

**The
Academic Plan
of the
University of
California
Santa Cruz**

June 1977

June 27, 1977

UCSC CAMPUS COMMUNITY

Enclosed is a copy of the recently completed UCSC Academic Plan.

This document not only represents a particularly important commitment to the University of California, but, more significantly, it provides the campus with a reappraisal of its founding principles and current academic program, two vital steps in reaching more cohesive judgments in the management of our academic resources. Many issues widely acknowledged to be critical to the future of the campus are discussed, and it is the explicit intent of the campus administration to use this Academic Plan as a basic means of further clarifying and engaging these issues. We thus consider the Plan to be a working document which will be appropriately revised and updated to reflect the emerging campus academic program and changing student and faculty needs.


The Academic Plan represents a considerable effort on the part of many members of our campus community. Students, faculty, and staff have all participated in its development. In particular, Deans, Provosts, and Board Chairs and their staffs have made major contributions through preparing Plan materials for their respective units. Additionally, officers of the Divisional Senate and other faculty and administrators have given us their valuable insights in reviewing the Plan at various stages of its development.

Although the nature of the Plan is of necessity quite formal, the concluding subsection -- Longer-Term Directions -- represents the most personal and important feelings of those of us who are centrally and directly involved in the academic planning and administration of the campus. I have therefore extracted and attached this brief subsection to this letter of transmittal as our personal "introduction" to the Plan.

Special acknowledgement should be given to the following individuals who have worked so untiringly on the development and production of the Academic Plan over the past year:

James Pepper, Faculty Assistant to The Academic Vice Chancellor;
William Becker, Acting Coordinator for Academic Planning;
Robert Jorgensen, Assistant to The Academic Vice Chancellor;
Jean Atcheson, Campus Editor; and staff members Graham Bice,
Stephen Hill, Abby Thomas, and Patricia Zelko

On behalf of the Chancellor and myself, I wish to thank all who participated in the current academic planning process. I look forward to your substantive response and action resulting from this Plan, and the support of the entire academic community in our continuing planning efforts.


Eugene H. Cota-Robles

Attachment

cc: Chancellor Taylor
Chancellor-Designate Sinsheimer

LONGER TERM DIRECTIONS

As so aptly noted in the section on campus aspirations, it is difficult to foresee the future with great accuracy; nonetheless it behooves us to make intelligent and realistic assessments of what is necessary and possible and to act accordingly if the campus is to be effective in shaping its own future. The preceding subsection enumerates a series of recommendations formulated to address the current academic program issues at UC, Santa Cruz. However, these recommendations neither directly engage the larger issues of the deep crisis of higher education at the national level, nor do they specifically discuss strategies for academic planning and administration of the Santa Cruz campus within this environment of educational upheaval.

This omission is deliberate, because such issues are secondary to a more immediate concern: the involvement of all members of the academic community -- faculty, students, staff, and administration -- in insuring the long-term vitality of Santa Cruz.

The University is a university of individuals, and its vitality is always dependent upon their good will and enlightened commitment. In a period of limited or no growth, impinged on at every turn by the external pressures of a rapidly changing society, these resources become the only ones upon which the campus can rely. In this sense, then, each one of us has the power to determine whether Santa Cruz will be an outstanding or an undistinguished institution in the years that lie ahead.

The purpose of this concluding subsection is to raise these more individual and personal considerations and briefly discuss their importance in determining the longer-term direction of the campus.

This Academic Plan draws substantially upon and reinforces the founders' intentions to create at Santa Cruz a collegiate university which provides an unparalleled undergraduate education within a state university system. The Plan contains considerable evidence of major success in meeting this overall objective. However, it is also clear that the unforeseen shifts in enrollments, student body composition, fiscal resources, and the nature of higher education itself have all significantly interfered with the full realization of the academic mission.

The question to be raised is not whether the campus should have been prepared for changing external circumstances, but whether full realization of the initial plans is possible, given that these circumstances now exist. The early planners of Santa Cruz were not only dealing with a more stable planning context in terms of demography and fiscal resources, but with the optimistic mood of higher education in general. They also were conceiving an idealized community, rather than engaging an actual one, beset with the problems of a reality very different from the projections of a decade ago. Given the unpredictability of current and emerging circumstances, we must now recognize that it is our own human resources that are critical in the realization of Santa Cruz.

The importance of responsive and inspired leadership within both administrative and faculty ranks has been discussed in several sections of this Plan. But although leadership is a crucial ingredient, the long-term vitality of the campus requires an equally responsive and inspired faculty; a faculty whose members can both enthusiastically serve student needs and actively pursue scholarship at the frontiers of their respective fields. The spirit of experimentation must persist if the Santa Cruz faculty, attracted by the opportunity for teaching and creative scholarship in a personal and relatively small-scale setting, are to continue to work for the ideals of a truly liberating education. But the faculty must also be ever-mindful and tolerant of the changing composition and interests of their students, and be prepared and willing to respond imaginatively to such changes. The future academic strength of the campus may well turn on our ability to adapt to and direct these forces of change sensitively and creatively.

The vitality of the University will also be greatly influenced by the degree to which it can provide real educational opportunities to an increasingly representative cross-section of able students. Of comparable importance is the extent to which the personnel composition of the University itself represents the society it serves. Nothing short of a genuine and vigorous commitment to the principles of affirmative action can insure that such truly representative composition can be achieved. The campus must therefore renew -- and demonstrate -- its commitment to such principles.

Finally, the true richness of Santa Cruz undoubtedly lies in the diversity of perspectives, styles, and institutional structures which comprise the academic program, and the capacity to restructure or recombine this diversity to bring the greatest benefit to students. But the openness and smallness of Santa Cruz, combined with the uncertainties of slowed growth or steady state, also create a climate for strong partisan and personal advocacy which can lead to unhealthy factionalization among units and/or faculty groups. The campus's long-term vitality will therefore be significantly influenced by our ability as a community to rise above this latent and emerging factionalization and to move beyond potential stalemates which could freeze Santa Cruz into a static and uncreative institution.

With its bright and committed young faculty and student body, UCSC has an unparalleled opportunity to become a leading and influential institution in American higher education. Our success, over the long term, will largely depend on the degree to which we can draw upon our humility, compassion, and humanity in developing, maintaining, and enhancing friendships within our entire campus community and especially those relationships between students and faculty which have always been the heart of the Santa Cruz experience.

A C A D E M I C P L A N

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UCSC ACADEMIC PLAN

JUNE 1977

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PREFACE

A. PURPOSE OF THE ACADEMIC PLAN

The University of California at Santa Cruz (UCSC) is in its twelfth year of operation. During this time, the campus has closely followed its original Academic Plan. Enrollment growth has deviated from initial projections, but growth has been steady and generally within initially planned academic programs. The purpose of this Academic Plan is to describe Santa Cruz in the academic year 1976-77, assess the current state of the academic program, set forth an agenda for the years immediately ahead, and discuss what the campus direction should be in the next decade.

The plan is intended to help the UCSC community (faculty, administration, staff, and students) and the University of California (UC) Systemwide Administration to understand the campus (how it originated and what it has become), to think about its future by establishing general directions, and to come to grips with campus problems in planning, analyzing alternatives, and formulating academic and fiscal objectives. Hopefully, those responsible for the decisions that will shape the future of the Santa Cruz campus will find valuable information in the thoughts, speculations, descriptions, and factual presentations included here.

This process is not intended to develop an immutable "plan", but to build an organizational framework for ongoing planning and decision making. Because it will be modified in response to new contingencies, the plan represents a point in the continuing development of the campus, rather than describing an "end state".

Five basic objectives have guided and will continue to guide the development of the planning process:

1. To inventory a campus that has been interrupted in its growth, in order to determine which programs are unique or outstanding; which programs are incomplete or thin; and which new programs could be supported despite very limited resources.

2. To establish an overview of the campus which will permit the setting of specific campuswide goals and the articulation of a broadly based campus mission. Ultimately, this objective seeks to develop a consensus on broad campus academic goals and priorities within the Universitywide community.
3. To foster and assist in the development of more orderly policies and procedures in specific areas such as leaves and sabbaticals, workload distribution, advising, tenure and age distribution planning, the use of pools of temporary assigned resources to add to flexibility, and so on.
4. To develop, as an integral part of the planning process, campuswide criteria for setting academic priorities and establishing procedures which will enable the campus to make well-informed resource decisions in the future.
5. To continue to develop a well-defined campus planning process that is integrated with current and future Universitywide budget calendars.

B. PLANNING ASSUMPTIONS

Development of this plan has been governed by several broad assumptions about the role of the University of California as a whole and that of the Santa Cruz campus as a component in the UC System. These assumptions relate specifically to the joint University and Santa Cruz campus missions:

1. The University will maintain its mandate to provide instruction, research, and public service as described in the California Master Plan for Higher Education.
2. The University's Academic Plan provides the framework and objectives within which the Santa Cruz campus will continue to function.
3. Undergraduate education is a central concern. Accordingly, the University will:
 - continue to offer admission to all qualified undergraduate students;

- endeavor to improve its ability to provide educational opportunities to a broad segment of academically capable Californians as part of its overall affirmative action efforts;

 - seek to prepare those who graduate from the University to respond intelligently to the unknown questions of the future. The University fully accepts its responsibility to assist students in making informed career choices, but realizes that the best way of equipping students for life beyond the University is through emphasizing the development of basic analytical skills rather than by setting educational objectives from the limited perspective of currently perceived vocational needs.
4. The University will sustain graduate and professional enrollments at planned levels in existing programs while looking for opportunities to reorganize to develop new graduate and professional programs in accordance with standards of excellence, informed student demand, sound educational policy, and available resources.

 5. As the State's principal academic research agency the University will maintain and enrich its programs of basic and applied research with the twin objectives of extending the boundaries of knowledge and serving as a repository of organized information. Faculty in all disciplines will have the responsibility of conducting inquiry at the frontiers of their fields and providing the immediate benefits to students and the general public.

 6. The University will continue to receive and provide support in accommodating to changes in student and societal needs through a wide variety of program emphases and instructional modes while striving to utilize existing resources to the fullest through selective program development, resource reallocation, and extensive flexibility.

 7. The University will receive the capital resources required to meet planned growth and development in both programs and enrollment.

8. In the design and development of its campuses, the University will take into account as an important planning factor their physical, economic, and social impacts on the communities that surround them.

Based on these assumptions about the University of which it is an integral part, the Santa Cruz campus will continue to pursue its unique course of providing a high-quality undergraduate program in a wholly collegiate setting, in addition to maintaining and developing graduate programs of a quality appropriate to the University of California and fostering excellence in scholarship and research. Further, the campus assumes that the University will continue to respect its uniqueness by providing Santa Cruz with the administrative and resource support necessary to realize an outstanding academic program.

C. ORGANIZATION OF THE DOCUMENT

This plan is composed of five sections and a series of appendices. Section I, Introduction, is devoted to a brief description of the original concept of the campus, a review of the first decade of its development, and a general overview of the campus in 1976-77. The Campus Academic Mission is the subject of Section II. This section sets forth the campus's mission and educational philosophy, outlines its aspirations, and identifies the campus's educational responsibilities to students and the State of California. A summary description of the Campus Academic Program is contained in Section III. This description is organized into ten subsections. The first two -- campus Organization, and Characteristics of the Campus Academic Program -- provide a short description of the academic and administrative structure of the campus, and discuss the characteristics of the academic program which give Santa Cruz its unique qualities within the University. The remaining eight subsections -- College Programs, Divisional Programs (Undergraduate and Graduate), Campuswide Programs (Intercollege and Interdivisional), Graduate Division, Organized Research Units, University Extension and Summer Session, and Academic Support Units -- briefly describe each of the major academic administrative units in terms of their specific contribution to the campuswide academic program. Section IV, Assessment of the Academic Program, presents a series of findings and conclusions related to the three primary and interdependent functions of the University-- teaching, research, and service--and the similarly linked issues of resources

and leadership. The final section, Recommendations, is based on the findings and conclusions of the previous section. A three-to-five-year action agenda is set forth for the campus, and longer-term directions are briefly discussed. A series of Appendices follow in Section VI, including summary descriptions of collegiate and divisional programs, a discussion of enrollment projections, and an outline of the academic planning process.

I. INTRODUCTION

The Santa Cruz campus has now been in existence nearly twelve years. To put its development into perspective, the brief account that follows has been divided into three parts: an outline of the conception and foundation of Santa Cruz, a review of its first decade of operation, and an overview of the current academic year (1976-77).

A. THE ORIGINAL CONCEPTION

In October, 1957, The Regents authorized three new campuses of the University of California. One of these was to be situated in "the south central coast" area. This region, comprising the counties of San Mateo, Santa Clara, Santa Cruz, San Benito, and Monterey, had been designated as an appropriate location for a general campus in the Additional Centers report issued earlier in 1957. The Santa Cruz site for the campus was selected in March, 1961, Chancellor McHenry was appointed in July, 1961, and in July, 1962, the Chancellor and his planning staff moved to Santa Cruz.

Academic planning for the new campus led to the approval, in principle, by The Regents in November, 1962, of a Provisional Academic Plan for the Santa Cruz Campus, 1965-1975. This initial plan was developed further during 1963 and 1964. In January, 1965, The Regents approved a somewhat fuller and more precise Academic Plan, University of California, Santa Cruz, 1965-1975. Students were first enrolled in the fall of 1965 when Cowell College opened under the leadership of Provost Page Smith.

From the beginning, Santa Cruz was intended to share the characteristics of the University of California: high standards for admission of students; the same high standards for quality of faculty; and, in its fully developed eventual form, the provision of instruction and research in the arts and sciences, engineering, business, and other professional fields in which the extent of demand warrants duplication on several campuses. However, Santa Cruz was specifically planned to emphasize and achieve distinction in undergraduate education, and was organized around a unique dual structure of academic units -- colleges and divisions -- which provide the curricular

programs offered by the campus. An understanding of this unusual organizational structure is difficult without an awareness of the conceptual base on which the campus was founded. The brief historical description that follows (drawn largely from Quality at Santa Cruz, the 1975 report of the Chancellor's Self-Study Accreditation Commission) highlights the ideas which led to the origin and evolution of the campus structure.

Legend holds that the genesis of the Santa Cruz campus concept occurred in the minds of Clark Kerr and Dean McHenry when they were graduate-student roommates at Stanford in the 1930s and debated their respective undergraduate experiences at Swarthmore and UCLA. Kerr and McHenry went on to distinguished careers in the University of California and had ample opportunity to expand and elaborate a critique of the large American university. They agreed that the weakest aspect of the institution was its failure to provide a truly liberating education for undergraduates. They identified the first cause as sheer size: placing so many thousands of undergraduates under a single administrative structure was bound to engender feelings of anonymity and inhibit meaningful acquaintances between students and faculty. But faculty habits were also to blame. The increasingly narrow specialization of the disciplines led to the neglect of undergraduates in favor of graduate teaching and research, and research was too often judged in quantitative rather than qualitative terms: publish enough or perish. These flaws in large universities were considered to be directly attributable to the conventional departmental scheme of organization.

Thus, the founding of UC Santa Cruz joined opportunity with challenge: to plan a new campus on a scale as large and diverse as Berkeley or UCLA that would restore undergraduate education to a place of honor in the University. The Santa Cruz campus was to be based on a series of undergraduate residential colleges (models of the residential college were to be found in the ancient English foundations of Oxford and Cambridge, and a California version existed in the associated colleges at Claremont); and the colleges were to be firmly established before organized research units, graduate programs, and the other attributes of the modern multiversity would be developed. The concepts which would guide the campus were formulated in phrases that were at best guidelines, at worst slogans. The campus, wrote Kerr, should be organized in such a way that it would "seem small as it grows larger." Above all, McHenry added, it was necessary to break out of the academic lockstep; undergraduates should have

an environment that encouraged self-directed intellectual growth. They should not be regarded as items to be processed along the assembly belt to graduate school.

The organizational manifestation of these concepts was delineated in the initial academic plan for Santa Cruz presented to The Regents in 1963. The Regents were skeptical at first because of cost-consciousness, and McHenry made a commitment that the Santa Cruz collegiate structure would be realized at no greater cost in public funds per student than was being expended at any other campus of the University. Two important organizational principles were contained in this initial plan:

1. A series of relatively small residential colleges would be "the basic units for planning" of the campus; and
2. the campus would be organized without departments. There would be three campuswide disciplinary groupings, the Divisions of Humanities, Natural Sciences, and Social Sciences, to organize more specialized studies than the colleges could offer.

The initial planning did not call for clear delineation of what pattern of faculty interaction and student-faculty relationships would replace the departments, other than propinquity within the colleges.

From the first planning year (1961-62) there was emphasis on four major concepts: (1) the colleges as basic units of planning and of student and faculty identifications; (2) initial concentration on undergraduate liberal arts education; (3) the residential nature of the campus; and (4) attainment of early distinction in the arts and sciences. The intention was to avoid narrowness and fragmentation in the curriculum, which was to be designed to serve student needs rather than cater to specialized faculty interests. The campus was to be organized and operated in such a way as to preserve the sense of smallness and of closeness between students and faculty even as it grew larger. The statement of the goals of undergraduate education set forth in the 1965 Plan gives a strong sense of the founding mission and vision:

- "1. To establish an undergraduate liberal arts program on such a firm basis in the early years that it will not be adversely

affected by the subsequent build-up of graduate work, or subordinated to the concurrent research and creative work of the faculty.

2. To produce undergraduates with the abilities, attitudes, and habits deemed central to a liberal education, including:
 - a. The ability to think in the different ways of the great areas of human knowledge and creative endeavor:
 - (1) the humanities and the arts
 - (2) the social sciences
 - (3) natural sciences and mathematics.
 - b. Competence to speak, read, and write a foreign language.
 - c. Skill to write in English with clarity, precision, and a sense of style.
 - d. Ability to read easily and accurately and the urge to read widely.
 - e. Historical and philosophical perspective.
 - f. Relative expertness in one area of study, as a field of concentration.
3. To reach the student in depth by adding to the usual lectures and classwork such devices as:
 - a. Close instruction in seminars, tutorials, and independent study.
 - b. An intellectual atmosphere and residential setting.
 - c. Full-time commitment by the student to his/her University career."

The implementation of these goals was designed as an important responsibility of the colleges. Within specified campuswide limits, each college was to determine its own approaches to general education for its lower-division students. Some colleges might also choose to provide some common course or other experience for their juniors and seniors. Fields of concentration were to be defined and requirements set on a campuswide basis, and comprehensive examinations would be required to test overall competence in the major.

Even though there was a deliberate avoidance of the usual organization of academic departments (as budgetary units and as the primary agencies for the planning and offering of courses and curricula), there was recognition of a need for campuswide academic units that would cut across college lines. The 1965 Plan

mentioned several reasons for this need:

"Graduate work and research will be important considerations from the beginning; in many fields, distinction is unlikely to be achieved without a critical minimum of colleagues who associate frequently and who have access to appropriate facilities--laboratory, library, and other. Groupings by discipline are also needed to fix the responsibility for determining professional competence of staff, for judging the quality of research work, and for guiding graduate students. Contacts by discipline with colleagues in other institutions, and in learned societies--regional, national, and international--are desirable to place students, to find outlets for creative work, and to secure informed reactions to one's ideas and experiments."

Although most of the attention in the early planning was focused on the colleges and undergraduate education, the importance of graduate and professional education in establishing Santa Cruz's future as a major university was clearly recognized and included in the planning. In June, 1964, The Regents authorized a Graduate Division for Santa Cruz and empowered the campus to offer work leading to the M.A., M.S., and Ph.D. degrees. At the same meeting The Regents formally established Cowell College and empowered it to offer work leading to the B.A. and B.S. degrees.

It is important to note that the original (1962) estimates and plans for enrollment assumed that the campus would start with 500 students in 1965, grow by about 500 per year for four years, then somewhat more rapidly, reaching 7,500 by 1975. The ultimate accommodation of 27,500 students would thus add a campus the size of Berkeley to the University.

B. THE FIRST DECADE

During its first ten years of operation, the campus developed at a very rapid rate and in general accord with the initial academic plan. By 1975-76, the campus had reached an enrollment of 5,910 students with 309 ladder faculty. Eight colleges had been established and six were operating in their own facilities. Facilities for the seventh college (Oakes) were under construction. Funding authorization for facilities for College Eight had been sought but not obtained, and the College was operating in temporary quarters in the Social Science Building. The ratio of lower-division to upper-division students changed constantly and significantly during the first decade. Transfer students represented a steadily increasing proportion of enrollments and the 1967-68 ratio of 60/40

lower-division to upper-division enrollments had reversed to 40/60 by 1975-76. Graduate enrollments constituted over 7 percent of the total enrollments by 1970-71, but the proportion then dropped slightly. It is currently slightly under 6 percent.

Development of the disciplines followed a traditional pattern at Santa Cruz during these initial years: The humanities consisted of history, literature, and philosophy; the natural sciences were represented by biology, chemistry, mathematics, and physics; and the social sciences complement was anthropology, economics, politics, psychology, and sociology. This configuration was augmented over the next five years by the addition of art, linguistics, music, religious studies, and theater arts in the humanities; earth sciences and information sciences in the natural sciences; and community studies and environmental studies in the social sciences. For the first time in 1971-72 some of the colleges began to offer majors distinct from the customary disciplinary majors offered in the divisions. Cowell College offered majors in Arts and Crafts and Their History and in Studies in Western Civilization, Stevenson College offered a major in Modern Society and Social Thought, and College Five offered a major in aesthetic studies.

Although the undergraduate program developed with a reasonable balance among the three divisions, the graduate program did not; graduate education in the natural sciences tended to dominate the early development of the campus, with graduate enrollments that were equal to those of the other two divisions combined. By 1974-75, the mix had become even more unbalanced, with well over 60 percent of graduate enrollments in natural sciences programs. The interdisciplinary program in History of Consciousness and the humanities programs--history and literature--each had 13 percent of the enrollments, and the social sciences programs--psychology and education--each had 6 percent.

In addition to instructional programs, Santa Cruz also assumed heightened research capabilities through the establishment of Organized Research Units (ORUs) on campus. Lick Observatory, a Systemwide ORU, was moved to Santa Cruz in 1966, and in 1967 the Center for South Pacific Studies was established as a campus ORU. The intercampus relationship in the Institute for Marine Studies formed the basis for a strong marine science group at Santa Cruz, which would gain recognition as a fully fledged ORU, the Center for Coastal Marine Studies, in 1976.

Chancellor McHenry retired in 1974, following thirteen years of service as Chancellor and nine years of strong leadership for the growing campus. However, his retirement and the appointment of Chancellor Mark Christensen coincided with a dramatic and generally unforeseen drop in the rate of campus growth. Due in large part to a marked change in nationwide demographic trends, the initial rapid growth of 500-600 additional students per year had slowed to 400-500 after 1971-72, and the annual enrollment increments projected from 1976-77 through 1982-83 dropped dramatically to the 50-150 range. (Detailed information on historic enrollments is included in Appendix G.)

A major impact of this sudden drop was on resources, which are allocated on the basis of student enrollment, and the corresponding uncertainty about the future development of the academic program produced an environment of great concern on the campus and difficult problems of academic planning and administration. Chancellor Christensen resigned at the end of January, 1976, and was replaced by University Provost and former Systemwide Vice President--Academic Affairs, Angus E. Taylor. Taylor's role as Acting Chancellor and Chancellor was destined to be brief. The search for a new Chancellor began soon after his arrival at Santa Cruz. Dr. Robert L. Sinsheimer will take office as Chancellor September 1, 1977, and Chancellor Taylor will retire.

Thus, after little more than a decade of operation, UC, Santa Cruz found itself facing several distinct issues, each critical to the campus's future. Leadership was in a period of continuing transition, and the prospects for additional enrollments and resources were so significantly reduced that the academic program was truncated in its planned development. Despite these difficulties, however, the 1976 Accreditation Review Team from the Western Association of Schools and Colleges concluded that the campus "with its outstanding faculty, excellent students, and dedicated administration, had established itself as a unique and extraordinary institution." The team's assessment noted that the campus is "not only of great value for its own constituency, but that it also serves as a model and proof that State systems of higher education can encourage and sustain diversity, and provide effective, innovative educational options."

C. CURRENT CAMPUS OVERVIEW: 1976-77

UC, Santa Cruz is unusual among the campuses of the University of California in

a number of respects: the ratio of graduate to undergraduate students is low, and the amount of faculty attention devoted to undergraduate students is accordingly very great. The collegiate structure of undergraduate life and education at Santa Cruz has no counterpart on any other UC campus. (The colleges at San Diego are totally different in conception from those at Santa Cruz). The incidence of the kind of educational activity that does not follow traditional disciplinary lines is extraordinarily high here. In consequence, a full understanding of the UCSC educational structure cannot be quickly or easily conveyed to a person unfamiliar with it. Terms such as "cross-disciplinary" and "interdisciplinary" can be used to describe some of the courses and curricula, but they do not portray adequately the nature of the academic program. These diverse features have been remarkably successful in establishing Santa Cruz as a collegiate university that is unique.

There are eight colleges, with enrollments ranging from 600 to 850 students, approximately half of whom live on campus. Every undergraduate student is a member of a particular college but is not limited to that college for classes or for faculty contacts. The colleges are complemented by three academic divisions, which offer major programs in a full range of traditional disciplines and a considerable number of interdisciplinary areas, administered by units known as boards of studies. In addition, the campus has a Graduate Division with twelve graduate programs enrolling about 350 students. The total 1976-77 fall quarter enrollment of the campus was 6,159 students.

Bachelor of Arts and Bachelor of Science degrees are offered primarily, though not exclusively, within the three academic divisions. Individual majors are also available and so popular with students that they account for a sizable number of majors and degrees. Undergraduate acceptances at graduate schools run better than 80 percent of those who apply, and the campus consistently has a particularly high per-capita number of recipients of the prestigious Danforth and Fulbright awards. Figure for 1976-77 were two Danforth fellowships out of 65 awarded, and four Fulbright grants. Each year, Santa Cruz has been second only to Berkeley within the UC system in numbers of students awarded National Science Foundation fellowships; in 1976-77, the campus had six recipients out of the 500 awarded nationally.

At the graduate level, Master of Arts, Master of Science, Candidate in Philosophy,

and Doctor of Philosophy degrees are offered, all presently within the divisions. Although these programs are still relatively small compared with those of other UC campuses, several have already developed as relatively strong programs.

Three major organized research units are located on the campus. The Lick Observatory and its telescope facilities on nearby Mount Hamilton serve faculty research and graduate study in astronomy and astrophysics, both at Santa Cruz and at other UC campuses. The other formally established units are the Center for South Pacific Studies, and the Center for Coastal Marine Studies, which achieved ORU status in 1976.

The campus has a mainly young and extremely eager faculty with a very important complement of more senior faculty members including a number of highly distinguished scholars. Among the senior faculty and emeriti are ten members of the National Academy of Sciences, eight members of the Academy of Arts and Sciences, and two recipients of the E. Harris Harbison Awards for Gifted Teaching. The general criteria of the University of California are used in making judgments about appointment, retention, and advancement, but all members are recruited with the special nature of Santa Cruz always in mind.

The future growth of undergraduate enrollment at UCSC will be strongly affected by nationwide demographic trends. This growth rate is heavily influenced by changes in composition of the national population; there is a high correlation between the 18-24-year-old population of college age and university enrollment levels. The California 18-24-year-old population, which rose rapidly in the 1960s and early 1970s, is expected to stabilize in the 1980s and then decline somewhat. At Santa Cruz, this trend is hastened by the decreasing proportion of the potential high school population attending UCSC each year. Thus, UCSC can expect enrollment increases of less than 3 percent annually, stabilizing at approximately 6,600 students. (For data on projected enrollments see Appendix G.)

In the area of graduate academic programs, Santa Cruz got off to a rather late start, and no start at all in graduate professional programs. The campus thus finds itself with an uneven development of Ph.D. programs and unpromising future prospects for developing a more complete and better-rounded graduate program. The plan is to maintain graduate enrollment at about 6 percent

of the campus total. Because of the important role of graduate education at Santa Cruz, however, it is recommended that graduate enrollments be increased to represent 10 or more percent of the campus enrollment over a fifteen-year period. (The reasons for this recommendation are discussed in Section IV, Assessment).

A spirit of experimentation from a traditional base has been central to the development of UC, Santa Cruz. As the campus adapts to new situations and needs in higher education that attitude must and will persist, especially if faculty, attracted by the opportunity for close teaching and creative scholarship in a relatively small-scale setting, continue to care about and to work for these ideals.

An expanded description of the current campus configuration and academic program is contained in Section III, Academic Program.

II. ACADEMIC MISSION

A. CAMPUS MISSION

In the broadest sense, the Santa Cruz campus shares in the University of California's responsibility to serve the public through its programs of teaching, research, and public service. At present and for the immediate future, UCSC's main mission is the provision of instruction and research at the undergraduate and graduate academic levels, a mission amplified through the professional activities of faculty members that reach beyond the campus, through the programs of University Extension, and through the University-derived cultural opportunities that enrich the life of the entire Santa Cruz community. The eventual broadening of campus offerings and the inclusion of professional schools will make it possible to widen the range of teaching, research, and public service.

There is no need for lengthy elaborations of the University's explicit educational mission as a place where teachers and students learn together. Little that is original can be said. Yet, because Santa Cruz was formed with the intention of stressing undergraduate education, it is worth devoting a few paragraphs to some ideas on that subject.

For both undergraduate and graduate students, the University is a place where they can cultivate intellectual analytical and creative power and an appetite for knowledge and understanding--not only of facts and techniques, but of ideas and their interrelationships. But how are the purposes of undergraduate programs to be distinguished from the purposes of the graduate academic or professional programs that may build upon them? The distinguishing idea is that of liberal education.

The traditional concept of a liberal education has been that it educates free people in a free society, aiming to achieve a rounded world view through knowledge of the history and cultures of the past as well as the present. Ideally, a liberal education should liberate the mind and make it aware of its power; it should also develop a sense of personal responsibility that includes a willingness to share in the wider concerns of the community. More generally, by enabling people to orient their lives through adequate knowledge, shared moral values, and sympathetic understanding of others, such an education should produce effective

citizens, not only of this nation, but of the world.

There can no longer be any hope of designing general education at the undergraduate level in any single curriculum or pattern to accomplish all that is needed to realize this larger purpose. It is unrealistic to expect the consensus required for acceptance of a single common-core curriculum: student interests and needs are too varied. There must be many designs, both large and small, and a great variety of detail in the patterns used. It is of importance, however, that the undergraduate experience be designed to enhance the likelihood that students who attain the bachelor's degree will continue their liberal education in succeeding years.

The fact that undergraduate education should contribute toward the ideal of liberal education does not mean that undergraduate studies are not to have practical value. Some students, upon their arrival as undergraduates or soon thereafter, can confidently select a course of studies leading either toward a chosen occupation or to preparation for graduate or professional school in which they can train for a specific career. (Some of these may even need to be encouraged to include some liberalizing elements in their education.) But many students will remain generalists in outlook and their eventual choice of career will be independent of college or disciplinary curricula.

Still others, while at the University, will shift uncertainly from one career plan to another. For both of these latter groups a desirable pattern of courses would interweave two strands, one devoted to the general aims of liberal education and the other to exploration of possible careers through a choice of courses that would build bridges from the general to the particular, and teach applicable skills without being too narrowly designed.

All undergraduate curricula should be planned so that they make some contributions to the ideal of liberal education just described, and all curricula, even those designed chiefly for liberal education, should offer students the opportunity to engage in studies that cultivate skills with direct occupational relevance and yield insights into possible careers.

In addition, undergraduate education ought to provide opportunities for students to orient themselves culturally, morally, and socially, to undertake self-explor-

ation, to discover and test out their individual creative capacities, and to grow in judgment, tolerance, and wisdom.

At the graduate level the University's mission becomes more focused: to link faculty and students in an intellectual effort, to enlarge the boundaries of knowledge, to create new ideas and visions, and to improve our understanding of those already in existence. At Santa Cruz the mission of graduate education is further expanded to include the training of first-rate teachers dedicated to the goals of liberal education, in addition to the more traditional emphasis on developing research scholars of high quality.

The campus mission also includes the reaffirmation, maintenance, and strengthening of the traditional University commitment to fundamental research and scholarship.

Increasingly, the problems that concern our best thinkers and our social and political institutions are on a global scale, in such critical areas as energy production and expenditure, food production and population growth, the conservation of nonrenewable resources, and the achievement of greater equity between rich and poor nations.

Research in these problem areas is vitally important and demands an interdisciplinary approach. In addition to accepting the validity of such research, institutions of learning must also support and reward those scholars who seek to contribute to the body of human knowledge and understanding in a less traditional vein.

In fulfilling the University's responsibility as the State's principal agency for academic research therefore, the Santa Cruz mission also includes a strong commitment to this aspect of research.

B. ASPIRATIONS

Santa Cruz was founded with high hopes. Some, though not all, of these have been realized. In our twelfth year of operations a great deal has been accomplished, but there is still much to be done. Although it is difficult to foresee the future with great accuracy, intelligent assessments of what is necessary and of

what is possible will make a difference in shaping the campus's future. Our current aspirations include undertaking several important tasks:

1. To develop a cooperative form of campus governance which will establish UCSC as a unique collegiate university where students, staff, and faculty have superior opportunities to work together to realize their aspirations in teaching and learning.
2. To improve the quality of campus academic programs by designing courses and curricula that will (a) bring to the campus a good mix of lower-division, upper-division, and graduate students, (b) be commensurate in resource requirements with the resources that are available, and (c) be distributed between colleges and divisions in ways that enhance the quality of undergraduate liberal education and on-campus student life.
3. To maintain a series of small, high-quality graduate programs. The level of graduate enrollments may have to increase from the present level (just under 6 percent) to 10 percent or more in order to achieve a magnitude that will stimulate the intellectual quality and vitality of the campus for both students and faculty.
4. To further develop the system of colleges and divisions in order to assure the continuance of the distinctive and valuable differences between Santa Cruz and a conventionally organized departmental university.
5. To maintain a reasonable disciplinary balance between the humanities and the natural and social sciences, while continuing adequate support for each division and retaining enough resource flexibility to permit the campus to respond to increased student interest in various fields of study, such as the recent enrollment surges in environmental studies, performing arts, and psychology.
6. To improve library book collections, facilities, and services to keep pace with the needs of students and faculty, especially in those fields in which the campus has established major academic thrusts.
7. To improve the quality of student life on campus:

- a. for undergraduates, by making it more attractive to live on campus and share more fully in college life;
 - b. for graduate students, by involving them more fully in the colleges and by creating an on-campus Graduate Student Center which faculty and students can use as a place to meet and share both social and intellectual concerns;
 - c. for all students, by creating a Campus Center (which would include premises for the Graduate Student Center) with centralized access to all campuswide student services (the offices of Admissions, Campus Activities, EOP, Financial Aid, Housing, and the Career Planning and Placement Center) and with space provided also for the most urgent needs of recognized student campus organizations.
8. To continue to work toward an improved campus community, a sense of shared value and a continued commitment to the principles and goals of affirmative action in the composition of the student body and faculty, and of the staff.

The Santa Cruz campus has been successful in establishing potent undergraduate liberal arts programs and effective graduate and research activities. The University and campus now share the responsibility of building upon these strong foundations in order to meet current campus program requirements while still maintaining academic excellence and continuing to support emerging and changing campus priorities.

C. EDUCATIONAL RESPONSIBILITIES

The assumptions set forth in the Preface identify a series of basic educational responsibilities which are embodied in the UC mission. Some additional responsibilities toward students and the provisions made for their welfare by the State of California are of direct interest and concern to the Santa Cruz campus:

Diversification among the several campuses will continue to be encouraged so that students may have a broad choice of program emphases, social and physical environments, and instructional modes.

The University will provide educational opportunities to an increasingly representative cross-section of able California students as a part of its overall commitment to affirmative action. All University students will be expected to meet the same high standards of academic performance.

The University will continue to assist qualified individuals to enroll, through the provision of financial aid from its own funds and through efforts to develop or expand other sources of financial aid.

The University will respond to the public's desire for increased opportunities for nontraditional students to pursue their educational goals and to take continuing professional training and other kinds of educational courses offered by University Extension.

In the appointment and promotion of both academic and staff personnel, the University will follow a program of affirmative action for minorities and women which is responsive to moral obligations, in compliance with all legal requirements, and consistent with University standards of quality.

The extent to which California's junior high schools and high schools provide an education that naturally leads a student on to the University is another important consideration in the area of institutional responsibility. UCSC intends to do its part to reach students at relatively youthful ages, encourage them to become aware that a University education is possible for them, and to prepare themselves appropriately for such further education if they wish.

It is also important that the University respect its responsibility to be aware of the educational history of all its students. Lack of knowledge of what our students did before they enrolled and insufficient knowledge of what they do when they leave equally reduce our ability to provide intelligent service and outreach. UCSC is developing institutional research that will offer the campus more specific data about areas in which students can be better served than they currently are.

The implications and directions which derive from these responsibilities are manifested throughout the Santa Cruz academic program and are discussed all through this plan. However, the goals in a few areas of particular institutional responsibility are specifically addressed here.

1. ADMISSIONS

In common with many other university campuses, UCSC has begun to experience a decline in the number of applications for admission. The campus is examining this trend with care and concern. It is important to know whether the trend has special features that relate particularly to Santa Cruz, or if they are mainly of a more general nature, relating to factors that apply to higher education more broadly.

Given the residential nature of the campus, and specifically the social and intellectual advantages of a sustained experience of living in a college, it is vital that we continue to attract freshmen (who comprise approximately 40 percent of the campus's undergraduate residents) in appropriate numbers, within the general framework of the University of California Master Plan.

The decline in freshman applications in the last few years, therefore, has particular meaning for Santa Cruz, and requires some redirection of our energies. Within the freshman priority, it will be important to fix our attention on certain specific groups. One of these is represented by the "traditional" UCSC student, who is self-motivated, creative, and independent, ready for the unusual opportunities available on this campus. Another is the EOP student who, because of the intimacy and human support systems provided here, can be well served by an education at UCSC. Still another is the older or "returning" student, who is seeking a broad liberal arts education after some years spent either in the job market or rearing a family. Yet another, of course, is the deferred or redirected student who might find UCSC an appropriate alternative in making his or her primary choice within the UC system.

In recent years UCSC has found itself increasingly popular with community college graduates and other candidates for advanced standing at the undergraduate level. Despite our need to concentrate on admitting freshman students, the campus has no intention of reducing interest in community college graduates or others who ask for admission above the freshman level. Quite the contrary. They constitute an enriching element in the educational life of the institution, and we have already made adaptations which have increased our capacity to serve these students.

On campus this small, yet with the usual wide University range of program

offerings, it is a constant concern to match the disciplines' varying capacities to absorb students against the numbers of entering students who want to major in them. Such matching becomes even more important in a period of reduced growth or steady state, which additionally complicates the campus's ability to fulfill its admissions responsibilities.

2. FINANCIAL AID

The admissions and financial aid operations must be closely integrated and must function cooperatively in order to minimize redundancy and student confusion. They must also work effectively with other campus units whose activities are associated with theirs. The ultimate aim is to provide for each student a "one stop shopping" opportunity that offers quick and personalized attention to individual problems and needs.

These requirements must necessarily be placed in a larger context. All efforts toward improving service will be affected by a number of variables which beyond immediate or direct control, and to which the campus must be constantly attentive. A key variable is the degree to which the Federal government increases its commitment to support the financial needs of undergraduate students. To give additional backing where it is most needed, the campus must attempt to increase the funds available from both public and private sources.

3. AFFIRMATIVE ACTION

Affirmative action goals and policies for campus personnel are contained in UCSC's Affirmative Action Personnel Program, which is summarized in what follows:

"The University of California, Santa Cruz campus is committed to the principles of affirmative action as set forth in the statement of policy on the subject by the Systemwide Administration. This campus is determined to provide new opportunities for members of groups that have been underrepresented in the University. The University will not engage in discriminatory practices against any person employed or seeking employment because of race, color, religion, marital status, national origin, sex, physical and mental handicap, or, within the limits imposed by law or University regulations, because of age or citizenship. Positive efforts to further written affirmative action personnel programs must be vigorously pursued, must conform to all current legal requirements, must be consistent with University standards of quality and excellence, and must be specific in identifying areas of underutilization and substantial disparity and in prescribing corrective measures."

The Student Affirmative Action Program seeks to improve access to admission, and to be helpful with the academic development, retention, and graduate or professional placement of the low-income, nontraditional student, including minority group individuals, women, and the physically disabled.

For affirmative action to work effectively, it must be made part of the daily operational functioning of the campus. Every administrative official and supervisor must come to feel a personal responsibility for carrying out the plan. There must, in other words, be nothing singular or separate about affirmative action.

4. EDUCATIONAL OPPORTUNITY PROGRAM (EOP)

The Educational Opportunity Program, established in recognition of the growing need for representation of minority and low-income students in higher education, actively assists in identifying and arranging admission of such students to UC, Santa Cruz. To meet their educational needs, EOP offers a comprehensive program of support services which includes personal, academic, career, and graduate school counseling as well as tutorial assistance. An intensive summer academic program is provided to help in orienting EOP students who will be entering UCSC for the first time the following fall. EOP also maintains close liaison with the Office of Financial Aid to assist with the various financial aid concerns and policies that directly affect EOP students.

5. STUDENT AFFAIRS

The Student Affairs enterprise includes ten units, serving a broad range of student needs. Virtually no category of "nonacademic" life at UCSC escapes attention by the Student Affairs Office; indeed, the office has at least an indirect effect on all aspects of campus life.

Essentially, the Student Affairs mission is to support, enrich, and enlarge the educational experience at UCSC. By "support" is meant the establishment of basic routines upon which students can count, routines which free them to concentrate on their primary and personal goals. The Financial Aid, Registration, and Health Services units are exemplary in that regard. By "enrich" is meant the provision of activities that complement and blend well with the academic work that is done here. The offerings of Arts and Lectures and

Physical Education and Recreation typify how rich and integrated the life at UCSC can be for students.

By "enlarge" is meant the development of opportunities for students to become better acquainted with themselves as individuals, in relation to their peers, and especially in relation to the community around them and the future of the society. The Counseling Service is of importance here, as is the Student Activities Office, and perhaps especially the Office of Career Planning and Placement. Each of these--and indeed all the Student Affairs units--is committed to service of the highest quality, in full collaboration with the colleges and self-initiated student organizations.

The topic of student affairs is discussed in three areas of service: counseling, career planning, and housing.

a. Counseling Services

The Counseling Services are both centrally located and college-based, and they offer a wide range of psychological services including counseling in the individual, group, peer, and minority areas. The staff includes clinical and counseling psychologists, and its members maintain a close working relationship with the Psychiatry Service and with the Student Health Center. Counselors, whether housed in the Counseling Center or in one of the colleges, are available to students from any college. They consult with informal groups, associations, committees, and other college community organizations, and with faculty and staff members regarding their concerns for individual students. The counselors also concern themselves with broader questions regarding college or university life. Information gathered in the course of counseling is confidential and is released only with the student's consent.

b. Career Planning and Placement

The Career Planning and Placement Center offers a variety of services to assist students in making choices about what they will do after graduation from UCSC. Counselors meet with students to "map out" a future career that fits their needs, desires, talents, and skills. The Career Planning Library offers written information, cassette tapes and video tapes on careers, on job-hunting techniques, and on graduate and professional schools.

During the academic year, group seminars are scheduled at college sites on the subject areas that are of greatest concern to students. In addition, recruiters and representatives from employers and graduate and professional schools visit the campus, to describe their work and to interview for specific positions.

c. Housing Services

Housing Services at Santa Cruz are divided organizationally into two distinct functions. The first is the centrally located Housing Office, which is a business service that provides direct administrative services and overall financial control for all the college residences and the Married Student Apartments. It also offers an off-campus housing service, which assists students in finding suitable housing in the Santa Cruz area, works to improve landlord/tenant relationships, and provides opportunities for student tenants to become fully informed and independent consumers.

The second aspect of Housing Services is the provision of college-based residential programs, which are under the supervision of the business officer in each college. The range of these activities is wide, and includes development of resident adviser programs; provision of funds to support student cultural and recreational activities and small discretionary budgets for resident faculty members; and assistance in the creation of special opportunities such as a foreign-language-speaking house or houses oriented toward a specific academic discipline. The colleges also make room assignments, and select and train their resident assistance (RA) staffs.

III. ACADEMIC PROGRAM

A. CAMPUS ORGANIZATION

The principal campus administration agencies responsible for the academic program are the eight colleges (each headed by a provost), the three disciplinary divisions: Humanities, Natural Sciences, Social Sciences (each headed by a dean), and the Graduate Division (also headed by a dean). Within each division there are boards of studies in the various disciplines (each headed by a chairperson, or chair). There are also some committees (e.g., Classics, Education, Language Instruction, Psychobiology) which are like boards of studies but are less formal, and organized for specific curricular reasons, usually of an interdisciplinary nature. A committee may be but is not necessarily a nascent board of studies. Administrative supervision of graduate admissions and graduate instruction is the responsibility of the Graduate Division, but the various graduate degree programs are conducted by the specific boards of studies. Undergraduate courses and curricula are conducted by boards of studies, colleges, and committees.

The principal officers of the central administration are the Chancellor, three vice chancellors (The Academic Vice Chancellor, the Vice Chancellor--Business and Finance, and the Vice Chancellor--Student Affairs), the Dean of the Graduate Division and the three deans of disciplinary divisions, and the University Librarian. There are also three assistant chancellors: for Planning and Analysis (which includes the Budget Office), for Public Affairs, and for University Relations. The latter two assistant chancellors work very closely together and divide between them responsibilities for relations with the media, with the local community, and with officers of government; campus publications; alumni affairs; gifts and endowment; and the UC, Santa Cruz Foundation.

The vice chancellors, assistant chancellors, and deans of disciplinary divisions report to the Chancellor. The Dean of the Graduate Division and the University Librarian report to The Academic Vice Chancellor. The eight college provosts report to the Chancellor. Although each provost is the administrator of a college rather than being a member of the central administration, the provosts as a group form part of the central administration. The provosts meet together as a council at regular intervals. One of their number is chosen as convenor of the council

and thereby assumes a role in central administrative concerns.

The Chancellor meets regularly with the Council of Principal Administrative Officers (CPAO), which consists of the three vice chancellors, the four deans, the eight provosts, and the University Librarian. Regular meetings are also held with the Chancellor's Immediate Staff Council (CISC), which is composed of the three vice chancellors, the three assistant chancellors, and the Assistant to the Chancellor.

The Academic Vice Chancellor is the number-two officer of the campus. The Chancellor has assigned to The Academic Vice Chancellor responsibility for developing and administering the budget for instruction and research and he also has the chief administrative responsibility for the details of academic planning. Thus, although the provosts and the deans of the three divisions report to the Chancellor, they work very closely with The Academic Vice Chancellor on academic administration. The Academic Vice Chancellor also has the title "Director of Affirmative Action." There is an Affirmative Action Office, headed by a coordinator who reports to the director.

The University of California has a strong tradition of extensive participation in University governance by the faculty through the agency of the Academic Senate. The composition of the Academic Senate and the powers and duties assigned to it by The Regents are stated in the Standing Orders of The Regents, specifically in the following articles: 105.1, 105.2, 101.1 (g), (h), (i), 103.2, 103.10.

The Academic Senate is a Universitywide organization. It conducts its business through divisions on each of the nine campuses and is a Systemwide structure composed of a legislative body (the Assembly of the Academic Senate) and an assortment of standing committees.

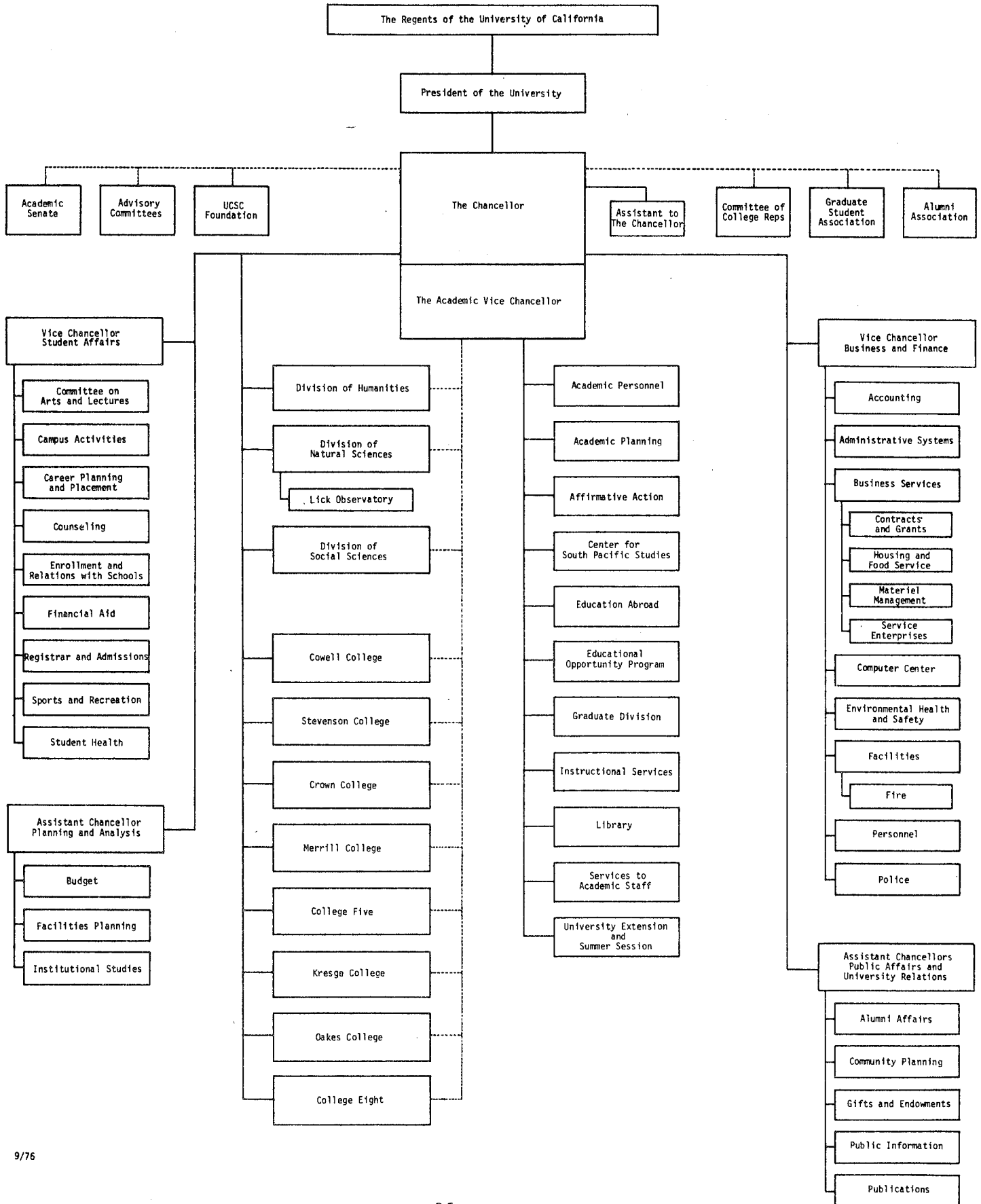
Of the eighteen Academic Senate divisional standing committee on the Santa Cruz campus, five are the most central to the conduct of the academic program.

- (1) Budget and academic Personnel (BAP) makes recommendations to the Chancellor on appointments, promotions, salaries, and other matters relating to faculty.

- (2) Budget and Academic Planning (BAPL) makes recommendations to the Chancellor and to the Division concerning long-range planning for the Santa Cruz campus.
- (3) The Committee on Committees appoints officers of the Division, chairpersons and members of all standing and special committees.
- (4) The Committee on Educational Policy (CEP) approves all undergraduate courses and is concerned with short-range academic planning, quality of academic programs, grading, evaluations, and examinations.
- (5) The Committee on Research approves faculty research grants, travel to scholarly meetings, and faculty and graduate student intercampus research.

The chart illustrated in Figure 1 (page 26) shows the administrative organization of the campus in more detail. This form of organization was first initiated on July 1, 1976.

FIGURE 1 1976-77 ADMINISTRATIVE ORGANIZATION, University of California, Santa Cruz



B. CHARACTERISTICS OF THE ACADEMIC PROGRAM

The Santa Cruz campus represents a bold attempt by a public university to improve the quality of undergraduate education. It is itself an innovation that consists of many innovations. This section describes the distinctive features that characterize the campus and contribute to its unique qualities.

Emphasis on Undergraduate Education - - The primary academic program emphasis at the Santa Cruz campus is on undergraduate education. This has been true from the beginning, and it will continue to be so for the foreseeable future. There are a number of graduate programs and more will be added, but all will be small and they will be designed and operated in such a way as to enhance the undergraduate program.

Course Load Innovations - - From the first, Santa Cruz has encouraged new approaches to learning. One basic approach that was adopted was making all courses equal in credit and establishing a normal load of three courses per quarter. This arrangement permits students to concentrate more fully on fewer courses per quarter. For external transfer purposes only, each course value is identified as five quarter units, and by this standard the campus requires the same number of units for graduation as the other UC campuses.

The Narrative Evaluation System -- The campus also operates under a variance from the University grading policy, which was made permanent in spring, 1974 by the Assembly of the Academic Senate. The academic performance of all undergraduate students is described by means of a narrative evaluation rather than by letter grades; satisfactory work is graded "Pass," and unsatisfactory work is designated as "No Record." The written evaluations by instructors vary from terse judgmental statements to lengthy, sometimes glowing prose. Only courses graded "Pass" constitute satisfactory work toward graduation and, in accordance with Academic Senate regulations, all work must be "of a clear passing standard," equivalent to a C grade or better. If work in a course is not completed satisfactorily, the course is dropped from the student's record. The option of requesting a letter grade in addition to the evaluation is open to students in certain nonintroductory courses considered essential for graduate or professional school entrance evaluations. In addition to earning passing grades on all course work, each senior must meet the specific graduation requirements of the

degree-granting unit, including both curricular and special requirements. Special requirements vary among units, although the most common are a comprehensive examination in the major field and/or preparation of a senior thesis. Other special requirements include senior seminar participation or specified percentiles in the Graduate Record Examination.

The Narrative Evaluation System has been a subject of much controversy, both before and since its formal adoption at Santa Cruz. Some of the criticisms voiced are that it is prejudicial to UCSC students' chances for admission to graduate school; that it involves considerable overhead expense, as well as time invested by the faculty who produce the evaluations and the staff who do the processing; that it is out of the norm for students, who sometimes find it hard to adjust to; and that it requires lengthy explanation in the campus's various enrollment and other publications.

On balance, however, UCSC students have reacted positively to the UCSC concept of evaluation without grades. In the survey of 1974 graduates conducted by the Office of Planning and Analysis, for instance, 74 percent of the respondents indicated that grading using a Pass/No Record notation was much more desirable than conventional letter grades and 65 percent that the narrative evaluations they received were "very valuable" to their academic development at UCSC.

In the area of admission to graduate schools, surveys conducted in 1975 and 1976 by three of the colleges, Cowell, Crown, and Merrill, showed that better than 80 percent of the students who applied to graduate or professional schools were accepted.

The Santa Cruz Narrative Evaluation System frees students from the competitiveness and extrinsic motivation of letter grades and grade-point averages. The evaluation provides more and, it is hoped, better-quality feedback to the student as well as a more descriptive form of information to other schools. The comprehensive examination or thesis provides an overall measure of the student's breadth, depth, and mastery of the field or fields selected for the major. Students at Santa Cruz are encouraged to undertake studies that are not included in the standard course offerings of either boards of studies or colleges. At the lower-division level, they may engage in "directed studies," and at the upper-division level, in "independent studies." In either case, each student has a faculty adviser or

sponsor who assists in the design of the learning project.

Interdisciplinary and Individually Designed Majors -- Approximately one-sixth of the undergraduate students major in some form of interdisciplinary study. Some interdisciplinary programs (such as Modern Society and Social Thought, and aesthetic studies) are located within the colleges, although the largest major enrollments are in board-sponsored programs such as community studies and environmental studies. Another large interdisciplinary program, psychobiology, is supervised by a committee composed of faculty from both the natural and social sciences.

Two percent of Santa Cruz undergraduates are presently pursuing individually designed interdisciplinary major programs. These are majors which fall outside a single discipline and generally involve integrating material and experiences from two or more disciplines. Students propose their intended major in writing along with a justification and rationale for the program, the courses to be taken, and whether a comprehensive examination or a thesis will be included (one or the other is mandatory). They must designate three faculty members, at least one of whom is from the student's own college, who have agreed to serve on a committee to supervise the program. A recent sampling of majors that were individually designed: Myth and Consciousness, Play in Culture, Construction of Reality, Creativity and Consciousness, Literature and Nature, and Art and Social Awareness.

Field Studies - - Field studies and extramural studies are offered in all eight colleges and by seventeen of the boards of studies. Both lower-division and upper-division students may engage in these programs, which are conducted off campus. In some cases, the program is designed and supervised by a board of studies to provide actual experience in an aspect of the discipline. For example, the Earth Sciences Board specifies that students do "geologic mapping or topical investigation of specific geologic, paleontologic, or geophysical problems conducted in the field." Other field-study programs consist of campus/community projects in which students participate, and, in some cases, can design their own field experiences. A large program of this nature is the Merrill Field Program, sponsored by Merrill College. To participate in the program a student must have a Merrill faculty supervisor and submit a detailed proposal for the project to the Field Committee for review and approval.

Student-taught Courses - - Junior or senior students also have the option of designing a course and teaching it to other undergraduates, under the supervision of a faculty member. The student teacher receives credit for the design and presentation of the course, and the students who enroll in it receive credit as they would in any other course. A review of the program, which is now well established, reveals generally favorable results and no serious problems. Student-taught courses have been given in a wide range of areas. Some examples: Plant Ecology of the UCSC Campus, The Individual and Science, History and Methods of Classical Horticulture, and Expression and Structure within the Christian Church. A significant number of upper-division undergraduates also participate in the teaching enterprise by serving as peer convenors for discussion section meetings, assistants to TAs, and readers.

Undergraduate Involvement in Research - - The small size of Santa Cruz and the commitment of the faculty to teaching have led to a relatively large number of undergraduates being given the opportunity to do investigative research work, frequently in research laboratories. Most of the undergraduates who carry on such research under faculty direction work in everyday close collaboration with graduate students. This situation appears to have had an extremely positive educational impact on both groups. The graduates welcome energetic co-workers who are eager to learn, and undergraduates, in helping them, have a chance to test themselves on problems that have no "cookbook" answers and to work closely with more experienced researchers.

Such practical work experience seems to be a key step in these undergraduates' maturation, career planning, and potential for attainment. They are given genuine responsibility in a project that everyone around them takes seriously, and they can also find out whether they like actual investigative work. If they respond well, they gain real confidence in their ability to do research. Lastly, if the undergraduates decide that they want to go to graduate or professional school or to work in research, they are aided in obtaining entry because faculty members can give important recommendations that are solidly based on relevant experience.

This aspect of the academic program is attractive to faculty as well, because it helps to overcome the artificial distinction between research and teaching. A real problem, however, is the shortage of faculty to carry on such work at the appropriate level. There is also very little funding available for research

supplies. It is only the presence and involvement of interested graduate students that makes the program as large and as successful as it is.

Another point of contact between graduate and undergraduate education is in classroom teaching by graduate students. At UCSC this involves interested graduate students far beyond the standard TA role; many advanced graduate students have developed their own courses and taught them very successfully under supervision. The fact that such courses tend to be in new areas that have not yet reached the regular curriculum in any university offers undergraduates valuable opportunities to widen their exposure. For their part, the graduates obtain well-documented and evaluated teaching experience which can benefit them in obtaining employment.

Graduate Programs - - The campus's goal in this area is not to develop a comprehensive graduate school, but to offer a selected range of truly outstanding and distinctive programs. The program in astronomy and astrophysics, possibly the best in the country, sets a standard for distinction and excellence; the program in History of Consciousness attracts large numbers of able students who find it fertile ground for intellectual development. It is anticipated that a few more graduate programs will be added, primarily in the social sciences and humanities. In developing proposals for such programs, the intention will be not to duplicate programs that are offered elsewhere, but rather to exploit especially creative concepts, the natural advantages of the Santa Cruz campus, opportunities to complement programs on other campuses, or well-justified manpower needs. All the existing programs are strongly based on research. Astronomy and astrophysics has a very strong link with the Lick Observatory, an Organized Research Unit of Systemwide importance. The marine biology section of biology is associated with the Center for Coastal Marine Studies, which was formally approved last year as an ORU. The History of Consciousness program is unusual in its interdisciplinary approach and in its effort to attract more mature students, i.e., those who have considerable experience, whether practical or academic, beyond the B.A.

Curricular Programs -- An instructive way of describing the campus's curricular program is first to identify the range of intellectual activities which are referred to generically as "the academic program," and then to discuss their distinguishing characteristics. An academic program tends to be equated, in common parlance, with a degree-granting major consisting of a series of formally required courses. This conventional type of program is but one of several program types which

contribute significantly to the richness and distinctiveness of the composite UCSC academic program. In its broadest sense, then, "the academic program" refers to the array of intellectual opportunities which are available on campus, including but not limited to:

- formal disciplinary degree-granting programs;
- formal interdisciplinary degree-granting programs;
- student-developed individual degree-granting programs;
- formal, informal, and individually designed pathways within degree-granting programs;
- formal, informal, and individual clusters of courses (both general and specific) designed to provide or enhance a general or liberal arts education, but which are not part of a degree-granting curriculum; and,
- special programs (field study, research, etc.) which supplement both degree and nondegree-granting curricula.

To identify more clearly those distinguishing characteristics, a typology of the various components of the aggregate campus academic program is presented as Table 1 (page 37). The richness and diversity of these programs encourage and promote self-directed intellectual growth (research, teaching, and learning) for both students and faculty; thus, they represent one of the principal academic strengths of UCSC.

C. COLLEGE PROGRAMS

Many universities have turned the general education function over largely to a few skilled lecturers, assisted by armies of teaching assistants. This method leaves intact the emphasis on graduate and research functions, which serve as giant magnets drawing senior faculty members away from undergraduate teaching. Yet some of the Ivy League institutions have clung tenaciously to the tradition that part of the teaching time of even the most distinguished faculty members should be reserved for undergraduates. At Santa Cruz, the campus founders made the decision to establish such a tradition through the college plan. They thus rejected, at the outset, any notion of having separate undergraduate and graduate faculties, an arrangement that invites a double standard and promotes an unfortunate hierarchy. Their initial task, then, became the recruitment of a teaching staff that would be both interested in undergraduate teaching and capable of doing first-rate graduate and research work.

TABLE 1 TYPOLOGY OF ACADEMIC PROGRAMS AT UCSC

PROGRAM TYPE	DEGREE-GRANTING	HAS FORMALLY DESIGNATED REQUIREMENTS	CURRICULA:		SPONSORING UNIT	EXAMPLES
			FORMALLY ORGANIZED	INDIVIDUALLY DETERMINED		
1. Formally established major	YES	YES	YES	NO	Boards Colleges Committees	History, Biology, Economics Aesthetic Studies, Modern Soc. and Social Thought East Asian Studies
2. Formally recognized individual major/pathway in program	YES (only individual majors)	YES	In some cases	In some cases	Boards Colleges Divisions	Classical Studies, Design American Studies, Dramatic Literature Perception Natural Sciences
3. Formally recognized pathway within degree-granting program	NO	YES (either requirements or guidelines)	YES	NO	Board	Molecular Biology, Dance
4. Informal individual major	YES (only individual majors)	NO	NO	YES	College	Political Economy of Whaling, Folklore
5. General education	NO	NO	NO	YES	College	College core courses, college curricula
6. Special Programs						
a. Field Studies Programs	NO	In some cases	YES	NO	Boards Colleges	Community Studies Field Program Merrill Field Program
b. Internship Programs	NO	NO	N.A.	N.A.	Boards Committees	Environmental Studies Internship Program Education Internship Program
c. Undergraduate laboratory research	NO	NO	N.A.	N.A.	Boards	Biology, Chemistry, Physics

A second reason for the collegiate plan was the hope that it might alleviate the impersonality that often afflicts large, monolithic universities. In too many major institutions the web of acquaintanceship is inadequate both between student and student and between teacher and student. Santa Cruz envisaged a living and learning arrangement that would make contacts close and frequent. An important proviso, however, was that the individual colleges should be small enough for a normally gregarious student to know many, if not most, peers as well as a fair proportion of the faculty of the college.

Mode of growth was a third consideration in adopting the college plan. The necessity of growth was widely accepted; the young people who would populate our colleges in the early years were already born and soon would be college-bound in record numbers. In the past, with few exceptions, American universities generally absorbed enrollment growth by letting each unit grow larger. The result often was schools, colleges, and departments stretched to the breaking point, amid increasing depersonalization. If the size of a college could approximate annual growth, the founders of Santa Cruz reasoned, then a new college each year -- on the average -- would provide the least disruptive way to grow.

In the first eight years of the campus's existence eight such colleges were launched, each with a complement of from 600 to 850 undergraduates, 26 to 44 faculty, and a sprinkling of graduate students. In compliance with the founders' intentions, each had a distinctive academic emphasis, but the same general characteristics of independence from, and interrelationship with, the disciplinary divisions.

The way in which this worked out, in practice, has made for some confusion, both in the definition of what a Santa Cruz college actually is and in the allocation and coordination of educational functions between the boards and the colleges, in the area of planning courses and curricula.

A Santa Cruz college is both an academic unit in the administrative sense and an academic community in an intellectual and social sense. Each college is an association of faculty, students, and staff in which various faculty disciplinary interests are present, with enough variety to provide good intellectual breadth. Its intellectual leadership and governance are always delegated to the provost, although the degree and style of academic leadership actually exerted by individual provosts has been quite varied.

As academic units, the colleges are responsible jointly with the boards for the intellectual quality of their faculty members -- who are also members of the faculty in their individual disciplines -- and their performance in teaching, research, or other creative work, as well as service to the University.

As academic communities, the colleges are deliberately limited in size so that all members can enjoy and profit from knowing and associating with each other -- a stimulus that has paid valuable intellectual dividends in the shape of cross-disciplinary interaction both for faculty and students.

The Santa Cruz colleges are commonly described as liberal arts colleges, but this does not mean that they are comparable to such liberal arts colleges as Pomona, Reed, Swarthmore, or the Colleges of Letters and Science at Berkeley and Los Angeles. Although all the colleges offer courses of instruction, college teaching programs do not necessarily encompass a major for an undergraduate degree, as distinct from the majors offered by the boards, although there are some instances where this is so. Typical majors in such disciplines as chemistry, economics, history, and mathematics are offered within the divisions by the appropriate boards of studies. Colleges are, however, responsible for administering their students' own individually designed majors.

In any given discipline some courses will be sponsored by the colleges and others by the boards, and students at Santa Cruz take courses offered by boards, by their own college, or by other colleges, as appropriate, to meet the requirements of their majors.

Likewise, a faculty member who is a member of a particular college will normally teach both college- and board-sponsored courses. Practices vary from college to college and from individual to individual, but currently (1977) a typical faculty member teaches about one college course and four board courses annually.

Each college, then, contributes a great deal to the education of many of its undergraduate students. It does this in the form of (1) advising, (2) special required courses, (3) various miscellaneous courses, (4) clusters of courses offered by college faculty who share an intellectual interest, (5) specific nondegree programs or courses -- some of these of considerable scale, (6) organized college-approved major programs leading to a B.A. degree in a field administered

by college faculty, (7) individual majors designed by individual students with the help of the college faculty and administration, (8) specific programs sponsored by more than one college or by a college and another academic unit on campus, and (9) special field-study programs arranged and administered through the colleges.

Each college certifies undergraduate degrees for those of its students who fulfill the campus and college degree requirements. The college faculty constitute a committee of the Academic Senate and are delegated powers to establish curricula and sponsor courses. It is also they who recommend the award of the B.A. degree. Courses and programs are primarily those that are offered by the college faculty. Most colleges, in addition to a number of committees, have one or more officers from the faculty who help plan and develop their courses and programs; the most common title is Academic Preceptor. The colleges are additionally charged with a heavy responsibility for academic advising; again, there is considerable variety between the colleges in the way in which such advising is structured.

Some colleges have emphasized separate subdisciplines, as for example, literary studies according to the methods of the "new criticism," political philosophy, marine biology, or economic history. In these instances students are able to plan specialized "pathways" through their major which draw more substantially upon the faculty of their colleges than would ordinarily be the case. Some interdisciplinary groups with shared subject matter (e.g., Chinese studies, human communications) may also be housed in a particular college or in adjoining colleges.

It should be made clear, however, that the offerings of these groups are informal; they do not constitute major programs and are not recognized as bases upon which to organize additional boards of studies. For while the groups formed within or between colleges act as resources for students and centers for stimulation and intellectual interchange among students and faculty, they are not intended to have the permanency of the disciplines. In addition, they generally lack a faculty of sufficient size to be able to maintain a separate program in the face of the depredations caused by sabbaticals, research leaves, faculty transfers, and the like. The formation of these groups does not affect the composition of the boards; rather they constitute an additional resource, utilizing faculty members in different combinations. Faculty subgroups of a given board may be found in only three or four of the eight colleges. Students can thus

select an appropriate college based on academic strengths once they have decided upon their majors.

Most colleges have experienced difficulty in sustaining highly structured programs over a long period of time, due in part to campus leave policy, patterns of absence of faculty members, shortage of qualified faculty in certain fields, and changing faculty interests.

The colleges are also involved in encouraging and stimulating creative scholarship on the part of their faculty members. One piece of evidence indicating that faculty who share membership in a college also share their scholarly interests: Books published since faculty came to Santa Cruz frequently contain acknowledgments of intellectual debts to college colleagues, many of them scholars in other fields of expertise than the authors'. Colleges provide one of the most convenient arenas of team-teaching, enabling faculty members to gain additional perspectives, both in evaluation and instruction. In a number of cases, teaching together has led to writing together. A college can often provide a forum for the discussion of works in progress as well as the presentation of finished scholarship. When colleges work well they stimulate and enrich individual scholarly effort.

The principal characteristics that distinguish a Santa Cruz college include the following:

1. The college provides housing for a substantial number of students and some faculty, and offices and classrooms for many faculty members. Thus, it serves as a home for faculty and students, providing social amenities that facilitate interaction both among students and among faculty, and between students and faculty. The qualities of the college as a home are hard to represent on an organization chart, but they are essential to its nature.
2. The college provides a setting for serious intellectual effort -- teaching and research of the most formal kind, as well as the informal interactions just mentioned. When courses taught within colleges meet the requirements of majors administered by boards of studies, the value of the college as a serious enterprise is enhanced, not diminished. Teaching "within" colleges is not a geographical definition, for it can include courses, particularly

in the natural sciences, individual studies, and other academic exercises that are carried on outside the college boundaries.

3. Colleges house academic programs of varying formality and intensity. College-sponsored courses are of such substance that most are taught by ladder-rank fellows of the college. Some of the permanent academic activities currently offered by colleges are supported by "soft money," which means they are in a constant state of impermanence. This does not preclude colleges from financing experimental programs through foundation grants or sponsoring temporary visitors, such as writers, musicians, or artists-in-residence.
4. The contributions of faculty to the lives of their colleges are not measured solely through their teaching of college-sponsored courses. This sort of involvement is not expected to be uniform, nor is it rigidly prescribed. Rather, each faculty member's contribution is largely based upon individual intellectual interests and skills.
5. Membership by the faculty member in the college is, however, not voluntary. With rare exceptions every faculty member is appointed jointly by a college and a division. The effectiveness of the joint appointment is evaluated periodically through conferences between the individual, the provost of the college, and the dean of the division.
6. As administrative head of the college, each provost represents both the faculty as a whole and its component members. The fact that provosts can negotiate on an equal basis with the divisional deans should ensure equity in the devotion of faculty energies, especially those of junior faculty members, to the common goals of the campus, as well as appropriate recognition and reward for such services.

Descriptions of the specific academic programs of the eight colleges and their contributions to the campus academic program are summarized in Appendix B.

D. DIVISIONAL PROGRAMS: UNDERGRADUATE AND GRADUATE

As was pointed out in the Introduction, the notion of three broad disciplinary groupings into the Divisions of Humanities, Natural Sciences, and Social Sciences

was present in the original Academic Plans for the campus. As the campus developed, faculty groupings within the divisions have emerged as boards of studies. The chairpersons of these boards report to the dean of the respective division, and this latter officer is administratively responsible for the academic affairs of the division and the boards that comprise it. In particular, the deans have major responsibilities for instructional budgets and faculty personnel matters. The divisions, as well as the colleges, are intended to function in ways that insure that UCSC is not essentially a departmentalized university in which boards of studies are virtually the same as traditional academic departments. The deans of the divisions and the provosts of the colleges share a campuswide responsibility to forge the qualities that make this collegiate university unique.

A board of studies resembles an academic department, as the term is used in the traditional university or college organization. However, a Santa Cruz board of studies is not fully equivalent to a traditional academic department. The differences are important and some of them exist by deliberate plan. It was part of the initial conception of the campus that the academic structure would be such as to abridge and contain the autonomy which conventional academic departments typically have and the powerful influence which some of them have wielded in ways that are adverse to the broader interests of their campus.

The original design of the boards of studies made them essentially boards of examiners, based on the Oxford and Cambridge models. In the ancient English universities, "teaching" and "examining" are separate functions. Teaching is the business of the college, and its characteristic form is the tutorial; tutor and pupil become co-conspirators, in order to satisfy the examiners. The examiners form a separate, universitywide body that establishes a syllabus in the subject and sponsors various series of lectures but has no direct teaching relationship with individual students. After one, two, or three years of study, the student then sits for a week or more of comprehensive examinations. (The operation of this English system, with tutorials, probably requires a student/faculty ratio of around 8:1.)

A Santa Cruz board of studies is an academic unit composed of a group of faculty with a common field of intellectual interest. Typically, this is a recognized discipline, such as history, economics, or mathematics, but a few boards are interdisciplinary, as, for example, the Boards of Community Studies, Environmental

Studies, and History of Consciousness. A board is expected to create an academic environment for its members that is more specialized and intensive than the academic environment in a college, where the faculty expertise deliberately has more breadth. A board is also expected to create a larger intellectual community that includes students, especially those with special interests (either as undergraduate majors or as graduate-student candidates for advanced degrees) within the common disciplinary field. Each board is responsible for organizing the courses and curricula appropriate to the degrees offered in the area of its interests; as an academic administrative unit it also bears responsibility for the intellectual quality and professional performance of its members and for the quality of its instructional offerings. (Board responsibility for the quality and performance of each individual faculty member, however, is shared with the college to which that faculty member belongs.) Most boards offer an undergraduate major leading to the baccalaureate degree. Twelve of them offer programs leading to graduate degrees.

The boards also are charged with nurturing and promoting research, professional association, and scholarship within their disciplines or fields of study. Typically, a board has professorial membership ranging from assistant professor to full professor; there may also be lecturers. In most cases, all members of a board will be in the same discipline, but independently pursue different aspects of the field. As noted, several boards have a strong interdisciplinary cast and include faculty from a number of fields.

In the actual situations at Santa Cruz, boards of studies vary widely in the extent to which they succeed in becoming academic communities that are supportive of the disciplinary or other special intellectual interests of their members. The reasons are various. Geographical proximity of the offices of members of the board is the general rule in the natural sciences because the offices are located in science buildings apart from the colleges. But in the humanities and social sciences, the offices of board members are in the colleges, so that a faculty member of one of these boards finds it less natural and convenient to have frequent contacts with board colleagues in other colleges than would be the case were the offices of all board members grouped together. This problem is especially serious in the case of small boards with widely dispersed members.

The balance of this subsection contains summary descriptions of those elements

of the campus academic program which are embodied in the three academic divisions.

1. Humanities Division

There are nine Boards of Studies in the Humanities Division: Art, History, History of Consciousness, Linguistics, Literature, Music, Philosophy, Religious Studies, and Theater Arts. The division also includes the Committee on Language Studies. Nine undergraduate major programs are offered by Humanities Division units: art, art history, history, linguistics, literature, music, philosophy, religious studies, and theater arts. Graduate programs leading to the Doctor of Philosophy degree are offered in history, History of Consciousness, and literature. The division has strong research clusters in nine areas: drawing and painting, sculpture, art history, American history, English literature, American literature, French literature, theater, and dance.

The Humanities Division has several distinguishing characteristics. Close student/faculty interaction is fostered throughout the divisional programs, particularly in the arts. The arts are distinguished by a performance-theory curriculum combination that is quite unique at the undergraduate level. Letters may be generally characterized as presenting a cultural and historical intellectual perspective. A strong undergraduate group in classics is a notable feature of the division. An exceptional language program services the campus as a whole, and provides the foundation for the teaching of literature in the original language.

Double and joint majors represent 12 percent of the declared majors in humanities disciplines; religious studies accounts for a large portion of these majors. Undergraduate major requirements can be summarized in terms of course and graduation requirements. Total course requirements range from eighteen courses in music and seventeen courses in (studio) art to nine courses in history, literature, and philosophy. Graduation requirements include satisfactory completion of a comprehensive examination or senior thesis in art, history, linguistics, literature, music, philosophy, and theater arts, and a senior thesis in religious studies.

Enrollment projections derived from the experience of the past three years indicate that disciplines in the humanities may not show significant growth

over the next five years. The number of majors and degrees awarded has been relatively stable, as has the percentage of total campus student credit hours carried by the humanities. Letters disciplines -- history, language studies, linguistics, literature, philosophy, and religious studies -- are, with the exception of language studies, expected to sustain existing enrollment levels. Language studies are expected to increase in some areas and stabilize in others; firm funding for faculty is a major prerequisite for significant growth. Student demand in the fine arts disciplines -- art, music, and theater arts -- is high, but ability to support growth in these areas has been determined to be dependent on additional faculty and support facilities.

Descriptions of the specific academic programs of boards of studies and committees in the Humanities Division are summarized in Appendix C.

2. Natural Sciences Division

Seven Boards of Studies comprise the Natural Sciences Division: Astronomy and Astrophysics, Biology, Chemistry, Earth Sciences, Information Sciences, Mathematics, and Physics. Undergraduate major programs are offered by all the boards except Astronomy, and graduate programs leading to the Doctor of Philosophy degree are offered by all seven. In addition, the Chemistry, Earth Sciences, Information Sciences, and Physics Boards offer the Master of Science degree, and the Biology Board offers the Master of Arts degree. The division has strong research clusters in fourteen areas: stellar structure and evolution, theoretical astrophysics, observational stellar astronomy, observational galactic and extragalactic astronomy, botany, cell development and molecular biology, marine biology, organic chemistry, photochemistry, biochemistry, active continental margins and island arcs, global analysis (mathematics), high-energy physics, and condensed matter physics.

The Natural Sciences Division has several distinguishing features. Close student/faculty interaction is a characteristic of the division as a whole, and is particularly evident in laboratory research. Undergraduates are encouraged to participate in the primary research of faculty members, in collaboration with graduate or postdoctoral students. Many articles published in refereed journals have been coauthored by undergraduates with faculty. Interdisciplinary and cross-disciplinary groupings have developed in several areas, notably biochemistry and marine sciences.

The Natural Sciences Division also administers two divisional undergraduate programs: natural sciences, and science writing. These programs are described in Appendix C.

Double and joint majors account for 13 percent of declared majors in the division. Two boards have an unusually high percentage of joint and double majors: Chemistry (25 percent), and Information Sciences (21 percent). Undergraduate major requirements can be summarized in terms of course and graduation requirements. Total course requirements range from fourteen in chemistry and eleven to fourteen in earth sciences, depending on the particular pathway, to nine courses in biology and physics. Partial graduation requirements for all six programs include completion of a senior thesis. The comprehensive examination option is available in chemistry, earth sciences, information sciences, and mathematics. A senior essay or report will satisfy graduation requirements in biology and chemistry, as will a score in the 50th percentile or higher on the advanced Graduate Record Examination in biology.

Some growth is anticipated in the Natural Sciences Division over the next five years. Biology has maintained a rapid growth rate, and a continued high demand for biology courses at all levels is expected. Chemistry and earth sciences have grown at a more normal pace which is expected to continue over the next five years. Information sciences, mathematics, and physics have not grown significantly in recent years (with the exception of service courses in mathematics) and will probably remain at current sizes. All disciplines in the natural sciences are faced with an increased number of junior transfers who often have difficulty completing major programs in two years. Until curricular and scheduling adjustments are made, growth may be somewhat curtailed.

Descriptions of the specific academic programs of boards of studies and committees in the Natural Sciences Division are summarized in Appendix C.

3. Social Sciences Division

The Social Sciences Division is composed of seven Boards of Studies: Anthropology, Community Studies, Economics, Environmental Studies, Politics, Psychology, and Sociology; and a Committee on Education. All seven boards offer undergraduate major programs. Graduate programs leading to the Doctor of Philosophy

degree are offered in psychology and sociology. Although it offers no undergraduate major, the Committee on Education offers a curriculum which leads to the teaching credential under the Ryan Act. Faculty in the Social Sciences Division have strong research interest in both theoretical and applied social science. A substantial amount of social science research is publicly oriented. There is also considerable emphasis on international as well domestic issues in faculty research.

There are several important distinguishing characteristics of the Social Sciences Division. Four programs -- community studies, environmental studies, education, and the sociology graduate program -- are directed toward understanding society, social institutions, and social problems in an interdisciplinary context. The more traditional disciplines also offer broadly based programs, generally with social, cultural, political, or historical interests, often focusing upon theory and policy issues. The division also supports several excellent field-study and intern programs within the boards of studies. This commitment to extramural learning and research opportunities is a primary distinguishing feature of the social sciences disciplines at Santa Cruz.

Fifteen percent of social sciences majors take double and joint majors; several boards have a significantly higher percentage of these: Community Studies (32 percent), Economics (24 percent), and Environmental Studies (40 percent). Undergraduate major requirements are best summarized in terms of course and graduation requirements. Total major course requirements range from seven courses in anthropology to twelve in politics. In community studies a six-month field study is also required. Graduation requirements include a comprehensive examination in economics, politics, and sociology; a senior thesis in anthropology, community studies, and environmental studies; and in psychology, either a comprehensive examination or a score greater than the 50th percentile on the advanced Graduate Record Examination.

Only very limited growth is planned in the Social Sciences Division, and will probably be concentrated in the Sociology Board. The Anthropology, Community Studies, Economics, and Politics Boards may experience gradual expansion with the addition of new faculty resources. The excessive faculty workloads in the two most rapidly growing boards, Psychology and Environmental Studies, have led to the development of enrollment controls which will mandate an

enrollment decline next year and then modest growth commensurate with new faculty resources in subsequent years.

Descriptions of the specific academic programs of boards of studies and committees in the Social Sciences Division are summarized in Appendix C.

E. CAMPUSWIDE PROGRAMS: INTERCOLLEGIATE AND INTERDIVISIONAL

A number of academic programs at Santa Cruz are both interdisciplinary and inter-unit in nature. Four such programs are discussed separately here: History of Consciousness, Psychobiology, Area Studies, and Marine Studies. In addition, this subsection includes a discussion of the campuswide physical education and recreation programs.

1. History of Consciousness

As noted, History of Consciousness is an interdisciplinary Board of Studies administered through the Humanities Division, but drawing upon faculty from both the Humanities and Social Sciences Divisions. It offers the Ph.D only. The program is organized into student/faculty study groups which at present include studies in culture and imagination, feminist studies, praxis, theories of mind and world, and studies in political and social theory.

The program is an attempt to overcome the traditional fragmentation of knowledge into the separate academic disciplines. It provides opportunities for intensive study of theory, method, and subject matter of problems that exist at the intersection of disciplines.

2. Psychobiology

Psychobiology is a newly emergent interdivisional discipline whose focus is the biological basis of behavior. The determinants of behavior can be studied at many levels: in evolution, in societies of animals, in the individual, in terms of brain mechanisms, and at the level of the single nerve cell and biochemical molecule. The Committee on Psychobiology supervises an undergraduate major structured to provide an understanding of each of these approaches to such study.

3. Area Studies

Area studies is a collection of programs coordinated by Merrill College, but which have affiliated faculty from many colleges and boards. The programs include: Latin American studies; East Asian studies; South, West, and South-east Asian studies; African studies; and American studies. The Committees on Latin American and East Asian Studies offer undergraduate majors in their respective areas; individual majors can be declared in the other area studies programs. Central to each of these programs is the belief that an understanding of the dynamic forces that shape societies in any geographical location demands knowledge and skills derived from a wide range of disciplines.

4. Marine Studies

The focus of the marine studies program is the description and interpretation of the biological, chemical, and physical processes of the nearshore area. Marine studies combines the interests of an environmental studies research team, a College Eight faculty cluster, and the Center for Coastal Marine Studies. Subprograms include higher marine vertebrate studies, coastal zone processes, and the marine geology of continental margins and island arcs.

5. Physical Education and Recreation

The Office of Physical Education and Recreation (OPER) sees physical activity as providing not only well-known physical benefits but also certain clearly recognized psychological and social advantages. Consequently, it places major emphasis on encouraging students, whatever their skill levels or activity background, to participate in a wide variety of physical activities.

The academic program focuses on instruction in physical education, and is closely related to three other OPER programs: intramural/recreational sports, sports and recreational clubs, and general recreation. The instructional program in physical education is generally geared to beginners and offers structured courses, which carry no academic credit, in more than 30 areas. The intramural/recreational sports program provides scheduled competitive activities for students, faculty, and staff in approximately 25 individual and team sports. Sports and recreational clubs are organized by students who seek more practice and challenge than is provided by the intramural and physical education programs; such clubs also cover a broad range of activities. Apart from organized physical activities, students are strongly encouraged to use the physical education and sports facilities during their free hours

and to participate in campus activities and off-campus events.

The staff of the physical education and recreation program consists of 5.0 permanent faculty FTE and several temporary faculty FTE. The program enrolled an average of 1780 students per quarter in 1975-76 and 1800 students in 1976-77. Program facilities are located at the East Campus Field House and also, to a lesser degree, on the West Campus.

Expanded descriptions of these intercollegiate and interdivisional programs are found in Appendix D.

F. GRADUATE DIVISION

Graduate study on the Santa Cruz campus is coordinated by the Graduate Council, a committee of the Academic Senate, which has several functions. It establishes policy for determining graduate student status and for the administration of graduate programs, recommends fellowship awards, supervises the conduct of examinations, and insures the satisfaction of University requirements by candidates for advanced degrees.

Subject to Graduate Council policy, graduate programs are directed by the appropriate boards of studies. Coordination and record-keeping for matters common to all graduate students, such as filing applications for admission, fellowships, and formal advancement to candidacy, are the responsibilities of the Office of the Graduate Division. The Dean of the Graduate Division is its chief administrative officer.

Graduate programs at UCSC offer work leading to the Doctor of Philosophy degree in the following subject areas:

Astronomy and Astrophysics	History	Mathematics
Biology	History of Consciousness	Physics
Chemistry	Information Sciences	Psychology
Earth Sciences	Literature	Sociology

All these subjects except History of Consciousness also offer a master's degree

en route to the doctorate. Separate Master of Science degree programs are offered in chemistry, earth sciences, information sciences, and physics.

Applications are encouraged from students who are interested in the creative pursuit of graduate work and have well-defined research plans. In addition to research activities, the graduate programs at Santa Cruz contain a strong element of supervised teaching experience, primarily through service as a teaching assistant.

The academic performance of graduate students in both graduate and undergraduate courses is evaluated with a "Pass" or "Fail" notation and a narrative evaluation written by the instructor.

G. LIBRARIES

The University Library, which supports the campus's teaching and research programs, is composed of the Dean E. McHenry Library and the Science Library. The total Library collection consists of some 540,000 volumes, to which are added some 30,000 volumes per year. The catalog, published in computer-composed photo-offset book format and recumulated biennially, provides the principal bibliographical access to the collection. Lending and readers' assistance services are offered not only to students and faculty on the campus, but to members of the Santa Cruz community who depend upon or benefit from the Library's resources.

The University Library at Santa Cruz has the smallest book and journal collection among those of the eight general campuses, even though Santa Cruz does not have the smallest enrollment. Continued growth and development of the collection is essential, as is continued growth in the size of the Library staff in order to provide library services and maintain the collection.

It is recognized that the UCSC Library will be developed in accord with a UC Master Plan for libraries, and that faculty and students at Santa Cruz will continue to be dependent on other parts of the UC library system, especially the collections at Berkeley, for a portion of their needs. The Stanford University Library is also a resource for UCSC. Nevertheless, on-campus library resources must be available here for the most basic and immediate requirements of those involved in campus programs of teaching and research. As part of its academic

planning, therefore, the campus needs to pay careful attention to the library requirements of new academic programs that are under consideration for approval.

Library planning includes planning for housing the collections and making them useful. A very important expansion in physical space (Unit II of the McHenry Library) has recently been completed. There is, however, urgent need for attention and planning in connection with the Science Library, which is housed adjacent to the Thimann Laboratories. The science collections have grown beyond the capacity of the Science Library, and this physical facility is inadequate in a number of ways (e.g., not enough reader stations and no toilet facilities). Studies and conclusions must be made on the future of the Science Library.

H. ORGANIZED RESEARCH UNITS

The Santa Cruz campus currently has three organized research units:

1. LICK OBSERVATORY

Lick Observatory's primary responsibility is to carry out work on the frontiers of astronomical and astrophysical research, and to provide and maintain optical telescope facilities for the astronomers of the UC System. The basic goals are to do first-class pioneering research, to maintain and extend the reputation of UC as an international leader in the field of observational astronomy, and to train outstanding research scientists for tomorrow. With the flowering of space and radio astronomy in the last two decades, Lick's mission has expanded to include particular emphasis on measurements of radio sources, X-ray sources, quasars, pulsars, and all the sources discovered in other wavelength regions, thus bringing the full power of optical telescopes and advanced instrumentation to bear on these problems.

Lick Observatory resources include the telescopes at Mount Hamilton, measuring and reduction equipment in Santa Cruz, and the Lick Observatory Collection in the campus's Science Library. Santa Cruz graduate students make intensive use of them in their training in observational astronomy, and for their thesis work; so do postdoctoral research associates. Though the heaviest use of the Mount Hamilton facilities is by UCSC faculty and graduate and postdoctoral researchers, they are also in considerable use by researchers and faculty from UCB, UCLA, and, to a lesser extent, UCSD.

As Lick endeavors to maintain its standards of excellence in the future, the greatest need is for more telescopes, with high-quality auxiliary instrumentation, at a dark-sky site where seeing conditions are good. A new observing site is being proposed for construction at Junipero Serra Peak in the isolated Santa Lucia Mountains above Big Sur, and a well-equipped 60-inch telescope is required at Mount Hamilton.

2. CENTER FOR SOUTH PACIFIC STUDIES

The principal goals of the Center for South Pacific Studies are to develop sensitivity to and awareness of the South Pacific peoples and territories, and to explore the South Pacific through controlled comparative study with an interdisciplinary approach that involves not only the social sciences (as has been done in the past history of the center), but also the physical and biological sciences, the humanities, and the fine arts.

The "South Pacific" is an operational framework that includes Australia, New Zealand, and the islands of Oceania from New Guinea to Hawaii and eastward to the Easter Islands. The center's policy is sufficiently flexible to allow for reasonable extension of interest areas beyond these, within the general Pacific area.

The center programs currently include: faculty exchange arrangements with a number of leading South Pacific universities; maintenance of two annual visitors-in-residence from the South Pacific who work with UCSC faculty and students while pursuing investigations that are of value to their nation; and invitations to research scholars from the South Pacific to spend a quarter or more at Santa Cruz either teaching or doing research.

3. CENTER FOR COASTAL MARINE STUDIES

The Center for Coastal Marine Studies was approved by The Regents as an ORU in fall 1976, in response to the widely recognized need for more research information in this important area. The study of the complex coastal zone and marine mammal issues requires a multidisciplinary approach, which Santa Cruz is ideally equipped to provide. The center's goals are to encourage imaginative and sustained research by fostering interaction between natural scientists and social scientists, and to provide data on which society can base critical management decisions in the future.

As an ORU, the center provides administrative and technical support for its faculty, staff, and students, and the Coastal Marine Laboratory now under construction will offer additional facilities to aid in these efforts. The center is also responsible for coordinating interaction with other UC marine programs, arranging cooperative programs with other public and private marine stations in the state, and maintaining contact with a variety of groups interested in coastal environment and marine mammal issues at local, state, and federal levels.

4. PROPOSED ORGANIZED RESEARCH UNITS

Currently, no proposals for Organized Research Units from Santa Cruz are pending. In the next five years, however, proposals for ORUs in one or more of the following areas may be forthcoming:

- (1) High-energy physics
- (2) Photochemistry, with relation to physics and biology
- (3) Public policy
- (4) Psychobiology

I. UNIVERSITY EXTENSION AND SUMMER SESSION

This descriptive summary of these programs is supplemented where appropriate by additional materials in Appendix E.

University Extension has three principal goals:

- (i) To assist members of a variety of groups to meet their continuing education needs in the areas of information, understanding, and skills, in order to increase their ability to serve their publics.
- (ii) To enable individuals to continue the process of liberal education, to make progress toward self-understanding, to expand their insight into natural and social phenomena, including those requiring public action, and, in general, to acquire an informed sensibility to the humanistic, cultural, and aesthetic aspects of life.
- (iii) To assist nonmatriculated individuals to move up the educational ladder toward a University degree.

In 1975-76, University Extension had 22,000 enrollments in more than 900 self-supporting programs. The 1968 requirement that University Extension operate without State support has imposed a special burden on Extension as it attempts to meet needs which inevitably involve high cost factors.

The activities of University Extension are offered under the auspices of two divisions:

- (i) The Division of Courses and Special Programs serves four clientele groupings. Education Extension serves personnel in the schools. Its principal components are catalog and in-house, in-service courses; and an "approved credential" program for early childhood, elementary, secondary, and pupil personnel categories. Professional programs serve personnel in business and industry, public agencies, health organizations, law enforcement, and social services. General programming is primarily concerned with interests relating to self-understanding, public affairs, and the humanities. Community Development programming provides training to improve skills and understanding of groups in our society with special needs.

- (ii) The Division of International Programs provides training for personnel in a number of foreign countries, through assignment of staff in the field and also by training selected personnel in the United States.

The Summer Session is intended primarily to aid undergraduates in accelerating their progress toward completion of a degree. Opportunities to engage in field studies, make up program deficiencies, or develop interests not pursued during the regular University quarters are available, and full-time language and dance theater institutes and a marine studies program are also offered.

J. ACADEMIC SUPPORT UNITS

1. INSTRUCTIONAL SERVICES

The Office of Instructional Services supports instruction and research activities on the campus by providing:

- audio-visual services;

- photography;
- graphic arts;
- television, radio, and film service;
- programmed learning materials, teaching apparatus, general-purpose learning laboratories; and,
- other services to facilitate new methods of instruction, study, and communication.

The Instructional Services staff assists individual instructors and campus units in planning facilities, programs, and materials which involve audio-visual communication and individualized learning and teaching.

The unit reports to The Academic Vice Chancellor and is responsible for coordinating its activities with the colleges, academic divisions, and faculty members, as well as other instructional units. Instructional Services also has inventory control of all instructional communication equipment, approves audio-visual systems designs and installations, and performs maintenance, repairs and modification of such equipment, as required.

2. INSTRUCTIONAL USE OF COMPUTERS

Technology in the field of electronic computation is moving so rapidly that new developments in speed, adaptability, and costs are dramatically expanding the computer's potential for use. As this revolution occurs two things become evident:

- (i) A basic knowledge of the computer as a tool should be part of the curriculum for every well-educated student. Providing the opportunity for all interested students to use and understand computers and their potentials should be a campus goal.
- (ii) As computer technology improves and the extent of its application to instruction and research increases, faculty who had not previously considered utilizing a computer will find a knowledge of computing a valuable asset in their University work.

The greatly increased interest in and use of computing at Santa Cruz over the past several years reflects a concomitant awareness among faculty of how computers can be used both for instructional and research purposes. In addition to the disciplinary offering of computer science, computing is widely used on campus as an academic tool, an instructional aid, and a research facilitator. A knowledge of computing also has applications as a liberal art and as a basic skill for future employment. These applications are discussed in Appendix F.

The campus also has considerable need for computing in the administrative area. Close integration of administrative and academic uses of computing is important, to avoid unnecessary duplication of equipment and services and maximize the benefits to the campus.

With the aid of a substantial increment in IUC (instructional use of computing) funds in academic year 1976-77 the campus is attempting a modest increase in services by implementing "open access computing." Under this plan students maintain individual accounts with the Computer Center and may, within reason, do as much computing as they wish. The center has almost enough assured income to cover its expenses (assuming some historical non-IUC patterns of use are maintained) so that rates can be adjusted toward a level at which IUC income will match the amount of computing charged to IUC.

Santa Cruz computing needs center heavily on instructional and research uses, but the campus's funds are inadequate to support the initial cost of the hardware, plus the expenses of its maintenance and operation. The campus must have increased computer support if we are to meet our existing and projected instructional requirements. A campus such as Santa Cruz with an undergraduate instructional focus deserves financial and policy consideration that is based on the students' needs for those services rather than on formulae set up to meet the quite different needs of older, well-established campuses with substantial research and academic computing facilities.

3. SERVICES TO ACADEMIC STAFF

Through a series of centrally administered and individually supervised service units, Services to Academic Staff provides faculty members with secretarial and clerical services to support their instruction and research responsibilities. Faculty request such services through the individual supervisors, who are located in each college. Remote dictating facilities are available

for faculty use. The highest priority is given to instructional and examination-related materials, with manuscripts being prepared as time allows. Services include:

- typing of correspondence;
- typing of instructional, research, and examination materials;
- typing of manuscripts, monographs, and papers;
- provision of secretarial services for chairpersons of boards of studies;
- distribution of telephone messages and faculty mail;
- provision of in-college duplicating services;
- purchase and distribution of office supplies;
- preparation of travel expense vouchers and related forms;
- reservation of audio-visual equipment;
- making travel reservations, typing agendas, and arranging committee meetings and faculty appointments.

IV. ASSESSMENT OF THE ACADEMIC PROGRAM

A. BASIS FOR ASSESSMENT

In order to remain vital, a university campus must maintain a continuous formal and informal assessment of its academic program. For Santa Cruz in particular, which has been subject to an abrupt alteration in circumstances resulting from lowered student enrollment patterns, such a review has even more profound significance. We can only plan effectively for the future on the basis of a searching and candid appraisal of the present. For the past three years, therefore, the Santa Cruz campus has been engaged in an ongoing assessment of the academic program which has benefited from the major self-study required for renewed accreditation by the Western Association of Schools and Colleges as well as the evaluation involved in the preparation of this Academic Plan.

During the period from fall 1974 to 1975 an internal campus commission consisting of faculty, staff, and students appointed by the Chancellor was charged with the preparation of materials for an accreditation review team representing the Western Association of Schools and Colleges (WASC). Although the impetus for the study derived from the accreditation review, the Self-Study Commission explicitly pursued a more active purpose: to clarify the understanding -- by all involved in the Santa Cruz enterprise -- of the institution's articulated goals and realized achievements, and to propose organizational changes which would better enable the campus to achieve its potential.

In March 1976, following the completion of Quality at Santa Cruz, the report of the Self-Study Commission, the WASC accreditation review team, composed of nationally prominent educators, visited the campus. Although the time spent on campus was brief, the team had the opportunity for a thorough review of the self-study report and other subsidiary materials. At the conclusion of the review, the evaluation team recommended reaccreditation and issued an evaluation report which has been very useful in the preparation of this section.

Some excerpts from the report's conclusion provide a useful overview of UCSC'S current situation:

UCSC has established itself as a unique and extraordinary institution. It is not only of great value to its own constituency, but also serves as a model and proof that state systems of higher education can encourage and sustain diversity, and provide options for all. The team has been favorably impressed and most members have carried some new ideas back to their home campuses.

The achievement to date carries with it an obligation: to continue to improve and to make the structure work. This will require clarification and strengthening of the administrative organization so as to bring about effective oversight, coordination, and quality control of the ongoing educational enterprise, as well as the clear definition of goals and the implementation of a systematic planning process.

The planning task will not be easy. UCSC now expects to provide an excellent education for able and motivated undergraduates, largely in the 17-to-24-year-old age range, and largely resident in colleges. It also expects to provide an excellent graduate education for perhaps one-tenth as many Ph.D. candidates as there are undergraduates. There are problems enough in meeting these expectations: truncated growth, managing creative balance between the colleges and the disciplines, finding appropriate graduate opportunities for the "have-not" disciplines. But present trends suggest a major shift in the ages, quality, and prior experience of the undergraduate students which would demand a real redefinition of mission and change in expectations. Reversing this trend, or adjusting to it, will require great academic leadership.

In addition to these general assessments, the fact that the campus has been actively engaged in the preparation of this Academic Plan has required a more detailed and in-depth examination of the academic program. Although changes in campus leadership have delayed completion of the Plan until this year, the activities involved in planning and allocating resources during this interim period have provided important data and valuable insights which are also embodied here. These, then, are the bases for the findings, considerations, and conclusions presented in this section.

B. GENERAL FINDINGS

Primarily concerned with questions of the effective development, management, and administration of the academic program, these findings are derived from the assessment of the organization, curricula, faculty, and resources of the campus.

One of the principal areas of concern in assessing the academic program in 1977 is the question of balance among the academic functions of undergraduate education, graduate education, and research. It is, therefore, important to first review the strategy set forth in the original campus Academic Plan for developing

this balance. The campus's founding academic leadership sought to establish an undergraduate liberal arts program on such a firm basis that it would neither be adversely affected by a subsequent build-up of graduate work, nor subordinated to the concurrent research and other creative work of the faculty. Although graduate work and research were to be important considerations from the beginning, the 1965 Academic Plan noted that distinction in these areas would probably not be attained in many fields until the campus could amass a critical minimum number of faculty colleagues with the opportunity for frequent association and access to appropriate facilities.

This developmental strategy was actively pursued, and is central to an understanding of the current state of the academic program. Further, since this 1977 Plan is being developed under a dramatically different set of assumptions about the prospects for the immediate realization of a desired balance among these three functions, a significantly different and carefully thought-out strategy for the development of a full academic program will be required.

The general findings in this section cover five substantive fields: the linked academic functions of teaching, research, and service, and the supporting areas of resources and administration. This section is organized on that basis, with each of the subject areas being assessed in turn. The recommendations based on these conclusions are covered in detail in the following Section V.

1. UNDERGRADUATE TEACHING

a. TEACHING ORIENTATION

(1) Emphasis on Undergraduate Instruction

A high-quality undergraduate program has been developed and is being maintained in line with the founding vision for the campus. A highly qualified faculty, dedicated to undergraduate instruction, has established a broad complement of academic programs covering an extremely wide range of intellectual pursuits. The campus, centered around its unique cluster of residential colleges, has graduated a large number of eminently well-qualified and successful students. Individualized student programs, often ranging beyond disciplinary boundaries, have been widely encouraged and have included field work and close proximity to and involvement in research. The narrative Pass/No Record student evaluation system has met with overwhelming student approval, although it requires additional

administration for records processing and storage and has met some problems of acceptance by graduate and professional schools.

The very intensity of the emphasis on undergraduate instruction, however, has resulted in diminished curricular coherence, insufficient balance between general education and specific disciplinary knowledge, and some overlap and duplication in the curriculum. This emphasis has also been costly in terms of faculty time, which has had the concomitant effect of de-emphasizing sustained "productive research" and graduate education in many disciplines.

(2) Differentiated Academic Roles of Colleges and Divisions

The planned establishment of the colleges as the principal units of academic identification was diluted by the inevitable introduction of the disciplines. Organized on a campuswide basis, colleges and disciplines have developed in contrary directions, regardless of their administrative form. Administrative practices have developed which rob the relationships between colleges and divisions of that degree of intellectual congeniality they might otherwise, and should display.

(3) Balance Between Disciplinary and General Education

It appears that not all students are being offered an appropriate blend of general education and deep knowledge and understanding in a reasonably definitive field. Colleges have enjoyed only limited success in meeting the general education goals as set forth in earlier academic plans. Curricula of boards of studies have tended to stress, in the aggregate, narrower disciplinary interests.

b. CURRICULUM

(1) Critical Mass of Boards of Studies

There are significant imbalances in the campus's academic program which have resulted from rapid campus development and the anticipation that future growth would ameliorate these imbalances. Twelve of the 23 boards of studies have less than ten permanent faculty FTE. This means that faculty leaves of absence, whether sabbaticals or leaves of other types, and assignments of administrative duties to faculty members have a disproportionate effect on curriculum planning. Curriculum breadth and depth are limited, and minor shifts in student demand can produce major

overburdens in faculty workload. Thus, from time to time, the lack of adequate numbers of faculty in certain program areas produces gaps or thin spots in the campuswide academic program. The need for more faculty, therefore, should remain a central concern in academic planning and resource allocation.

(2) Curricular Coherence

The lack of critical mass in a number of academic programs has led directly to curricular gaps, some of which are minor, others quite serious. Further, since the campus was organized so that the academic program interests of students and faculty could be met through either the board or the college structure, there have been cases of curricular overlap. The proliferation of specialized programs (e.g., area studies programs, adjunct programs, varying pathways within programs, and individual and multiple majors) and the entrepreneurial nature of course offerings have additionally tended to reduce curricular coherence through overspecialization as well as programmatic gaps and overlaps.

(3) Teaching Assistantship Allocations

Matching teaching support needs against available TA resources has been precluded by the small numbers of teaching assistants and the limited range of graduate fields of study offered on campus. A recent analysis of campus TA allocation trends undertaken by the Academic Senate Committee on Budget and Academic Planning indicates that allocations, in fact, are more closely matched to graduate student support than to undergraduate teaching needs. A shift toward increased support of teaching needs would greatly strengthen the campus academic program.

(4) Class Size Distribution

Despite widely expressed fears to the contrary, the distribution of class sizes has in fact remained relatively stable over the past few years. In 1975-76, courses with enrollments of fewer than 12 students comprised 25 percent of the classes; 50 percent of the courses had enrollments between 12 and 30 students; 13 percent of the courses had enrollments between 31 and 60 students; and enrollments of greater than 61 students occurred in only 12 percent of the courses. This distribution provides a mix of class sizes which balances the opportunities for close, personal

student/faculty contact with the economies of a limited number of moderate-to-large lecture classes.

Although the average class size campuswide has increased slightly over the last few years (due principally to a slight increase in the number of larger classes), the average indicates that the objective of close student/faculty contact is being met.

(5) Service Teaching

A number of programs -- in both colleges and boards of studies -- have experienced rather heavy enrollment demands by nonmajor students. There are three main reasons why this is so, and they are related to each other.

The first is that, in the opinion of some units, service teaching reduces the quality of education for their own majors by increasing class size and hence decreasing student/faculty contact. As a result, these units offer few campuswide service courses, and those that are offered are frequently oversubscribed. A second issue is that course enrollments are often split between program majors and students from other programs who either are fulfilling "breadth requirements" or are simply interested in the course. The third is that a number of degree programs specifically require certain courses from other units, especially in the Natural Sciences Division, but also in the other two divisions.

(6) Curricular Information

Given the array of courses and course-offering programs at Santa Cruz, course and curriculum descriptions have often been less than satisfactory and sometimes potentially misleading. There is need for greater accuracy and more timely dissemination in the promulgation of information about programs, courses, and curricula.

C. STUDENT NEEDS

(1) Changing Student Clientele

Today's students are more diverse than those who populated the campus in its first few years, and transfer and older students form a growing proportion of the group. As a whole, the current student body seems to be more career-oriented, and in need of increased structure, clearer

articulation of programmatic pathways, better academic advising -- possibly even a pre-enrollment system.

On the basis of current changes in applications and long-term demographic trends, UCSC's future student body will be greatly different from that for which earlier plans were made. The campus has not yet made a full adjustment in either attitudes or plans to begin the adaptation of the academic program to this altered student clientele. This is particularly the case in the areas of curricular coherence, academic advising, and general support services.

(2) Academic Advising

The academic structure and variety of academic opportunities available at Santa Cruz necessitate effective academic advising. The Narrative Evaluation System, in particular, creates intense advising needs. But although academic advising has always been considered a high campus priority, there is no comprehensive advising policy. Nor are there systemic means for evaluating current advising procedures, which exhibit gaps, overlaps, and lack of clear recognition of the responsibilities of faculty and the needs of students.

Two specific academic advising responsibilities need to be addressed: advising about general education and advising for major programs. The advising needs of certain student groups are not being well met, in particular those of nonresidential students, junior transfers, students with very specific disciplinary interests, students admitted under special action, and ethnic minority students. Greater attention should be paid both to the design of advising procedures and to evaluating their effectiveness.

(3) Skill Development and Remedial Instruction

The campus recognizes and has addressed the issues of student writing skills by establishing a campuswide writing program, with writing tutors in each of the colleges. Other forms of skill development and remedial instruction include self-paced courses, tutorial programs, and individual courses. The need for such instruction far exceeds the ability to provide it, however.

(4) Narrative Evaluation System

The Narrative Evaluation System is one of Santa Cruz's most unique features, and has been accorded a great deal of attention. In spite of its widely acknowledged and appreciated benefits, however, substantive as well as procedural problems inhibit full realization of this individualized approach to the evaluation of student work. Inconsistencies in quality and in timeliness, both of preparation and transmission, mean that some students are denied the advantages to be gained from prompt narrative assessment of their individual performance.

d. TEACHING TECHNIQUES AND METHODS

(1) Innovative Teaching Methods

Both the campus structure and choice of faculty have contributed enormously to the adoption of innovative and collaborative techniques at Santa Cruz. The many opportunities for interdisciplinary teaching, team teaching, and instruction improvement assessment attest to this fact.

(2) Undergraduates as an Instructional Resource

The close relationship between students and faculty and the heavy involvement of undergraduate students in research at Santa Cruz has resulted in a gratifyingly high proportion of highly qualified junior and senior students. These students are at a stage of intellectual and disciplinary maturation which makes them not only assets as students but instructional resources for the campus.

2. GRADUATE EDUCATION

(1) Scale of Graduate Education

The initial campus thrust of giving top priority to the establishment of undergraduate programs of the highest quality has clearly led to a retardation in the growth of graduate and professional education (although some very strong graduate programs have developed, particularly in the natural sciences). Many faculty have expressed concern that undergraduate program vitality and scholarly achievement equally need the stimulus and intellectual support that can only be derived from graduate education.

Graduate students currently comprise slightly less than 6 percent of the

aggregate student population. A larger proportion of graduate students would be beneficial to the campus in terms of providing greater intellectual collegueship among graduate students, increased opportunities for faculty scholarship and research productivity, additional teaching assistance in undergraduate programs, and economies of scale in the administration and delivery of graduate education.

Limiting factors in expansion are the extent of student enrollment in graduate programs and the prospects of employing those who attain doctorates in ways that utilize their degrees. The campus must plan carefully for gradual and selective development of additional graduate programs that are justifiable by their special contributions and students' particular needs for them.

(2) Graduate Program Size and Faculty Resources

A significant number of fields of study in the humanities and social sciences have not yet reached a critical threshold of breadth and depth in faculty resources to make possible the establishment of viable graduate programs. The establishment of new programs will thus require strengthening the faculty disciplinary or subdisciplinary groupings in areas deemed promising for program development.

(3) Innovative Graduate Programs

Santa Cruz presents a unique arena for innovative or nontraditional graduate programs (such as History of Consciousness). This is an opportunity which could be more fully realized.

(4) Professional Education

Although no professional programs currently exist on the campus, the addition of a modest level of professional education could provide an important opportunity for additional intellectual vitality in selected areas. Public Policy presents an opportunity in the applied social sciences, and Applied Geology in the natural sciences.

3. RESEARCH

The campus has attracted an excellent faculty, including a significant number of scholars of national and even international eminence. Although

the faculty's distinction has been widely recognized and its members have garnered many prestigious research awards and fellowships, Santa Cruz does not yet have the breadth and variety of achievement in scholarship and research that are required to realize its educational potential to the fullest. The campus must strive to remove this deficit. As this goal is pursued, there are several facets of the situation that require attention.

(1) Intellectual Support

The relative isolation of UCSC from other intellectual centers requires special efforts to promote the type of faculty interaction with the broader academic community necessary for full realization of the research component of the University's academic mission. The college/board dichotomy complicates the opportunities for faculty scholarship and continuing intellectual growth opportunities for faculty (as exemplified by team-teaching and interdisciplinary clustering) without the strong disciplinary structure that is traditionally supportive of faculty research. The campus as a whole needs to develop a stronger base of intellectual support for faculty scholarship, especially for junior faculty.

(2) Balance Between Research and Teaching

The emphasis on undergraduate teaching is acknowledged to have had a limiting effect on the productivity of faculty research, particularly in small programs or those that do not have a graduate complement. Productive scholarship is essential to the continued support and enhancement of undergraduate teaching, and should not be relegated to a secondary position, despite the campus commitment to excellence in undergraduate teaching.

(3) Impact of Graduate Education on Research

The small scale of graduate education at Santa Cruz has likewise served to reduce the institutional stimulus for faculty scholarship and research. As a consequence, the planning of graduate education should be a central concern in terms of developing faculty research and distributing the intellectual benefits as widely as possible.

(4) Balance Between Research and University Service

In addition to the emphasis on undergraduate teaching, the extraordinary

University service demands required by a young, developing institution have taken a disproportionate toll on faculty scholarship. Given these competing demands, it is of particular importance that there be among the faculty many individuals who serve as strong research role models for younger faculty--and indeed for all faculty. Such role models must set examples by combining first-rate research and scholarship with their teaching and service commitments.

(5) Effect of College Structure

Special efforts are needed to offset the possibility (especially in some of the smaller boards) that faculty members with common disciplinary interests will be isolated from one another because of their dispersal among the colleges. For some faculty, especially younger faculty not yet firmly established in research, such isolation can be a serious handicap.

(6) Research Benefits for Undergraduates

Many undergraduates at Santa Cruz receive a "value added" benefit within their instructional program as a result of their close proximity to and involvement in research (see Academic Program, page 30).

4. SERVICE

(1) University Service

University service in the form of institution-building has occupied an unusually high percentage of faculty time and effort since the arrival of the first contingent of faculty. Examples of unusual dedication and accomplishment abound. There must be adequate recognition and thanks accorded to those who served so well and so unselfishly. However, it is also desirable to recognize that the current level of demands made on the faculty for University service at Santa Cruz is somewhat excessive and has had some adverse effects.

Disproportionately heavy committee and administrative duties for the colleges, boards, Academic Senate, and administration have not only drained faculty energies, but have also led some faculty members into open hostility toward or total refusal to render such services. One serious consequence of faculty service fatigue is the rapid turnover of the board chair positions.

It is fair to say that the magnitude of committee and other administrative service is seen as excessive by most faculty. The level of University service must be reduced if scholarship is to have an opportunity to flourish and the level of instruction to be maintained.

As the campus moves from a period of growth and development to one of maintenance and internal adjustment, therefore, the scale of the service function should also be adjusted in the direction of greater efficiency and a smaller per-capita load.

(2) Public Service

In spite of the youthfulness of the campus, the external public service function has been substantial. A variety of field programs and cooperative arrangements with other educational institutions in the region are important public service contributions. Faculty have served and are serving in a number of public service capacities both in the local community, and with various statewide organizations. Others have served or are serving at the national and international levels, in both governmental and private organizations.

5. RESOURCES

The campus accepted the commitment of Chancellor McHenry to have Santa Cruz operate at a cost per student no higher than any other University of California campus. This meant, among other things, that the provision of close faculty/student contact that was a campus credo would have to be achieved without additional resources. Remarkable success has been achieved considering the resource level available, and the non-instruction-related units of the campus, in particular, are well established and staffed.

Although the academic and instructional support units were initially funded at acceptable levels, incremental funding has not kept pace with enrollment increases and the spiraling of costs related to the enlargement and diversification of the academic offerings. Currently, the campus is suffering from an actual lack of adequate resources. Faculty members are in the position of working, not to improve conditions, but to avoid dilution of program quality or lack of opportunity for students.

Santa Cruz is still trying to provide a unique level of contact and enrichment with supporting resources that are poorer than those on the other campuses. The consequences of such underfunding are seen in such things as inadequate research support for junior faculty, heavy teaching loads and contact hours, underfunded computing operations, and low program support in general.

Endowments from private sources have been a major source of support for the colleges. However, in almost all cases, these funds have been used for the construction of physical facilities rather than the improvement and support of teaching and research. There is need to develop outside resources to increase funding flexibility in these areas.

The campus has sometimes been subjected to economy-of-scale comparisons with other UC campuses. Because of the baseline costs for maintaining instructional and noninstructional overhead at Santa Cruz, direct economy-of-scale comparisons on either instructional or noninstructional fiscal issues are completely fallacious. Santa Cruz has unique needs; but unless the campus itself assumes responsibility for developing the criteria for such consideration, this will not be understood. Standard space formulas and existing measures of academic instructional production need to be redesigned and/or reconsidered in view of the campus's specific mission, performance, and collegiate structure. This task warrants a high priority on the campus agenda.

a. TEACHING

(1) Student/Faculty Contact

The initial campus student/faculty ratio has been greatly eroded because allocations of faculty have failed to match increases in student enrollment.

The campus objective of excellence in liberal arts undergraduate programs is founded on the maintenance of maximum student/faculty contact. Although the campus is currently close to the Systemwide average student/faculty ratio, Santa Cruz faculty contact hours, along with those at Davis, are the highest in the University, while the number of courses offered each year per faculty member is significantly higher than the Systemwide average. (Riverside, Santa Barbara, and Santa Cruz each show a heavier course load than the other University campuses).

The campus is constantly striving through instructional staffing reconfigurations, pedagogical innovations, and revised allocation criteria to maximize the use of existing resources. Despite these continuing efforts, however, the current level of faculty resources must be improved if the campus is to carry out its mission effectively.

(2) Support for General Academic Program

The campus is presently underfunded in general instructional support funds and requires substantial increments to meet its existing support needs.

The campus organization has incorporated many innovative features in support of its academic programs. In some cases these features were initiated in anticipation of the projected large enrollment and expanded unit size -- anticipations that have been confounded by the changed enrollment outlook. Specific support activities are in the process of being reviewed from both the fiscal and service standpoints. Similarly, unit support needs are being thoroughly scrutinized and current resource uses evaluated, with the aim of utilizing existing funds more effectively.

(3) Temporary Faculty

UCSC presently lacks the necessary number of faculty positions to permit the campus to adequately adapt to its evolving academic mission and changing student clientele.

Initially, a number of temporary faculty positions on "soft" funding were created in order to buttress specific program areas. Because of the campus need for permanent critical mass, however, there has been a tendency to want to make these positions permanent. This in turn has led to insufficient flexibility of temporary faculty positions to shift around in order to meet surges of interest in certain areas.

The campus is moving steadily toward an approach that would assign relatively permanently budgeted positions (for nonladder use) to colleges and other academic units where curricular format and shifts in student demand require considerable flexibility. The campus goal of meeting student demands and interests can more readily be achieved with this resource flexibility.

(4) Teaching Assistantship Support

There is a continuing unmet need for teaching assistants (TAs) for specific undergraduate instructional programs. The current level of TA resources and availability of qualified graduate students to fill teaching assistantships on campus are both inadequate to meet curricular demands. The campus needs to convincingly demonstrate its need for these additional resources to the Systemwide Administration.

b. RESEARCH

(1) Lack of Funding Support

The University's achievement in research has also been hampered at Santa Cruz through the lack of adequate state funding for "departmental" research. Historically, the campus has had low levels of the kind of general support that can provide both instructional and research funds at the departmental level. Improvement in this resource need is critical.

c. FACILITIES AND EQUIPMENT

(1) Overuse or Ineffective Use of Facilities

The campus is currently utilizing its available physical space for academic use beyond its maximum intended capacity (College Eight has no facility of its own and is currently occupying space originally designed for Social Sciences). Similarly, some space which should be used for instructional and research purposes is currently being used for administrative functions. Central Administration offices are dispersed throughout the campus causing frustration, time loss, and less coordination than would be achieved were a single central administrative facility available.

Space needs on campus include:

- construction of College Eight;
- additional instructional space;
- additional research space;
- construction of an Administration Center;
- construction of a Student Center, including space for graduate students and campuswide student organizations; and,
- there should also be planning for the future eventuality of need for one or two more colleges.

(2) Equipment Obsolescence

The campus is currently experiencing an acceleration in the amount of instructional and resource equipment that is becoming technologically and functionally obsolete. Lack of effective equipment and the cost and time lost in equipment repair equally curtail the effectiveness of our instructional program. Substantial increments in the level of equipment funding are required in order to maintain adequate instructional equipment inventories.

6. ADMINISTRATION

Because the issue of campus administration and leadership is all-pervasive in an assessment of the Santa Cruz academic programs, the following conclusions necessarily encompass the full range of concerns identified under the first four topics (teaching, research, service, and resources).

a. LEADERSHIP AND GOVERNANCE

(1) Administrative Stability

Since the announcement of founding Chancellor McHenry's retirement in 1973-74, the campus has been in a constant period of leadership transition. The brief tenure of Chancellor Taylor, following the similarly short but unsettling period under Chancellor Christensen, has served well to stabilize the affairs of the campus. When Chancellor-designate Robert Sinsheimer assumes the leadership of the campus in September, 1977, he will become Santa Cruz's fourth chief executive officer in the past five years. Purposeful and stable academic leadership is vital, both in the administration and in the faculty. The campus was fortunate in having thirteen years of strong and visionary leadership in the person of Chancellor McHenry. There have also been able provosts, deans, and vice chancellors, but the turnover among these latter officers has also been too great for the good of the campus. For board chairs, too, the turnover is too rapid. It is hard to achieve results in planning, implementing plans, and achieving campus purposes in teaching and research when leadership at several levels is changing every year or two. Ways must be found of securing reasonable continuity and stability of leadership.

(2) -Need for Administrative Coordination

The differentiated roles and responsibilities of the campus administration and the Academic Senate are an essential part of the University of California

tradition. Effective administration requires sustained effective collaboration and coordination between the administration and the Senate, which has not been developed at Santa Cruz. Strong administrative leadership must be matched by statesmanlike leadership in the faculty; in the colleges, in the boards and divisions, and in the Santa Cruz Division of the Academic Senate.

Of comparable importance is the need for a clear locus of administrative responsibility. Administrative duties and responsibilities at both the central and unit levels have not been sufficiently clear in the past. The campus is in need of a rational, ordered approach to self-governance, encompassing both the delegated authority of the Senate and the chartered authority of the administration on behalf of The Regents.

(3) Creativity in Leadership

The campus as an institution is responsible for the quality of life which exists within it. Creative and imaginative educational leadership and planning are, therefore, key to the pursuit of excellence in instruction, research, and public service. The development of the campus will be directly proportional to its leadership's ability to develop orderly policy and procedures which will facilitate individual and academic unit productivity.

More than at any previous time, the Santa Cruz campus is in need of creative solutions to its organizational, academic, and fiscal tasks. The academic programs, in particular, have developed under what have proved to be erroneous growth assumptions. Since the original enrollment projections and resource expectations will not be met in the foreseeable future, plans for the conduct of academic programs within realistic expectancies of resources must be made by tough-minded people who are capable of making and living with hard decisions.

(4) Resource Acquisition

Santa Cruz currently labors under funding levels that greatly restrict the campus's ability to meet its objectives. The concerted campus leadership -- administration and Senate -- has several responsibilities:

- to continue to develop a concise campus Academic Plan and a continuing planning effort;
- to coordinate the development of a cohesive academic program budget; and,
- to establish and carry out a consistent resource acquisition strategy for State, University, and other funds.

(5) Improving Communication

The campus has received national attention and acclaim as an experiment in higher education, yet much of its effectiveness in achieving major success in both academic endeavors and research has not been communicated. For many potential students and California citizens, Santa Cruz remains an enigma. There is an important task to perform in furnishing information to the schools and the public that will enable the campus to be better understood.

There have been problems too, in internal communication, which to some extent result from the division of energies and responsibilities between boards and colleges, and also from the dispersal of administrative offices throughout the campus. There, too, there is need for improved understanding both of the campus's mission and of the administrative functions involved in interpreting it.

These conclusions relate to the academic aspects of the campus's functions. The mission of the campus has been well served to date but now it faces a severe test. The implications of reduced funding, lower enrollment projections, dramatic changes in student demand, and the fluctuating market for university graduates are far-reaching and demand thoughtful but immediately effective campus leadership.

b. PLANNING AND MANAGEMENT

(1) Academic Planning Process

Caught in mid-growth by radical revisions in its original expectations as to size and mission, UCSC finds itself in need of an efficient faculty-administration process for planning and goal-setting. UCSC is facing fundamental planning issues, the seriousness of which is not widely appreciated by the faculty. In addition to effective leadership the campus requires an explicit academic planning process that will link

more closely the campus's academic mission and aspirations with the procedures of resource acquisitions and allocations.

(2) Curricular Planning

The leaders of the Academic Senate and the campus administration share the responsibility of promoting and guiding efforts in the boards and colleges to plan and coordinate the curricular undertakings of these units so that faculty resources are used to the greatest advantage for students and in accordance with the basic collegiate educational goals of the campus.

It is unfortunate that the multifaceted organizational and curricular demands of the campus have diffused the effectiveness of both the administration and the Senate in carrying out their responsibilities. Work toward improving these procedural and functional interrelationships has been going on during the 1976-77 year. This work must continue.

There is need for searching and candid analysis in several important areas:

- i) A review of the curricula and course offerings to determine if, in the aggregate, they are well suited to the current student body, giving due consideration to:
 - the numbers of students who are in the first, second, third, and fourth undergraduate years;
 - the numbers of students who transfer to UCSC with advanced standing; and,
 - the interests of students in particular subjects and with particular perspectives, as, for example, the interests of students in the arts, environmental studies, and psychology, and the perspectives of students from ethnic minority groups.
- ii) A review of course offerings and curricular requirements to determine if students are being offered and are receiving an appropriate blend of general education with deep knowledge and understanding in a reasonably limited field.
- iii) An examination of the mechanism of formal course approval by the Senate and subsequent authorization to insert courses in the

schedule of classes. The need here is to discern whether the procedures are sufficiently orderly and adequately coordinated to conform with educational objectives and budgetary constraints as well as meeting reasonable standards of efficiency in terms of time and other demands on the faculty.

(3) Faculty Renewal

Now that the period of rapid faculty growth is over, the campus must give careful thought to the composition and characteristics of the faculty with respect to the factors of age, annual turnover in faculty positions, and intellectual freshness and vigor.

A number of issues are of concern, including:

- the rate of renewal of faculty,
- the portion of ladder faculty holding tenure,
- the age distribution of faculty,
- the number of and roles for temporary faculty, and
- the broader question of flexibility in faculty allocation.

Turnover of ladder-rank faculty through resignation has been minimal at Santa Cruz over the past seven years, averaging 1.9 percent per year for tenured, and 9.2 percent per year for untenured faculty. The historical campus policy of hiring at entry level has resulted in a predominantly young faculty with a relatively low tenure ratio.

Given these trends, the current campuswide renewal rate of 5.2 percent per year is projected to drop to 4.1 percent per year over the next ten years, while tenure ratio will increase dramatically from 59 to 84 percent. A slight shift in age distribution will occur, with the current concentration of faculty in the middle age range moving toward the older ranges. These changes are primarily the result of curtailed growth. Many fewer nontenured faculty enter the campus each year, and since their separation rate is also much higher than that for tenured faculty, this decrease affects both the renewal rate and the tenure ratio.

Given current trends, the campuswide renewal rate will eventually regain its former level of 5.2 percent per year. The tenure ratio will decrease slightly, stabilizing at 82 percent (23 percentage points above its present value). There will be a substantial shift in age distribution, resulting in a much more uniform age distribution with an older faculty average age. This shift will be primarily responsible for restoring the present renewal rate, because a larger portion of tenured faculty will be closer to retirement.

These projections have significant implications for the Santa Cruz, academic program. Nearly two-thirds of the current ladder-rank faculty will not reach retirement age until after the year 2000. The campus will have less flexibility to adjust to fluctuating student interests and the changing sense of campus mission.

In addition, the Systemwide Administration expects the campus to be able, with one year's notice, to free up about 10 percent (the currently specified absolute number is 35) of the total faculty FTE assigned to the campus, in the event that some intercampus reallocation of resources is necessary.

In order to provide for an adequate rate of infusion of new faculty and to be able to meet needs for new directions in program growth and development, a pool of positions must be maintained from which new appointments can be made within one year's lead time. Maintenance of a marginal number of appointments, either in reserve or filled on a year-to-year appointment basis, should allow the campus the flexibility it needs for dealing with unforeseen developments.

In addition to providing for an influx of new ideas and personalities through faculty turnover, the campus must be alert to ways of assisting permanent members of the faculty to adapt themselves to the fluctuating needs of the boards and colleges as well as changes in their disciplines that may necessitate alteration in their skills, special interests, and intellectual development.

(4) Academic Program Load

In spite of the acknowledged difficulties in quantifying faculty workload, data on course load and course enrollment indicate that there are major differences in the distribution of instructional load among the Santa Cruz faculty. In some cases these differences represent unreasonable disparities. Guidelines for equitable distribution of teaching assignments must be developed.

(5) Service Teaching

Service teaching poses difficult questions of curriculum development and management. (See Subsections (6) and (7)).

(6) Oversubscribed Programs

When it opened, the campus attracted large numbers of highly qualified students who moved easily into open, accessible programs. Currently, however, certain programs and boards are experiencing overloads of student majors and/or service course responsibilities. Enrollment has had to be restricted in some very popular programs, and in consequence students denied admission to the programs of their choice either leave campus or "hide" in other majors while absorbing courses in their preferred major until they can officially switch to it. Continuation of these circumstances may be harmful to the campus. There is no easy or ready solution to these difficulties, but efforts to improve matters should be pursued, as, for example, by controlling enrollment in impacted programs.

(7) Course Scheduling

The problems of matching a wide range of class sizes to a limited number and confined size-range of facilities will necessitate some major adjustments in class scheduling procedures, especially when both curriculum planning and course scheduling must be conducted in an environment of fluctuating major enrollments.

(8) Support For Nonacademic Units

The nonacademic units have effectively served the campus during its major growth years. The current shift in emphasis from accelerated growth to slower paced enrollment and resource increases indicates a need for a comprehensive review of the objectives and fiscal requirements of all campus nonacademic units. Similarly, careful consideration should be

given to the organizational placement of those units currently classed as nonacademic in order to achieve maximum direct line support of the campus's academic mission.

(9) Space Planning

There is need for a thorough and comprehensive review of the amount and type of space available for instruction and research support.

A study of the space needs for research in laboratory sciences is currently under way, but need for other kinds of research space, including space for students, requires appropriate planning.

(10) Institutional Analysis

The campus has not yet determined what extent of institutional research is required to provide information and analysis that can effectively guide planning and assist in decision-making. It is clear, however, that the administration must have the capability to conduct institutional studies that will serve the needs of the Chancellor and vice chancellors. For the purposes of academic planning, close coordination between a central institutional studies unit and the staff of The Academic Vice Chancellor is crucial, so that the vice-chancellorial responsibilities for academic planning, administration of the budget for instruction and research, and liaison with advisory bodies of the Academic Senate can be well discharged.

V. RECOMMENDATIONS

The recommendations that follow should be considered as a three-to-five-year action agenda covering the years 1977-78 to 1983-84, with some notations of longer-term directions that seem important to reiterate. Because they are derived from the assessment in Section IV, they are listed in a parallel topical structure. Since they addressed to the campus itself--to the members of the administrative staff and to the faculty, both individually and collectively--the task of prioritizing them for action is a matter for immediate consideration.

A. A THREE-TO-FIVE-YEAR AGENDA

1. UNDERGRADUATE TEACHING

a. TEACHING ORIENTATION

(1) Emphasis on Undergraduate Instruction

The solidly based undergraduate program must be maintained and strengthened through both intellectual leadership and resource support. Careful judgment on priorities must be made and decisions reached, program by program, whether to enhance the excellence of already good programs, to bolster the strength of promising programs in which critical mass is minimal or not yet achieved, or to phase out programs when such action seems necessary in order to make better use of their resources elsewhere.

(2) Differentiated Academic Roles of Colleges and Divisions

Explicit definitions of academic responsibilities and of the organizational arrangement of academic programs within these units are required and must be worked out by patient discussion and persistent leadership.

(3) Balance Between Disciplinary and General Education

A careful and early review of course offerings and curricular requirements is vital to ascertain whether an appropriate curricular blend (i.e., lower-division/upper-division graduate, general/disciplinary, theoretical/applied) is available and well utilized, particularly in view of changing student clientele. Key Senate committees must be directly involved, along with the deans and provosts. This review should be a continuing project, with periodic checks conducted as required.

b. CURRICULUM

(1) Critical Mass of Boards of Studies

The campus must immediately undertake the assessment of the faculty staffing and instructional resource base of each of the boards of studies. This assessment should include an evaluation of academic program effectiveness in terms of the board's articulated mission, and a determination of the campuswide need for and capacity to achieve critical mass within the existing program structure and resource base. These findings should be used to guide academic planning and decisions about the acquisition and use of resources.

(2) Curricular Coherence

Curricular coherence must be consciously strengthened with key Senate committees and deans and provosts directly collaborating on adjustments as they are found to be necessary. Several important criteria must be borne in mind:

1. Introductory courses must be offered frequently enough to accommodate students' varied scheduling requirements.
2. The core of a discipline must be adequately serviced before branching out into more specialized subfields.
3. The composite of course offerings by boards and colleges must be complementary and not overlapping.
4. Courses central to programs must be adequately covered during faculty leaves and sabbaticals. This is of particular concern in the smaller boards. (See also Subsection 6.b. (2) page 75).

(3) Teaching Assistantship Allocations

Policy and procedures governing the allocation of Teaching Assistant FTE among campus academic units must be designed to support undergraduate teaching needs more effectively.

(4) Class Size Distribution, and

(5) Service Teaching

Wherever possible, current class size distribution and average class size should be maintained in order to continue the provision of close student/faculty contact. However, as part of an enrollment control program (see Subsection 6.b. (6) page 78), the campus must examine degree requirements for

all major programs to determine the type and number of required courses offered by units other than that which sponsors the major. An analysis of breadth requirements and their effect on service teaching should be included in the review of general education called for in Subsection 1.a. (3) page 60). Policies must be developed to deal with any problem areas for which concerted action is indicated.

(6) Curricular Information

The campus must develop formal procedures and timely schedules for the dissemination of accurate course and curricular information.

c. STUDENT NEEDS

(1) Changing Student Clientele

Clearer articulation of curricular purpose and adjustments in management to achieve tighter scheduling and sequencing of courses are necessary in order to respond to the needs of many students for more structured programs. (See Assessment Subsection 6.b. (2) page 75 for specific items.)

(2) Academic Advising

A campuswide review of advising must be undertaken to assist both colleges and boards in re-examining their existing approaches to academic advising in light of current student needs. Clear responsibilities for academic advising must be determined to ensure that this important function is adequately fulfilled. Small advising programs for identifiable student groups with distinct needs should be continued. Examples of important areas include EOP, re-entry women, veterans, premed students, and junior transfers.

(3) Skill Development and Remedial Instruction

A careful review of the campus's program of skill development and remedial instruction is required to determine what additional actions can be taken to improve the preparation of students for advanced course work in both disciplinary and general education studies.

(4) The Narrative Evaluation System

The quality and timeliness of the preparation and distribution of narrative evaluations must be improved. Faculty performance in the area

of evaluations should be included as a criterion in the personnel review process.

d. TEACHING TECHNIQUES AND METHODS

(1) Innovative Teaching Methods

Support of proven innovative and collaborative instructional efforts, such as team teaching and interdisciplinary teaching, should be integrated into the campus's permanent resource base.

(2) Undergraduates as an Instructional Resource

The campus should immediately begin exploring ways of utilizing qualified junior and senior students as instructional resources (as differentiated from readers or other noninstructional positions) within the established guidelines for maintenance of quality academic instruction (Senate Bylaws Section 12.4).

2. GRADUATE EDUCATION

(1) Scale of Graduate Education, and

(2) Graduate Program Size and Faculty Resources

In order to support undergraduate instructional excellence and research achievements, substantial expansion of the number of graduate students over a reasonable period of time should be a high campus priority. For educational reasons, the proportion of graduate students should be increased (at a rate commensurate with the resources available) to around 10 percent of total enrollment, or about two graduate students per ladder-rank faculty member. This richer complement of graduate students would provide greater intellectual diversity, allow for better balance of graduate work among the three divisions, and provide additional stimulus for faculty scholarship. The campus must move forward in planning for new graduate programs in the social sciences and humanities, including development of an instructional resource base adequate to mount such programs effectively.

(3) Innovative Graduate Programs

In light of the lessened demand for Ph.D. students in many traditional disciplinary areas, alternative -- in the sense of less traditional --

graduate program proposals should be developed for implementation by 1985. Attention should also be paid to possibilities of developing additional master's degree programs.

(4) Professional Education

Preliminary proposals for appropriate professional programs for the campus should be developed for start-up by 1985.

3. RESEARCH

(1) Intellectual Support, and

(2) Balance Between Research and Teaching

The campus must develop more active support for faculty scholarship, especially for junior faculty. The emphasis on undergraduate teaching must not be allowed to obstruct faculty research responsibilities. Distinguished intellectual attainment in both teaching and research will continue to be the sine qua non for a permanent faculty career at UCSC. Young faculty members must therefore be given the opportunity to develop as both scholars and teachers; they should be counseled and assisted by their peers, particularly their senior colleagues.

(3) Impact of Graduate Education on Research

See Subsection 2.(1) page 84.

(4) Balance Between Research and University Service

It is important for the quality of the campus that all faculty members bear in mind that the best role models among those who lead in University service are those who demonstrate superior intellectual attainments as creative thinkers and leaders.

In no circumstances should University service be permitted to dominate the intellectual development of faculty. It is thus incumbent on every member of the faculty to assume a fair share of University service responsibility.

(5) Effect of College Structure

The opportunities for faculty research must be strongly supported within the collegiate structure so that optimum conditions for both disciplinary

and broad intellectual development are achieved.

(6) Research Benefits for Undergraduates

This important aspect of campus activity should be maintained and, if possible, enhanced.

4. SERVICE

(1) University Service

The current excessive demand for faculty service on administration, collegiate, divisional, and Senate committees must be reduced by reallocating responsibilities to remove overlap and redundancy among service functions, and by improving the productivity and effectiveness of the committees that are deemed truly necessary.

(2) Public Service

The campus must maintain and (where necessary) build congenial and fruitful relationships with local communities, the State, and with national groups and organizations.

5. RESOURCES

As was pointed out in the Assessment, Santa Cruz has a dual problem in the area of resources: a unique structure, with needs that are not directly comparable with those of other UC campuses, and inadequate support for those needs. If the campus is to continue its mission of achieving excellence in undergraduate education, it cannot continue to do so at the expense of an overstressed faculty. The continuing decline of instructional resource availability in comparison to both academic program need and increases in enrollment must be reversed. The campus must graphically demonstrate its resource needs in relation to its academic goals, and detail the specific requirements at the college, board, and program levels. Resource policies, and the levels of resources required to implement them, can then be established in line with these academic objectives. It is vital that Santa Cruz's budget needs be presented and judged in comparison with the campus's own academic goals, and not on the basis of other institutions' funding levels or economies of scale.

a. TEACHING

(1) Student/Faculty Contract

To re-establish the lower student/faculty ratio vital to fully realizing the objectives of the campus academic mission, the current level of faculty resources must be increased. The campus needs to continue its efforts to make the maximum use of existing faculty while simultaneously developing clearly reasoned programmatic justification for incremental faculty resources.

(2) Support for General Academic Program

Similar programmatic justification must be developed in the area of support resources, both for those currently in existence and to prove demonstrate the need for substantial incremental support.

(3) Temporary Faculty

The campus must acquire additional faculty resources in order to insure adequate coverage of permanent faculty workload assignments while maintaining the flexibility necessary to meet shifts in programmatic workload. Efforts currently under way to assign nonladder positions to colleges and other units needing flexibility should be strengthened.

(4) Teaching Assistantship Support

The campus should strenuously pursue methods of providing adequate TA resources to meet undergraduate instructional workload requirements. It must also demonstrate its need for such resources to the Systemwide Administration.

b. RESEARCH

(1) Lack of Funding Support

The campus must find ways to develop better funding support for "departmental" research. (See Subsection 6.a. (4) page 89.)

c. FACILITIES AND EQUIPMENT

(1) Use of Facilities

The campus must actively develop comprehensive major and minor capital projects programs to attract State, University and private funds for the construction of the additional facilities necessary for adequate support

of a high-quality academic program. These include:

- academic facilities for College Eight;
- additional instruction and research space;
- an Administrative Center;
- a Student Center.

Academic and facilities planning for the eventual need for one or two more colleges should go forward concurrently.

(2) Equipment Obsolescence

The campus must develop a comprehensive program for equipment replacement. This should include projections of:

- equipment obsolescence and replacement costs; and,
- new equipment required as a result of enrollment growth and the development of pedagogical and technological innovations that are related to campus programs.

6. ADMINISTRATION

a. LEADERSHIP AND GOVERNANCE

(1) Administrative Stability

In order to give the campus the effective leadership it needs, ways must be found to secure reasonable continuity and stability in academic administration at all levels. Incentives for administrative service should be enhanced.

(2) Need for Administrative Coordination

The campus must act immediately to improve coordination between the central administration and the Academic Senate, and to establish clear lines of responsibility at both central and unit levels.

Clear statements of each campus administrative unit's responsibilities, with corresponding policy and procedural definitions, are required. In every case, these items must flow from the unit's goals and objectives in meeting the campuswide mission, and they should be developed so that mutually exclusive areas of responsibility can be clearly understood by all members of the campus community.

(3) Creativity in Leadership

The campus leadership -- both administration and Senate -- must clarify roles and responsibilities throughout the campus, in order to develop

strong campus understanding and commitment to the accomplishment of the academic mission. The campus leadership must also move immediately to plan policies and procedures that will effectively marshal academic program development and resource management. (See Subsection 6.b.)

(4) Resource Acquisition

The campus administration must develop a coordinated planning and budgeting process directly linked to acquisition and management of the fiscal resources required to achieve its objectives. (See Subsection 6.b.)

There is also need for simultaneous development and programmatic justification of a long-term resource acquisition strategy which will apply to State, Federal, University, and private fund sources.

(5) Improving Communication

The campus must develop an external (University, State, and national) communication process that will directly convey a clear and accurate concept of the intellectual activities and productivity at UC Santa Cruz. The campus leadership must also establish a more effective system of internal communications to clarify curricular and organizational issues for the campus community.

b. PLANNING AND MANAGEMENT

(1) Academic Planning Process

The campus academic planning process must strengthen and make explicit the links between academic mission and resource allocation. The campus leadership must establish campuswide academic priorities that support this process, as well as developing explicit and ongoing methods of resource management. All campus resource allocations -- both instructional and noninstructional -- must be stringently reviewed in terms of their current support for the campus mission, to identify areas where it might be possible to reallocate funds to meet higher priority academic needs.

(2) Curricular Planning

The campus leadership must identify specific criteria for the evaluation of proposed and existing academic programs before undertaking the detailed review described in the Assessment under this heading. The distribution of existing instructional resources among campus programs must be assessed

and appropriate adjustments (either temporary or permanent) made to insure equitable treatment of students and faculty.

Incentives and planning procedures should be established for evaluating, nurturing, and, where necessary, redesigning existing programs, facilitating new academic program development, and reducing overlap or redundancy among academic programs.

(3) Faculty Renewal

The issues identified in Subsection 6.b. (3) of the Assessment (page 76) should be carefully considered, both in the hiring of new faculty and in the personnel review.

The campus must plan explicitly for a steady injection of new members into the faculty and must also take definite steps to encourage and support actions that will help faculty members to maintain themselves at the highest level of intellectual and professional effectiveness, both for their own satisfaction and the good of the campus.

(4) Academic Program Load

The campus must analyze and resolve major inequities in the instructional load that exist among faculty members and among instructional units. The campus leadership should establish guidelines for instructional workload for use by instructional units, and fix responsibility for seeing that the guidelines are followed.

(5) Service Teaching, and

(6) Oversubscribed Programs

A strategy is needed to maintain a flow of highly qualified incoming students -- particularly at the freshman level -- while managing student placement within programs so as to enable as many students as possible to enter programs of their choice and continuing some control over numbers in the interest of program quality. This will not be an easy task, but it is a vitally important one.

Unusually heavy service teaching loads must not be permitted to overburden individual program curricula. When such conditions occur, appropriate

steps (such as increased resource allocations or curriculum adjustments) should be taken in order to relieve the impacted units. (See also Subsection 1.b.(4) and (5) page 82).

(7) Course Scheduling

Procedures must be developed to ensure that students' curricular needs are thoughtfully met. Curricula should be planned to provide reasonable access and ease in student advancement, and to be sufficiently flexible to meet changing student demands. Course scheduling must be adjusted to provide a better match between class size and facility capacity.

(8) Support for Nonacademic Units

The campus must review the organizational situation, objectives, and resource needs of all campus nonacademic units with the objective of improving their capacity to support the campus mission.

(9) Space Planning

A study is required of all the space currently being used for instruction and research (including space for students); where necessary, efforts must be made to plan and obtain proper augmentations.

(10) Institutional Analysis

The campus administration must do what is needed to establish and maintain an institutional research capability that is adequate for its planning and decision-making needs. Such a capability must serve all parts of the administration, as well as providing needed information and assistance to the Academic Senate.

There must be adequate staffing arrangements to carry out appropriate institutional research and communicate its results to the administration and Senate so that programmatic and resource decisions can be made on the basis of solid information and analysis.

B. LONGER TERM DIRECTIONS

As so aptly noted in the section on campus aspirations, it is difficult to foresee the future with great accuracy; nonetheless it behooves us to make

intelligent and realistic assessments of what is necessary and possible and to act accordingly if the campus is to be effective in shaping its own future. The preceding subsection enumerates a series of recommendations formulated to address the current academic program issues at UC, Santa Cruz. However, these recommendations neither directly engage the larger issues of the deep crisis of higher education at the national level, nor do they specifically discuss strategies for academic planning and administration of the Santa Cruz campus within this environment of educational upheaval.

This omission is deliberate, because such issues are secondary to a more immediate concern: the involvement of all members of the academic community -- faculty, students, staff, and administration -- in insuring the long-term vitality of Santa Cruz.

The University is a university of individuals, and its vitality is always dependent upon their good will and enlightened commitment. In a period of limited or no growth, impinged on at every turn by the external pressures of a rapidly changing society, these resources become the only ones upon which the campus can rely. In this sense, then, each one of us has the power to determine whether Santa Cruz will be an outstanding or an undistinguished institution in the years that lie ahead.

The purpose of this concluding subsection is to raise these more individual and personal considerations and briefly discuss their importance in determining the longer-term direction of the campus.

This Academic Plan draws substantially upon and reinforces the founders' intentions to create at Santa Cruz a collegiate university which provides an unparalleled undergraduate education within a state university system. The Plan contains considerable evidence of major success in meeting this overall objective. However, it is also clear that the unforeseen shifts in enrollments, student body composition, fiscal resources, and the nature of higher education itself have all significantly interfered with the full realization of the academic mission.

The question to be raised is not whether the campus should have been prepared for changing external circumstances, but whether full realization of the initial plans is possible, given that these circumstances now exist. The early planners of Santa Cruz were not only dealing with a more stable planning context in terms

of demography and fiscal resources, but with the optimistic mood of higher education in general. They also were conceiving an idealized community, rather than engaging an actual one, beset with the problems of a reality very different from the projections of a decade ago. Given the unpredictability of current and emerging circumstances, we must now recognize that it is our own human resources that are critical in the realization of Santa Cruz.

The importance of responsive and inspired leadership within both administrative and faculty ranks has been discussed in several sections of this Plan. But although leadership is a crucial ingredient, the long-term vitality of the campus requires an equally responsive and inspired faculty; a faculty whose members can both enthusiastically serve student needs and actively pursue scholarship at the frontiers of their respective fields. The spirit of experimentation must persist if the Santa Cruz faculty, attracted by the opportunity for teaching and creative scholarship in a personal and relatively small-scale setting, are to continue to work for the ideals of a truly liberating education. But the faculty must also be ever-mindful and tolerant of the changing composition and interests of their students, and be prepared and willing to respond imaginatively to such changes. The future academic strength of the campus may well turn on our ability to adapt to and direct these forces of change sensitively and creatively.

The vitality of the University will also be greatly influenced by the degree to which it can provide real educational opportunities to an increasingly representative cross-section of able students. Of comparable importance is the extent to which the personnel composition of the University itself represents the society it serves. Nothing short of a genuine and vigorous commitment to the principles of affirmative action can insure that such truly representative composition can be achieved. The campus must therefore renew -- and demonstrate -- its commitment to such principles.

Finally, the true richness of Santa Cruz undoubtedly lies in the diversity of perspectives, styles, and institutional structures which comprise the academic program, and the capacity to restructure or recombine this diversity to bring the greatest benefit to students. But the openness and smallness of Santa Cruz, combined with the uncertainties of slowed growth or steady state, also create a climate for strong partisan and personal advocacy which can lead to unhealthy factionalization among units and/or faculty groups. The campus's long-term vitality

will therefore be significantly influenced by our ability as a community to rise above this latent and emerging factionalization and to move beyond potential stalemates which could freeze Santa Cruz into a static and uncreative institution.

With its bright and committed young faculty and student body, UCSC has an unparalleled opportunity to become a leading and influential institution in American higher education. Our success, over the long term, will largely depend on the degree to which we can draw upon our humility, compassion, and humanity in developing, maintaining, and enhancing friendships within our entire campus community and especially those relationships between students and faculty which have always been the heart of the Santa Cruz experience.

VI. APPENDICES

APPENDIX A.

DEGREE PROGRAMS

TABLE 2 DEGREE PROGRAMS

PROGRAM	EXISTING				FUTURE	
	BACHELORS	MASTERS	DOCTORATE	OTHER	PROPOSED TO SYSTEMWIDE ADMINISTRATION	DISCUSSED ON CAMPUS FOR FUTURE CONSIDERATION
<u>HUMANITIES</u>						
ART	BA (69-70)					BFA/MFA
HISTORY	BA (65-66)		Ph.D. (70-71)			
HISTORY OF CONSCIOUSNESS			Ph.D. (66-67)			
LINGUISTICS	BA (71-72)					
LITERATURE	BA (65-66)	MA (68-69)	Ph.D. (68-69)			HUMANITIES (MA)
MUSIC	BA (69-70)					MFA
PHILOSOPHY	BA (65-66)					MA
RELIGIOUS STUDIES	BA (70-71)					
THEATER ARTS	BA (71-72)					POST-GRADUATE PERFORMANCE INSTITUTE

PROGRAM	EXISTING				FUTURE	
	BACHELORS	MASTERS	DOCTORATE	OTHER	PROPOSED TO SYSTEMWIDE ADMINISTRATION	DISCUSSED ON CAMPUS FOR FUTURE CONSIDERATION
<u>NATURAL SCIENCES</u>						
ASTRONOMY/ ASTROPHYSICS			Ph.D. (66-67)			
BIOLOGY	BA (65-66)	MA (66-67)	Ph.D. (66-67)			HUMAN BIOLOGY (BS/A) (Pre-professional health sciences)
CHEMISTRY	BA (65-66) BS (73-74)	MS (67-68)	Ph.D (67-68)			
EARTH SCIENCES	BA (67-68) BS (72-73)	MA (68-69) MS (70-71)	Ph.D. (68-69)			APPLIED GEOLOGY (MS)
INFORMATION SCIENCES	BA (68-69)	MS (72-73)	Ph.D. (72-73)			
MATHEMATICS	BA (65-66)	MA (69-70)	Ph.D. (69-70)			
PHYSICS	BA (65-66)	MS (70-71)	Ph.D. (70-71)			
PSYCHOBIOLOGY	BA (70-71)					PSYCHOBIOLOGY (Ph.D.)
SCIENCE	BA (69-70)					

PROGRAM	EXISTING				FUTURE	
	BACHELORS	MASTERS	DOCTORATE	OTHER	PROPOSED TO SYSTEMWIDE ADMINISTRATION	DISCUSSED ON CAMPUS FOR FUTURE CONSIDERATION
<u>SOCIAL SCIENCES</u>						
ANTHROPOLOGY	BA (66-67)					PROGRAM FOR ADVANCED GRADUATE STUDENTS FROM UCB (Ph.D.)
COMMUNITY STUDIES	BA (69-70)					
ECONOMICS	BA (65-66)					
EDUCATION						MA
ENVIRONMENTAL STUDIES	BA (70-71)					
POLITICS	BA (65-66)					
PSYCHOLOGY	BA (65-66)	MA (70-71)	Ph.D. (70-71)			
SOCIOLOGY	BA (66-67)		Ph.D. (75-76)			
DIVISIONAL (INTERDIS- CIPLINARY)						PUBLIC POLICY (MA, Ph.D.) REGIONAL PLANNING (Ph.D.)

PROGRAM	EXISTING				FUTURE	
	BACHELORS	MASTERS	DOCTORATE	OTHER	PROPOSED TO SYSTEMWIDE ADMINISTRATION	DISCUSSED ON CAMPUS FOR FUTURE CONSIDERATION
<u>COLLEGES</u>						
AESTHETIC STUDIES (COLLEGE V)	BA (71-72)					
ARTS/CRAFTS AND HISTORY (COWELL)	BA (71-72)					
HUMANITIES (COWELL/ LITERATURE)						MA
LATIN AMERICAN STUDIES (MERRILL)	BA (72-73)					
MARINE STUDIES (COLLEGE VIII/ BIOLOGY)						
MODERN SOCIETY AND SOCIAL THOUGHT (STEVENSON)	BA (71-72)					
WESTERN CIVILIZATION (COWELL)	BA (71-72)					

APPENDIX B.

COLLEGE PROGRAMS

This appendix is intended to give a brief description of the colleges as a whole and individually. Table 3 indicates the role of the colleges in the campus's academic program in terms of majors in college programs and enrollments in college-sponsored courses. The remainder of the appendix contains brief descriptions of the individual colleges in terms of their faculty complement, distinguishing characteristics, and major programs where applicable. Rather than giving a complete view, these descriptions serve to provide an impression of the range of activities, interests, and programs among the colleges of the UC, Santa Cruz campus. Since the colleges came into being at approximately one-year intervals from each other, they are described here in order of their chronological establishment.

Accompanying each college description is a table containing data on faculty, students, and (where applicable) college majors. These data were derived from three sources: those on permanent faculty FTE from faculty profiles generated by the Administrative Systems Office, as of January 19, 1977; those on students from "Headcount Enrollment Distribution by College" (based on a three-quarter average and including both lower- and upper-division students), published in the Office of Planning and Analysis 1977 Data Book; and those on college majors from "Undergraduate Enrollments by Major" (based on a three-quarter average and excluding individual majors, but with double and joint majors partially counted in order to preserve headcount), from the Office of Planning and Analysis 1977 Data Book.

TABLE 3 COLLEGE MAJORS AND COLLEGE TEACHING

	1971-72	1972-73	1973-74	1974-75	1975-76
College Majors ¹	49	102	91	120	156
Individual Majors	56	68	86	71	87
Total College Majors ²	105	170	177	191	243
% of Total Declared Majors	3.4%	4.8%	4.7%	4.5%	5.5%
College Student Credit Hours ³	--	--	16,105	18,405	18,816
% of Campus Student Credit Hours	--	--	23.0%	25.6%	24.5%

Notes:

1. College majors from all colleges.
2. College and individual majors combined.
3. Student credit hours for courses taught by the college.

Source:

Office of The Academic Vice Chancellor - Academic Planning

COWELL COLLEGE

ORIGIN: 1965

COLLEGE DEGREES: B.A. (1970, Western Civilization)

B.A. (1970, Arts and Crafts and Their History)

TABLE 4 SUMMARY DATA -- COWELL COLLEGE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	39	40	40	40	47
Students	739	710	753	784	804
College Majors	8	17	16	20	23

Cowell College, the oldest of the UCSC colleges, opened in 1965. While its faculty and students have interests that span the range of disciplines, they share a humanistic view of the aims of learning, a central concern for the human race and its possibilities. The rapport of social scientists and humanists in Cowell is extremely strong and important team-teaching efforts that involve anthropologists, sociologists, historians, literary critics and others are essential aspects of Cowell College curricula.

The College offers two upper-division major programs that Cowell students may select or may use to complement work done in another major: Studies in Western Civilization and Arts and Crafts and Their History¹. Cowell attempts to achieve a number of goals through these programs: to provide multidisciplinary alternatives through which a student may fulfill the requirement for a major; to achieve clarity, coherence, and continuity in a student's program; and to develop communities of interest among faculty and students through which ideas may be shared and developed. To ensure a common grounding all freshmen are required to take a one- to two-quarter course, Sources and Documents in Western Tradition, taught by ten senior faculty members. Freshmen and sophomores are also encouraged to take courses in writing, composition, history, and literature.

¹The major in Arts and Crafts and Their History is temporarily suspended and will not be offered in 1977-78.

COWELL COLLEGE

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Studies in Western Civilization is an interdisciplinary major designed exclusively for Cowell students. Its course offerings and resources at the upper-division level rely exclusively on Cowell fellows. While the College's core course provides a brief introduction to some of the fundamental source material of the Western tradition, this major is intended to enable students to amplify their knowledge of the tradition, and so to secure a basic knowledge of some of the elements that have been and still are aspects of Western civilization. Although students are required to concentrate in three designated fields, they have an opportunity to take courses in a variety of standard disciplines -- for instance, anthropology, art history, history, literature, philosophy, or religious studies -- as well as such interdisciplinary courses as maybe offered by the faculty or proposed for individual study by the student. To graduate with a major in Western Civilization, students are required to complete nine upper-division courses and a senior essay; all students are also required to have completed the three-quarter lower-division sequence in either Greek or Latin language prior to completion of the junior year. To count toward the major, an upper-division course must be taught by a fellow of Cowell College; whether the course is sponsored by the College or a board of studies is irrelevant.

The Cowell/Stevenson science courses constitute a nondegree program administered by the two colleges. The courses are result of a joint effort by many of the science faculty in both colleges to provide an integrated, coordinated, lower-division science and mathematics sequence within the more personal collegiate framework. The principal objective has been to develop science courses that retain a certain degree of rigor without being narrowly focused. Many have been designed primarily for the nonscience student and offer an excellent opportunity to make the science breadth requirement a meaningful and useful part of a general education. They cover a range of topics in biology, chemistry, earth sciences, information sciences, mathematics, and physics.

The College also has a distinctive group of faculty working in dramatic literature, and individual majors in this topic are available. In addition, a number of other courses are also offered by Cowell on special topics, both disciplinary

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and interdisciplinary. These courses are designed to supplement and to complement the offerings of the boards of studies.

In 1975-76, the College's 47 permanent faculty¹ were distributed as follows: 56 percent in the Humanities Division, 26 percent in the Natural Sciences Division, and 18 percent in the Social Sciences Division.

¹Data on permanent faculty in 1976-77 by college is not currently available, and therefore 1975-76 data are used here. These figures represent each college's formal faculty allocation, and thus do not account for administrative duties, midyear transfers, and other more specific considerations.

STEVENSON COLLEGE

ORIGIN: 1966

COLLEGE DEGREES: B.A. (1972, Modern Society and Social Thought)

TABLE 5 SUMMARY DATA --- STEVENSON COLLEGE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	46	44	43	42	42
Students	776	776	785	793	823
College Majors	3	11	13	10	19

Stevenson College, since its inception in 1966, has sought to be an outstanding college of arts and sciences, attractive to students whatever their area of intellectual interest. The College seeks to provide an atmosphere in which students can discover and find their way among the great established academic traditions and also see those traditions as vital and dynamic, responding to the needs and pressures of the contemporary world. Although Stevenson College shares with other colleges a broad commitment to the liberal arts, particular emphasis is given to the social sciences, their intellectual orientations, their interconnections with the other divisions of disciplined learning and their role in the study and life of man. Thus, the College's special goals include the development of some grasp of both the humanistic and scientific components of social science and development of knowledge of "external" (as well as American) cultures and societies.

Stevenson offers a core sequence for new students, consisting of a required fall-quarter core course, Self and Society, followed by two additional courses on this topic open to students of the College. The College's major program, Modern Society and Social Thought, offers at a more advanced level some of the themes introduced in the required freshman core sequence. It is an interdisciplinary major focusing on the social conditions and human problems in industrial societies and how they may be illuminated by theories about the nature of society and social change. It is broadly international in scope, offering a chance to

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study issues in such major "postindustrial" societies as the United States, England, the European countries, and the Soviet Union, and also in some developing Third World nations.

Participating faculty are drawn from a wide range of disciplines, including history, literature, sociology, anthropology, politics, economics, psychology, philosophy, and art. The relationship between theoretical models and empirical (or "down-to-earth") study of modern society is emphasized. Many concrete aspects of modern society are open to exploration in this fashion--for instance, work, the family and sex roles, leisure patterns, counter-cultures, social planning and criticism, socially relevant art and fiction, the role of intellectuals, social classes and ethnic groups, change, conflict, and revolution, and the history of industrialization and of protest against its effects. The program imposes no one theoretical perspective, but acquaints students with a great many of them, encouraging personal development of an analytical approach.

Students in the program usually find it convenient to be affiliated with Stevenson College, though this is not required. Typically, students enter the program as juniors or as sophomores. Junior transfer students are specifically welcome. Each student must take nine courses in the program. This drops to seven if one is a joint major with another discipline; double majors, on the other hand, take the full nine. All students are required to write a senior essay, which is defended in an oral examination.

For a description of the Cowell/Stevenson science courses see page B-4.

In 1975-76, the College had 42 permanent faculty, who were distributed as follows: 38 percent in the Humanities Division, 31 percent in the Natural Sciences Division, and 31 percent in the Social Sciences Division.

CROWN COLLEGE

ORIGIN: 1967

COLLEGE DEGREES: NONE

TABLE 6 SUMMARY DATA -- CROWN COLLEGE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	36	32	32	32	35
Students	605	632	619	652	666
College Majors	—	—	—	—	—

From Crown College's inception in 1967, issues of science and technology have contributed significantly to its orientation. Nothing is so prominent in the life of the second half of the twentieth century as the role that science and technology play in it. Modern medicine and drugs, nuclear energy, organ transplants, and space exploration show the immense power and drive of human originality and persistence. Many current problems, such as pollution, the balance between population and food, and the quality of the environment generally, are in large part scientific problems.

As a result of this orientation, Crown has continued to attract students and faculty with a special interest in the natural sciences. In addition, however, Crown College has an established commitment to the humanities and social sciences. Thus, while approximately half of the faculty of Crown College are in astronomy, biology, chemistry, earth sciences, information sciences, mathematics, and physics, the other half are in art history, creative writing, history, literature, music, anthropology, community studies, economics, politics, psychology, and sociology. Similarly, about half of the students in Crown College major in one of the natural sciences and about half in a humanities or social science discipline.

Although it offers no undergraduate major and has no "core course" for all of its students, the College offers an assortment of courses that appeal to quite varied interests. For the student majoring in one of the natural sciences, Crown courses

should help to define the broader implications of his or her field, for the learning required for scientific studies needs to be leavened by other interests. Some of the science courses that have been given in Crown College include California Geology, Mathematical Ideas, Topics in the Natural History of the Monterey Bay Area, Development of Molecular Structure in the Nineteenth Century, and Calculus and Linear Algebra with Applications.

Other courses explore certain interests that cross disciplinary boundaries. Partly as a result of recent additions to the humanities faculty at Crown, a number of interdisciplinary groups have begun to define more sharply existing area interests. For example, the creative writing and medieval studies programs are newly formed clusters whose contribution to the Crown College curriculum responds to student and faculty desires to maximize the opportunity of daily intellectual contact and collaboration offered by a college setting. The result is a growing range of individually or jointly taught interdisciplinary courses in the humanities including The Development of Western Civilization, Art, Literature, and Sociology in the Feudal Era, Studies in Contemporary American Fiction, and Drawing with Color.

From time to time, interdisciplinary courses on science and public policy issues are offered by faculty of different disciplines. Courses such as Capitalism and Democracy in America, Experts in the Political Arena, Technology and Society, and Prospects for the Future bring together faculty and students from various fields to consider urgent policy issues facing humanity.

In 1975-76, the College's 35 permanent faculty were distributed among the three Divisions as follows: 28 percent in the Humanities, 47 percent in the Natural Sciences, and 25 percent in the Social Sciences.

MERRILL COLLEGE

ORIGIN: 1968

COLLEGE DEGREES: NONE

TABLE 7 SUMMARY DATA -- MERRILL COLLEGE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	30	33	33	34	34
Students	632	629	637	664	707
College Majors	—	7	16	18	20

The academic program at Merrill focuses on the study of world societies in their richness and diversity, the ways in which we are all increasingly bound together for good or ill, and how an understanding of our own society and its place in the world can help us to work more effectively for change. The various interests within the Merrill College program are represented in three interrelated components, each of which is interdisciplinary in nature: (1) World Studies, (2) American Studies, and (3) Science and World Society.

The world studies program is based on the belief that a thorough understanding of a geographical area is possible only through an integrated plan of study which lies beyond the scope of the traditional disciplines. The program focuses on a number of geographical areas, including African studies, Latin American studies, East Asian, South Asian, Southeast Asian, and West Asian studies. Majors are offered in Latin American studies and East Asian studies by the respective supervisory committees in these areas. The Latin American studies major requires nine courses, a senior project, and a comprehensive examination. The East Asian studies major requires twelve courses and a senior thesis (or comprehensive examination). In other areas of world studies, individual majors can be designed. Although there are no specific course requirements, the individual major must include: a freshman core sequence, field study, and upper-division senior seminars; advice concerning alternative "paths" for preparation in world studies; an optional series of lectures, films, and symposia on important issues and topics; and a

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variety of cultural presentations on world cultures.

The American studies program consists of a number of faculty at Merrill College who specialize in American aspects of their fields, which include history, literature, politics, and folk music. Further, the College coordinates the campuswide American studies program and sponsors regular American studies colloquia for students and faculty from all the UCSC colleges.

The overall focus of the American studies group is broadly historical; its aim is to explore the complex nature of United States culture through time -- with due attention to diversities of subcultural experience -- and to consider this culture in the context of other national cultures, both in the Western and in non-Western worlds.

Merrill College seeks to enrich the study of science by sponsoring the Science and World Society program. The program is organized around two ongoing seminars: International Interactions in Science and Society, and Science and Human Values. Another component of the program is the Merrill-Crown Science Table, a weekly dinner at which scientific questions are informally discussed by interested students from Merrill and Crown Colleges and a faculty guest.

In addition to these academic programs, Merrill College has two substantial academic support programs. The Merrill Field Program, one of the College's most distinctive features, has placed and supervised students in a variety of off-campus projects. Predicated on the assumption that people learn through active experience as well as by formal course work, it provides a way in which students can become involved directly with a number of issues and problems facing our country and other nations today. The other program, the Third World Teaching Resource Center, was established five years ago at UCSC in response to the University community's expanding demands for up-to-date materials concerning Third World peoples. Students, working within the Center, provide the main impetus not only for the collation of the growing information about minority peoples, but also for the development of creative approaches to Third World studies as exemplified through research projects. Once completed, these research projects

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are then made available to the students, faculty, and staff of the University as well as to teachers throughout Santa Cruz County.

In 1975-76, Merrill's 34 permanent faculty were distributed as follows: 42 percent in the Humanities Division, 26 percent in the Natural Sciences Division, and 32 percent in the Social Sciences Division.

COLLEGE FIVE

ORIGIN: 1969

COLLEGE DEGREE: B.A. (1971, AESTHETIC STUDIES)

TABLE 8 SUMMARY DATA -- COLLEGE FIVE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	41	39	39	43	40
Students	861	794	795	854	852
College Majors	38	67	46	66	68

College Five is an academic community concerned with artistic and scholarly pursuits. The collegiate intention is to establish a climate in which preparation for the future combines with new realizations of the self. Thus, the faculty and the students are involved with aesthetic values and the supposition that art, in some appropriate way, should be an integral part of everyone's life. While the analysis and contemplation of art are intimate concerns in the College, equally important is the actual making of art. Opportunities for such experience are offered in the College in the studio/seminar series, the guilds, and the aesthetic studies major. Some students in College Five major in the natural or social sciences; others in the humanities or fine arts.

For lower-division students, College Five offers studio courses in film, dance, creative writing, photography, printmaking, and ceramics. These offerings constitute an informal "core" program.

The aesthetic studies major is the crux of the College program and is designed to serve upper-division students. The goal of the major is to integrate aesthetic theory with competence in the arts. This goal is pursued through a coherent program in aesthetic theory for students specializing in the arts. The aesthetic studies major contains seven subfields or "paths." These are: ceramics, creative writing, film, music, photography, performing arts, and the visual arts. Requirements for the major are five art studio and five arts seminar courses,

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and two additional courses (independent studies) in preparation for a senior project. The senior project requires both a performance or exhibit of the student's art and an essay on the aesthetics of that art or the arts generally. The arts study courses are drawn from offerings in aesthetic theory, the psychology of aesthetics, art and society, aesthetic education, practical criticism of the arts, and art history.

To facilitate the pursuit of artistic endeavors on an extracurricular basis, students in the College have formed guilds centered on particular interests. Currently, there are active guilds in figure drawing, ceramics, photography, recorder, cinema, graphic stories, folk music, children's art, and drama. Most guilds cut across student, faculty, staff, and town lines for membership.

In 1975-76, the College had 40 permanent faculty, 54 percent in the Humanities Division, 23 percent in the Natural Sciences Division, and 23 percent in the Social Sciences Division.

KRESGE COLLEGE

ORIGIN: 1971

COLLEGE DEGREE: B.A. (1974, Women's Studies)

TABLE 9 SUMMARY DATA -- KRESGE COLLEGE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	13	22	27	35	38
Students	290	429	577	649	663
College Majors	—	—	—	6	26

Two features of Kresge College have a strong influence on its academic program. The first is a commitment to development and change, rather than adherence to a single philosophy. The second is participatory decision-making -- every member of the community has the chance to take a hand in decisions that affect his or her life. Almost on arrival, new people are likely to find themselves drawn into the process of shaping the College into what they want it to become. The College respects and fosters an interdisciplinary, ecological approach to learning with the goal of understanding our world. The intention is to consider broadly whole bodies of knowledge as they interrelate with actual life experiences, goals, and career possibilities.

Many of the social science disciplines represented in the College are concerned with fundamentals of communications research as these have influenced the various fields of anthropology, sociology, psychology, and community studies, among others. Recognition of the mass media as a powerful force in the development and maintenance of social values makes the study of communications theory and techniques vital in understanding the human ecosystem. Faculty and students from various traditional disciplines attempt to construct useful models of the representational systems available to human beings as well as the relationships of symbolic expression to social and cultural contexts. These interests culminate in the creation or performance of selected patterns of communication such as dance, literature, and theater.

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Kresge also offers an undergraduate major in women's studies. The program has four objectives: to examine critically assumptions about women held by each academic discipline; to test these assumptions in the perspective of current research and individual experience; to examine traditional and changing sex roles in various cultures; and to explore new alternatives for men and women in our society. Because issues in women's studies demand both an interdisciplinary scope and a competent knowledge of one of the traditional disciplines, this program is pursued as part of a joint or double major. The major requires completion of eight upper-division courses and a comprehensive examination or senior thesis (or project).

In 1975-76, the College's 38 permanent faculty were distributed among the three Divisions as follows: Humanities 39 percent, Natural Sciences 17 percent, and Social Sciences 44 percent.

OAKES COLLEGE

ORIGIN: 1972

COLLEGE DEGREE: NONE

TABLE 10 SUMMARY DATA -- OAKES COLLEGE

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	1	10	14	25	26
Students	—	237	313	386	531
College Majors	—	—	—	—	—

The specific goals of Oakes College are to provide equal educational opportunity within the framework of a culturally unbiased academic atmosphere, and to facilitate the development of a community morality based upon universal human concerns. As a liberal arts college concerned with quality education, Oakes College seeks to provide excellent opportunities for the acquisition of traditional academic skills. At the same time, the College is vitally concerned with value formation and the philosophical and moral context in which a student utilizes acquired skills. It is imperative to create an ethical living-learning environment which fosters in each student a humane rationality that leads to a sense of responsibility to all humanity.

Oakes College has no undergraduate major, but offers three curricular programs regularly staffed by College faculty: the core curriculum focusing on the College's theme of "The Ethnic Experience and Cultural Pluralism in America," the Oakes College introductory science program, and the writing program. As of fall 1977, Oakes will also be coordinating the Extramural and Community Services Program, formerly offered by Cowell College.

The developing core curriculum consists of: two central team-taught core courses, a series of "spin-off" core seminars which delve into specific questions arising in the core course, and a series of other courses that revolve around the general theme of ethnic experience and cultural pluralism in America. Core curriculum

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courses are designed to sensitize all students to cultural and biological differences, while also offering relevant points of identification and self-validation for minority students.

The Oakes College emphasis on science results from an awareness of the intrinsic value of science for all groups in our society. The science program is designed to provide an alternative to the standard campus science offerings, which assume that enrolling students have a strong science background. The program offers a wide range of small introductory science courses taught by concerned College faculty; these courses ultimately feed into board-sponsored offerings.

In 1975-76, the College had 26 permanent faculty, distributed as follows: 21 percent in the Humanities Division, 44 percent in the Natural Sciences Division, and 35 percent in the Social Sciences Division.

COLLEGE EIGHT

ORIGIN: 1972

DEGREE: NONE

TABLE 11 SUMMARY DATA -- COLLEGE EIGHT

AVC-AP

	1971-72	1972-73	1973-74	1974-75	1975-76
Permanent Faculty	—	5	17	24	28
Students	—	144	261	441	541
College Majors	—	—	—	—	—

College Eight is committed to a balance between intellectual activities and experiences in the field, and to maintaining the connection between teaching and research with larger social and ecological issues. The College expects that all its members will have serious concerns with important human and environmental problems, and will maintain a continuing engagement in and awareness of the world's intellectual and creative work. Specific educational directions are emerging from the shared interests and talents of its members. Many of these interests involve an attempt to understand and improve upon the response of human society to the natural environment.

Most of the College Eight faculty have grouped themselves into academic "clusters." Clusters are envisioned as faculty and students interested in similar problems or having a similar approach to a variety of problems. Clusters can concern one discipline or can be interdisciplinary in nature. Six such clusters now exist.

One of these is Marine Studies, whose members are broadly based in the natural sciences and are concerned with describing and interpreting the biological, chemical, and physical processes of the near-shore sea. A close relationship with the Center for Coastal Marine Studies enriches these efforts. A related social sciences-based cluster, Planning, focuses on the state of the environment

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and those human actions that significantly affect it. The Social and Political Thought cluster relies upon the classic texts and arguments of such figures as Plato, Augustine, Machiavelli, Hobbes, Marx, Weber, and Merleau-Ponty in order to provide a critical vantage point for understanding contemporary political and scholarly issues.

The Institutional Analysis cluster studies institutions such as the legal system, the organization of science and technology, and the instruments of political participation and denomination in a world context. The Perception cluster is concerned with how both living and artificial systems receive, process, store, and use information about their environments. These problems are attacked from the standpoints of psychology, biology, information sciences, and chemistry. Those in the Natural History cluster are concerned with a more generalistic, holistic view of plant and animal life, the earth, and our relationship to it; its philosophic overview includes aspects of evolution, anthropology, geology, and the link between human constructs and natural systems.

College Eight's responsiveness to social conditions has prompted it to embrace many of the groups that have heretofore been represented only marginally on campus. These include older students, returning women, transfer students, and veterans. Lower-division students attracted by the academic clusters are also welcomed.

Construction of College Eight physical facilities has been delayed several years and is not likely to be completed before 1980. College offices and social spaces are currently located in the Social Sciences Building and most of the students live off campus. For all members of the College community, College Eight attempts to be an accessible and responsive place.

In 1975-76 the College had 28 permanent faculty, 10 percent in the Humanities Division, 43 percent in the Natural Sciences Division, and 47 percent in the Social Sciences Division.

APPENDIX C.

DIVISIONAL PROGRAMS

This appendix is intended to give a brief description of the academic program of the boards of studies and committees. Principal features are the research and intellectual focus of faculty and undergraduate and graduate programs. In addition, teaching objectives, the type of students served, the types of classes offered, and subdisciplinary curricular pathways are also noted, where applicable.

The portion describing faculty research and intellectual focus is based on the identification of clusters of faculty with common interests within the various boards and committees. An area of research with three or more associated faculty FTE is designated as a research strength; an area with from one to three FTE is considered a research interest. This designation is not intended to imply that a single, outstanding faculty member cannot bring great distinction to an individual board or committee. It does, however, indicate that without a certain minimum number of faculty in a given area of teaching or research, a program will have difficulty maintaining curriculum consistency and research continuity when a faculty member goes on a sabbatical or leave of absence.

Accompanying each board and committee description is a table containing data on faculty, enrollments, majors, and degrees awarded for that unit. These data were derived from three sources: those on permanent faculty FTE from faculty profiles generated by the Administrative Systems Office, as of January 19, 1977; those on student enrollments from annual listings of Student Credit Hours, issued by the Office of Planning and Analysis; those on majors and undergraduate and graduate degrees from the Office of Planning and Analysis 1977 Data Book. (For 1973-74, joint degrees were fully counted.) All other information in this appendix was order to preserve a campuswide headcount; for 1974-75 and 1975-76, double and joint degrees are fully counted.) All other information in this appendix was obtained from the respective boards of studies and committees.

1. Humanities Division

The Humanities Division includes eight Boards of Studies -- Art, History, Linguistics, Literature, Music, Philosophy, Religious Studies, and Theater Arts -- and the Committee on Language Instruction. The graduate program in History of Consciousness is discussed in Appendix D, Campuswide Programs.

BOARD OF STUDIES IN ART

ORIGIN: 1966

DEGREE: B.A.

TABLE 12 SUMMARY DATA -- ART

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		10.5	12.5	15.0	15.0
Enrollments:	UG	526	714	801	
	G	—	—	—	
	TOTAL	526	714	801	
Majors:	UG	44	71	105	
	G	—	—	—	
Degrees:	UG	35	46	75	
	G	—	—	—	

Research and Intellectual Focus

The Art Board has 15.0 permanent faculty FTE, with research strengths in drawing and painting, sculpture, and art history. An additional area of faculty research interest is in printmaking.

Undergraduate Programs

The Art Board offers programs in drawing and painting, sculpture, printmaking, and art history. The studio programs are based on a diverse faculty who offer close, intensive instruction. Currently there are eleven faculty in various studio disciplines of the visual arts: painters, sculptors, and printmakers. Studio art has a fifth-year enrichment program to provide selected students with greater exposure to studio experiences. The Art Board has affiliations with the majors in aesthetic studies at College Five, and Arts and Crafts and Their History at Cowell. Art history, which became a major program in 1975, provides a visually exciting context in which to learn about the history of humanity and its artistic creation. It includes courses in a broad range of periods and themes, and the student is encouraged to take independent studies and further studio courses, as well as to become proficient in at least one foreign language.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN HISTORY

ORIGIN: 1965

DEGREE: B.A.; Ph.D.

TABLE 13 SUMMARY DATA -- HISTORY

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		14.33	18.0	19.0	18.5
Enrollments:	UG	541	642	697	
	G	20	14	20	
	TOTAL	561	656	717	
Majors:	UG	196	216	225	
	G	13	7	8	
Degrees:	UG	55	61	54	
	G	7	4		

Research and Intellectual Focus

The History Board has 18.5 permanent faculty FTE, with research strengths in European and American history. These and other research interests are central to the graduate program described below.

Undergraduate Program

The general objective of the history program is to provide undergraduates with a broad knowledge of history, balanced between mastery of specific periods and subjects, and understanding of general historical thinking. In a campuswide context, the History Board augments the curricula of other boards, colleges, and committees for which history plays a supportive role. Characteristically, one-third of the board's twenty historians serve simultaneously on at least one other board. Accepted principal fields of study within the history program are American, ancient, early modern European, English, Far Eastern, German, Latin American, medieval, modern European, Near Eastern, Renaissance and Reformation, and Russian history, and the history of ideas. An effort is made to cover many different historical subjects, while at the same time allowing concentration in modern European and United States history.

Graduate Program

The Ph.D. degree was originally offered in both European and United States history; the program has since been modified to focus on European history only.

COMMITTEE ON LANGUAGE STUDIES

ORIGIN: 1965

DEGREE: NONE

TABLE 14 SUMMARY DATA -- LANGUAGE STUDIES

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		3.0	3.0	3.0	3.0
Enrollments:	UG	662	800	804	
	G	—	—	—	
	TOTAL	662	800	804	
Majors:	UG	—	—	—	
	G	—	—	—	
Degrees:	UG	—	—	—	
	G	—	—	—	

Undergraduate Programs

The Committee on Language Studies is responsible for intensive instruction in eight languages, mostly at the lower-division level, with one or two upper-division courses in each language. No undergraduate degree is offered. With a heavy service role, the main goal is to provide students with the opportunity to become competent in all these areas of language instruction or in those areas which are most necessary to their studies. The committee includes faculty members in literature and language studies and offers instruction in Chinese, French, German, Hebrew, Italian, Japanese, Russian, and Spanish (Greek and Latin are offered by History and Literature Board faculty in the classics program). However, the different languages are not classified as degree programs. In each case, the program objective is to prepare students for the various opportunities available at the upper-division level in other boards or areas of study.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN LINGUISTICS

ORIGIN: 1965

DEGREE: B.A.

TABLE 15 SUMMARY DATA -- LINGUISTICS

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		2.0	4.0	4.0	4.0
Enrollments:	UG	83	100	113	
	G	—	—	1	
	TOTAL	83	100	114	
Majors:	UG	33	40	36	
	G	—	—	—	
Degrees:	UG	4	6	7	
	G	—	—	—	

Research and Intellectual Focus

The Linguistics Board has 4.0 permanent faculty FTE, whose research interests cover a range of topics within linguistics.

Undergraduate Programs

The Linguistics Board seeks to provide a basic and comprehensive introduction to the discipline with the opportunity for some specialization in one or more of the principal branches; to provide a solid foundation for graduate work in linguistics; and to meet the needs of students from other disciplines. The board offers a full range of basic courses including phonetics and phonology, syntax and semantics, and courses in historical, sociological, and psychological linguistics. Two lower-division introductory courses are given each year; the rest are upper-division. An average of fourteen regular board courses a year has been given in the last three years and only a small number of courses are sequential.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN LITERATURE

ORIGIN: 1965

DEGREE: B.A.; Ph.D.

TABLE 16 SUMMARY DATA -- LITERATURE

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		33.0	34.0	33.0	32.0
Enrollments:	UG	829	935	937	
	G	42	47	46	
	TOTAL	871	982	983	
Majors:	UG	387	416	385	
	G	25	33	25	
Degrees:	UG	82	76	108	
	G	9	13		

Research and Intellectual Focus

The Literature Board has 32.0 permanent faculty FTE, with research strengths in English, American, French, and German literature. Additional areas of research interest include: Italian, Latin American, and Spanish literature, and classics. These research foci are central to the graduate program described below.

Undergraduate Programs

The Literature Board serves two groups of students on campus: those wishing to specialize in the study of Western literature by means of a major in the subject and those wishing to take one or more courses in Western literature as a part of a liberal and humanistic education. Literature courses are offered in English, classics, French, German, Greek, Italian, Latin, Russian, and Spanish. Majors are expected to work in two or more national literatures, have competence in at least one language other than English, and to be familiar with works written in various periods.

Graduate Program

The board offers a doctoral program which stresses not only the development of skills in close textual analysis, but also the training of young teachers who can in turn bring to another generation of students the power and value of literature. The graduate program encompasses English, French, German, Spanish, Italian, and classical literature. Particular emphasis is placed on assigning students to teaching assistantships.

BOARD OF STUDIES IN MUSIC

ORIGIN: 1965

DEGREE: B.A.

TABLE 17 SUMMARY DATA -- MUSIC

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		7.0	8.0	8.0	8.0
Enrollments:	UG	251	249	333	
	G	1	2	—	
	TOTAL	252	251	333	
Majors:	UG	30	27	32	
	G	—	—	—	
Degrees:	UG	11	11	15	
	G	—	—	—	

Research and Intellectual Focus

The Music Board has 8.0 permanent faculty FTE, whose research interests lie in the general area of music of Western civilization.

Undergraduate Program

The goal of the Music Board is an integration of performance and scholarship skills, combining the traditional conservatory emphasis on musical performance with the University emphasis on scholarship and cultural breadth. The music curriculum is based on a three-year (nine-quarter) core sequence, which details the historical, theoretical, analytical, and performance aspects of the music of Western civilization. Following the core sequence, students develop an emphasis in an area of music, culminating in a project or thesis which, ideally, includes products of scholarship, individual creative works, and public performance. The undergraduate program enables majors to gain considerable experience in both scholarship and performance and to establish a broad and substantial foundation for further academic or performing studies, a teaching career, or other vocations which involve music.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN PHILOSOPHY

ORIGIN: 1965

DEGREE: B.A.

TABLE 18 SUMMARY DATA -- PHILOSOPHY

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		8.0	8.0	8.0	7.0
Enrollments:	UG	290	291	357	
	G	—	—	—	
	TOTAL	290	291	357	
Majors:	UG	116	134	145	
	G	—	—	—	
Degrees:	UG	24	23	32	
	G	—	—	—	

Research and Intellectual Focus

The Philosophy Board has 7.0 permanent FTE¹ whose research interests cover a broad range of topics, from the traditional subfields such as ethics and epistemology to various contemporary developments.

Undergraduate Programs

In its course offerings and requirements for philosophy majors, the Philosophy Board maintains a balance between philosophy as a resource for humanistic studies and philosophy as a field with its own history and specialized methods. Upper-division courses range from those examining root assumptions in different fields of cultural experience (e.g., aesthetics, philosophy of religion) to those on specialized areas of philosophical method (e.g., philosophical logic, studies in ontology and language). The board also offers advanced seminars calling for focused work on specific problems. In these seminars and also in individual studies courses (tutorials for independent projects), Santa Cruz students often go much farther than is possible in most other undergraduate philosophy programs. The Philosophy Board of Studies works to cultivate among its students a sense of critical vocation and a responsibility for clarifying issues of personal, social, and historical existence. Philosophy majors from UCSC have had notable success in gaining admission and fellowships at philosophy graduate programs in major universities.

¹The normal complement of permanent faculty FTE for the Philosophy Board is 8.0.

BOARD OF STUDIES IN PHILOSOPHY

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Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN RELIGIOUS STUDIES

ORIGIN: 1974

DEGREE: B.A.

TABLE 19 SUMMARY DATA -- RELIGIOUS STUDIES

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		4.5	4.5	4.5	4.5
Enrollments:	UG	276	148	266	
	G	—	5	—	
	TOTAL	276	153	266	
Majors:	UG	64	64	65	
	G	—	—	—	
Degrees:	UG	25	15	37	
	G	—	—	—	

Research and Intellectual Focus

The Religious Studies Board has 4.5 permanent faculty FTE, whose interests include Christianity, Judaism, Mysticism, Buddhism, and Hinduism, including the historical, spiritual, and intellectual issues raised by such interests.

Undergraduate Programs

The Religious Studies Board seeks to make available an increased understanding of students' own religious traditions and to open students' minds to the possibility, history, and value of religion. The study of religious traditions is a profound education. The undergraduate program in religious studies investigates the claims and the cultural components of religion, and focuses on three major traditions: Christianity, Indic religions, and Judaism. Thus, it provides the basic tools and equipment for future advanced study in the infinitely rich and varied field of religious aspiration. Apart from the general elevation of the quality of thought which religious studies students hope to provide throughout the University, there are specific areas where cooperation has proved fruitful. For example, many students develop joint majors with religious studies: some from the Art Board, quite a number from the Psychology Board, some from the Anthropology Board, others from History, Philosophy, and Environmental Studies. Lastly, there are very close connections between the board and the all-campus ministry, and some Religious Studies Board members are on committees connecting the campus ministry with the activities of churches in Santa Cruz County.

BOARD OF STUDIES IN RELIGIOUS STUDIES

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Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN THEATER ARTS

ORIGIN: 1969

DEGREE: B.A.

TABLE 20 SUMMARY DATA -- THEATER ARTS

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		4.0	7.0	9.0	9.0
Enrollments:	UG	270	215	308	
	G	---	---	---	---
	TOTAL	270	215	308	
Majors:	UG	26	30	40	
	G	---	---	---	---
Degrees:	UG	19	17	19	
	G	---	---	---	---

Research and Intellectual Focus

The Theater Arts Board has 9.0 permanent faculty FTE, with research strength in theater and dance. An additional area of faculty research interest is in film.

Undergraduate Programs

The primary focus of the Board of Studies in Theater Arts is the fusion of performance with the study of history, literature, and theory of the arts. The board's goal is to prepare students to move into professional study and work, to go on to graduate school, or to relate a knowledge of these arts to their own lives, to the community, and to other disciplines. By including the whole spectrum of theater, dance, and film arts, the theater arts curriculum attempts to provide a breadth and unity of perspective not available in the study of any single art.

The major program is organized into three pathways: theater, dance, and film. The program in drama allows for breadth while allowing the student to concentrate in depth on one aspect of theater arts, such as acting, directing, or design. The objective of the dance program is to provide students with the means of recognizing and developing their own self style, and the curriculum is designed to develop a strong sense of self through experience with contemporary American dance. The film curriculum provides a collaborative relationship between film studies (theory) and filmmaking (practice), according students the options of concentrating in film studies or, in greater depth, in the discipline of filmmaking.

BOARD OF STUDIES IN THEATER ARTS

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Graduate Program

No graduate program is offered.

2. Natural Sciences Division

The Natural Sciences Division includes seven Boards of Studies -- Astronomy and Astrophysics, Biology, Chemistry, Earth Sciences, Information Sciences, Mathematics, and Physics - and administers two undergraduate programs -- in natural sciences and in science writing.

BOARD OF STUDIES IN ASTRONOMY AND ASTROPHYSICS

ORIGIN: 1966

DEGREE: Ph.D.

TABLE 21 SUMMARY DATA -- ASTRONOMY

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		6.5	6.3	7.3	7.3
Enrollments:	UG	101	157	170	
	G	53	48	49	
	TOTAL	154	205	219	
Majors:	UG	—	—	—	
	G	23	21	23	
Degrees:	UG	—	—	—	
	G	2	9		

The Board of Studies in Astronomy and Astrophysics was organized at UCSC after the academic staff of Lick Observatory was transferred to the Santa Cruz campus in 1966. Most of the faculty hold joint appointments in Lick Observatory and the board.

Research and Intellectual Focus

The board has 7.3 permanent faculty FTE, with research strengths in stellar structure and evolution, theoretical astrophysics, observational stellar astronomy, and observational galactic and extragalactic astronomy. These research foci are central to the graduate program described below.

Undergraduate Programs

The board offers a general nondegree curriculum for undergraduates. The objectives are to provide physics majors with upper-level courses in astrophysics in preparation for graduate training in astronomy and to provide general astronomical science courses at the lower-division level.

Graduate Program

The Astronomy Board provides a high-quality program of graduate education with the dual goals of the advancement of knowledge and the development of future professionals in the fields of observational and theoretical astrophysics. The Ph.D. program thus covers both theoretical and observational aspects of astronomy: stellar structure and evolution, stellar spectroscopy, the interstellar medium, galactic structure, external galaxies and quasars, astrometry, general relativity and gravitational radiation, infrared astronomy, advanced astronomical instrumentation, high-energy astrophysics, pulsars, and x-ray astronomy. The graduate program is internationally recognized, and many Ph.D. graduates of the program have obtained prestigious postdoctoral fellowships and faculty positions.

BOARD OF STUDIES IN BIOLOGY

ORIGIN: 1965

DEGREE: B.A.; Ph.D.

TABLE 22 SUMMARY DATA -- BIOLOGY

AVC-AP

	1973-74	1974-75	1975-76	1976-77
Permanent FTE	22.0	26.0	27.0	26.0
Enrollments:	UG	1283	1306	1318
	G	159	158	159
	TOTAL	1442	1464	1477
Majors:	UG	638	721	704
	G	54	52	51
Degrees:	UG	146	175	186
	G	6	19	

Research and Intellectual Focus

The Biology Board has 26.0 permanent faculty FTE, with research strengths in botany, cell development and molecular biology, and marine biology. Additional areas of faculty research interest include psychobiology and physiology. These research foci are central to the graduate program described below.

Undergraduate Programs

In order to offer a general undergraduate education in the biological sciences to students with a wide range of interests and professional goals, the program is organized in a way that allows students a maximum amount of individual choice in designing their plan of study. However, a number of course pathways have been prepared for students wishing to specialize in a particular area of biology. These include marine biology, ecology, plant or animal physiology, developmental biology, genetics, molecular biology, neurophysiology, and animal behavior. In addition to the formal course offerings, many undergraduate students have the opportunity to work in biology research laboratories, usually in collaboration with a professor or graduate students.

Graduate Program

Graduate students are expected to develop mastery of the concepts and methods of general biology, and proficiency in one of the following fields of investigation: molecular and cellular aspects of genetics and development, endocrinology, immunology, plant physiology, neurophysiology, psychobiology, marine biology, and ecology. Students are admitted only on the basis of a faculty sponsorship in their area of study. The graduate program is considered to be quite strong, and attracts a large number of applicants. In spite of the national trends in Ph.D. employment, graduates of the Santa Cruz program have had little trouble finding either teaching or research positions after graduation.

BOARD OF STUDIES IN CHEMISTRY

ORIGIN: 1965

DEGREE: B.A.; M.S.; Ph.D.

TABLE 23 SUMMARY DATA -- CHEMISTRY

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		15.0	16.0	17.0	17.0
Enrollments:	UG	648	661	694	
	G	70	93	104	
	TOTAL	718	754	798	
Majors:	UG	104	119	115	
	G	26	37	41	
Degrees:	UG	26	41	30	
	G	11	7		

Research and Intellectual Focus

The Chemistry Board has 17.0 permanent faculty FTE, with research strengths in organic chemistry, photochemistry, and inorganic chemistry. These research foci are central to the graduate program described below.

Undergraduate Program

The undergraduate major in chemistry is designed to accommodate both students interested in becoming professional chemists and those preparing for work in the allied fields of biology, biochemistry, chemical physics, and environmental sciences. To accomplish this diverse service role, alternative course options are offered in the introductory, organic, and physical chemistry sequences. For example, in addition to traditional courses, the board offers a two-quarter self-paced sequence in introductory chemistry as well as a two-quarter organic chemistry sequence aimed at life science majors. A very popular four-course biochemistry sequence which is unique for a department of this size should be mentioned. Undergraduates are also encouraged to become involved in faculty research; these research efforts often lead to scholarly publications in collaboration with the faculty sponsor.

Graduate Program

The objectives of the Ph.D. program are to prepare students to embark upon careers of research in chemistry as independent investigators, to teach in colleges and universities, or to engage in other pursuits which require education in chemistry at the highest formal level. The master's program is meant to prepare a person for similar activities but at an intermediate level. The Chemistry Board offers opportunities for research and in-depth study in the traditional fields of organic, inorganic, physical, and biological chemistry. In addition, several of the faculty share cross-disciplinary interests in the areas of photochemistry, vision, marine chemistry, and computer-generated organic synthesis. A notable attribute of the program is an environment which encourages graduate students to develop their teaching skills. The board also places great emphasis on training students to become effective teaching assistants.

BOARD OF STUDIES IN EARTH SCIENCES

ORIGIN: 1967

DEGREE: B.A.; B.S.; Ph.D.

TABLE 24 SUMMARY DATA -- EARTH SCIENCES

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		9.0	10.0	9.5	10.0
Enrollments:	UG	334	235	347	
	G	74	64	70	
	TOTAL	408	299	417	
Majors:	UG	85	117	124	
	G	25	22	26	
Degrees:	UG	15	29	33	
	G	7	5		

Research and Intellectual Focus

The Earth Sciences Board has 10.0 permanent faculty FTE, with research strength in active continental margins and island arcs. An additional area of research interest is applied geology. These research foci are central to the graduate program described below.

Undergraduate Program

The goal of the Earth Sciences Board is to educate the undergraduate student on the earth's physical setting and the processes that shape it. The board offers courses to give the general student body some appreciation of these processes, and provide a smaller group of students with an understanding of sufficient depth to encourage continued study of earth processes and their implications for human needs and environmental protection. Subfields within the program include geophysics, structural geology, petrology, paleontology, marine geology, and environmental geology. The undergraduate program is unique on the campus in that both the B.A. and B.S. degrees are offered. The B.S. degree is regarded as a preparation for graduate school.

Graduate Program

The composition of the graduate program is as varied as the research interests of the faculty. A special characteristic is a concentration on the tectonic problems of active continental margins. Subspecialties involved in this area include basin analysis, marine geophysics, seismology, petrology, and structural geology. There are also programs in paleoecology, rock deformation and paleomagnetism, and environmental geology. Earth sciences is considered one of the strongest UCSC natural sciences graduate programs.

BOARD OF STUDIES IN INFORMATION SCIENCES

ORIGIN: 1968

DEGREE: B.A.; M.S.; Ph.D.

TABLE 25 SUMMARY DATA -- INFORMATION SCIENCES

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		8.0	10.0	9.5	8.5
Enrollments:	UG	224	249	251	
	G	25	39	34	
	TOTAL	249	288	285	
Majors:	UG	60	68	77	
	G	11	16	19	
Degrees:	UG	12	23	20	
	G	1	0	0	

Research and Intellectual Focus

The Information Sciences Board has 8.5 permanent faculty FTE, with research interests in the areas of systems and information codes, language and language processing, modeling and methods, and modeling behavior. These research foci are central to the graduate program described below.

Undergraduate Program

Information sciences is concerned with the representation and the processing of information by both natural and artificial systems. The disciplinary title "information science" was chosen to emphasize both the subsidiary aspects of the computer in these processes and the board's interest in general laws relating to information and associated systems. Major and nonmajor students alike are encouraged to devise programs that explore the common ground between information sciences and other disciplines such as anthropology, biology, economics, education, environmental studies, linguistics, mathematics, political science, psychology, and sociology. The undergraduate program has developed four major areas of curricular emphasis: systems analysis, intelligence and cognition, languages and machines, and computer programming. The first two areas are applications/oriented

and strongly interdisciplinary in nature. The third area (languages and machines) concerns computer languages, their interpretation, translation, and implementation. The fourth area is designed to prepare the student to make an immediate and meaningful contribution as a practicing computer programmer.

Graduate Program

The graduate program covers basically the same four areas of emphasis. Many of the undergraduate courses in the areas are followed by graduate courses presenting the most recent developments in these areas. In contrast to the average computer science graduate program, there is more emphasis at Santa Cruz in interdisciplinary areas, particularly in the systems and intelligence and cognition areas. A conscious effort is made to maintain close relations between faculty and graduate students.

BOARD OF STUDIES IN MATHEMATICS

ORIGIN: 1965

DEGREE: B.A.; Ph.D.

TABLE 26 SUMMARY DATA -- MATHEMATICS

AVC-AP

	1973-74	1974-75	1975-76	1976-77
Permanent FTE	13.0	13.0	13.25	13.25
Enrollments: UG	491	598	669	
G	40	36	46	
TOTAL	531	634	715	
Majors: UG	144	142	119	
G	13	20	20	
Degrees: UG	20	29	25	
G	3	3		

Research and Intellectual Focus

The Mathematics Board has 13.25 permanent faculty FTE, with research strengths in global analysis and finite group theory. Other areas of research interest include graph theory, geometry, and statistics. These research foci are central to the graduate program described below.

Undergraduate Program

The undergraduate program of the Mathematics Board is very similar to that at most other universities. It has two main goals. One is to provide basic mathematical skills to students from all disciplines, and approximately half of the board's teaching effort goes into lower-division courses, most of which are aimed at this task. The other goal is to provide a sound education for students who wish to pursue mathematically related careers or who are interested in studying mathematics for its own sake. The board tries to ensure that students receive rigorous courses in the basic areas of algebra and analysis and that each student has an opportunity to become acquainted with a variety of other fields within mathematics.

Graduate Program

The graduate program endeavors to provide excellent supervision for students who

BOARD OF STUDIES IN MATHEMATICS

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aspire to be professional mathematicians. The program is small, and the board has chosen to concentrate its strength in selected areas of mathematics, rather than attempt to represent a broad range of specialties. Particularly strong clusters of faculty are in global analysis and finite group theory. The board does not have the resources to offer an extensive program of courses; in consequence, graduate teaching often takes the form of research seminars or individually supervised instruction.

BOARD OF STUDIES IN PHYSICS

ORIGIN: 1965

DEGREE: B.A., M.S., Ph.D.

TABLE 27 SUMMARY DATA -- PHYSICS

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		12.5	12.5	12.5	12.0
Enrollments:	UG	275	303	339	
	G	44	46	54	
	TOTAL	319	349	393	
Majors:	UG	77	94	92	
	G	16	19	19	
Degrees:	UG	14	14	12	
	G	4	4		

Research and Intellectual Focus

The Physics Board has 12.0 permanent faculty FTE, with research strengths in high-energy physics and condensed-matter physics. Another area of research interest is astrophysics. These research foci are central to the graduate program described below.

Undergraduate Program

The board offers an undergraduate program in physics that emphasizes personalized undergraduate education. The program is designed as a full four-year major, with a sequential series of courses. At the end of the sophomore year the students take one course which is entirely laboratory work and quite individual. Upper-division students are expected to take a two-quarter mathematical physics sequence, beginning at the start of the junior year. The bulk of the upper-division program relies on this sequence and tends to treat material in a sophisticated and rigorous manner. All majors are required to take an advanced laboratory course which is highly individual, and are also required to prepare a well-written senior thesis. The board plays a heavy service role in the natural sciences, with two introductory course series (a three-quarter calculus-based sequence and a two-quarter noncalculus sequence) and upper-division courses in mathematical physics and electronics.

BOARD OF STUDIES IN PHYSICS

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Graduate Program

The board offers a Ph.D. and a master's program, with the objectives of providing high-quality education in theoretical and experimental physics for those interested in college or university teaching and/or research careers in physics. The board offers opportunities for graduate education and research in two general areas: high-energy physics and condensed-matter physics, both theoretical and experimental. In addition, several faculty members have active research programs in relativistic astrophysics and biophysics.

NATURAL SCIENCES DIVISIONAL UNDERGRADUATE PROGRAMS

Natural Sciences Program

The natural sciences program was established to meet the needs of students whose educational goals are broader than the strongly professional programs offered by the individual boards in the Natural Sciences Division. Although not a formal undergraduate major, natural sciences can be declared as an individual major. The major is interdisciplinary and sufficiently flexible that a curriculum can be designed to meet students' individual needs. The program has no assigned faculty FTE and offers no courses; all courses offered by the seven Natural Sciences Division Boards are considered to be science courses. Requirements for the major are an approved study plan, twelve science courses, and either a comprehensive examination or senior thesis.

Science Writing Program

The science writing program, now in its second year, has a small staff and offers a few courses each year in science writing. The program, which is purely elective, serves primarily students in the natural sciences, but also physical anthropology and environmental studies. Its purpose is to teach scientists how to write about science for the general public, and several program graduates are serving as paid interns in government agencies and citizens' organizations such as the Sierra Club.

3. Social Sciences Division

The Social Sciences Division includes seven Boards of Studies -- Anthropology, Community Studies, Economics, Environmental Studies, Politics, Psychology, and Sociology -- and the Committee on Education.

BOARD OF STUDIES IN ANTHROPOLOGY

ORIGIN: 1965

DEGREE: B.A.

TABLE 28 SUMMARY DATA -- ANTHROPOLOGY

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		11.0	11.5	11.5	11.5
Enrollments:	UG	455	373	404	
	G	—	—	—	
	TOTAL	455	373	404	
Majors:	UG	155	186	174	
	G	—	—	—	
Degrees:	UG	29	49	46	
	G	—	—	—	

Research and Intellectual Focus

The Anthropology Board has 11.5 permanent faculty FTE whose research interests include Southeast Asian studies, political economics, and social organization.

Undergraduate Program

The primary objective of the Anthropology Board of Studies is the continued development of a high-quality, well-rounded, and flexible undergraduate program. Anthropology as a discipline seeks to understand human society with respect to both biological and cultural factors. The program covers five traditional subfields: ethnology, social anthropology, archaeology, linguistics, and physical anthropology. Ethnology aims at understanding the diversities of human culture and the processes of growth and change. Social anthropology investigates the ways in which human society is structured and the range of social behavior by means of controlled comparisons. Archaeology studies past human adaptations, including social and cultural systems, by analysis of their material by-products. Linguistics is concerned with the structure and formal properties of language as well as the relationships between this distinctively human symbolic process and cultural and various social phenomena. Physical anthropology studies the processes of human evolution, adaptation, and diversity, using living primates to assist in understanding evolutionary pathways. In modern anthropology, the boundaries between

BOARD OF STUDIES IN ANTHROPOLOGY

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these traditional subdisciplines have become less important. Consequently, the Anthropology Board encourages majors to design their curricula around one or a few issues, drawing heavily on each of the five subdisciplines.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN COMMUNITY STUDIES

ORIGIN: 1969

DEGREE: B.A.

TABLE 29 SUMMARY DATA -- COMMUNITY STUDIES¹

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		3.0	5.5	6.0	6.0
Enrollments:	UG	263	316	321	
	G	—	—	—	
	TOTAL	263	316	321	
Majors:	UG	117	91	60	
	G	—	—	—	
Degrees:	UG	36	39	46	
	G	—	—	—	

Research and Intellectual Focus

The Community Studies Board has nine permanent faculty FTE² whose research interests include ethnic and closed cultural communities, and political economy.

Undergraduate Program

The board defines its purpose as being the study of institutions and social change within the context of communities. Possibly UCSC's most interdisciplinary program, community studies is principally centered on the idea of field studies. In keeping with this philosophy, the board sponsors the Community Studies Field Program which places students in community service posts throughout the nation and overseas. This central focus on field studies is a deliberate break from traditional distinctions between teaching, research, and public service. Since the emphasis is on a framework for learning rather than a body of disciplinary material, there is a great deal of interaction with other boards, and six of the nine headcount faculty hold joint appointments with other boards. In addition, the major combines the interests of students from several major disciplines including

¹Enrollments in the terminating Extended University program are not included in this figure.

²Faculty members associated with the terminating Extended University program are not included in this figure.

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politics, economics, sociology, psychology, biology, anthropology, and literature.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN ECONOMICS

ORIGIN: 1965

DEGREE: B.A.

TABLE 30 SUMMARY DATA -- ECONOMICS

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		10.0	10.0	8.5	9.5
Enrollments:	UG	493	469	566	
	G	—	—	—	
	TOTAL	493	469	566	
Majors:	UG	105	140	161	
	G	—	—	—	
Degrees:	UG	39	50	62	
	G	—	—	—	

Research and Intellectual Focus

The Economics Board has 9.5 permanent faculty FTE with research strengths in American economic institutions and in international, comparative, and development economics. Other areas of research interest include political economy, business, and theory.

Undergraduate Program

The Economics Board has a fairly standard program. The curriculum is designed to acquaint students with the economic aspects of modern society. The objective of the program is to provide training in the techniques of economic analysis, and to help the student develop an ability to exercise social judgment in evaluating public policy issues. Another major goal is to provide an understanding of the function of economic systems other than that of the United States. Areas of program emphasis are American economic institutions, international, comparative, and development economics, political economy, business, and economic theory. For students majoring in economics, the curriculum will provide the groundwork which will enable them either to pursue graduate studies in economics or other disciplines or to enter into a career in private or public institutions. For students not

BOARD OF STUDIES IN ECONOMICS

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majoring in economics, the course offerings serve to equip them with the economic literacy indispensable to the understanding of current affairs and to satisfy their curiosity as to the manner in which society has solved the problems of organizing productive effort.

Graduate Program

No graduate program is offered.

COMMITTEE ON EDUCATION

ORIGIN: 1969

DEGREE: B.A.

TABLE 31 SUMMARY DATA -- EDUCATION

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		4.0	4.0	4.0	3.0
Enrollments:	UG	217	258	273	
	G	80	52	—	
	TOTAL	297	310	273	
Majors:	UG	—	—	—	
	G	—	—	—	
Degrees:	UG	—	—	—	
	G	—	—	—	

Research and Intellectual Focus

The Committee on Education has 3.0 permanent faculty FTE, with areas of interest that include multicultural/bilingual education, aesthetics education, and alienated youth.

Undergraduate Program and Teaching Credential Program

The philosophy of the Committee on Education is to examine education today through the widest possible philosophical lens. Critical problems are presented as debates, and students are encouraged to assimilate a wide variety of scholarly thought. The relationship between schooling and such issues as economic mobility, political participation, multicultural appreciation, and salubrious interpersonal relationships is examined, along with different orientations to the problems. The goal of the program is to prepare informed, analytical, articulate leaders of educational reform within public schools and in the community. Unlike any other UCSC program, the education program offers a professional credential, as part of which students undertake two-quarter teaching assignments with local public schools. Education pathways now being offered include bilingual/cross-cultured education, policy and content for social change, child psychology and child development,

COMMITTEE ON EDUCATION

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aesthetic education, and science/math education. In every pathway there is a strong multicultural emphasis, and all students are encouraged to become bilingual.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN ENVIRONMENTAL STUDIES

ORIGIN: 1970

DEGREE: B.A.

TABLE 32 SUMMARY DATA -- ENVIRONMENTAL STUDIES

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		7.0	8.0	7.0	7.5
Enrollments:	UG	292	430	515	-----
	G	---	---	---	-----
	TOTAL	292	430	515	-----
Majors:	UG	125	159	167	-----
	G	---	---	---	-----
Degrees:	UG	24	27	49	-----
	G	---	---	---	-----

Research and Intellectual Focus

The Environmental Studies Board has 7.5 permanent faculty FTE, with research strengths in the area of public values and institutions. An additional area of research interest is natural history.

Undergraduate Program

Environmental Studies is not a disciplinary effort, but a programmatic recognition that crossing disciplines is vital to understanding the complex environmental issues that face us all. The board currently sponsors three separate pathways through the undergraduate major: environmental studies, public values and institutions, and natural history. In each case the student must take a concurrent joint or double major to insure a disciplinary grounding from which to articulate the principles learned. These pathways are highly flexible, interdisciplinary and offer a field-work component. The environmental studies pathway is designed to assist students in developing a program that focuses on a specific environmental issue. The public values and institutions pathway is designed to acquaint the student with the ways in which societies recognize and respond to changing social values. The natural history pathway focuses on study

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of the dynamics of natural systems. In addition, there is a growing interest in topics related to the marine environment. The Environmental Studies Board has one of the largest internship programs on campus, and it oversees the 4,000+ volume Environmental Studies Library/Research Center. The board also sponsors undergraduate field research which has resulted in extensive studies of the Santa Cruz coastal and mountain areas and of the Wrangell Mountains of Alaska.

Graduate Program

No graduate program is offered.

BOARD OF STUDIES IN POLITICS

ORIGIN: 1965

DEGREE: B.A.

TABLE 33 SUMMARY DATA -- POLITICS

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		13.5	12.5	11.5	12.0
Enrollments:	UG	452	472	474	
	G	—	—	1	
	TOTAL	452	472	475	
Majors:	UG	264	294	319	
	G	—	—	—	
Degrees:	UG	52	71	84	
	G	—	—	—	

Research and Intellectual Focus

The Politics Board has 12.0 permanent faculty FTE¹ with research strengths in American politics and political theory. Another area of research interest is international politics.

Undergraduate Program

As a basic social sciences subject and a generally popular major, the Politics Board was one of the original boards established on the UCSC campus. The board's distinctive character was early indicated by its choice to adopt the classical name of the discipline, "politics," rather than the more usual behaviorist ("political science") or institutional ("government") names. Theoretical, historical, and practical concerns have always distinguished the program along with social and scientific interests. The emphases of the Politics Board are in four traditional areas of political study: political theory, American politics, comparative politics, and international politics.

Graduate Program

No graduate program is offered, but many board members are involved in the History of Consciousness program.

1. Actually 11.0 permanent faculty FTE due to faculty turnover.

BOARD OF STUDIES IN PSYCHOLOGY

ORIGIN: 1965

DEGREE: B.A.; M.S.; Ph.D.

TABLE 34 SUMMARY DATA -- PSYCHOLOGY

AVC-AP

	1973-74	1974-75	1975-76	1976-77
Permanent FTE	21.0	22.0	19.5	18.0
Enrollments: UG	1415	1489	1554	
G	34	45	57	
TOTAL	1449	1534	1611	
Majors: UG	519	587	712	
G	20	19	26	
Degrees: UG	158	171	207	
G	7	6		

Research and Intellectual Focus

The Psychology Board has 18.0 permanent faculty FTE, with research strengths in social, personality, and humanistic psychology. Other areas of research interest include developmental, physiological, and perceptual psychology, cognition, and psycholinguistics.

Undergraduate Program

The Psychology Board offers a wide range of courses which reflect the breadth of the field. At the lower-division level, students take introductory courses in experimental, social, personality, and humanistic psychology, and analytic methods. At the upper-division level, students concentrate on an area of their choice and are encouraged to become involved in research in this area. The curriculum is intended to provide students with a sense of the many distinct fields within psychology and an understanding of the nature and spirit of scientific inquiry in the field. The Psychology Board also administers a field program, available to all psychology majors and utilized by close to half the upper-division majors. The field program supports expressed student and faculty interest in experimental psychology.

Graduate Program

There are two pathways in the graduate program, both of which award the Ph.D. degree. One focuses on the areas of personality and social psychology and emphasizes research, particularly research that extends traditional methods into natural settings. The other concentrates on psychobiology and experimental psychology, emphasizing research apprenticeship experience, mainly in laboratory situations. Both pathways prepare students for careers in research and teaching, through initial structured course work, followed by direct research experience. There is no professional program in psychology.

BOARD OF STUDIES IN SOCIOLOGY

ORIGIN: 1965

DEGREE: B.A.; Ph.D.

TABLE 35 SUMMARY DATA -- SOCIOLOGY

AVC-AP

		1973-74	1974-75	1975-76	1976-77
Permanent FTE		12.5	15.5	16.5	17.5
Enrollments:	UG	461	420	471	
	G	—	3	2	
	TOTAL	461	423	473	
Majors:	UG	227	206	204	
	G	—	—	—	
Degrees:	UG	58	71	62	
	G	—	—	—	

Research and Intellectual Focus

The Sociology Board has 17.5 permanent faculty FTE, whose research interests include urban sociology, political sociology, development and underdevelopment, social psychology, theory, women's/family studies, and health care. These research foci are central to the graduate program described below.

Undergraduate Program

The Sociology Board's main concern is the understanding of the sources and consequences of human social action. Course offerings range broadly over the general field of sociology, with four areas of primary concentration: political sociology, urban sociology, social psychology, and the sociology of women. The board stresses teaching at the undergraduate level, and supplements the usual lecture and discussion courses with independent studies, field studies, senior theses, and student-taught courses in order to enrich the experience of its undergraduate majors.

Graduate Program

The Sociology Board has just initiated a Ph.D. degree program with three foci: institutional analysis and political economy, social movements and social change,

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and the theory and practice of social policy analysis. The program is both theoretical and applied, in the sense that it is designed not only for those students who wish to understand social change, but also for those who intend to apply such understanding to the design and implementation of social policy. At present the program is very small and not intended to grow beyond a maximum of 35 graduate students.

APPENDIX D.

CAMPUSWIDE PROGRAMS; INTERCOLLEGIATE AND INTERDIVISIONAL

This appendix contains supplementary and more detailed information concerning the five intercollegiate and interdivisional programs discussed in Section III, E.

1. History of Consciousness

The History of Consciousness program was initiated in 1967 and although it is designated as a Board of Studies, it is administered by an executive committee within the Humanities Division. The program has no assigned faculty; its staff consists of interested faculty members from various boards. As noted, it offers the Ph.D. only.

No formal curriculum is offered; the bulk of teaching and learning is achieved through individual studies and independent research on projects of an interdisciplinary nature. However, there is a traditional core seminar concerned with common methodology and thematic problems. This usually occupies the first year of a student's program, with the balance of course work being individual studies and subgroup colloquia.

2. Psychobiology

The Committee on Psychobiology supervises and administers an undergraduate major structured to provide an understanding of the biological basis of behavior through the variety of approaches outlined in Section III. The committee is composed of fourteen faculty members, primarily from the Boards of Biology and Psychology, and to a lesser degree from Chemistry and Information Sciences. Thanks to the cooperation of these boards in providing teaching time and funds, the Committee on Psychobiology has been able to fulfill its teaching mission without any assigned faculty.

For acceptance to the major in psychobiology, eight prerequisite courses are required: an additional seven courses are required for the major -- in biology, chemistry, psychology, and other disciplines. Either a senior thesis (or essay) or a score greater than the 50th percentile on the advanced Graduate Record Examination in psychology or biology is required for graduation.

3. Area Studies

As noted in Section III, area studies is a collection of programs coordinated by Merrill College but which have affiliated faculty from many colleges and boards. Two of these programs, Latin American studies and East Asian studies, offer undergraduate majors sponsored by their respective committees. Individual majors can be declared in the other area studies. Further discussions of these programs appear in the description of Merrill College (Appendix B).

4. Marine Studies

Marine studies is neither a major nor a single program, but the combined interests of at least three separate campus programs: an environmental studies group, a College Eight faculty cluster, and the Center for Coastal Marine Studies (an Organized Research Unit). There is no course-sponsoring agency responsible for providing marine science courses. Rather, students involved with marine studies take courses offered by the Biology, Chemistry, Earth Sciences, Environmental Studies, and Information Sciences Boards, as well as by several colleges. The Environmental Studies Board also provides the means for students to design individual programs in marine studies within the board major.

5. Physical Education and Recreation

The Office of Physical Education and Recreation offers four interrelated programs in physical education, intramural/recreational sports, sports and recreational clubs and general recreation. Physical education is the only strictly academic program; it is, however, closely linked to the other three programs.

The physical education program offers regularly scheduled courses, which carry no academic credit but which provide excellent instruction in a broad range of physical activities. Subjects range from water sports and court sports to martial art forms and general physical fitness activities. Some are presented in a single introductory course; others, because of their complexity, are offered in a series of courses designed to carry participants from beginning to advanced levels. Most classes are small, with expert instruction and carefully designed practice sessions, enabling students to learn much in the two- to three-hour-per-week sessions. Besides offering

courses for beginners, many activities also have intermediate and advanced sections.

The intramural/recreational sports program provides scheduled competitive activities for men and women students, faculty, and staff in approximately 25 individual, dual, and team sports. While some activities are offered only for men or women, many are coed and open to all interested persons. Team sports are scheduled throughout the quarter with playoff and championship games. Individual and dual sports are scheduled on a one-day basis, usually weekday evenings or Saturday mornings. The program is designed around the needs and interests of the UCSC community. Activities range from flag football, basketball, and slow pitch softball to racquetball, takedown wrestling, and motorcycle day trips.

Sports and recreation clubs are initiated and organized by students seeking more practice and challenge than is provided by the intramural and physical education programs. The sports clubs, including basketball, tennis, soccer, rugby, volleyball, fencing, karate, skiing, and sailing, engage in inter-collegiate competition of varying degrees and intensities. Recreation clubs are organized around less competitive interests such as surfing, folk dancing, sport parachuting, rock climbing, aikido, and cycling.

Whether or not students participate in any organized physical activities, they are strongly encouraged to use the physical education and sports facilities and equipment during their free hours. They may involve themselves in such activities as a pick-up basketball game, playing tennis or racquetball, jogging around the beautiful campus, or swimming in the pool. Besides offering "free-time" recreation, OPER also organizes campus activities and off-campus outings and expeditions. The main goal is to create a program that will fulfill the needs of the total UCSC community.

The Field House, located on the east side of the campus, is the focal point for the various programs and their direction. It includes a gymnasium, handball/racquetball courts, a dance studio, a personal conditioning room, and a martial arts room as well as locker rooms, an equipment center, and

faculty offices. Contiguous are spacious playfields suitable for all types of field activities, tennis courts, several outdoor basketball and volleyball courts, an outdoor gymnastics area, and a multipurpose building. Nearby is a small swimming pool. Facilities on the west side of campus include a new gymnasium, outdoor handball/racquetball courts, outdoor volleyball and basketball courts, tennis courts, and a small sports field. All facilities are open daily during the academic terms and students may use them whenever they are not being used for classes or club activities.

APPENDIX E.
UNIVERSITY EXTENSION

This appendix contains supporting materials concerning University Extension.

The three principal goals of University Extension dictate the orientation of its programs:

- (i) To assist members of a variety of groups to meet their continuing education needs with respect to information, understanding, and skills, in order that their ability to serve their publics may be enhanced. These persons include primarily teachers, health workers, veterinarians, counsellors, law enforcement personnel, business and industry groups, and public employees. Extension programs in maternal and child health in Africa also assist the government to achieve the goals of its foreign policy.
- (ii) To enable individuals to continue the process of liberal education. This goal envisions progress toward self-understanding, expanded insight into natural and social phenomena, including those requiring public action, and the acquisition of an informed sensibility to the humanistic, cultural, and aesthetic aspects of life.
- (iii) To assist nonmatriculated individuals to move up the educational ladder toward a degree. Many potential University students have obligations or constraints which preclude their involvement in the regular University program. University Extension attempts to make continuous progress toward serving this section of its constituency.

Examples of programs offered by University Extension include the following:

- (i) Maternal and Child Health Projects, funded under AID auspices and conducted pursuant to agreements between the University and the governments of the People's Republic of Benin, The Gambia, and Lesotho, in Africa, and the government of Afghanistan. An advisory committee which includes faculty in the School of Medicine, UC, San Francisco and the School of Public Health, UC, Berkeley, assists in the administration of the project. Training in the

United States is provided for personnel from these and other developing countries.

- (ii) The programs offered by the Division of Community Programs and Services, which emphasize training to improve competence in the performance of a social function. These are conducted not only within the campus service area but also, depending on the program, throughout California and other parts of the United States.
- (iii) University Extension also cooperates in many ways with programs of the Santa Cruz campus, often resulting in direct benefits to the campus program involved.

In looking to the future of University Extension, the immediate objective is to forestall deficits in current operations caused by the fact that costs rise more rapidly than fees or registrations can be increased. Mandated range adjustments and merit increases without comparable support funds to offset them, together with escalating costs of printing and mailing, have called into question the Extension's future fiscal viability. This situation is in sharp contrast to that of the community colleges, which receive a significant amount of ADA funding in support of activities that are directly competitive with those of University Extension. The decrease in school population has also significantly reduced the number of school teachers, who were formerly Extension's largest constituency.

Extension's activities are intended to respond to need, but, in reality, they can only respond to effective demand. The response, in effect, is determined by the intersection of two considerations: what is considered appropriate for the University to offer and what people will pay to take.

Given the well-qualified programming staff of Extension, maintaining programs of reputed excellence is mainly a fiscal matter. While it seems that training programs can be made to pay, that is more difficult where educational programs are concerned. Certain programs may be cited as examples of ones that should certainly be continued on the basis of their excellence: computer institutes, approved credential programs, Training of Trainers, Jungian workshops, and early childhood programs.

Currently, three program initiatives are under way. One involves a significant expansion of the programs for business and industry; a second seeks expansion of the law enforcement and corrections programs; and a third would seek to extend in-service training programs for personnel of public agencies.

Fifteen to twenty years ago, University of California Extension was known nationally among its peer groups as pre-eminent. Within California, it provided the sole continuing education program offered at a college/university level. Today, the California State Universities and Colleges have embarked on a strenuous effort to develop a greatly expanded extramural program that includes part-time degree programs for adults. The community colleges have also rapidly expanded their programs on the basis of a state-supported ADA formula.

The last fifteen years have also seen a proliferation of programs offered by corporations specifically organized to exploit the business possibilities in continuing education. In sum, the decrease of state support to the vanishing point (in 1968) has coincided with a greatly sharpened competition from other agencies. Nevertheless, feedback from students indicates that University of California Extension has an edge in quality of programs and their relevancy to student needs.

APPENDIX F.

ACADEMIC SUPPORT UNITS: INSTRUCTIONAL USE OF COMPUTERS

This appendix contains supporting materials concerning the instructional use of computers. Motivations for the current academic applications of computers on campus (identified in Section III) are discussed below.

1. Computing as a Liberal Art

Computer program development has creative elements that are comparable to the writing of poetry, the composition of music, and the working of mathematical proofs. Computers are, in effect, intellectual instruments, as worthy of that designation as any library or piece of scientific equipment. By facilitating the development of enormously complex human-constructed systems, they add new dimensions and new questions to the fundamental concepts of philosophy.

With computers becoming ubiquitous today, a person who lacks a basic knowledge of computers and their functional capabilities and applications cannot be considered well educated. In an analogous sense, computer systems and their applications cannot effectively develop through the work of computer technologists alone; human values and social systems must also be an integral consideration in their design and use.

2. Computing as an Instructional Aid

Computers have an evolutionary role in enhancing learning. A typical example: the use of the computer to simulate a laboratory experiment, allowing it to be run over and over with different parameters without consuming expensive supplies or requiring costly laboratory equipment. A second example is the use of interactive computing for tutorial or remedial instruction, such as is currently being provided at UCSC for Chemistry 12A, B, and C and Chemistry 8A and B. A third illustration is the use of computers to provide modeling and simulation exercises in decision-making in the social and behavioral sciences, where real-life experimentation would be impossible.

3. Computing as an Academic Tool

Undergraduates in certain fields of study, particularly in the natural and social sciences, already use computers significantly in pursuit of their

studies. Students frequently use computers to solve regular homework problems, much as one would use a complex calculator or slide rule. Open-access computing encourages this type of usage and has been highly beneficial. Many faculty are now assigning homework that requires students to access the computer; many are preparing manuscripts that utilize test-processing programs. The computer's value for graphic display of complex functions, the structure of organic molecules, and other types of data is also being realized.

4. Computing as a Research Facilitator

Computing is a critical element in the provision of meaningful research, and without adequate computing support the Santa Cruz campus could neither attract nor retain competent faculty. Most original research in the natural sciences, and much of that carried on in the social sciences, requires computer availability to record, analyze, and display the data generated by experimentation.

Many of those computing needs can be provided on campus, but allowance must also be made for researchers to use large, off-campus computing facilities that are impracticable for the campus to endeavor to maintain on its own. Failure to provide both the process and the funding for such computing activity would result in the loss of exceptional faculty, the production of inferior research, and the overall deterioration of academic professionalism at Santa Cruz.

5. Computer Science

Computer science, an integral part of the Information Sciences Board offerings at UCSC, owes its existence as an established program of instruction to the recognized importance of computing in today's world and the related growth in computer technology. To fulfill its instructional obligations, the campus must offer a range of computer hardware, software, languages, and peripherals sufficient to allow extensive hands-on experience for the future computer and information sciences professionals who will graduate from the program.

6. Computing as a Basic Skill for Employment

Several occupations today require both a range of computing knowledge and experience and the breadth of knowledge characteristic of a University education. Many employers are seeking graduates who combine a general

understanding of computing with an appreciation of the computer's potential and limitations. If the University is to prepare its graduates adequately for competition in the job market, they must receive appropriate exposure to computing during their years at UCSC.

APPENDIX G.

ENROLLMENTS AND ENROLLMENT PROJECTIONS

In the 1965 Plan, the total campus enrollment estimates were stated with both a low range and a high range. This was partly because of uncertainties about how the plans for year-round operation of the larger University campuses would affect the rate of growth at Santa Cruz. These 1965 enrollment projections for fall 1975 were:

	<u>Lower Div.</u>	<u>Upper Div.</u>	<u>Graduate</u>	<u>Total</u>
High Range	2,075	3,975	1,150	7,200
Low Range	1,600	2,900	850	5,350

The actual enrollments in fall 1975 and 1976 were:

	<u>Lower Div.</u>	<u>Upper Div.</u>	<u>Graduate</u>	<u>Total</u>
1975	2,638	3,137	329	6,103
1976	2,353	3,455	331	6,139

Although growth in undergraduate enrollment at Santa Cruz has not diverged far from what was expected in 1965, the demographic situation has changed markedly -- with major effects on UCSC and the entire University. The situation in the early 1960's seemed to warrant expectancy of continued future growth that would require eight general campuses of approximately 27,500 students each (and perhaps one or two more campuses). By 1970, however, it became clear that the projections of the early 1960's for undergraduate enrollment increases in the University as a whole had to be revised sharply downward. In particular, demographic considerations and prevailing conditions portend fewer students than were originally planned for in the mid - 1980's.

This growth rate is determined primarily by two factors -- the number of potential University applicants and the proportion of these individuals who decide to go to college. There is a high correlation between the 18-24 year-old population and college enrollment levels. The national birthrate rose rapidly in the 1950s, peaking in 1957. This has resulted in a steady increase in the 18-24 year-old population, which will reach its maximum in the 1980s and then decline, so that

in 1990 the 18-24-year-old population will be approximately the same as it was in 1969. Based on assumptions regarding birth rates, mortality, and net migration into California, the California 18-24-year-old population is expected to follow a pattern similar to the national one.

New undergraduate enrollment is composed of two groups: freshmen entering directly from high school and advanced-standing students transferring from other schools, predominantly community colleges. The population of California high school graduates has been found to be a sensitive indicator of the number of new freshmen entering UCSC. The projected number of high school graduates will peak in June 1979 and decline steadily thereafter. The community college population in California, an indicator of the advanced-standing enrollment, is projected to grow at a very slow rate.

For Santa Cruz, this decline is compounded by the prevailing trend of a smaller proportion of the potential high school population attending UCSC each year. This downward trend has existed for the past five years. In addition, the proportion of community college attendees who register at UCSC has remained fairly stable over the past six years.

Growth in enrollment has been accompanied by growth in the number of institutions of higher education. During the last decade, the number of new institutions increased each year; the majority of them are public institutions. Public institutions tend to be considerably larger than private, with enrollment growth occurring almost entirely in the public sector. The National Center for Education Statistics reported in November 1976 that it found virtually no change in total enrollment at colleges and universities in fall 1976 compared to fall 1975. As the population declines, these institutions will be competing more intensely for a smaller group of students in order to maintain their current enrollment levels or, in some cases, to increase their enrollment.

Table 36 shows the historical enrollment growth and Table 37 shows projected enrollment growth in the UCSC student body; the projections are derived from existing and anticipated levels of demand without any use of either restrictions or encouragements to modify the demand (except for the University and campus encouraging greater numbers of disadvantaged and minority students to become qualified for admission). In the aggregate, this projected enrollment leveling

TABLE 36 HISTORIC ENROLLMENTS¹

Year	Undergraduate				Subtotal	Graduate ³		Total
	Lower Division ²		Upper Division ²					
1965-66	521	82%	116	18%	637	-	-	637
1966-67	844	68%	403	32%	1,247	26	2%	1,273
1967-68	1,119	60%	737	40%	1,856	61	3%	1,917
1968-69	1,392	56%	1,072	44%	2,464	96	4%	2,560
1969-70	1,475	50%	1,462	50%	2,937	155	5%	3,092
1970-71	1,672	49%	1,774	51%	3,446	267	7%	3,713
1971-72	1,832	47%	2,071	53%	3,903	306	7%	4,209
1972-73	1,923	44%	2,428	56%	4,351	282	6%	4,633
1973-74	2,026	43%	2,714	57%	4,740	292	6%	5,032
1974-75	2,245	43%	2,978	57%	5,223	327	6%	5,550
1975-76	2,270	41%	3,317	59%	5,587	323	5%	5,910

Notes:

1. Includes lower-division, upper-division, graduate, and total campus enrollment (three-quarter average).
2. The two columns indicate headcount enrollments, followed by the percentage of total undergraduate enrollments these represent.
3. The two columns indicate headcount enrollments, followed by the percentage of total campus enrollments they represent.

Source:

Office of the Registrar

TABLE 37 PROJECTED ENROLLMENTS

Year	Undergraduate Enrollments	Graduate Enrollments	Total	Change in Enrollments	% Change
1976-77	5,650	340	5,990		
1977-78	5,800	355	6,155	165	2.75
1978-79	5,890	370	6,260	105	1.71
1979-80	5,980	380	6,360	100	1.60
1980-81	6,055	385	6,440	80	1.25
1981-82	6,110	390	6,500	60	0.93
1982-83	6,150	390	6,540	40	0.62
1983-84	6,175	395	6,570	30	0.46
1984-85	6,190	395	6,585	15	0.23
1985-86	6,200	400	6,600	15	0.23

Source:

"Revised Santa Cruz Enrollment Plan, Three-Quarter Average Headcount",
Office of Planning and Analysis

does not present an unpleasant or discouraging prospect to the campus. However, current trends in the balance between upper- and lower-division enrollments and the mix between undergraduate and graduate students (as shown in Table 16) will require the campus to re-examine a number of aspects of its academic program, particularly the general education provisions of the curriculum, academic advising, and courses for new students in their first quarters. As indicated in Table 38, new students have constituted between 44-48 percent of the undergraduate enrollments over the past five years; transfer students alone constitute 29-33 percent of the upper division enrollments.

TABLE 38 NEW STUDENTS¹

	New Undergraduate Students ²			Total Undergraduate Students ³		New Students as % of Total Students	
	Freshmen	Transfers ⁴	Total New	Transfer Level	Total	Transfers	Total New
1966-67	493	393	886	774	1,247	51%	71%
1967-68	672	334	1,006	1,167	1,856	29%	54%
1968-69	768	334	1,102	1,684	2,464	20%	45%
1969-70	879	487	1,366	2,081	2,937	23%	47%
1970-71	939	593	1,532	2,501	3,446	24%	44%
1971-72	1,122	605	1,727	2,851	3,903	21%	44%
1972-73	1,131	862	1,993	3,328	4,351	26%	46%
1973-74	1,181	995	2,176	3,662	4,740	27%	46%
1974-75	1,278	1,249	2,527	4,068	5,223	31%	48%
1975-76	1,153	1,484	2,637	4,558	5,587	33%	47%

Notes:

1. This table compares the number of "new" students with the total number of undergraduate students enrolled (i.e., new, continuing, and returning).
2. Three-quarter total; includes visiting, EAP, limited or special status, and part-time students; excludes Extended University.
3. Three-quarter average; includes the same student group as "new students".
4. "Transfers" and "transfer level" refer to students at the sophomore, junior, or senior levels.

Source:

"Undergraduate Student Headcount Enrollment", Office of Planning and Analysis

APPENDIX H.

FACULTY COMPOSITION

Mention has been made of the need to achieve intellectual breadth and depth at Santa Cruz. This should apply not only to the academic program offerings, but also to the composition of the faculty, particularly if the campus is to achieve an academic program diversity characterized by a range of social and cultural perspectives, in addition to purely intellectual considerations. The campus deserves a heterogeneous faculty that reflects both social and cultural emphases and appropriate ethnic/sexual representation. This is true on a campus-wide basis, as well as in the collegiate and divisional units.

The ethnic and sexual composition of the Santa Cruz faculty is currently far from the mixture representative of society as a whole -- although significant changes have taken place in terms of the sex distribution of ladder-rank faculty in the past four years. Because no data on ethnicity are available prior to 1974, compositional change cannot be assessed.

As shown in Table 39, in 1971-72 the sex distribution was 91 percent male and 9 percent female. Four years later it had shifted to 82.8 percent male and 17.2 percent female. This shift was most pronounced at the assistant professor level, where the balance shifted from 88.4 percent male and 11.6 percent female to 71.7 percent male and 28.3 percent female. On the basis of this data, the campus affirmative action program appears to have made a significant contribution to reducing sexual inequities in the hiring of ladder faculty.

Table 40 shows the 1974-75 and 1975-76 ethnic distribution of ladder faculty. The range is too small to enable any comparative assessment to be made from these data, although inspection indicates that this distribution also does not reflect the composition of the society served by the University.

TABLE 39 LADDER RANK FACULTY DISTRIBUTION BY SEX

	1971-72		1972-73		1973-74		1974-75		1975-76	
	Number	%	Number	%	Number	%	Number	%	Number	%
Professor										
Male	64	100.0%	66	100.0%	74	98.7%	80	93.0%	91	92.9%
Female	0	0.0%	0	0.0%	1	1.3%	6	7.0%	7	7.1%
Associate Professor										
Male	52	91.2%	59	92.2%	67	89.3%	70	90.9%	71	89.9%
Female	5	8.8%	5	7.8%	8	10.7%	7	9.1%	8	10.1%
Assistant Professor										
Male	84	88.4%	78	83.0%	81	80.2%	84	74.3%	81	71.7%
Female	11	11.6%	16	17.0%	20	19.8%	29	25.7%	32	28.3%
Acting Assistant Professor										
Male	20	83.3%	19	67.9%	14	70.0%	13	76.5%	6	66.7%
Female	4	16.7%	9	32.1%	6	30.0%	4	23.5%	3	33.3%
Lecturer with Security										
Male	2	100.0%	3	75.0%	4	80.0%	5	83.3%	5	83.3%
Female	0	0.0%	1	25.0%	1	20.0%	1	16.7%	1	16.7%
Associate Supervisor										
Male	0	0.0%	1	100.0%	1	100.0%	1	100.0%	1	100.0%
Female	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Assistant Supervisor										
Male	0	0.0%	1	50.0%	1	25.0%	1	33.3%	1	33.3%
Female	0	0.0%	1	50.0%	3	75.0%	2	66.7%	2	66.7%
TOTAL										
Male	222	91.0%	227	87.6%	242	86.1%	254	83.8%	256	82.8%
Female	22	9.0%	32	12.4%	39	13.9%	49	16.2%	53	17.2%

Source: Office of Planning and Analysis

TABLE 40 LADDER-RANK FACULTY ETHNIC DISTRIBUTION¹

	Prof.		Assoc. Prof.		Asst. Prof.		Acting Asst. Prof.		Lecturer with Security		Assoc. Supervisor		Asst. Supervisor		Total		Percent		
1974-75																			
Black	3	0	5	4	0	0	0	0	0	0	0	0	0	0	12	4.0%			
Asian American	1	0	3	0	0	0	0	0	0	0	0	0	1	5	1.7%				
American Indian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-			
Other Non-White	0	3	0	1	0	0	0	0	0	0	0	0	0	4	1.3%				
Mexican/Spanish American	2	2	5	2	0	0	0	0	0	0	0	0	0	11	3.6%				
Caucasian	80	72	100	10	6	1	2	6	6	1	2	2	271	89.4%					
TOTAL	86	77	113	17	6	1	6	6	6	1	3	303	100%						
1975-76																			
Black	3	1	7	1	0	0	0	0	0	0	0	0	0	12	3.9%				
Asian American	1	0	2	0	0	0	0	0	0	0	0	0	1	4	1.3%				
American Indian	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.3%				
Other Non-White	0	3	1	0	0	0	0	0	0	0	0	0	0	4	1.3%				
Mexican/Spanish American	2	2	5	3	0	0	0	0	0	0	0	0	0	12	3.9%				
Caucasian	92	73	97	5	6	1	5	6	6	1	2	276	89.3%						
TOTAL	98	79	113	9	6	1	6	6	6	1	3	309	100%						

Notes:

1. Data prior to 1974 not available.

Source:

Office of Planning and Analysis

APPENDIX I.

THE ACADEMIC PLANNING PROCESS

1. Academic Planning and Development in an Environment of Change

"Academic planning" as an explicitly named activity was initiated in the University of California by Clark Kerr when he was Chancellor of the Berkeley campus (1952-58). After Kerr became President of the University in 1958, he instituted academic planning as a distinct activity in the University administration and asked each existing and newly developing campus to prepare formal Academic Plans. In 1960 Dean McHenry was appointed University Dean of Academic Planning for the System. During the Kerr and Hitch years in the presidency, several successive University Academic Plans were developed, the most recent of them the 1974 University Academic Plan and its 1975 "Phase II" supplement, through multiple interactions between the campus administrations and the Systemwide Academic Planning and Program Review Board (APPRB).

The Academic Plans of the 1960s were efforts to deal with the University's enormous growth, which lasted until the late 1960s. It affected every aspect of University operations: enrollment, physical plant, academic programs, numbers of faculty and staff, budgets for operating and capital outlay. Planning was intended to make administrators and faculty aware of the problems and challenges posed by growth, and to enable planners and decision-makers to approach issues in an orderly way. The end of the period of growth has brought its own problems, but the general purpose of academic planning remains the same: to help maintain quality or improve it, and to reduce the chances of mistakes in judgments and decisions by those engaged in the running of the University.

The University's 1969 Academic Plan anticipated a "planned maximum enrollment" of 27,500 for the Santa Cruz campus, estimating that this ceiling would be reached between 1980 and 2000. Because general campus enrollment at Santa Cruz was the smallest among the eight general campuses at that time, academic planning at UCSC was understandably oriented to rapid growth, and concerned with new colleges, new disciplinary and interdisciplinary programs and boards of studies, new graduate programs, and with rounding out the faculty complements for existing units and programs.

The 1974 University of California Systemwide Academic Plan contained substantial changes from the previous University Academic Plan issued in 1969. These were primarily based on two external factors -- the dramatic downward shift in state and national population growth rates (contained in the 1970 Census) and the reduction in the fiscal resources available to the University. This plan also outlined a new planning and program review process designed to provide better coordination between campus and Systemwide planning and between planning and resource allocation.

Although the 27,500 "planned maximum enrollment" for Santa Cruz has never been formally reduced, the campus administration has successively used 12,500, 10,000, and, most recently, 7,500 as an interim enrollment ceiling. Current enrollment projections (discussed in Appendix H) indicate that the campus enrollment will reach approximately 6,600 by 1985-86 if no shifts occur in either demand or enrollment incentives.

Slow growth or "steady state" requires a different kind of academic planning from an era of expansion, where the prospect of additional resources permits a looser or more approximate description of the state of the campus. In slowed expansion, steady state, or retrenchment, the dominant source of resources is the campus itself, and future planning becomes impossible without systematic, detailed knowledge of the present spectrum of campus programs. As a corollary to the tightening of resources, moreover, academic planning must also bring academic and budgetary factors into closer relation through corroborative evidence and carefully interpreted quantitative data.

The heart of any Academic Plan is its assessment of the academic programs; it is also the hardest area to deal with explicitly, due to the qualitative and judgmental nature of such assessments. The core of the campus budget is the budget for the support of faculty salaries and the programs of instruction and research. One of the problems facing planners in this area is lack of a crystal ball: What changes will be needed to adapt academic programs to altered circumstances? Budgetary conditions can either constrain or advance existing programs; a variety of societal factors, ranging from changes

in student interests to a shift in the direction of research and scholarship in response to the needs of society, can encourage the establishment of new ones. Without an informed awareness of these effects, and an ability to project the influence of planned programs on budget requests as realistically as the impact of actual budgets on existing programs, effective planning cannot go forward.

2. Ongoing Academic Planning

This 1977 UCSC Academic Plan addresses campus development under a dramatically different set of conditions than earlier plans. In addition to the general decline in demographic projections that indicate a slow-down in the expansion of all institutions of higher education, there are at least four other important factors that make the development of a new academic planning process and a new Academic Plan essential:

- a. The need to pause and reevaluate the campus, which is now in its twelfth year, to identify strengths and weaknesses.
- b. The need to develop strategies to maintain and increase the quality of academic programs under conditions that approach a steady state.
- c. The need to develop a planning and resource management process capable of guiding balanced development of the academic program.
- d. The need to stabilize the campus's academic direction during the continuing period of leadership transition.

Academic planning should be a continuing process, and the campus Academic Plan should be updated on an annual basis. The major planning cycle leading to production of a substantially new Academic Plan and involving the types of procedures and tasks described in Sections IV and V should be started every three to five years, depending on the nature of change in both internal and external factors. Such a major planning cycle would normally be initiated at the request of the Chancellor or by a request from the Systemwide Administration.

The need for major revision could result from a number of factors:

- a. Ongoing program reviews or formal program evaluations could require substantive and substantial changes in the Academic Plan.
- b. Unanticipated changes in the aggregate student demand could require important changes in the type and size of the academic program.
- c. Since a number of unit programs are currently staffed at minimum acceptable levels, the aggregate impact of reorganization, retirements, negative tenure decisions, and deaths could warrant important reconsiderations of these programs. Such reassessment could require significant revisions in the Academic Plan.
- d. Significant changes in academic styles and areas of intellectual inquiry will also require periodic revisions to the Plan, although changes of this magnitude are not likely to occur frequently.
- e. Constant shifts in economic conditions and political realities will also require periodic revisions, although such external changes do not occur on either a regular or predictable basis.
- f. Changes in academic leadership, either at the Systemwide or campus central administrative level or within the campus academic administration, could also require revision of the Academic Plan.
- g. Finally, changes in organizational structure would also require appropriate revision in both the Plan and in the academic planning process. Although such changes are not common, adjustments in the division-board/college structure at UCSC could bring about more frequent revisions in the Plan than would be the case in a campus run on departmental lines.

It should be noted in conclusion that academic planning extends beyond production of a formal Academic Plan document. Academic program planning goes on continuously at many levels on campus, from the individual faculty member and the aggregations of faculty in boards and colleges, through the intermediate levels of deans and provosts, up to The Academic Vice Chancellor's

and the Chancellor's offices and the campus Academic Senate.

Some stages of academic program planning extend to the University Systemwide Administration and certain formal actions of The Regents are concerned with academic program planning, as for example, the establishment of new colleges, schools, and Organized Research Units.