

STRATEGIC ACADEMIC PLAN
UNIVERSITY OF CALIFORNIA, SANTA CRUZ

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Office of the Executive Vice Chancellor

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PART A: A VISION FOR THE FUTURE

A Vision for the Future

The UCSC vision is to promote academic excellence within a diverse community of scholars and learners. UCSC will lead in the development of new disciplines, advances in established disciplines and in new lines of collaboration between disciplines by its receptivity to creativity and innovation based in rigorous scholarly activity. We will celebrate the diversity of our students, faculty and staff and value their differing perspectives and contributions.

The Santa Cruz campus of the University of California, having passed the 40th anniversary of its founding, is making its mark as a premier research university with a commitment to educational programs that promote active learning, critical thinking and involvement with the research mission. With recognized centers of excellence in many areas as well as emerging strengths, the campus is poised to move into a leadership role in developing and promoting new areas of research and learning based upon solid expertise in the traditional disciplines and strong inter-disciplinary foundations.

UCSC has achieved a national reputation for excellence and that achievement is evident across each of the Santa Cruz divisions. Overall, the campus ranks 11th in the nation among public universities for the quality of its research productivity, 1st in the social sciences, and 6th in the arts and humanities. In Economics, international finance was ranked 9th in the world. The Institute for Scientific Information ranked UCSC first in the nation for its impact on the field of physics and fifth in the field of space sciences. The campus serves as home for two of the University of California's honored University Professors, 23 members of the American Academy of Arts and Sciences, 13 members of the National Academy of Sciences, and two members of the Institute of Medicine. An additional indicator of the quality and innovation of UCSC faculty is the recent rise in external funding—over the past five years, awards have increased by 88% to \$128 million; in the past year alone, research awards grew by 28%.

The campus was founded with a system of colleges, grouping together an array of faculty from a spectrum of disciplines. Faculty from different colleges who were allied along disciplinary traditions then formed Boards of Study. As the campus grew, faculty positions were assigned to their respective boards although college associations were retained without a budgetary commitment. This inception for the campus, with colleges that gathered together disciplines around broad themes, laid the groundwork for a continuing commitment for faculty and students working at the intersections of traditional disciplines. The outgrowth of this trend has been the creation of not only new departments on the campus but also the shifting of established disciplines into new and exciting areas.

Conceived as primarily an undergraduate institution, UCSC has gradually augmented its programs with an increasing number of graduate programs. Recently, the Academic Senate urged the campus to grow to at least a 15% graduate enrollment in order to allow all interested faculty to participate in graduate education as well as to support the research interests of the campus, provide the trained graduates needed by the state and the nation, and enhance the quality of the undergraduate experience.

UCSC has made substantial progress toward this long-standing campus goal of expanding graduate and professional enrollments. Since the last comprehensive academic plan (1988), the campus has more than doubled the number of research doctoral programs from 13 to 29 and, in the past five years, has introduced 11 new graduate programs. As a result, the campus has more than doubled the number of Ph.D. degrees it awards each year.

UCSC is recognized for its uncommon commitment to academic engagement and a quality learning experience at all levels. Our ambitions for graduate education support our continuing dedication to superlative undergraduate learning environments. Undergraduate programs have increased dramatically and we now offer 52 majors, eight of which added since 2001, and 31 minors. UCSC is rightfully proud of its achievements in training students with a commitment to innovative scholarship and social justice. In a survey of 60 elite universities, UC Santa Cruz ranked 15th for the percentage of its students whose bachelor's degree led to doctorates and second among the UC campuses.

The UCSC Mission

In 1998, the Advisory Report of the Millennium Committee was released, defining a mission for UCSC for the 21st century:

- UCSC must be an **outstanding research university** with an **uncommon commitment to high-quality undergraduate education**.
- UCSC will **serve the people** of the region, the state, and the world by the engagement, development, and application of knowledge.
- A UCSC education will enable our students to become **tomorrow's leaders and lifelong learners**.
- UCSC will attract, retain, and advance a **diverse student body, faculty, and staff** from many different communities in the state, nation, and world.
- UCSC will commit itself to **high-quality production and transmission of knowledge** across all disciplines.
- UCSC will plan its growth and development with attention to **sustainability** and in consultation with the larger external community.

Eight years later, these statements still hold true.

We now see the **UCSC mission** as providing a comprehensive education for undergraduate and graduate students in focused, high quality programs. The combination

of research and teaching links faculty and students in a partnership dedicated to independent, critical thinking, active understanding, creativity, and social responsibility. We believe that disciplinary excellence provides the surest basis for inter-disciplinary collaboration that is responsive to the needs of current and future students as well as to a multiethnic and global society. Over the coming years, we plan to utilize this strong foundation as we grow beyond our current size, emphasizing programs for which there are growing societal needs and the potential for academic excellence. It is essential that we recruit and retain first class faculty representing a diversity of backgrounds and perspectives, provide them with facilities to enable their research to flourish and with colleagues with whom they can expand the significance of their work. Our graduates must be ready to step into their place as active and engaged citizens and our academic mission is to provide them the means to develop these abilities.

Guiding UCSC Academic Planning

The strategic academic plan provides an approach to fulfill our mission, retain our values and do so within the financial resources we have or can make available. We must acknowledge our present status as an institution and, most importantly, focus on where we are going. For this reason, this plan lays out the choices that we face, the options we should consider, the costs in financial but also academic terms, and which options appear to best serve the campus community. Such a plan cannot simply consist of a compilation of divisional goals but must address issues that cross divisions, address our commitments in terms of delivering a curriculum that meets student needs and fostering the ground-breaking research we have come to expect of our faculty.

The academic plan serves many purposes. To the outside community, it provides a clear depiction of the principles under which decisions are being made and the aspirations of the campus community, allowing us to present our true strengths for evaluation. This information is particularly important for donors and patrons of UCSC. It is also helpful for prospective students and their families who must make decisions about which campus to attend. It should prove useful in attracting faculty and leadership to the campus. The plan is most important for departments and their faculty and for the Academic Senate as a measure of our goals and strategies. This is the place to see how departmental plans can be integrated into those of the university.

Guiding Principles

This plan is based on five principles:

- The first is that we increasingly **view UCSC as a single unit**, rather than focusing primarily on the multiple small units of which it is constituted. By sharing and building upon the strengths of each unit, a greater product can be produced than providing the sum of each small unit.
- Second, UCSC must **invest differentially** rather than incrementally and homogeneously in order to maximize our ability to produce excellence in specific units.
- Third, we should target development of departments and programs to areas where we will have the **greatest impact**. To do this we must be aware of the unique areas of strength we already possess, the competitive landscape in terms of other programs, and to new opportunities in which we can gain a competitive advantage.
- Fourth, the mode for change on the campus must incorporate not only those positions derived from the funding from increased enrollment but also **reconsidering and realigning positions opened due to retirement or**

departure. As such, we should think of the disciplines and fields of study as “evolving” rather than simply “growing.”

- Finally, it is critical that we be **realistic in our goals**, given the limitations that are currently placed on our resource envelope and the new resources that we may be able to obtain beyond what is currently received.

Goals and Strategies

As we begin to lay out the plan, we must first identify what are the goals to which we strive. Each goal can then be supported by a set of strategies by which we can achieve our aspiration.

Research and Scholarly/Creative Activity

As a member of the UC system, UCSC is a vibrant, interactive scholarly community within the resources of a larger system. With the mission to generate new knowledge, we must further the development of our faculty and the support for their research through strategic use of available resources. The strategies we will employ include:

- Expect departments to identify particular areas within their disciplines in which they are poised to excel and where investment in program development should be directed;
- Develop administrative facilitation of cross-disciplinary collaborations so that foci existing in different units can be linked in dynamic and productive ways;
- Develop programmatic plans to maximize our contribution to meeting societal needs;
- Foster an academic community where a diversity of backgrounds and perspectives are appreciated, are encouraged and prosper;
- Encourage an entrepreneurial spirit in our faculty to generate exciting research agendas and approaches to obtain funding for them.

Expansion of Research Infrastructure and University Development

As the funding from the state and fees shrinks as a proportion of our overall budget, we must pay closer attention to the follow strategies:

- Expand the research infrastructure to enhance the ability of our faculty to increasingly identify and secure external funding;
- Increase graduate student support through externally funded research assistantships and scholarships;
- Increase the level of financial support from our alumni, donors and foundations through investments in and the efforts of University Relations and our campus community.

Graduate Education

Over the next five years, UCSC aims to enroll substantially more graduate students to achieve graduate enrollment of 15% of total enrollments. The bulk of these enrollments

will be doctoral students, probably constituting 10-12% of the total enrollment with the remainder being made up by students in a number of terminal predoctoral degree programs. We plan to achieve this through several means:

- Ensure that all interested faculty have the opportunity to participate in graduate education;
- Develop new graduate programs in which there is clear potential for excellence;
- Serve the nation and the state with professional programs and schools in which there is clear engagement with critical social needs;
- Maximize capacity and diversity in existing programs, primarily at the doctoral level, by investing in graduate support;
- Develop the foundations for at least one major professional program using a differential fee-based structure;
- Increase extramural funding that will provide support for graduate student researchers.

Undergraduate Education

UCSC seeks to become the campus of choice for students across the state, recognized for producing graduates with a strong disciplinary framework, appreciation for diversity of thought and perspective, a sense of social justice, and the ability to critically analyze and make insightful and direct presentations of their knowledge. Our college system will continue to provide a nurturing setting to introduce and support students as they address the challenges of university life. Our strategies include:

- Continue our outreach efforts to attract excellent students, including transfer students, to apply and to enroll at UCSC;
- Increase our efforts to attract students representative of the state's eligible students, in response to our changing demographics context;
- Expand programs to retain these students once they enroll in our courses;
- Facilitate the retention of students within their initial areas of interest, particularly in the sciences and engineering;
- Increase development efforts to provide funds for student scholarships and student support programs
- Develop a culture of active understanding in our educational setting to enhance not only the instructional efforts of our faculty but also the learning by our students.

We will not be able to devote sufficient resources to make even progress on all of these goals so both goals and strategies must be prioritized. This situation will necessitate delays in some of the areas we would like to emphasize in favor of those more central to the highest priorities. Emphasis on some areas will also be needed in order to lay the foundations for later investments.

PART B: ACADEMIC VISION AND DIRECTIONS

Disciplinary Excellence and Cross Disciplinary Strengths

Disciplines are nucleated around methodological approaches, research topics or creative foci. However, no academic discipline is a stationary category but is a dynamic envisioning of knowledge and perspective, emphasizing specific methodologies and topics but informed by the developments seen in aligned disciplines and by new discoveries removed from the immediate focus of the discipline. As a consequence, traditional disciplines often converge on similar topics or methods, each contributing their unique history and perspective. The dynamic nature of the disciplines lends itself to the style of cross-disciplinary and inter-disciplinary work that has been the tradition of the UCSC campus. Our current vision rests on building the disciplines in ways that will advance their impact upon the academy while simultaneously complementing the related disciplines. We plan to build strategically to allow our faculty and students to drive forward knowledge and education in ways that will benefit all citizens in the coming century.

This strategic academic plan seeks to identify areas of excellence where the teaching and research potential can be maximized for the advancement of knowledge of particular service to the state. Examination of the current strengths across the campus, the plans for future hires, the prospects for new undergraduate and graduate programs, and the need for university-trained graduates to meet the demands of the 21st century has revealed six themes around which the campus as a whole can be said to coalesce. These themes or foci include:

- Technological Development and Their Societal Impacts
- Public Documentation and Communication
- Evolving Environments, Science and Policy
- Human Health Studies
- Cross Cultural Initiatives
- Transnationalism and Globalization.

We will build programs in such a way as to maximize the impact we will have in these areas and facilitate the collaborations of departments and programs in providing research and educational opportunities.

The plan also must take into consideration the ambitions of the individual departments. Our choice in specific investments in departmental faculty and program resources should be guided by the desire to enhance the quality of the educational and research mission of UCSC as a whole. How faculty positions have the potential to interact and interface with the common themes that unite the divisions should be one important criterion for prioritizing our investment of resources. The aspirations of the academic divisions and the School of Engineering are presented in the following pages with notations on

collaborative efforts. The efforts being made to establish one or more professional school or programs are also presented.

Targeting Disciplinary Excellence

Each of the academic divisions and the School of Engineering have developed plans for enhancement of established strengths, development of new academic programs including research objectives and educational programs, and faculty recruitment alignments for new and replacement positions. Following is a discussion of the divisions, in light of the campus objectives to build on research and scholarly work, develop and expand graduate programs and enhance undergraduate opportunities within the resource window available.

Division of the Arts

The Arts are affected by the rapidly changing digital technologies and the “urgent need to address these sea changes in the way art is produced and understood, as well as how the arts affect society and the economy.” An essential goal of the Arts Division is the achievement of a balance between theory and practice throughout all levels of the curriculum. The divisional academic plan responds to the challenging new technologies in research and instruction, to establishing an array of graduate programs, to the maturation and distinction of existing programs, to diversification of faculty, to globalization of the curriculum, and expanding capital facilities. Strongly interdisciplinary in approach, the Arts Division has been instrumental in developing the intersections of art and engineering through digital media. Portions of the division also merge interests with Humanities and Social Sciences, avenues also being actively pursued and developed by the faculty.

Divisional Goals: The development of graduate programs is the division’s highest priority and the division has chosen to differentially invest in this area. The relatively new Digital Arts and New Media program successfully integrates faculty and research from Arts and Engineering into a dynamic new graduate program. Proposals are under review in Film and Digital Media (PhD) and Visual Studies (PhD). The academic plans also discuss the possibilities of graduate programs beyond the certificate in Theater Arts (PhD or MFA) and consideration is being given to an MFA in Visual Art through the Art Department.

Strategic distribution of new faculty are primarily made with regard to the development of graduate programs. Those departments where programs are either established or emerging are slated for growth positions in the near term with other units receiving later hires as graduate proposals are generated. Areas identified for new faculty hires represent a continuation of current department specialties. Faculty replacement in the Arts Division is less critical than in other divisions as a smaller percentage of faculty are at or near retirement age. Leadership may be a factor, however, and discrepancies between the vision for departments held by senior and junior faculty must be handled diplomatically but with an eye toward building to meet the needs of rapidly evolving views on visual and performance studies and practice.

Developing and mounting new graduate programs while maintaining a high demand undergraduate program will be difficult. An additional but important constraint will lie in graduate support which promises to rely heavily on teaching assistantships, in turn dependent on maintaining undergraduate enrollments. Efforts toward the development of external funding sources, including a sympathetic donor base, will be critical if the graduate expansion is to be maintained.

The second goal of the division is the maintenance of quality in the undergraduate curriculum in the face of increasing demand and collaborative efforts with other disciplines. Undergraduate Arts curriculum has historically served students from non-arts majors by offering very popular and diverse electives and minors. In addition, it serves a large number of majors, particularly drawing enrollments in Film and Digital Media. Curriculum diversification extends widely to non-European cultures as demonstrated by the Theater Arts sponsored African and African American and Chicano and Mexican theater companies. Dramatic changes in this enrollment trend are not anticipated.

The growing Arts focus on digital media places new demands on Arts to support undergraduate curriculum for programs such as the Computer Game Design B.S. sponsored by the Computer Science Department. Balancing divisional responsibility to inter-disciplinary undergraduate programs while simultaneously managing student demand within traditional programs will be a challenge.

The arts undergraduate curriculum may be further constrained by the divisional priority on graduate growth as the departments reorganize their instructional responsibilities to incorporate graduate curriculum and student advising. Workload at the undergraduate level is a consideration and some faculty allocations will address the impact of heavy enrollments compounded by pedagogical needs for small classes in studio courses. The continued need for studio classroom space in both undergraduate and graduate programs will constrain the size of these programs. The scope of the undergraduate curriculum will need evaluation especially in the offering of gateway courses and institutional research will be critical in monitoring and predicting critical impacts due to changes in enrollment and course accessibility. Summer session may offer some possibilities for relief in gateways to degree flow at the undergraduate level.

The third goal is the increase in funding from indirect costs and from development efforts to support the scholarly work of the faculty, maintain the dedication to individualized instruction and to promote the construction of the facilities that Arts will need to accommodate its instructional, creative, research and service needs. External funding is limited in comparison to the sciences and the majority of available sources do not produce indirect cost returns to the department. Increased focus on digital arts may attract more large scale overhead bearing grants and there are collaborations with private industry benefiting computing infrastructure. The Arts Research Institute, established in 2003, is poised to substantially increase the number of individual grant applications and increase faculty productivity. In addition to the scheduled Digital Arts Facility, faculty

are also interested in additional buildings to serve as a creative focal point for student/faculty interactions and exhibitions.

Allocation of faculty to departments within the Arts should await the production of graduate proposals that 1) have the potential to bring distinction to UCSC, 2) are inclusive of the faculty in the department, 3) are inter-disciplinary in structure to ensure that there are sufficient faculty to encompass a range of perspectives and maintain the curriculum, and 4) are viable with the available resources. Until departments are able to meet these criteria, they may wish to establish parenthetical notations within their own department, develop a truly inter-disciplinary program as a collaboration among a dispersed cohort of faculty members, or participate in the other established and inter-disciplinary programs both within the Arts and emerging elsewhere.

Jack Baskin School of Engineering [awaiting full revision of draft plan]

The Jack Baskin School of Engineering (SOE) specializes in 6 interwoven research areas: bioengineering, bio-info-nano technology, information and communication infrastructure, mathematical and statistical modeling, software and service engineering, and system design. These designated research areas are synergistic in nature with activities in each area supported and enhanced by contributions from the others, and leveraging campus expertise. Engineering programs promote an integrated vision of science and engineering, serve the needs of the greater Silicon Valley region and produce graduates who are contributing citizens in a high technology society.

Divisional Goals: Extensive new instructional programs are planned to come on line as the faculty grows. With the availability of external fund sources to sponsor graduate students, Engineering continues to invest differentially in graduate studies, and has as a target increasing its 17% share (2005-6) of campus graduate degrees. New graduate programs include an Applied Mathematics track to the newly approved Statistics and Stochastic Modeling M.S/PhD, an Autonomous Systems graduate program, Biomolecular Engineering M.S./Ph.D., Engineering M.Eng., Software Engineering M.S., Technology & Information Management Cert./M.S./Ph.D, Interdisciplinary Biomedical Research Group (IBRG) umbrella PhD program, and a Silicon Valley Master's program based on the just-approved Computer Science: Computer Game Design B.S.. These programs are highly interdisciplinary both within the division and with other divisions.

While enrollments in undergraduate engineering programs are subject to cycles, the current downturn appears to be reversing, as supported by lower-division student growth and the California Department of Labor's list of fastest growing occupations for 2014. The SOE plans to further accelerate undergraduate growth with the introduction of new programs, broadening its range of majors. Several of these programs are expected to enhance the ability of the school to recruit a diverse student body. The new programs include an Applied Mathematics B.S., Bioengineering B.S., Computer Science: Computer Game Design B.S, Mechatronics B.S., and an Environmental Technology/Sensing minor. Student workload projections are relatively low within the

school in comparison to the other units on campus and with established Schools of Engineering. We anticipate that Engineering will accommodate a larger portion of the undergraduate student body as it develops new undergraduate majors, bringing the school's student:faculty ratio to the UC engineering average of 17:1¹ for established programs. Beyond the introduction of new majors, Engineering will also focus on programs that attract a diversity of students, continued efforts to increase retention in the majors, and effective instructional coordination with other divisions.

Engineering promotes connections with the technology industry by expanding its curricular and research presence at the Silicon Valley Center. Future undergraduate and graduate student internships with Silicon Valley corporations and UARC research ventures will enhance external funding and student job opportunities.

With a relatively young faculty, Engineering must pay close attention to faculty development. Given that the fields in which instruction and research occurs are ones that advance rapidly, allowing faculty leaves and sabbaticals to allow them to update their skills and explore new areas will be essential. For the School, such programs will be more important for the next few years than the examination of replacement positions required in the other academic divisions.

The Baskin School of Engineering is currently re-evaluating its departmental plans and divisional priorities in light of the campus planning efforts and towards the development of a new coherent plan consistent with expected resources. Given the sizeable investment needed to increase faculty in the engineering fields, release of faculty FTE should be contingent on 1) approval of proposals for new programs at the graduate and undergraduate levels, 2) evidence of collaboration with other divisions in interdisciplinary areas 3) a space plan addressing the laboratory and fabrication needs of current and future faculty, and 4) positive movement to increase the student:faculty ratio.

Division of Humanities

The Division of Humanities' scholarly emphasis in human expression, critical evaluation of ideas and actions, and intensive study of cultural traditions, underscore the discipline's critical importance to understanding and solving contemporary problems. Particularly vital now are topics such as the growing ethnic and cultural diversity in California, increasingly complex human problems and opportunities associated with advancing technologies, and mutual interdependencies of physical, social and cultural worlds.

Divisional Goals: The identified priorities for the division in their draft plan are to invest in the pillar disciplines while, simultaneously, encouraging these faculty to establish collaborative arrangements with the smaller interdisciplinary units in the Humanities. These pillar departments are primarily History and Literature which are staffed at substantially lower levels than seen at other UC campuses. Both areas have developed

¹ Student:faculty ratios based on 2004-5 data: UCB 16.0, UCD 17.9, UCI 10.6, UCLA 15.0, UCR 18.7, UCSD 19.7, and UCSB 13.8

new perspectives on their respective disciplines, placing the national context within the broader global framework. The excellent, nationally ranked program in Linguistics also warrants additional investments. This department has already demonstrated its ability to work in cooperation with other divisions to push the frontiers of the discipline. Expanding into experimental and computational linguistics would position this program to move forward.

The division also proposes to build upon themes which overlap the departmental interests. These thematic interests include Gender/sexuality, Science & Technology Studies, South Asian Studies, and Religion. The assignment of faculty to departments will depend on the disciplinary perspective of the proposed hires rather than the departmental interest in expansion.

In the context of building upon intradivisional themes, one of the founding graduate programs, History of Consciousness, will need to be re-envisioned. Its future is complicated by the development of graduate programs throughout much of the Humanities and Arts, many of which encroach on the areas traditional served by this graduate program. Although, significant new investment in HOC is not foreseen, the Division is preparing to move rapidly to facilitate and formalize the interdisciplinary involvement of faculty in other departments.

Finally, the Division is working energetically with the central administration to develop memoranda of understanding with regard to the funding of the academic service curricula in the Writing and Language Programs. Expansion of these programs is inevitable given anticipated increases in enrollment. However, strategic reconfiguration of the program should provide not only capacity but renewed scholarly vigor.

The division faces a number of challenges. Graduate student support is constrained by the low level of available external research funding. It is critical that the Humanities division pay increasing attention to alternative sources of funding for its graduate programs. The fundamental budget shift away from primarily state funding towards a mixture of state, student fee, and external resources requires adaptation and increased entrepreneurial activity. Humanities faculty must accommodate this changing financial scene in their plans for new and expanded graduate programs which can no longer be funded solely through teaching assistantships.

Faculty replacement and development of leadership varies considerably within the Humanities departments. While in some areas, the faculty profile does not suggest a high number of retirements, others suggest almost complete turnover in the faculty. This situation presents an opportunity for the programs to utilize these positions in realigning the department with current trends in the discipline and with campus themes.

Division of Physical and Biological Sciences

The Division of Physical and Biological Sciences (PBSci.) reaffirms its continued focus on the broad theme of service to society in three extensive areas which align with the campus themes, 1) biomedical and health sciences, 2) the study of regional and global environmental processes and ecosystems, and 3) the development and application of new technologies to societal problems and to fundamental research. In each area, the rapid pace of advancement and change has created opportunities for PBSci. programs to achieve excellence, secure external funding sources, and build on established high quality programs to launch broader inquiries. The inherently multidisciplinary themes enable department and division cross-connections which explicitly inform faculty hiring decisions.

Divisional Goals: Planning goals include providing essential support to significantly enhance the research and educational stature of the departments through the hiring of high quality and productive faculty. The expectation is that this investment will be reflected in “top quartile” ranking in the National Research Council’s regular assessment of doctorate programs and in other national or discipline-specific assessments. A significant portion of new resources will be allocated to relieve critical staffing issues generated by program growth, and to support core research activities with broad impact.

Stature is also affected by the strategic use of replacement positions within the departments and across the division. These positions are routinely evaluated as to appropriate new alignment within the division. Most departments do not have large percentages of faculty close to the minimum retirement age so retirements are less of a concern than elsewhere on campus. Similar to Engineering, faculty development and enrichment is a factor that must be integrated into planning to allow older faculty to retain their intellectual edge. Retentions, on the other hand, are difficult in the sciences due to the costs associated with start-up. The difficulty in retaining faculty whose research attracts national and international attention is common and UCSC has not escaped this situation. Unfortunately, this potential for fluctuation can impair the ability of departments to move steadily forward.

A second priority of the division centers on its educational mission. Three key instructional objectives are to sustain current and develop new instructional programs to train leaders and innovators in our technological society, to continue supporting co-curricular activities, and to increase division enrollments through several approaches. The PBSci Division has already developed an array of undergraduate programs, many of which are highly inter-disciplinary. The ability to develop additional offerings must be weighed against the impact on the already flourishing programs and the need for foundational laboratory courses. The immediate plans of the division, therefore, focus primarily on the development of the California Teach program, a Science/Math B.S. combined with an Education minor run jointly with the Department of Education.

In the conception of new graduate programs, the division plans to build upon its existing departmental strengths by proposing new cross-disciplinary programs. New graduate programs include Biomedical Sciences, Materials Science, and Planetary Sciences pathways in an existing Ph.D. programs. They are exploring the possibility of a semi-professional masters program in Coastal/Marine Policy.

A third priority is focused specifically on the ability of the division to attract external funding through its research mission. Such funding is particularly crucial for graduate support aside from its use in promoting scholarly activity. Division success in increasing external contract and grant funding is contingent on faculty growth. A proportionate increase in research activity and funding is assumed as faculty increase with some allowance for changing seniority demographics. The approach to critical mass in departments and inter-disciplinary groups increases the possibility of further leveraging compelling and large scale center-based proposals. The division goal to increase research funding will increase indirect cost returns to sustain and build research infrastructure. While external funding does increase indirect cost returns to the campus, these funds are largely offset by the cost of start-up packages and laboratory support. Decisions regarding priorities must, therefore, be made on programmatic grounds and not in expectation of financial benefits to the campus.

Within the focus on biomedicine and human health, linking both established subdisciplines and interests expressed in other divisions may allow PBSci to narrow its programmatic goals in this area. The division should emphasize areas that will 1) allow strong inter-disciplinary development, 2) emphasize strength and excellence in programs, and 3) take advantage of changes in technological and scientific knowledge. The cross-divisional activity required under the plans for the coming growth cycle is a challenge. Strong leadership and continued effort is indicated to promote a more efficient and integrated approach to the collaborative undergraduate and graduate curriculum.

Division of Social Sciences [awaiting full revision of draft plan]

The Division of Social Sciences reiterates the goal of extending the boundaries of knowledge in Social Sciences disciplinary and inter-disciplinary lines of inquiry. Programmatic expansion in graduate education, begun in the early 1990's, has enhanced faculty research and contributed to professional program growth. Faculty distinction is marked by professional awards and influence on their distinct disciplines, and through the impact they have on international discourse of issues ranging from trade, social documentation, social justice, open space, educational reform, and leadership development.

Divisional Goals: In their draft plan, the division intends to build upon established strengths by focusing on five themes: 1) culture, learning and knowledge, 2) environment and sustainable development, 3) globalization and governance, 4) science, technology and human development, and 5) social justice, identity and power. These themes will be developed with initiatives which build on existing strengths, show comparative

advantages for UCSC in claiming a place within a discipline or within social sciences, address a societal concern, perpetuate positive images of the social sciences, and/or capitalize upon the campus location. Recognition of budgetary constraints will be incorporated into the planning effort.

Two new programs, one graduate and one undergraduate, are possible: Latin American & Latino Studies Ph.D, and Biology B.S./Education minor, in collaboration with Physical and Biological Sciences.

Professional Schools

In its recent reaccreditation report on UCSC, the Western Association of Schools and Colleges (WASC) strongly recommended the addition of professional programs and schools to the array of programs offered at UCSC. The step into professional education, begun with the School of Engineering, is seen by WASC as the transition of UCSC into a truly comprehensive research institution. Two other lines of thought argue for a significant move in this direction in the coming planning cycle. The first is the need within the state for increased production of high-quality graduates to move into professional areas. In specific areas, the number of available professionals is limited and programs that will appeal to and train students in the changing demographic patterns of the state are desperately needed. This need is compounded by two other trends: a) the growing perception by professional licensing organizations that a masters or a doctorate is the appropriate terminal degree, and b) the subsequent need for those with advanced degrees to teach in professional programs throughout the state.

The second line of thought is that the ability of a growing campus to expand graduate offerings often rests on the development of terminal masters programs designed to attract a diverse group of students to move into practice upon graduation. Particularly around a campus size of 19,000 students, professional programs become a primary means of adding graduate students. At UCSC, our ability to add new graduate program at the Ph.D. level is limited by the mentoring ability of the faculty, the need to hold cohort sizes to levels that facilitate close interactions between and among students and faculty, and the availability of graduate support of a sufficient quality to attract high quality students. Consequently, adding more faculty to established programs has not necessarily resulted in a substantial increase in the number of graduate students.

Terminal predoctoral degrees and professional doctorates are often produced in self-supporting programs, utilizing a differentially higher fee structure to cover at least a large portion of the expenses to the campus. Even without this higher fee structure, professional programs are usually mounted with significantly less financial support for graduate students. Students are expected to place greater reliance on loans to be repaid once the graduate enters the profession.

A business plan for the proposed School of Management is currently under consideration and preproposals for two other schools in Public Policy and in Public Media have

received funding to move them forward to the proposal stage. Of these three, only the School of Management would be feasible to initiate within the planning cycle.

The School of Management, with its possible international and technology emphasis, will fit remarkably well with the campus' inter-disciplinary themes. By building upon both the utilization of advanced technology and information transfer and processes of globalization and transnationalism, the school would also move UCSC into a new area of research and teaching. The critical questions to ask, if we accept that this fits with the academic mission of UCSC, is whether or not such a school is feasible within the anticipated funding resources and how some aspects of current departments will be integrated into or collaborate with the new structure.

Policy issues have also infiltrated most areas of curricular and research interests. They appear in the Arts in regulation of artistic expression, ownership of performance, commercial exchange of art, for example. In Humanities, ethics and history evaluate how policies are conceived, enacted and implemented while other disciplines deal with the repercussions of these policies. Social justice, community and differential relationships are the focus of many aspects of the Social Sciences while the growing focus on human health and access to technology highlight policy issues in Physical and Biological Sciences and in Engineering. A few of these areas have been proposed for a possible School of Public Policy.

The Arts have led renewed attention on the role of media in today's society. This sentiment is echoed by research within Humanities and Social Sciences along with the development of the MA in Social Documentation. Using this combination, along with the collaboration of Engineering in the production and advancement of digital media, the possibility of a School of Public Media has been put forward.

Each of these proposals, and others which may develop, must receive careful attention. The choice of professional program, programs or school we should initiate will require weighing of a number of factors. These include the match with 1) need within the state for specific professions, 2) existing campus strengths, 3) financial feasibility, 4) sustainability of student demand and 5) fit within the UC system. Full campus consultation will be critical.

Crossing Traditional Boundaries

In addition to the disciplinary strengths we will enhance during the near term development, there are a number of reasons why we should consider the opportunities presented by collaborations between the disciplines. First among these reasons is that collaborations across the disciplines have proven to be a significant stimulant to production of new knowledge. Many research clusters such as the Center for Adaptive Optics, Institute for Global and Planetary Physics, and the Center for Justice, Tolerance and Community have produced “cutting edge” work, in large part because they draw together scholars from very different perspectives. Aside from the enhanced funding possibilities, the impact of this work in driving research in new directions has been substantial since this pattern reflects changes in the disciplines themselves. Disciplinary boundaries are pushed and research areas and methodologies are often adopted from other disciplines, bringing a fresh perspective.

A second reason is the rich tradition of UCSC in developing areas of research and creativity which cross traditional disciplinary boundaries. Throughout the divisions are instances where such intersections have resulted in new programs and departments that often mark the initiation of new avenues of scholarly work. Some examples include Digital Arts and New Media, Bioinformatics, Biomolecular Engineering, History of Consciousness, Feminist Studies, Ocean Sciences, Environmental Toxicology, Environmental Studies and Latin American and Latino Studies. The foundation for the campus itself rests on the inter-disciplinary nature of the residential colleges and their core courses which integrate writing into topical studies. If this is the foundation upon which we build, it is fitting that we pursue this distinctive feature as UCSC develops and grows.

A third benefit is that the recognition of broader themes allows for divisions to coalesce around these areas focus growth opportunities toward the development of areas of excellence. Already, the suggested themes have shaped plans within divisions to produce collaborative efforts and prompted long and thoughtful discussions between the units. The obvious overlap in interests allows divisions to unite in their efforts, with the product being greater than the individual contributions.

A fourth reason is the perception of the campus strengths by outside agencies. By aligning themes along the lines of areas of existing campus strengths, we can promote the campus in areas in which further investments of external funds would be highly beneficial. Over the past decade, the reputation of UCSC as a notable force in scholarly production has risen dramatically. It is essential that this momentum builds based on a coherent vision of the campus goals.

Implementation of Cross-Disciplinary Themes

The strategies for building programs that cross the boundaries of traditional disciplines involve:

- focusing programs on specific topics or approaches that unite or intersect two or more disciplines;
- providing the structural support and funding mechanisms for cross-disciplinary programs/efforts;
- defining and supporting a method of facilitating cluster hires across departments and divisions;

Potential mechanisms include the facilitation of program charters, team teaching, cross-listing of courses, integrated admissions, and re-emphasis of the academic objectives as primary. Cluster hiring is defined as the grouping together of associated recruitments to increase the possibility of team-hiring; hiring senior and junior faculty with the aim of facilitating inter-disciplinary collaborations; broadening the inter-disciplinary approach to faculty searches and selection. These points will be addressed more fully in the implementation portion of this document.

There are some cautions in developing themes that are not clearly aligned with a single discipline. First, these themes cannot exist to the exclusion or detriment of the foundational disciplines with which the themes ally. The themes do not replace excellent departments nor transform weak departments into strong themes. Close attention must be paid to retaining and expanding upon the solid foundations.

Secondly, we must retain the inter-disciplinary character in the face of an administrative structure which separates disciplines. Our existing inter-disciplinary programs are generally housed in one division, although with substantial overlapping interests in other divisions. The divisional administrative structure facilitates some interdisciplinarity within the division but imposes obstacles to formal involvement between divisions. Resource allocation and assignment of enrollment and teaching credit present hurdles that can hinder intellectual exploration. Formal mechanisms to promote collaboration are idiosyncratic. Parallel and potentially duplicative programs have emerged, separated by administrative lines. As a result, faculty and graduate students engage in research clusters or other less formal organizations but these efforts are less likely to include substantial undergraduate participation. The overlap between these clusters suggests that greater cooperation could be facilitated and could prove exciting for both faculty and students.

Finally, to date we have built inter-disciplinary programs, yet manage them structurally as new disciplines. Inter-disciplinary programs are expected to function as any other department and to mount both undergraduate and graduate curricula based on internal resources. As a result, we may be realizing only a portion of the true potential of these programs, hindering graduate students from entering popular and exciting fields, and limiting undergraduate programs due to insufficient faculty in the single department.

The identification of campuswide themes should seek areas that will advance the goals of the participating divisions in building upon existing strengths and simultaneously build core foci of strength across the university that will facilitate collaboration in research and instruction and maximize the identification of potential funding sources.

Six Themes for the Future

What should the main areas or themes be? The strategy employed in this document is to: 1) recognize the existing strengths across the department, both in overall orientation but also in its many centers of excellence; 2) examine the requests for new faculty FTE in the divisional plans; 3) examine the proposed new undergraduate and graduate programs in the divisional plans; 4) assess what are critical areas for future growth in state need for graduates; 5) assess the possibilities that we could significantly advance research; and 6) determine what areas of emphasis would be of greatest service to the state. From these distinct lines of evidence, six overall themes emerged that reflect current strengths, future ambitions, and greatest potential. Each theme includes many different aspects and all cross both disciplinary and divisional boundaries.

The six areas include:

- Cross Cultural Initiatives
- Evolving Environments, Science and Policy
- Human Health Studies
- Public Documentation and Communication
- Technological Development and Their Societal Impacts
- Transnationalism and Globalization

Cross Cultural Initiatives

How we construct our definition of ourselves, how our identity is determined by external forces, our connection to our ethnic, regional and national histories and how these definitions are swayed by global movements all fall under the broad category of “Cross-Cultural Initiatives.” These issues are at the forefront of work in the Divisions of the Arts, Humanities and Social Sciences.

One set of clusters focuses on the effects of diaspora on identity and ethnicity construction. The treatment of groups as they move into new areas and establish new contacts, how they are active participants in defining their role in the political and economic structures and how they retain or demolish links to their homelands all fall into this area. The Divisions of the Humanities and Social Sciences are actively pursuing collaborative efforts around this cluster with initiatives in Asian diasporic studies. These may well be supplemented by inclusion of South Asian and of Muslim studies.

Gender studies is another cluster within this theme which already enjoys considerable collaborative effort. Combined with our already existing strengths in Humanities and Social Sciences, this subfocus should be further highlighted. Expansion will facilitate planned programs in Feminist Studies and the activities of the Institute for Advanced Feminist Studies. Consideration of other aspects of gender studies should be considered including Queer Studies.

Evolving Environments, Science and Policy

An existing strength of the campus is in the area of environmental studies, sciences and sustainable use of resources, as seen in the Division of Physical and Biological Sciences and in the Social Sciences. Within these divisions are departments, each of which is already based on the merging of disciplinary strengths to focus on new directions or new approaches. In addition, the campus has made a commitment to the research aspects through STEPS Institute for Innovation in Environmental Research. This area also includes the functions of the earth as a planetary model, the factors that influence the movement of its continents and oceans, its climate and ecosystems and its ability to sustain life, and a broader understanding of how this one planet formed and exists in the universe

We can further promote cross-cutting themes in the area of environment and public policy along the lines of coastal policy and climate change. Evidence of this blending is seen with the renewed interest in a program on coastal/marine policy. In addition, the Center for Justice, Tolerance and Community conducts research into environmental degradation and social justice. Should we pursue a School of Public Policy, incorporation of this theme at some level may be appropriate.

The Department of Earth and Planetary Sciences demonstrates that the traditional focus on our planet has been supplanted by a broader view that incorporates formation and reformation of the Earth into an understanding of the formation of more distant objects. This shift links these studies to the fields of physics and astronomy. UCSC and its companion institute, the UC Observatory at Lick, have established a premier record in the study of deep space, origins of the universe, dark matter and many other phenomena. The quality of the programs and units associated with this work must be maintained and enhanced.

Human Health Studies

The field of human health enjoys extensive support from the School of Engineering and the Divisions of Physical and Biological Sciences, Humanities and Social Sciences, all of whom have faculty already conducting research complementary to this theme. Within Engineering, biomolecular engineering, development of assistive devices and biomaterials are critical areas for integration of science and technology with human health. Basic research in health, disease and toxicology, as well as academic programs in health sciences, is strong with the Division of Physical and Biological Sciences.

Increasing collaboration is evident between these divisions and must be promoted. Stem cell research opens new opportunities to promote the integration of biomolecular engineering with molecular, cellular and developmental biology. The recent surge in enrollment in the Health Sciences major suggests that student interest in programs specifically designed to prepare them for professional careers in health care is high.

Class and gender differences in access to health care, the history of biomedicine and disease, cultural understanding of health issues and communication about disease and wellness are also strong binding interests across the campus. Small faculty research clusters have emerged and could be re-examined to see if further investment would be helpful and is warranted. Students are also expressing interest in these health care related courses and programs, examining the accessibility of health services across class, gender and ethnicity groups, cultural differences in the understanding of health and disease, alternative health care providers, and the economic impacts of health care and our changing demographics.

If we are to invest in this area as heavily as anticipated, it is imperative that we have a clear vision of the best uses across the disciplines. To do so would allow us to handle cluster hiring, to develop faculty collaborations, to build appropriate facilities, to mount a targeted philanthropic campaign with the goal of raising funds to endow chairs, and to gain large industrial donations that will make it possible to excel despite our relatively small size.

Public Documentation and Communication

A recurring theme that appears in the plans of the Divisions of Arts, Engineering, Humanities, and Social Sciences is the role of public media, sound and visual media and the arts in transmitting not only knowledge but emotion, identity, and power. Throughout the disciplines, this study incorporates reflection on how media are shaped and shape the artists and society in which they are produced and through whom and in which they occur, how they change the perception of those who hear or view them and how they are utilized to construct or deconstruct power and control. The production of art and communication occurs in many disciplines and our programs focus on critical choices made in production and documentation and how these are transmitted, altered and adapted.

Investment in this area could focus more explicitly on the use of digital media and on how new media are changing the presentation and distribution of expression, information and data. At the intersection of theory and production, this theme also forms natural links to analysis and study of cross-cultural movements and the processes of globalization and transnationalism. A preproposal for a School of Public Media would encompass many of the aims of this theme, drawing on programs already established across the campus. Seed funding has been provided to allow faculty to expand the base from which such alliances could grow and this movement should be monitored to examine how best to meld these interests into a cohesive unit.

Technological Development and Their Societal Impacts

Technological Development and Societal Impacts is a broad umbrella that covers the rapid expansion we have seen in Engineering and the continued growth in Physical and Biological Sciences. It incorporates the cutting edge developments in info-, nano- and biotechnology proposed by Engineering. However, this cluster also includes the basic science research underlying this production and how, in Humanities, Arts and Social Sciences, these advances in technology have ramifications for society, environment, ethical considerations, the human interface with technology, social justice, and nationhood.

Among the developments we should push are four close collaborations. The first would be around the interests in digital media, building around the existing collaborative efforts such as those seen around Digital Arts, New Media and Computer Game Design. The second synergy is between Engineering and Physical and Biological Sciences, most probably focusing on the development of biomaterials and bioengineering. Sharing of courses, laboratory space and research facilities as well as cooperation in hiring between BME and departments in Physical and Biological Sciences will need attention. A third proposed area would be on computational initiatives. Building upon the foundational work of mathematics, alliances devoted to computational biology and computational linguistics are already thriving. The final cluster proposed within this theme is in technology and public policy including extensive work in the areas of ethics and social justice.

Transnationalism and Globalization

The dual processes of globalization and transnationalism will shape the future of the world. Globalization entails the increasing connectedness in the economic markets throughout the world, the common and linked environmental factors that affect and are affected by human habitation of the planet, the spread of language and culture, and the standardization of political expectations in terms of human rights, labor regulations, freedom of the press and of expression. The initial presumption that globalization would center on western traditions has quickly given way to an understanding of multiple globalizations. Transnationalism, in its broader definition, is similar to globalization but can also be defined more closely as interactions across one or more national borders. Whereas globalization can be said to emphasize homogenization across expanses, transnational emphasizes the duality or multiplicity of existences as events occur in different political, economic and cultural settings across the boundaries imposed by nation-states.

This theme already shows strong investment and established strength on campus, particularly in the social and environmental consequences and the modes by which these dual processes operate, the effects of migration on social and economic stability and

advancement, and in the consequences of technological changes in communication and media distribution. Because this theme is so widely dispersed throughout the campus, uniting the threads will be challenging. Proposals under development for a School of Management may provide the means to increase the focus to a great extent, combining interests in advanced technology and information transfer within a context of a global economy.

Arenas for Exploration Across the Disciplines

There are many arenas in which this border-crossing work already takes place. Our challenge is to facilitate and promote this work in such a way that the productive efforts of our faculty and students can be enhanced. We also need to provide “testing grounds” where new collaborative ideas can be tried, matured and implemented.

The foremost arena for research across the disciplines lies in the efforts of our faculty as they form natural alliances around common themes. Many of these are relatively informal but many receive some seed funding as focused research clusters. We must foster these efforts but also be willing to assess the potential for success and redirect resources if that potential is low. Success can be measured in many ways but should include significant scholarly productivity, development of new undergraduate or graduate programs, ability to raise external funding, and sustainability of faculty interest.

Scattered throughout the campus are research centers which unite faculty around topics. These groups have formed around internal and external promoters, may be divisionally located, and may provide a cluster or team of researchers who are able to access funds to a greater extent than a single individual. The centers often also stage symposia, lecture series, and colloquia which attract other faculty and graduate students. While some divisional funds are usually required to initiate these groups, there is the expectation that external funding will replace this, freeing the divisional funds to be directed elsewhere.

Finally, an often over-looked but exceptional arena for border-crossing work is the college system. Aside from its interdisciplinary core course structure, colleges continue to house faculty offices and small research groups. To varying degrees based on their level of funding, they also sponsor upper division courses which draw upon the faculty fellows. Many of these courses are team-taught, uniting faculty from divergent perspectives. The independent nature of the colleges lends themselves ideally to an incubator for exploration across and between disciplines.