. Once among the most isolated of social institutions, it is being drawn inevitably into a more intense and intimate relation with the society it serves. This is more than a matter of the degree to which new knowledge through research is necessary for economic progress. It is more than a matter of the astonishing numbers of persons who must be educated to higher levels for the occupations and leisure activities of an increasingly automated industrial economy. The university must meet these challenges, and more: It must educate not only the specialist who advances knowledge or provides high expertise, but the generalist who can see the complex interrelations among our specialties, and the fundamental continuities in human activity. It must educate young people to deal with change in their lives not as fearsome uncertainty but as opportunity which they can adapt to their needs. It must continue to nourish that critical independence of mind and spirit that is the essence and the ferment of the good university and the thriving democratic community alike.

Among the most significant effects of recent change is the new greater responsibility of universities for those who provide the specialized services upon which our security, economic abundance, and personal well-being depend. New professional services of many kinds are increasingly demanded today, and the universities are asked to supply them in many cases. Established professions such as law, medicine, and engineering rely more each year on specialized, technical knowledge for their quality; the importance of advanced professional training in the universities is increased concomitantly. As science produces rapid changes in our present knowledge, these professionals can no longer work for a lifetime without refreshing their training through additional university-based study. As society becomes more dependent on such professional services, its stake in their quality also expands, and the university's role in assuring the continued quality of professional skills is augmented.

Meeting these challenges will require more than accustomed ways, comfortable or inexpensive as they may be. The only way to retain the progress of the past, in a free society or a great university, is through the highest uses of trained intelligence, and the commitment of resources to the best plans we are capable of making—in the knowledge that we cannot then rest, but must continue to plan anew. To such endeavor the University of California is pledged.

APPENDIX

TABLE IV: Actual Enrollments, 1961–1964
Estimated Three-Term Enrollments, 1965–1975

TABLE V: Estimated Needs for Faculty, 1964–65 to 1975–76
Based on Three-Term Enrollments

Note: These estimates are included so as to indicate the alterations in plans for University campuses that will be necessary if support for year-round operation is not made available.

TABLE IV

ACTUAL ENROLLMENTS, 1961–1964, AND ESTIMATED THREE-TERM ENROLLMENTS, 1965–1975

University of California

	University	Berkeley	Los Angeles	Santa Barbara	Davis	Riverside	San Francisco	San Diego	Irvine	Santa Cruz	Education Abroad Program
Actual											
1961 Fall	54 265	23 713	18 874	4 130	3 500	1 979	1 913	156	–	–	–
1962 Fall	58 616	25 092	20 189	4 865	4 116	2 173	1 976	205	–	–	–
1963 Fall	64 682	26 756	21 890	5 938	4 956	2 641	2 040	283	–	–	178
1964 Fall	71 267	27 431	23 724	7 879	6 444	3 109	2 120	564	–	–	*
Budgeted**											
1965 Fall	80 660	27 500	26 020	9 887	8 384	3 800	2 219	1 350	1 000	600	
Estimated***											
1970 Fall	103 800	27 500	27 500	12 675	11 575	8 300	2 525	5 125	4 750	3 850	
1975 Fall	125 300	27 500	27 500	15 000	15 000	10 000	2 600	10 050	10 450	7 200	

* Included in campus totals.
** Fall 1965 campus enrollment budget estimates.
*** These estimates assume a quarter system without a summer term on any campus. The estimates were computed on a basis consistent with the official "Estimates of Four-Term Enrollments, June 1964."

TABLE V

ESTIMATED NEEDS FOR FACULTY, 1964–65 TO 1975–76

Based on Three-Term Enrollments*

University of California

	Total University	Berkeley	Los Angeles	Santa Barbara	Davis	Riverside	San Francisco	San Diego	Irvine	Santa Cruz
1964–65 Budget	4 741	1 608	1 505	448	432	249	361	104	21	13
1975–76 Estimated	8 175	1 677	1 932	923	921	604	434	606	638	440

	Total University
Total new faculty needed by 1975 because of enrollment increases	3 434
Replacements needed due to attrition, 1964–65 to 1975–76 (at 4.2% annually)	2 895
Total additional faculty needed by 1975	6 329

* The 1964–65 figures refer to full-time equivalents of regular faculty positions filled or provided for on 9, 10, or 11-month appointments, and include lecturers and teaching associates. The 1975–76 estimates are based on average enrollments over three quarters (fall, winter, spring).