UCR 2020: Academic Excellence Subcommittee Report Executive Summary

This executive summary is a compilation of the most important action steps recommended by the Academic Excellence Subcommittee. Following each action step, we provide a brief rationale. A more complete treatment of the topic areas covered here and the rationale for each action step can be found in the subcommittee's main report.

1. All means should be used to stimulate the grant productivity of the faculty.

Grant productivity on campus is low by AAU standards. We recommend setting expectations for grant seeking as part of merit reviews in fields where grants are important; regular discussions by Deans of the performance of departments and research units in chairs meetings and other venues; rewarding individuals who are obtaining grants with credit on merits and/or reduced teaching; finding seed funds for the preparation of multi-investigator grants; and exploring ways to allocate indirect costs to provide incentives for higher levels of grant submission. The Research Office should act as a catalyst and facilitator for pulling together faculty to seek large center, training, and other multi-investigator grants.

2. Find ways to make grants easier to apply for and easier to administer.

The Office of Research is perceived by many grant-seeking faculty members as more interested in compliance than in service to the faculty. The culture of the Office of Research must change so that it becomes a service unit and is oriented to the development of successful grants and the timely processing of received grants. In addition, more efficient processes should be developed to facilitate interactions between the departments, the Office of Research, and the Accounting Office. Grants analysts should receive better training for their jobs.

3. Create flexible forms of work assignment and merit evaluation that maximize the research and teaching potential of the faculty.

Deans and chairs should be encouraged to redistribute work activities between research and teaching in relation to the relative strengths of their faculty members. In addition, faculty members should have the option to be evaluated for merits solely for their teaching and service should they decide to focus on teaching. Likewise, a faculty member whose research or scholarly activity is accelerating should be incentivized to focus more in this area.

4. Review the activities of research centers on campus and sunset those that are no longer viable.

The research centers on campus form a disparate group with minimal supervision or fiscal oversight. A high priority should be to gain a better understanding of the activities

of the research centers, including an analysis of the costs and benefits of each, along with the realistic outcomes to be expected from further investment. Several are doing well, but some appear to be inactive. If they are no longer viable, it is time to sunset them and to redirect resources elsewhere.

5. Develop an improved system for tracking and updating faculty awards.

Major awards are a phase one indicator used by the AAU. The University cannot achieve the profile of an AAU institution if it does not know how it stands on one of the key first phase indicators. The University should investigate ways of updating lists automatically from personnel files, and, if this is not possible, it should devote sufficient time to tracking and categorizing faculty awards.

6. Secure nominations for top scientists for membership in the national academies.

National Academy membership is an important indicator of academic excellence. UCR has relatively few members of the national academies. The faculty includes 30 individuals with H-indexes of 30 or higher over the most recent 15 year period, including several with H-indexes in the 40s and 50s. Some of these people who are not currently members of the national academies merit nomination. Department chairs and deans should develop a process for identifying and nominating faculty for prestigious awards.

7. Focus on creating a critical mass of faculty in selected areas.

Smaller universities can succeed by deciding to be excellent in a few strategically selected areas, and by building programs in those areas of sufficient size to be nationally competitive. UCR has historically followed the reverse strategy, developing a large number of departments and programs, few of which have the critical mass necessary to achieve national and international recognition. Future hiring should be aimed towards building critical mass in selected areas, particularly those of existing or emerging strength.

8. Find ways to reduce fragmentation caused by the proliferation of small units.

Evaluations of highly successful programs show that they have achieved critical mass in the size of faculty. As a campus, UCR should be organized around fewer and larger units. The life sciences stand out as highly fragmented in relation to the organization of life sciences at other research universities, but some other units are also too small. The University should welcome faculty-led initiatives to reduce fragmentation and increase collaboration on campus.

9. Preserve currently strong departments and support productive faculty.

UCR includes several strong departments, centers, and many strong individuals. Existing departmental, center, and individual strengths are the foundation for the campus's

academic reputation. Strategic priorities should be established around existing and emerging campus strengths.

10. Identify strategic priority areas and focus investment on these areas.

Identification of strategic investment priority areas should be made on the basis of careful study with the following criteria in mind: a) the qualities of potential leaders of the focus area; b) histories of interaction among participants; c) levels of publication, citation, and grant awards of participants; d) how the focus area addresses global, national, state and/or regional concerns; e) grant opportunities in the area and how scholars in the area can address these opportunities; f) comparisons with regional and statewide competitor units in other universities; g) structural gaps that could be addressed through high-quality hires; and h) infrastructure requirements. No investments should be made without sufficient infrastructure support.

11. Develop incentives to encourage academic leaders to participate actively in graduate education.

Involvement in graduate programs should be an important criterion in merit reviews for full professors, and particularly for professors at Step VI and above. Conversely, those who have yet to distinguish themselves should not be advising large numbers of graduate students. The University should provide feedback to deans and departments in which distributions of effort in graduate training appear to be badly misaligned with faculty members' research productivity and/or opportunities in the field.

12. Find ways to improve selectivity in undergraduate admissions, while maintaining the diversity of the undergraduate student body.

Given the demographic make-up of inland Southern California, it will be possible to improve the academic profile of incoming students without sacrificing the racial-ethnic diversity in which the campus takes justified pride. By improving the academic profile of incoming freshmen, the university will develop a better reputation in its service communities and a critical mass for engaged intellectual discovery in its classrooms. Well-designed recruitment efforts, led by the Colleges, can improve the academic profile of entering students. The central administration and the deans should provide support to expand these efforts.

13. Find ways to improve the undergraduate academic experience.

The University can attract and retain high achieving undergraduate students by reforming the Honors Program as a selective, high-quality Honors College; hiring an awards and fellowship staff person connected to the Honors College; and finding new ways to encourage study enhancement and research opportunities for upper-division students. It should also foster competitions and awards for excellence in oral presentations, essays, and creative activity, as well as undergraduate research.

14. Find ways to improve budget management and transparency.

Budget officers at all levels should serve the academic mission of the university, rather than controlling the mission. Budgets linking revenues and expenditures should be available to deans and chairs, as should overviews of the allocation of funds to academic and administrative units. All administrators should have the information necessary to allocate resources effectively in line with strategic priorities.

UCR 2020: Academic Excellence Subcommittee Report

I. Introduction

This report is organized thematically. It begins with an overview of the strengths of the campus, and the challenges facing it as it moves forward. It then discusses conditions for improving academic excellence at UCR. These conditions were identified through evaluation of multiple sources of evidence, including quantitative indicators used by the AAU as membership criteria, graduate program and research center reviews, and conversations with deans. The report concludes with a discussion of metrics and sources. Special reports on six key topic areas are appended to this main report.

II. Overview of Academic Excellence at UCR

We begin with a broad assessment of the strengths and weaknesses of the campus, as it enters the next phase of its development.

A number of departments, research centers, and individual faculty members are performing at a high level and bring renown to the campus.

BCOE has made solid progress and is now in the top 50 of engineering schools in the country. BCOE is particularly strong in chemical and environmental engineering, electrical engineering, materials science, and in computer science and engineering. CE-CERT is one of the most successful research centers affiliated with UCR. The Center for Nanoscale Science and Engineering, which spans BCOE and CNAS, is another of the most successful research centers on campus. In CNAS, the university has competitive, nationally recognized programs in biochemistry, botany and plant sciences, chemistry, and entomology, as well as many highly regarded researchers in biology, environmental science, earth sciences, and high-energy physics. In addition, the Center for Conservation Biology and the Institute for Integrative Genome Biology have performed well overall both in publications and grants. In CHASS, Creative Writing, Philosophy, Psychology, and Sociology are comparatively strong departments. Some departments in CHASS are too small to be nationally recognized, but include well-published and award-winning scholars. The Center for Sustainable Suburban Development is showing signs of becoming an important campus resource, joining the already well-established Center for Bibliographic Studies and Presley Center on Criminal Justice and Socio-legal Studies as important centers in CHASS. GSOE and SoBA are smaller units, but both have a number of outstanding scholars. GSOE currently leads the campus in grants/capita. SoBA has made great strides under Dean David Stewart. It now houses one of the leading centers in the country on Internet Marketing, the Sloan Center for Internet Retailing, and several recently hired highly productive scholars.

Except in one field (mathematics and statistics), UCR science faculty fell in or near the middle of the AAU Comparison 11 on citation impact over a rolling 27-year period, with better than the mean performance in chemistry and social sciences.

As individuals, 90 UCR faculty members have averaged more than 100 citations per year over the most recent 15-year period. The H-index is a standard measure of research centrality, and is based on the count of the highest number of publications cited at least that number of times. Some 30 UCR faculty members have H-indexes of 30 or above, including several with H-indexes in the 40s and 50s. These frequently-cited faculty members are at the center of the University's reputation for academic excellence. To move forward, the University must make the most of their contributions and leadership.

The campus has also developed some important cross-department and cross-college collaborations. As noted above, the Center for Nanoscale Science and Engineering ranks as a highly productive organized research unit. The University was recently awarded a UC-wide Center grant in Global Health. The work of this new Center will cross social sciences, life sciences, physical sciences, and engineering. In STEM fields, other highly productive collaborations exist in global climate and environmental change, human health, and secure and sustainable food supply. In non-STEM fields, productive collaborations exist in the study of urban/suburban sustainability; higher education organization and policy; Latin America; and race, ethnicity, and immigration.

In spite of these strengths, UCR has a considerable distance to go before it achieves the profile of an AAU institution. Several departments and research centers are not producing publications, citations, and grants at a level that would be expected at a major research university. Methods must be found to bring these units up to a minimally acceptable level. If this cannot be accomplished, the university must think seriously before committing additional resources to them.

The campus's relatively small size works against it, as does the small size of many of its departments. In order to achieve the profile of an AAU institution, the university will need both to grow and to consolidate strengths among smaller academic units to create critical mass in key fields. During the current period of stable or declining resources, the university must make the most of the faculty who exemplify academic excellence – while helping other members of the faculty to achieve at higher levels. And it must make very good choices as it reallocates resources from faculty retirements and separations.

UCR is competitive with the AAU Comparison 11 in publications and citations in STEM fields and social sciences, where these measures are most pertinent. It is not yet competitive in grant expenditures, major faculty awards, or doctoral degree production. It also lags on some measures of academic excellence in undergraduate education.

UCR can move forward, even in this difficult budget climate. However, in order to do so, it must choose to invest wisely in current strengths as well as in areas of likely future prominence. This report will suggest ways that the challenging task of institutional improvement can be accomplished.

III. Steps to Improve the Campus's Level of Academic Excellence

In this section, we focus on the conditions for improving academic excellence at UCR and include recommendations about how to make improvements the campus needs to develop the profile of an AAU member institution.

A. Increasing Faculty Grant Activity
(Executive Summary Points 1 and 2)

UCR ranks significantly lower than the AAU comparison institutions and other University of California campuses in absolute level of grants and grants per capita. Grant activity has been almost flat for the last five years at a time when several institutions without medical schools, such as UC-Santa Barbara and Colorado State University, have greatly increased their grant activity. Grant performance in several research centers, even the Institute for Integrative Genome Biology, which includes several research stars, has been disappointing at times. Grant performance in the social sciences, other than Education, Psychology and parts of Sociology, has been disappointing as well. Some departments, which are major contributors at other institutions, such as Economics and Neuroscience, bring in little in the way of extramural funding.

Universities can use a number of mechanisms to stimulate the proposal submission process. These include rewarding people who are seeking and succeeding in obtaining grants with credit on merits and/or reduced teaching. They also include setting expectations for grant seeking as part of merit reviews and discussing performance of departments and units in chairs meetings and other venues. The university can also find funds and other support for the preparation of multi-investigator grants in strategic investment priority areas. The university should also explore new ways to allocate indirect costs to provide incentives for large-scale multi-investigator grants.

The faculty's success in obtaining grants is not helped by structural weaknesses connected to the Office of Research. Many faculty members who are trying to submit grants find the office of little help. It is perceived by many grant-seeking faculty members as more interested in compliance than in service to the faculty. The Office of Research has engaged in some efforts to foster collaborations on campus, including offering workshops for faculty members proposing IGERTS and Center grants and small grants for proposal preparations. But many faculty members see it as failing to perform the important role of catalyst and resource for bringing together faculty in pursuit of large center, training, or multi-investigator grants. Simply e-mailing all faculty lists of federal funding opportunities is not sufficient.

A change of practices and attitudes in the Office of Research will be necessary for the university to move forward. The Office of Research must greatly increase the value it places on successfully bringing grants to campus, while finding ways to promote successful grant seeking. Communication between departments, the Office of Research, and other university offices can be difficult and time consuming. At a minimum, smoother processes should be developed to facilitate interactions between the

departments, the Office of Research, and the Accounting Office. The quality of training of analysts in the departments also varies dramatically. Some units provide minimal help in the administration of grants. In other cases, high-achieving individuals and units effectively support and facilitate grant submission and administration. These individuals and units should be acknowledged, rewarded and studied for their success. Patterns of less effective operation should be identified and addressed. Analysts should receive training for their jobs under the tutelage of expert analysts. (See accompanying Special Topics Paper #1 on the Office of Research.)

B. Reforming Faculty Appointments
(Executive Summary Point 3)

The total number of faculty grew by 161 over the period 2000-2009, but faculty appointments have not been made with an eye to building on the comparative advantages of the University or with any other widely understood and shared strategic vision in mind. The seemingly *ad hoc* practice of allocating lines and making appointments should stop. New faculty appointments will need to be aligned to areas of strength, both in the existing departmental and research center structure and in new strategic priority areas that crosscut departments and colleges.

A major objective of change in faculty appointments, promotions, and workload should be to reward faculty who are research productive, whether in scholarly or scientific work, and who, if they are in the sciences or engineering, bring in large grants. These faculty members contribute disproportionately to the reputation of the university and its aspirations for distinction in research and graduate training. Faculty members who apply for and obtain grants should be credited for this activity in merit and promotion. Amending the Call to include research grants as a positive factor in merit and promotion reviews would help to build these expectations into the culture of the campus. If some percentage of indirect costs can be returned to PIs and front-line units, this could serve as a powerful incentive to increase grant activity.

Other changes in faculty appointments and evaluation would be desirable. Currently all faculty members are expected to be involved in both research and teaching. This expectation works well for faculty members who are research productive, but it does not work very well for faculty members who have hit a period of diminished research productivity. Faculty members should have the option of being evaluated for merits solely for their teaching and service, should they decide to focus on teaching due to declining research productivity or shifts in interests. Such an evaluation would require merits for demonstrated excellence in the classroom, based on higher levels of commitment to the teaching mission, as well as options for moving back into an evaluation structure that examines both research and teaching. Increased teaching loads for such faculty would provide equity in terms of effort, and would also allow departments to balance workload as other, more research active faculty place the preponderance of their effort on research. Course buy-outs are a simple way to allow for greater concentration on research, but the university should consider other mechanisms as

well, such as automatic course reductions for faculty members who are managing more than a campus-defined dollar amount in current academic year research grants.

The current patchwork of expectations about teaching loads should be replaced by a rational and equitable system of expectation, in which those who research less teach more and those who research more teach less, regardless of department or College. Norms of lower teaching loads in STEM fields are inequitable, if they lead to low levels of teaching among faculty members who are not research productive. (See accompanying Special Topics Paper #2 on faculty appointments.)

One final issue related to faculty appointments should be addressed. More than one Dean raised the issue of inadequate effort and collegiality among faculty who not only fail to fulfill their obligations but cause problems for those who must try to work alongside them. Campus procedures for dealing with such individuals appear to be inadequate.

C. Closing Non-Viable Research Centers
(Executive Summary Point 4)

Some of the research centers on campus are performing well. These include: CE-CERT, the Center for Conservation Biology and the Center for Nanoscale Science and Engineering. Others, like the Center for Sustainable Suburban Development, the Institute for Integrative Genome Biology, the Presley Center, and UC Mexus, are obtaining grants but not at consistently high levels. Still others, such as the Air Pollution Research Center, the Center for Invasive Species Research, the Center for Ideas and Society, and the Center for Social and Behavioral Science, appear to be inactive, at least in so far as grant awards are concerned. (The Center for Ideas and Society is valued by many faculty members in CHASS for the conferences it sponsors and the opportunities it provides for topical working groups.)

The research centers on campus form a disparate group with minimal supervision or fiscal oversight. The Office of Research does not seem to have a good handle on the research centers on campus. A large number are viewed by the Office of Research as the responsibility of Colleges. The Office of Research does not appear to have a complete list of all centers on campus, much less comprehensive information about them. The Office of Research should take the leadership for five-year reviews of all centers and for maintaining a complete list and background information on centers, even for those centers that report to a dean.

A few may be producing well in some senses but not others – for example, CE-CERT has been successful in obtaining extramural funding and visibility but has problems paying for its facilities and has limited impact on campus because of its off-campus location. A high priority for strategic planning should be to better understand what is going on in the research centers on campus, including an analysis of the costs and benefits of each, along with the realistic outcomes to be expected from further investment.

The Office of Research should develop and enforce a clear definition of what it means to be a research center. This definition should include the purpose of a center, the resources that a center can draw upon, the incentives that are provided to the director of a center, and, most importantly, the expectations that a center should fulfill concerning its contribution to the teaching, research and service mission of the University. Such a statement should also include clear requirements for the continuation of centers, and include a "sunset" provision to abolish centers that are inactive, without realistic future prospects, for extended period of time. Some dormant centers continue to receive at least nominal budgets and/or occupy space. If they have no real future prospects, it is time to close them and to shift resources to more promising centers of faculty activity.

D. Tracking and Increasing Major Faculty Awards
(Executive Summary Points 5 and 6)

Major awards, such as National Academy memberships and Guggenheim Fellowships, are first phase indicators for AAU membership. UCR lags behind most current AAU members in major awards.

A first step toward improvement will be to keep adequate records. The University cannot achieve the profile of an AAU institution if it does not know how it stands on one of the key first phase indicators. Our review suggests that award records are incomplete and poorly kept. Many faculty members who have received awards are not listed because they have not bothered to send in their awards. Award lists also do not separate minor from major awards. Faculty members who have departed the university long ago remain on awards lists.

The Office of the Vice Provost for Academic Personnel should have primary responsibility for revising the current inaccurate and incomplete list. Deans, department chairs, and individual faculty members should also be responsible for submitting names and awards as they take place. If this is impossible, merit reviews might be held up until candidates assure their chairs that their award list has been updated. The Office of the Vice Provost for Academic Personnel should investigate ways of updating lists automatically from personnel files. E-file could potentially be redesigned to direct major awards into an awards database.

A second step will be to secure nominations to the national academies for outstanding faculty members. The University has done a good job of nominating faculty members for membership in the American Association for the Advancement of Science. However, Deans and departments need to increase their effort to identify and nominate people to the national academies and similarly prestigious professional associations. The H-index is a standard measure of research centrality, and is based on the count of the highest number of publications cited at least that number of times. The University has approximately 30 scientists, engineers, and social scientists with H-indexes of 30 or higher over the most recent 15 year period, including several with H-indexes in the 40s and 50s. Some of these people who are not currently members of the national academies merit nomination. Some departments have standing nominating committees that are quite

active in seeking awards for both faculty and students. We recommend that all departments institute such committees and learn from the practices of the more active and successful departments.

E. Moving toward Fewer, Larger Programs
(Executive Summary Points 7 and 8)

Deans observed that the number of faculty at UCR is inadequate to the campus mission. Wherever one looks, one sees statistics concerning faculty/student ratios that are drastically worse than in AAU comparison institution programs with which UCR is seeking to compete, as well as in comparisons with other UC campuses. Most, if not all, UCR departments lack the critical mass to be nationally effective. In the long run, if UCR is to achieve the profile of an AAU institution, it will need to employ a larger faculty. Needless to say, it will also need to enforce demanding standards for new appointments and promotions.

Another option for achieving critical mass within various program areas is consolidation of departments or programs. Given its current resources and opportunities, campus academic organization includes too many small units. Some of the jurisdictions of these units overlap, as in the case of the several departments and units working on plant science. The life sciences stand out as highly fragmented in relation to the organization of life sciences at other top research universities. (See accompanying Special Topics Paper #3 on reorganization of the life sciences). Some other academic units are also too small. With the exception of a few specialized high-performing small units (such as the Department of Entomology), departments with fewer than 50 undergraduate majors absorb administrative resources without clear justification and sometimes create artificial boundaries that limit useful collegial interactions. In addition to welcoming faculty-led initiatives to reorganize the life sciences, the University should welcome faculty-led initiatives to bring together other small departments, such as Mathematics and Statistics, as well as the smaller cultural studies departments in CHASS. It should also welcome a proposal for a School of the Arts, as well as for a recombination of Hispanic Studies with Comparative Languages and Literatures. Even departments with more than 50 majors could potentially gain greater national prominence by joining other units to become larger. We can imagine, for example, a competitive national program in Literature, combining the Departments of English, Comparative Languages and Literatures, Hispanic Studies, and Creative Writing.

We do not favor efforts to reduce fragmentation that originate from the central administration or the deans, but encouragement and incentives could be provided by these offices. A core issue is the problem of combining small with big, so that small units of potentially greater strength do not lose that strength in the process of joining with larger but weaker units. Recombination must be sensitive to issues like this, hence the need for faculty leadership. Such efforts cannot work unless the faculty members are interested in pursuing program reorganization, and faculty members likely will not consider pursuing such efforts without finding both intellectual stimulation and practical benefits to themselves, their students, and the University's reputation. Therefore, the

Administration will need to think through the incentives it is willing to offer for departments to consider combining into larger, more effective units.

The problem with faculty size is not simply a matter of numbers and arrangement of units. Successful universities, such as Johns Hopkins University, have succeeded by deciding to be excellent in a few strategically selected areas, and by building programs in those areas of sufficient size (especially of faculty numbers) to be nationally competitive. UCR has historically followed the opposite strategy, developing a large number of departments and programs, few of which are large enough to be a serious presence on the national and international stage. Opportunities to remedy this situation have been missed in the past. Future hiring should be aimed towards preserving existing strengths and building critical mass in selected areas.

F. Defining Strategic Priority Areas, While Preserving Current Strengths
(Executive Summary Points 9 and 10)

Departments are foundational in so far as they provide the basic building blocks for scientific and scholarly progress. Existing departmental and individual strengths are fundamental also to the campus's reputation for academic excellence. Investment in new strategic priority areas should therefore not come at the expense of strong units and individuals. In fact, areas of strategic priority can be expected to overlap to some degree with these existing strengths. In addition, units with large numbers of early career faculty should be given a chance to prove that they can contribute to the campus's reputation for academic excellence.

Nevertheless, over the next several years, UCR is unlikely to be able to build strength across all current departments. Therefore, the best approach to improvement will be to preserve existing strong units, while leveraging current strengths that cut across departmental lines. We support this approach on both intellectual and practical grounds. Important research often occurs in new fields where progress requires the expertise of researchers from many different disciplines, and funding agencies are increasingly demanding that multi-investigator teams be drawn from more than one discipline.

Analyses conducted by members of the Subcommittee suggest that some important current areas of research strength on campus cross departmental and college lines. Members of the working group created publication and grant profiles for faculty members in a number of potential areas of strategic investment. These analyses, while necessarily preliminary, indicated a number of areas of strength in STEM fields, including nanoscale materials and engineering; environmental and climate change; secure and sustainable food supplies; and health and human well being (the latter potentially including many CHASS faculty members). The analyses also indicated a number of promising areas of potential strategic investment in social sciences and humanities fields, including urban/suburban sustainability; higher education organization and policy; Latin America; and race, ethnicity and immigration. In every case, these interdisciplinary fields showed high levels of potential faculty involvement, good levels of research productivity (as measured by publications and citations), and records of significant

success in grant seeking. Other areas examined in this exercise showed weaker profiles across the board.

Too often decisions about new hires or new areas for investment have been made on the basis of subjective impressions and values, and without consulting easily available statistical data about faculty publications, citations, grants, and awards. Such ventures have had neither the resources nor the critical mass to be successful. More formal analyses will be necessary to improve success rates in the future. At the same time, quantitative data alone are insufficient to make wise decisions about strategic investments.

Decisions about strategic investments should be based on both quantitative and qualitative data, as well as assessments about how well the proposed areas articulate with global, national, state and regional concerns. We recommend that the central administration, working with the deans and departments, study potential areas of strategic investment with the following criteria in mind:

1) qualities of potential leaders
2) histories of interaction among participants
3) levels of publication, citation, and grant awards of participants
4) how the focus area addresses global, national, state and/or regional concerns and/or how the focus area feeds into areas of basic research with commensurately strong funding opportunities
5) how scholars in the topic area can address these opportunities
6) comparisons with regional and statewide competitor units in other universities
7) structural gaps that could be addressed through high-quality hires
8) infrastructure requirements

The Subcommittee favors an RFP process in which formal proposals are required. These proposals should be evaluated by external referees and then compared to one another for scientific and scholarly merit, as well as for opportunities they provide for improving the productivity and reputation of the university. An alternative approach would be to choose areas based on careful study with the criteria above in mind. (See accompanying Special Topics Paper #4 on defining strategic priority areas.)

G. Aligning Graduate Study with Faculty Research Productivity
(Executive Summary Point 11)

Many graduate students do not finish or take too long to finish their doctoral programs. In some fields, those who finish do not easily find jobs. The University can do a better job of training and placing graduate students. It will need to begin by looking at the alignment of graduate training, faculty research productivity, and labor market opportunities.

Today, the campus's research and graduate teaching responsibilities are not well aligned. Some of the campus's most productive researchers are not mentoring graduate students.

At the same time, we find cases of professors who have yet distinguished themselves mentoring large numbers of graduate students. In some departments, a small minority of faculty members chair a disproportionately large number of doctoral committees. In other cases, the market for graduates in these fields is too small to warrant such a large number of students being advised by a particular professor.

Although the distribution of graduate training will never be fully aligned with the distribution of research productivity, the campus should strive to improve this alignment. Faculty in the agricultural sciences, in particular, can take advantage of the transition in state support of research to support graduate students in their labs. Although post-doctoral researchers and graduate students may cost roughly the same amount to employ, some units on campus that employ large numbers of post-doctoral researchers, must be encouraged to increase their numbers of graduate student researchers if the University intends to achieve the profile of an AAU institution. The University must have incentives in place, such as sufficient allocation of graduate fellowships, to reflect its commitment to highly-regarded departments and strategic priority areas. The University can provide incentives to research productive faculty members to mentor graduate students effectively, and it can raise questions on the merit files of senior faculty who show no involvement in doctoral training. The University should provide feedback to deans and departments in which distributions of effort in graduate training appear to be badly misaligned with research productivity and/or opportunities in the field.

The Mellon Foundation-funded Graduate Education Initiative provided helpful guidelines for improving graduate study.[1] These included: assigning incoming students to graduate mentors (with opportunities provided to change mentors); clear dates for meeting program requirements; specification of expectations for summer learning; doctoral dissertation workshops to prevent students from disengaging from their departments during the dissertation phase; and requiring that continued funding be contingent on timely progress. Students should also receive early and continuous advising about their progress in the program and about changing labor market opportunities.

Professionalization should be emphasized. Students should be encouraged to circulate papers to graduate student and professorial colleagues; to make conference presentations; and to submit papers to academic journals. In many fields, publishing papers and book chapters is an expected part of the graduate experience, and one that should develop progressively throughout the graduate experience. The departments and the Colleges can encourage these activities by presenting annual awards for outstanding research contributions.

[1] See Ronald G. Ehrenberg, Harriet Zuckerman, Jeffrey A. Groen, and Sharon M. Brucker, *Educating Scholars: Doctoral Education in the Humanities*. (Princeton: Princeton University Press, 2010).

The university should also address quality of life issues of graduate students, such as child care, social opportunities, and student support services, such as mental health services.

H. Moving toward Academically Stronger Undergraduate Programs
(Executive Summary Points 12 and 13)

Quality of the undergraduate student body and the undergraduate experience is a second phase AAU criterion. UCR currently ranks well below the AAU comparison 11, as well as most of the other University of California campuses, in the incoming SAT scores of entering freshmen. Incoming students also have lower uncapped high school grade point averages than students at other UC campuses (apart from UC Merced). The lack of selectivity in admissions leads to large costs for developmental courses, particularly the very expensive writing program. It is also associated with high failure rates in pre-calculus mathematics and introductory science courses.

Given the demographic make-up of inland Southern California, it should be possible to improve the academic profile of incoming students without sacrificing the racial-ethnic diversity in which the campus takes justified pride. Indeed, applications data reviewed in the CHASS 2009 recruitment campaign suggest that students in the next higher stratum of academic accomplishment (uncapped high school GPAs of 3.5 to 3.9) are as diverse, in terms of race and ethnicity, as the students the campus currently enrolls. By improving the academic profile of incoming freshmen, the university will develop a better reputation in its service communities and a critical mass for engaged intellectual discovery in its classrooms.

The University has many positive features to market to parents of high-achieving students, but it has not thus far found ways to become part of the consciousness of many of these parents. Parents of high-achieving students are far more interested in academic rigor than any other factor under the University's control. The University should therefore explore ways to improve the academic profile of incoming students through faculty-led recruitment efforts, travel to high-performing high schools, improvement in the honors program, and through providing additional opportunities for high-quality leadership and research experiences for undergraduates. Successful recruitment campaigns in BCOE and CHASS show that when faculty members become involved in recruiting high achieving students, their efforts bring measurable success. The central administration and the deans should provide resources for these campaigns to continue and expand.

While gradually raising its standards for admission, the University should not lose track of the strength and resource that the campus's diversity provides. Diversity is one important element of the campus that sets it apart from its competition. It should be encouraged, embraced, and utilized as a valuable asset.

The University has devoted considerable attention to student success and first year programs. These programs have a good record of success. However, students in the

middle and upper end of the academic achievement distribution are sometimes slighted on campus. It will be important to the University, not only to attract but to retain high achieving undergraduate students. It can do so by reforming the Honors Program into a selective, high quality Honors College, where the emphasis is on academic excellence and students have the opportunity to earn degrees in less than four years. Such an Honors College can create a small college environment within the large university. An outstanding staff person should be connected to the Honors College to help students with fellowship and graduate studies applications. The University should also find new ways to encourage study enhancement, such as through Study Abroad and research opportunities for upper-division students. It should also foster competitions and awards for excellence in oral presentations, essays, performances, film and video production, as well as for undergraduate research.

Student development opportunities through campus clubs and organizations are a vital ingredient of success in college and life. But academic excellence should be front and center in the public presentation of the University and in the activities it fosters on campus. The University can work with some of the excellent student organizations, including campus political and literary societies, as well as the more academically oriented to fraternities and sororities, to create stimulating cultural and intellectual events for our undergraduate students. Some current activities that do not promote the academic focus we desire for our undergraduate students might also be reconsidered, such as fall fraternity/sorority rush for freshmen.

Enrollment management is another issue with which the University must come to grips, as it balances enrollment pressures and resource constraints that limit course offerings. Deans observed that the admissions office seems to be obsessed with bringing in large numbers of students past a time when this practice brings commensurate resources to campus and, quite the contrary, is related to problems such as the crisis of unmet student demand for Winter Quarter 2010. A coordinated campus effort to match student demand for courses and the College's supply of courses will be necessary. Moving forward, the University must do a better job of enrollment management to assure that the campus offers sufficient courses for students to make timely progress toward their degrees. This will require regular consultation between the Office of the Registrar and the offices of the deans. (See accompanying Special Topics Paper #5 on admissions and enrollment management.)

I. Making Academic Budgeting Transparent
(Executive Summary Point 14)

Budget processes can help to facilitate academic excellence, or they can make the achievement of academic excellence more difficult.

Several Deans expressed frustration with the difficulty of obtaining useful financial information to support their own strategic planning. One Dean observed that he was unable to calculate with any confidence what the return would be on any investment, and other Deans made similar points. Several Deans commented that the overall system

seemed designed for command and control, rather than to provide service to the educational mission of the university.

The campus's financial system allows access to detailed accounts of all expenditures, but does not easily yield information about how the sources of funds dovetail with relevant expenditures. More than one Dean has developed his own in-house, "back-of-the-envelope" or Excel spreadsheet accounting system to try to gather useful information that is not available from the central administration.

Deans noted that the source of the problem might be a history in which a much smaller campus was run out of a single office by a few people. As the campus has grown, budget information has remained closely held by a very few people. As a result, Deans commented that substantive decisions concerning campus planning and operations are being made by financial officers, who issue decisions about whether mission-related spending is affordable, rather than by the academic administrators who are responsible for the campus's academic mission.

Budgeting reforms will be necessary for UCR to achieve the next level of distinction as a research university. Some of these reforms will require greater transparency and clarity. Budgets linking revenues and expenditures should be available to deans and chairs, as should clear, succinct overviews of the allocation of funds to academic and administrative units. All administrators should have the information necessary to allocate resources effectively in line with the campus's strategic priorities. Budget officers at all levels will need to see themselves as serving the academic mission of the University, as defined by the campus's strategic priorities, rather than as controlling or directing that mission. (See accompanying Special Topics Paper #6 on academic planning and budget.)

IV. Metrics and Sources

In this concluding section of the report, we will provide more detail on the data sources we used and comment on the importance of evidence-based approaches to strategic planning.

The Academic Excellence Subcommittee divided into four working groups: 1) Quantitative Indicators, chaired by Professor of Sociology and CHASS Associate Dean Steven Brint; 2) Qualitative Data, chaired by Distinguished Professor of Psychology David Funder; 3) Faculty Survey, chaired by Chancellor's Professor of Management Donna L. Hoffman; and 4) Structural Arrangements, chaired by Professor of Chemistry Cindy Larive.

The Quantitative Indicators Working Group gathered and reviewed hundreds of pages of statistical materials keyed to AAU membership criteria. The working group focused on first phase indicators: grant performance, doctoral program performance, publications and citations, and awards. It also collected data on second phase indicators related to undergraduate education. It compared UCR to a group of 11 AAU comparison institutions. These universities are all public and drawn from the lower quartile of the

current membership of AAU. They include the two most recently admitted members of AAU (Texas A&M and UC-Santa Barbara).[2] It also compared departments and units on campus to one another. Finally, it grouped faculty into several thematic areas for purposes of illustrating potential strategic investment opportunities.

Specifically, the Quantitative Indicators Working Group examined data on UCR grants expenditures over time compared to the AAU Comparison 11, other UC campuses, and the UC Comparison 8. It examined grants expenditures over time by department and research unit. It compared citation impact between UCR and the AAU Comparison 11 in 18 science and social science program areas. It assembled data on publications, citations, and H-indexes for all current faculty members by department over a recent 15-year period, 1993-2008. Fifteen faculty and staff members volunteered for the publication and citation project, and used Web of Science for STEM fields and Google Scholar for non-STEM fields. Comparisons between disciplines must be made with great care, because publication and citation patterns vary significantly. High-energy physicists, for example, may work on teams of 100 or more and therefore publication and citation levels tend to be higher in high-energy physics than other areas. Citation density is significantly lower in most arts and humanities fields than elsewhere in the university. The working group compared major awards for UCR faculty and faculty in the AAU Comparison 11 and examined awards by individual and department. It examined graduate student mentoring data by individual and department over time. It compared undergraduate SAT scores and six-year graduation rates between UCR and the AAU comparison 11, and it examined SAT scores, grade point averages, and six-year graduation rates for the campus and the colleges over time. It compared the UCR diversity index to that of the AAU Comparison 11. It also examined graduate program selectivity and placement data for CHASS departments only. (Data on other departments and colleges were not available.)

The Quantitative Indicators Working Group used grant awards, publication, citation, and H-index data to compare the productivity of faculty members aligned with 18 possible strategic investment priority areas. This analysis was conducted by Professors Michael Allen and Steven Brint. These 18 areas were not intended to constitute an exhaustive list of areas of current faculty strength in the University and were investigated for purposes of illustration only.

The Qualitative Data Working Group read all recent graduate program reviews and all research center reviews. The members of the group found the program and center reviews to be difficult to evaluate for purposes of strategic planning, because of the uneven quality of the reviews. Some recent reviews were not yet closed, and were therefore not included in the materials reviewed by the working group. Professor David Funder, the chair of the working group, also participated in discussions with each of the deans and summarized the results of these discussions for members of the Subcommittee.

[2] The AAU Comparison 11 are: Iowa State University, SUNY Buffalo, SUNY Stony Brook, Texas A&M, University of Arizona, UC-Davis, UC-Irvine, UC-Santa Barbara, University of Kansas, University of Missouri-Columbia, and University of Oregon.

The Faculty Survey Working Group conducted a survey of the faculty intended to elicit information concerning faculty assessments of academic excellence on campus. The Faculty Survey Working Group designed and field tested the survey, which was launched on January 11 and closed on January 20. Survey content was reviewed by the campus Human Relations Review Board, members of the Strategic Planning Steering Committee, and the Council of Deans. Questions on the survey focused on information that could not be obtained easily by other means, particularly information related to research collaborations and perceived areas of future strength. The survey also included an open-ended question asking for candid opinions about the University. Analysis of the survey data was conducted by Professors Donna L. Hoffman and Steven Brint.

The Structural Arrangement Working Group conducted individual, hour-long discussions with Deans Reza Abbaschian, Thomas O. Baldwin, Steven Bossert, Joseph W. Childers, Stephen E. Cullenberg, and David Stewart. Members also interviewed Vice Chancellor for Research Charles Louis, as well as colleagues at other comparable research universities. It commissioned reports on topic areas identified as key issues for campus improvement. These reports were written by members of the working group. Professor Cindy Larive conducted additional research on faculty appointments and the organization of Offices of Research at selected research universities. Professor Katie DeFea conducted additional research on the organization of the life sciences at other University of California campuses. Associate Dean Steven Brint conducted additional research on admissions and enrollment management at other research universities. Dean Joseph W. Childers conducted additional research on responsibility-centered management budget models.

Members of the Subcommittee sought to triangulate the results of their studies, wherever possible. If quantitative data, program reviews, and discussions with Deans, and faculty survey data all lead to similar conclusions, one can have confidence that these conclusions are valid. However, because perceptions and other indicators do not always coincide, it is essential to test one against the other. AAU membership criteria are largely quantitative and, if quantitative indicators are interpreted with sufficient care and sophistication, they can provide a particularly valuable “bone density test” of the university and its academic parts. However, quantitative data alone cannot be used to chart a course for the university. Instead, academic leaders must gather evidence from a variety of sources; use that evidence to inform decision-making; identify leadership for new initiatives; determine whether resources exist to support new initiatives; and develop a good sense as well of likely future directions in science, scholarship, and creative activity.

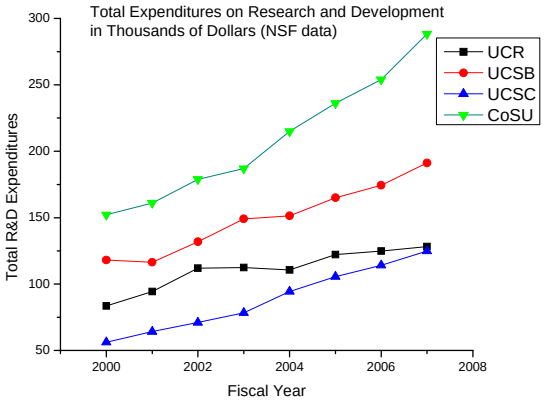
UCR 2020: Academic Excellence Subcommittee Structure Working Group

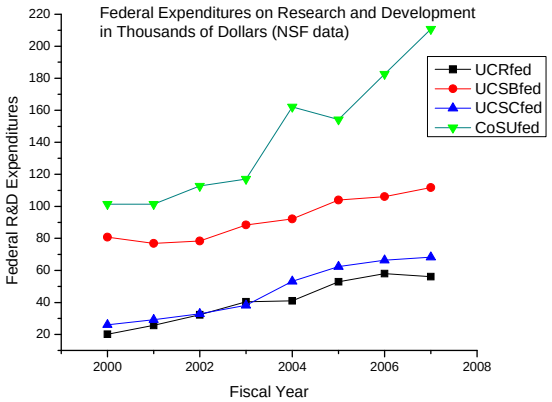
Special Topics Paper #1: Office of Research

I. Introduction

Members of the academic excellence committee engaged in conversations with the Deans and in the analysis of quantitative data related to faculty success in garnering research funds. The committee also administered a faculty survey to understand broadly the campus point of view. All of these data sources pointed to the Office of Research as a possible structural barrier to improving research productivity. The effectiveness of the Office of Research (OR) is a crucial to any Ph.D. granting institution, and by facilitating faculty productivity the OR can add value to the campus. At UCR, the OR has primary responsibility for three processes: 1) submission of faculty grant proposals, 2) assuring that the campus is compliant with federal and state regulations governing responsible conduct of research, and 3) assisting with the patenting and licensing of intellectual property developed by faculty; generally referred to as technology transfer. Other operations that may be affiliated with the OR on other campuses, such as cost accounting for active grants and research facilities, are located in other units at UCR.

The graphs below show the growth in total and federally funded research and development expenditures for UCR and three comparison universities over the period covering fiscal years 2000 – 2007. Because they provide a consistent basis for comparison, NSF data on research expenditures was used to generate these figures. UCSB and UCSC were selected for comparison because like UCR, they do not include a medical school. Colorado State University (CoSU) was selected for analysis because of its impressive gains in garnering research grants. Although CoSU does not have a medical school, it does have a strong veterinary school and like UCR, is a land grant university. During this period, UCR clearly lagged compared with the other three institutions with respect to gains in research expenditures.





Research proposals originate with the faculty. On some campuses, the entire process of proposal submission is centralized within a sponsored program office (SPO) administered by the OR. In this model, the faculty member contacts the SPO at the point at which the proposal is being developed and is assigned to an analyst who they work with to ready the proposal for submission. This organizational model has some advantages in that SPO personnel can be organized around funding sources, allowing the development of expertise in the requirements and policies of various funding agencies. It also has an advantage for assembling the materials needed for submission of large multi-investigator proposals. Because all proposals are developed and submitted via a single office, this organizational model facilitates development of a database of faculty expertise, bio-sketches and current and pending support forms. This model is used by the Office of Research and Graduate Studies at the University of Kansas, and their organizational chart can be found in the appendix of this report.

The UCR SPO effort is organized around a distributed model that relies on analysts within each department or center to work with faculty to complete boilerplate and generate an appropriate budget and justification for the proposal. These program analysts communicate with personnel in the SPO leading to approval and submission of proposals. This practice effectively removes the faculty member from the conversation between the program analysts and the SPO personnel. When a proposal submitted for review by the SPO requires changes or corrections, the typical communication pathway is that the SPO staff member communicates the problem to the program analyst who then informs the faculty PI. Because this communication protocol routes changes through the program analyst, valuable time can be lost in making the necessary changes. For example if the message to the analyst arrives while they are away from their desk in a meeting or at lunch, there can be a delay in communicating the nature of the problem to the PI. This practice may also foster the perception that the OR views faculty as a burden rather than valued customers, a common complaint among faculty. For example, the committee heard repeatedly the complaint that the OR operates as a command and control organization rather than a service organization.

The distributed model of SPO activities employed at UCR can also produce a significant variability in the quality of departmental analysts available to assist faculty in the submission of grants and contracts. The isolation of analysts within departments means that the training of new personnel can be variable in its quality. Due to staff resources, the OR does not currently provide systematic training for new analysts. There also appears to be no mechanism to efficiently provide uniform training to established analysts about changes to grant program requirements.

A recurring complaint the committee heard is that the OR is too risk averse and is primarily focused on issues of compliance. Compliance with Federal and State regulations is clearly important to the campus and the responsibility for this oversight lies with the OR. It could well be that the OR is appropriately focused on compliance, and that the negative view expressed about the effectiveness of this unit stems from insufficient efforts devoted to helping faculty secure new grants and contracts.

II. Staffing of the UCR OR

The committee examined the organizational charts of the research offices of UCR, UCSB and CoSU, and these are appended to this report. At CoSU, organizational charts were listed separately for SPO and for the Office of Research Compliance, and both are presented in the Appendix. The organization of the CoSU SPO around research teams is an interesting model. Although an organizational chart for USCS was not available on their OR website, the UCSC SPO lists eight contract and grant specialists and two proposal specialists all reporting to the Director of the Office of Sponsored Programs. Compared with UCSB, UCSC and CoSU, the UCR sponsored program office appears to be significantly understaffed. In contrast, the UCR OR staff levels for research integrity and compliance appear to be comparable to UCSB and CoSU.

III. Research Development Activities

In comparison with other campuses, UCR's research development efforts fall short. A more proactive approach by the OR would encourage the development of research collaborations and clusters, facilitate the submission of large programmatic research proposals by providing staff support and teaching release time to PIs, and identify and nurture potential research leaders early in their careers. The lack of programs to promote research at UCR may be reflected in the relative paucity of large program project and training grants on our campus. In 2004, the UCR OR initiated activities related to research development, and has one staff member devoted to this activity. In contrast, examination of the UCSB OR organizational chart shows four positions devoted to research development. It should also be noted that in 2009, CNAS, BCOE, CHASS and OR joined forces to offer a series of funding workshops for Ph.D. students, and novice and experienced PIs. This type of activity is a very positive step for the campus and should continue, but is not a substitute for actively promoting large, collaborative grants.

IV. Research Centers

Research Centers can be an important mechanism for bringing faculty together to work collectively around an important and focused research topic. Centers can also provide important infrastructure, both to enhance faculty research capabilities and to attract industrial or foundation support of center research. Research centers give the university opportunities to attract large-scale funding, for example from NSF in the form of Science and Technology Centers or Engineering Research Centers. Because research centers are interdisciplinary by nature, many crossing college boundaries, their natural administrative home is within the OR. Currently, some research centers administered by the Colleges and others by the Office of Research.

V. Leadership

The OR should champion faculty research by encouraging the submission of proposals, by streamlining submission protocols, improving communications with faculty and providing training to program analysts. New activities and increased staff numbers will likely be necessary to improve the effectiveness of the OR. At the same time, the effectiveness of the OR could also be improved by a shift in its core values, away from command and control and towards an attitude of service. An effective model may be embodied in the mission statement of the CoSU SPO, which can be found on their website, http://web.research.colostate.edu/osp/.

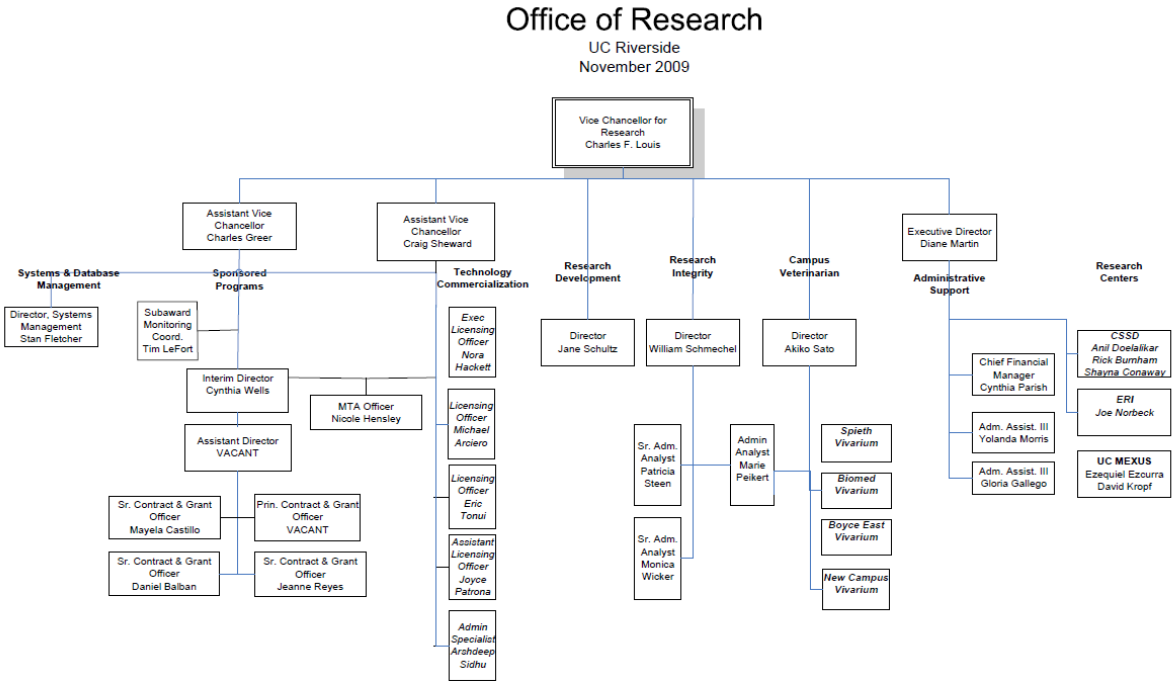
Mission:

- To serve and assist faculty toward their goal of outstanding research and scholarly activities
- Provide stewardship of sponsored funds through responsible management of contracted activity

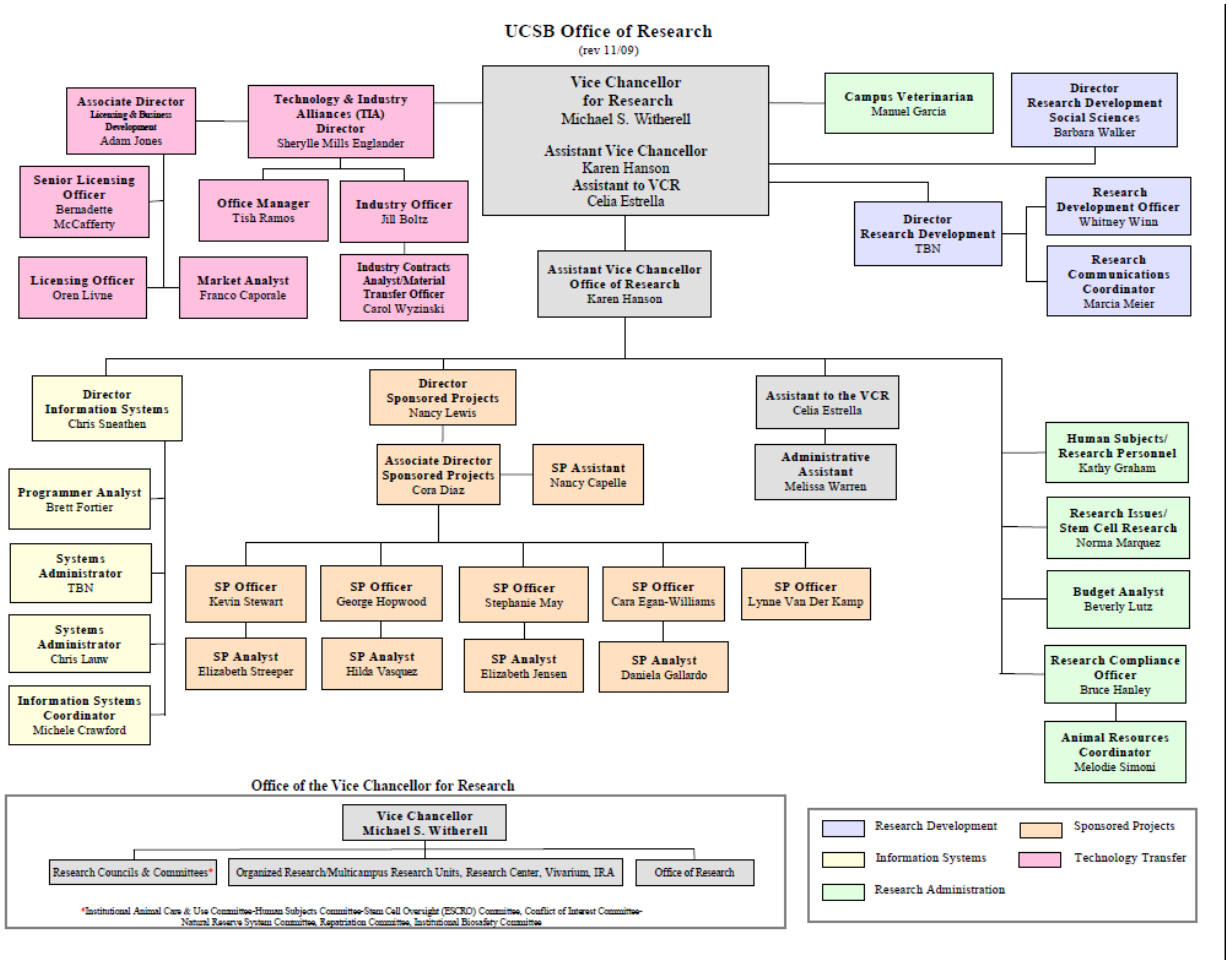
The OR at UCR has at times taken initiative to facilitate large-scale collaborative research by offering IGERT workshops and small grants for proposal preparation. At the same time, the OR at UCR needs leadership that is enthusiastic about research and about fulfilling its mission. The OR leadership should undertake significant initiatives to seek to remove bureaucratic obstacles to research within UCR (e.g., confusion concerning split responsibilities of the accounting and research offices for grant administration) and facilitate the submission of proposals, including the training of analysts in colleges and departments to help such submission. The OR should identify effective pathways by which it can support and facilitate faculty interactions to initiate new research collaborations. To some degree the lack of effectiveness of the OR in these areas can be attributed to a deficit in staffing compared with levels at comparable institutions. However, the subcommittee believes that the lack of proactive and effective leadership in the OR may represent another significant obstacle to progress in increasing campus research support.

Appendix

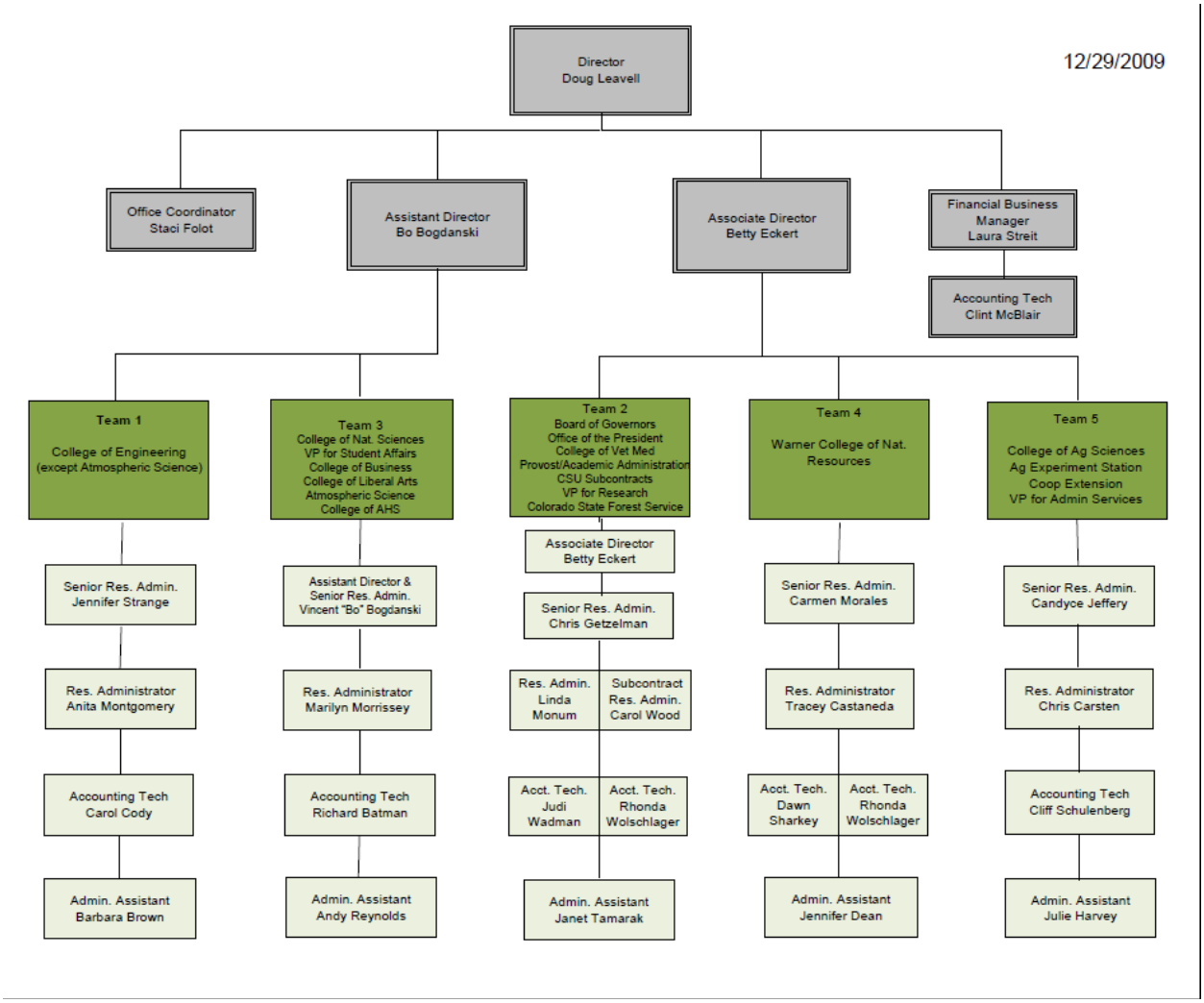
1. UCR Office of Research Organizational Chart

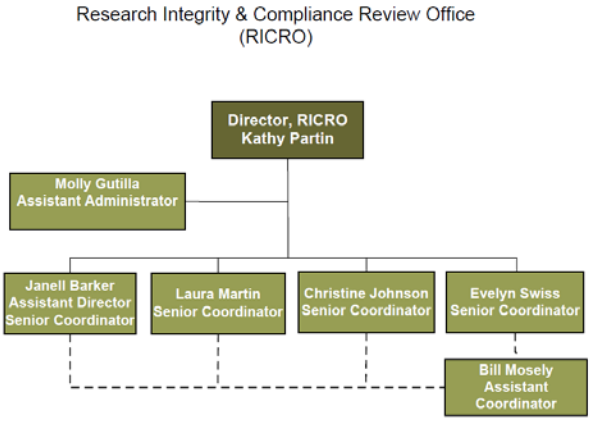


2. UCSB Office of Research Organizational Chart

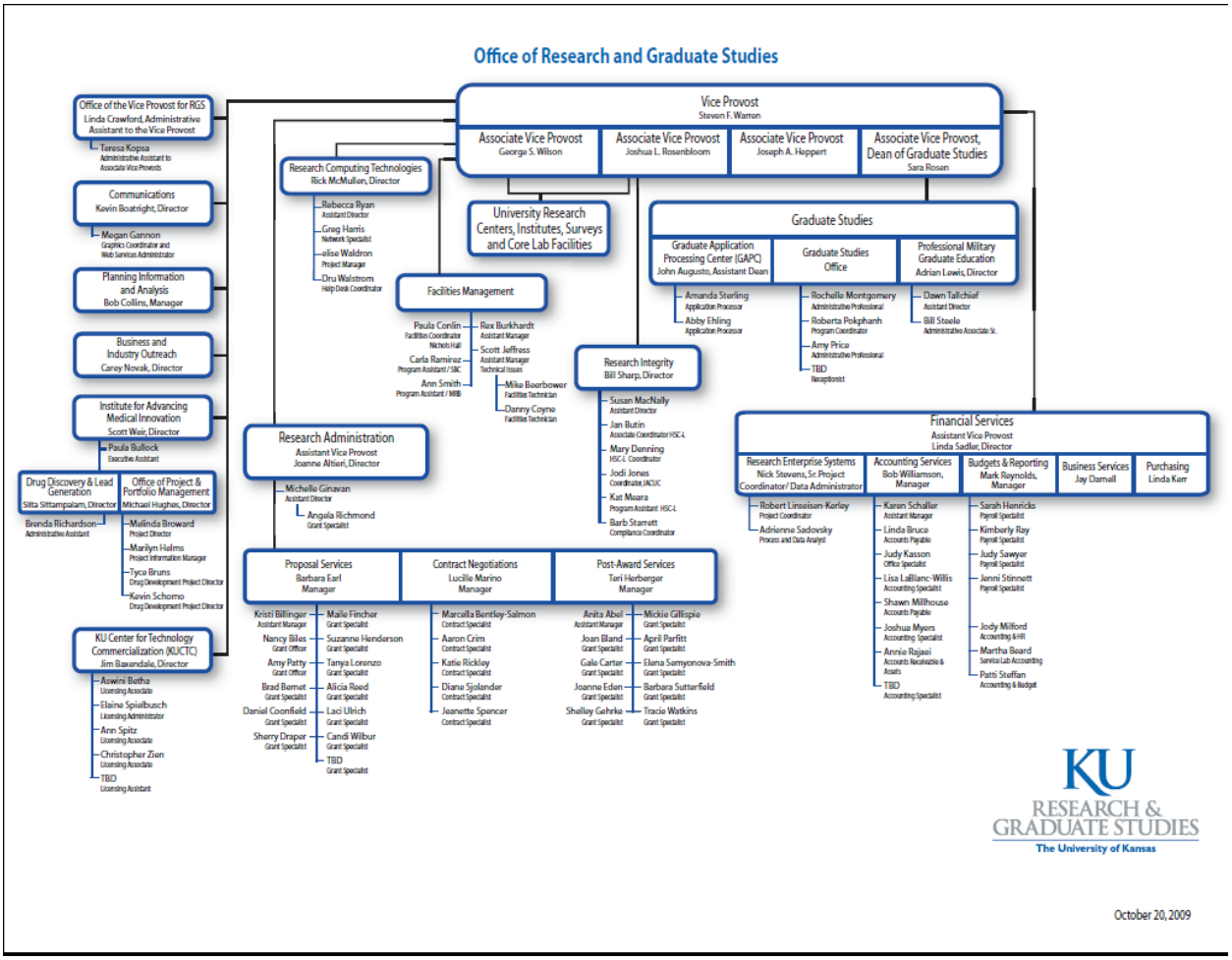


3. CoSU Sponsored Programs Office and Research Compliance Office Organizational Charts





4. University of Kansas Office of Research and Graduate Studies Organizational Chart



UCR 2020: Academic Excellence Subcommittee Structure Working Group

Special Topics Paper #2: Faculty Appointments

The academic excellence of a department, center, college or university hinges on the quality, productivity and number of its faculty. Decisions about which units are selected to receive new faculty hires, the standards for appointment, merits and promotion, the distribution of faculty effort, and retention of high-performing faculty can all profoundly affect the quality, climate and culture of the university.

The past decade has seen substantial growth in the number of faculty at UCR. The number of faculty grew by 161 over the period 2000-2009. During the same period, FTEs delivered by other instructional faculty (lecturers, visiting and adjunct professors) only grew from 261.91 to 266.43, with a peak of 301.58 FTEs in 2002. Although, the UCR faculty headcount increased by 161 (or about 30%) from 2000 to 2009, the campus actually hired 462 new faculty members during this period. In any given year, faculty members leave the university for a variety of reasons that include retirement, death, unsuccessful tenure cases and voluntary departures. Faculty growth comes only as a result of the addition of new faculty members beyond those needed for replacement. In the current budget climate, growth in faculty numbers is not likely. Therefore decisions about the strategic allocation of faculty FTEs are especially important, and can be important for our teaching, research and service missions as well as achieving campus goals for improved departmental rankings, increased research funding and numbers of Ph.D. graduates.

Faculty additions should not simply fill holes produced by faculty departures. The allocation of FTEs gives the campus a mechanism to respond to changing enrollment patterns and the emergence of new intellectual areas, and the opportunity to build on strength and create new research thrusts. For example, focused growth in BCOE over the past decade has been important in firmly establishing this unit, and one would expect a similar pattern will be required for the new School of Medicine. Faculty additions in interdisciplinary areas can be particularly important because they contribute to exciting new areas of teaching and research, and because they necessarily impact on multiple departments and colleges. Interdisciplinary areas such as bioinformatics, materials science, climate change and sustainable development are examples of exciting and important areas that the campus could target for growth. Interestingly, none of these areas are embodied by a single department or even a single college. Hiring in interdisciplinary areas should reflect campus instructional needs as well as the enhancement of research strengths and capabilities, and will require a high degree of interaction, planning and cooperation between departments and colleges. One way to promote effective interdisciplinary hires might be to encourage faculty groups to develop proposals for cluster hires into interdisciplinary research thrusts. These proposals could take into account current and anticipated teaching needs as well as needs to strengthen existing or nascent research areas.

It is obvious that the university must recruit and retain high quality faculty members. The standards by which new and continuing faculty are judged are an important component of

academic excellence. These standards also inform faculty about those performance characteristics that are expected and rewarded, and therefore can have a direct impact on faculty behavior. Currently, neither research grants or mentoring of graduate students are a required component of academic personnel decisions although increasing both the amount research funding and the number of Ph.D. students trained is necessary for the university to achieve the stature of an AAU institution and to increase departmental rankings.

The appropriate distribution of faculty effort can also be important for promoting and rewarding faculty productivity. Although the campus might wish to maintain a 40:40:20 distribution of effort in teaching, research and service for untenured faculty, realignment of effort for tenured faculty to focus on the aptitude, strengths or interests of the individual could benefit both the faculty member and the campus. Such a policy could recognize that the nature of faculty contributions might vary over a faculty member's career. Ideally policies that redistribute faculty effort could be implemented in a manner that both respects and rewards faculty talents and contributions. For example, an established faculty member with low productivity in scholarly research could transition to a position with equivalent salary as a lecturer with permanence of employment. This could allow the faculty member to focus on teaching and curricular matters and to be recognized and rewarded for excellent performance. Such individuals could make an important contribution to the campus teaching effort through higher teaching loads, leadership in curricular innovation and helping to develop the teaching prowess of our junior faculty. Similarly, a faculty member who maintains a high level of research funding could receive a reduction in teaching load to allow them to focus on research and graduate student training. Although it is currently possible for well-funded faculty to use grant funds to buy-out of teaching, this mechanism does not really recognize and reward outstanding efforts. Developing a policy that rewards high grant productivity could also be an effective strategy for retaining our most talented and productive researchers. If the campus develops a policy encouraging realignment of faculty effort, it is extremely important for faculty morale that such decisions be applied in an equitable and transparent manner.

Finally, the campus should consider whether a policy should be developed requiring all faculty not on leave to be on campus a minimum number of days during the academic year. Some faculty manipulate their teaching schedules by condensing their courses into one or two days, or by teaching double loads in one quarter with no teaching the next quarter so that they do not need to come to campus when they are not teaching. While there must be some flexibility for faculty to use their time in the manner they determine to be most efficient to carry out their teaching and research duties, abuse of such practices can damage campus productivity and overall faculty morale. A faculty member does more than just lecture and perform scholarly research. Faculty members must spend sufficient time on campus to allow for effective and personal interactions with undergraduates, graduate students and with other faculty. With the power of shared governance comes responsibility for faculty service to the campus to ensure that UCR effectively meets all of its missions. Faculty members who do not come to campus on a regular basis are not participating fully in the university. The campus could consider a policy that mirrors APM 025, which allows faculty with academic year appointments to spend 39 days during the academic year consulting. Under such a policy, faculty who prefer to perform a portion of their work at home or who spend time off-campus performing research could be permitted to spend up to 39 days off campus during the academic year without any special reporting or administrative

arrangements. A mechanism could be developed to allow for review and approval of alternative working arrangements that provide greater flexibility with appropriate justification. However, should a policy be developed, it would be important that it be applied in an equitable and transparent manner.

UCR 2020: Academic Excellence Subcommittee Structure Working Group

Special Topics Paper #3: Reorganization of Biological Sciences

I. Introduction

The structural working group within the Academic Excellence subcommittee met on three occasions to discuss ways in which the university structure could be improved to improve our national visibility, research and teaching productivity and student recruitment. This working group identified the Biological Sciences as an area where restructuring would likely improve overall academic excellence. The need for reorganization was also suggested in our meeting with the deans, including the Dean of CNAS, although the precise nature of such restructuring was not discussed in detail. The following two main points were noted:

A. Overall Organization of the Sciences in CNAS

The pairing of agricultural and life sciences within a single college is somewhat antiquated and is a relic from the history of the campus as an agricultural research station. Furthermore, Biomedical Sciences was established as its own division and yet on some levels, Biomed has more in common with the Biochemistry and CBNS departments within CNAS than do some of the agriculturally focused departments. Members of the Subcommittee raised the question whether top institutions have separate colleges for agricultural/environmental sciences and life sciences. One concern is that by fusing physical/life sciences with agricultural sciences, we create a situation in which it is difficult to set up an administration that reflects all areas of the college. In the next section, we present some information as to how separation of agricultural and other sciences correlates with overall performance. It is possible that the creation of a new college at this may represent too much of a challenge.

B. Organization of the Life Sciences

The life sciences are currently poorly coordinated, with isolation of certain groups who would be potential collaborators into different departments and redundancy of teaching curricula between departments. The structural arrangements working group noted the following problems with the current organization.

1) The redundancy within the departments creates a situation where graduate programs are competing with each other for students rather than UCR competing with other institutions for top students.

2) The major funding organizations for sciences, such as the NIH and NSF, are currently favoring integrative, interdisciplinary research efforts. The current structure results in isolation of potentially collaborative researchers and fosters competition for

federal funds within the campus, rather than fostering the formation of productive collaborations. In particular, one dean noted that research should not be divided "by phyla", and that the current system of organization reflected an obsolete notion that each department should provide its own expertise in molecular, cellular and organismal biology, as well as its own statisticians. It was noted that most of the top-ranked campuses have large inter-disciplinary departments within the biological sciences rather than small, focused individual ones.

3) There is a critical mass problem among many of the departments. While recruitment of additional faculty members is critical to fix this problem, consolidation of smaller departments would also help to raise the faculty number within individual departments without additional hiring. The current structure creates the impression that certain disciplines are under-represented, whereas if faculty members with common foci were all in the same department, it would be more apparent that the University has a strong core in that area.

The following additional concerns were raised:

4) The current organization renders it difficult for course coordinators to control the teaching efforts. Some courses are best taught by faculty from multiple departments but FTEs are given to only the department that houses a particular course. This means that the course coordinator has no control over the faculty participation outside of the department. This is particularly problematic for inter-disciplinary programs.

5) Having multiple, over-lapping small departments is confusing to incoming students and negatively impacts our ability to recruit top students.

In the next section, we review the structure of life sciences at our sister UC campuses, focusing on the structure at UC Berkeley, which reorganized in the 1990s from a structure similar to ours.

II. Life Science Organization at Other Campuses

UCR is currently at a crossroads in terms of Life Sciences with the coming addition of a medical school. The presence of a medical school affects the way in which the life sciences faculty members are organized, and a notable distinction exists in the organization of life sciences on UC campuses without medical schools compared to those with medical schools. Thus, it is important to consider whether any current faculty members are more aligned with the interests of the medical school when proposing restructuring of the life sciences.

In this section, we will discuss some differences in the organization of the ciences at the UC campuses, focusing on the organization of the life sciences (Section C).

A. Separation of Natural and Agricultural Sciences

At most major universities, the agricultural and biological/physical sciences are housed in separate colleges. However, there are some exceptions to this rule; one exception is the University of Arizona. At all of the UC campuses the biological/life sciences are in a separate college from the agricultural/environmental sciences. UCLA, UCSD and UCI do not have agricultural schools. (UCD, UCI and UCSD have ecology/evolution programs in the Biological Sciences division; whereas at the other campuses these subjects tend to be housed with in the agricultural or environmental sciences colleges.)

B. Separation of Biological/Life Sciences from other Sciences (e.g. Chemistry and Physics) varies from Campus to Campus

At UC Berkeley, Chemistry is contained in its own college but Biological sciences are within the College of Letters and Sciences and at UCD, Chemistry and Physics are within College of Letters and Sciences while Biological Sciences is its own college. At UCSB, UCSC and UCSD, Chemistry and Biochemistry are a single department, while at UCI, Biochemistry is paired with Molecular Biology (as it is here). Where Chemistry and Biochemistry should be housed relative to each other depends primarily on the focus of the individual researchers.

C. Organization of the Biological/Life Sciences

The most obvious need for reorganization at UCR is within the Biological and Life Sciences, where the existence of numerous small departments impedes collaboration and results in curriculum redundancy and confusion for the students. At most top institutions, the biological sciences are organized into large departments, with smaller groups within them allowing for organization of course and graduate programs around specific areas of focus.

In the UC system, a good example is UCB, which is the top public university in the nation and most of its Biological Science graduate programs are ranked in the top 5 nationwide (including private schools). Furthermore, until the late 1980s, the organization of the life sciences at UCB was similar to that at UCR. The graduate program ranking was dropping and it was determined that the organization was out of step with time. Now, housed within the College of Letters and Sciences (L & S) at UCB, there is a division of Biological Sciences which contains two departments: Integrative Biology and Molecular and Cellular Biology (MCB). MCB contains five sub-divisions: Biochemistry and Molecular Biology, Cell and Developmental Biology, Genetic, Genomics and Development, Immunology and Pathology and Neurobiology. Integrative Biology has a different organizational structure, with faculty members associated with one of 3 research museums/stations. The Department of Plan and Microbial Biology within the College of Natural Sciences (CNS) has considerable overlap in terms faculty research interests with both MCB and Integrative Biology, but otherwise, the two colleges (L & S and CNS) are quite distinct.

Before the reorganization, there were 11 free-standing departments within L & S-not united into a single division, as they are now. These were: Paleontology, Zoology, Botany, Bacteriology, Molecular Biology, Biochemistry, Virology, Genetics, Anatomy and Physiology and Neuroscience. In addition, there were (and still are) other faculty with biological science interests, in the Plant and Microbiology department within CNS. Similar to what we have at UCR, there were overlapping courses (at both the undergrad and grad level) taught in each department. For example, upper division cell biology could be taken in the Zoology, Physiology, and Molecular Biology departments. All 3 courses used the same text book and while there were slight differences in focus between the 3, they represented an area of gross redundancy. During the reorganization, many people from these departments went to either MCB or Integrative Biology, depending on their interests.

With respect to the concerns raised above by our working group about the organization of Biological Sciences at UCR, the structural reorganization at UCB addressed these issues:

1) The redundancy within the departments is eliminated by regrouping the faculty in a manner that is more aligned with their actual research interests rather than historical reasons. The major Biological Science courses offered at the graduate and undergraduate level are taught out of each department (MCB and Integrative Biology), with a few core undergrad courses (such as basic Biology) taught jointly between the two. FTEs are given to the departments rather than the sub-divisions (e.g. to MCB rather than Biochemistry, Cell and Molecular, etc.). This has allowed recruitment of top scientists at any given time, as faculty from each area might be interviewing for the same position, rather than having a situation where only one sub-division is hiring. This arrangement has also rendered it easier to manage teaching, as faculty participating in courses within a department like MCB that involve multiple areas of research all answer to the same Dean.

2) All of these sub-divisions are part of the same department, with faculty meetings, student seminar groups, etc. being all-inclusive. Individual sub-divisions do hold their own retreats, but there is far more interaction between the researchers within the department than at UCR. In the instance of faculty members within different departments, such as Integrative Biology, MCB and Plant and Microbial Biology (in CNS), interaction is fostered by faculty participation in several campus centers of excellence and two interdisciplinary graduate programs in Microbiology and in Infectious Diseases and Immunity. Additional interdisciplinary graduate programs in Neuroscience and Endocrinology involve members of MCB and Integrative Biology as well as Psychology.

3) A number of the pre-existing departments at Berkeley, for example Virology, were suffering from a similar critical mass issue as UCR is in some areas. Despite this, Virology remained one of their strengths in terms of the individual faculty productivity. When the reorganization happened, Virology became a sub-division within MCB (Immunology and Pathology) and more faculty have been recruited who fall into this category over the last 2 decades. As a result, MCB now appears as a strong vibrant

department with over 150 faculty members, but the area of strength in Virology that is a historical one, remains a core part of the program.

III. Recommendations for Reorganization

A. Restructuring CNAS

Whether separating CNAS into "Natural and Biological Sciences" and "Agricultural and Environmental Sciences" (or similar categories) should be a priority is not clear at this point. The current divisions and divisional deans represent an obvious starting point for reorganization should the faculty decide that reorganization is desirable. An important question is whether reorganization would further separate potential collaborators from one another. It seems that programs such as GGB and CMDB could act to foster collaborations should CNAS be split.

B. Restructuring Biological/Life Sciences

To keep up with current funding trends and cutting edge techniques, it would make sense to divide departments along cell/molecular/physiological rather than by phyla. Integration of the departments at the organismal level can then be achieved through interdisciplinary programs. Right now the Division of Biological Sciences contains the following departments: Biology, Biochemistry, Cell Biology and Neuroscience (CBNS), and Botany and Plant Sciences. Additionally, faculty members within Plant Pathology/Microbiology, Entomology and Nematology have overlapping interests with faculty members in Biology, Biochemistry and CBNS. Each department seems to have biochemists, cell biologists and molecular biologists. People in these specialties are usually grouped together because they often share techniques and equipment. Reorganizing as the medical school is developing gives UCR a unique opportunity to integrate the programs within the two colleges (Medicine and CNAS) based on some of the current inter-disciplinary centers and graduate programs. This is something that is not done at most other universities but would be a positive development for recruitment and funding. (A potential complicating factor is that FTEs originate from either the medical school or CNAS and the appointments fall into separate salary categories at UC.)

A logical way to split the groups would be to take the current Division of Life Sciences and split it into "Integrative Biology" and "Cell and Molecular Biology", as was done at UCB, although the titles of the departments could be named to suit UCR's traditions. We would propose that Integrative Biology encompass the following subjects: Evolutionary Biology and Physiology. Molecular and Cellular would encompass: Cell Biology, Biochemistry, Developmental Biology, Neuroscience and Plant Cell Biology. Researchers within Biology, CBNS, and Botany and Plant Sciences Departments would split into either group, while Biochemistry would likely mostly remain within MCB. In addition, some Entomology, Microbiology and Nematology faculty members with strong Biochemistry/Cell Biology ties might want to move into the Life sciences Division to join MCB or Integrative Biology. *This would partially address one of the concerns raised in our meetings that science should not be divided "by phyla" and that the concept of*

each department having its own cell, molecular, biochemical and physiological expert is antiquated. Citrus Research Center and Environmental Sciences would remain as part of the Division of Agricultural and Natural Resources. The common interests between the two departments could be fostered by interdisciplinary centers of excellence and graduate programs.

C. Drawbacks to the Reorganization Plan

The most obvious drawback to this plan is the difficulty of obtaining faculty support. Many people fear (or annoyed by) change and individual department chairs may feel threatened at the idea of losing their title. One way to compensate for this is to continue to have a "head" of each sub-division. Additionally, the choice of which group to join should be voluntary and pre-existing areas of interest would remain together under this plan. A second drawback is location. One of the advantages to bringing people with overlapping interests into the same department is to bring them into proximity. Often a good collaboration can be hindered by something as simple as laboratories in different buildings. Right now, some of the existing departments have been moved to new buildings while others remain in old ones. When this was done at UCB, two new buildings were constructed. It's hard to imagine how it would work without some major building renovations. Third, we need to consider administratively how equal representation will be achieved. To use a political analogy, there will always be a sub-division in the U.S. House of Representatives between small states, like Wyoming, and large states, like California. Mechanisms need to be developed to ensure that the needs of smaller groups are not ignored.

UCR 2020: Academic Excellence Subcommittee Quantitative Indicators Working Group

Special Topics Paper #4: Defining Strategic Priority Areas

I. Introduction

In the preliminary analyses presented in this paper, our approach has been to imagine how research and perhaps also graduate education could be organized along the lines of flexible topic areas, rather than along departmental lines. Centers and institutes, as well as interdepartmental graduate programs, fit this intent, but have often been constrained for a variety of reasons. Structural arrangements to facilitate faculty interaction across department lines will require improvement should the university establish new interdepartmental graduate programs and centers.

These results of this analysis should therefore not be used as a final recommendation for any grouping, but solely to help provide illustrations for how the organization of both STEM and non-STEM fields might be configured to facilitate the quality of the campus's research and graduate program and its level of national and international recognition.

The data must be considered preliminary both because publication and citation counts have not been double-checked and because a definitive list of faculty currently or potentially involved in the areas discussed does not exist. Members of the Quantitative Indicators Working Group gathered names of faculty members from available sources, including knowledgeable participants in research collaborations on campus. Many faculty members included in the lists used in these analyses publish in more than one area and may be only nominally attached to the groups discussed.

For the purpose of these preliminary analyses, publication information was drawn from Web of Science 1993-2008 for STEM fields and from Google Scholar 1993-2008 for non-STEM fields. Grant information uses that posted on the Office of Research website, and used for the period 2002 to present only.

II. Illustrations of Interdepartmental Campus Strengths in STEM Fields

Focusing on STEM-based fields, we examined nine potential areas for strategic investment. These included: 1) cyber-technologies; 2) energy sustainability; 3) environmental change and sustainability; 4) genomics; 5) human health; 6) nano-scale materials and engineering; 7) neuroscience and brain plasticity; 8) origin studies; and 9) secure and sustainable food production.

Faculty associated with four of these areas (environmental change/sustainability; human health; nano-scale materials and engineering; and secure and sustainable food production) showed a strong collective record of publication, citation, and grants activity.

Some other fields may bear additional investigation. We were unable to complete analyses of one area, cyber-technologies, due to incomplete information on faculty involved. Genomics crosscuts several areas examined in these analyses. Faculty members affiliated with the Institute for Integrative Genome Biology have a good record in publication and citation, but grant funding has, at times, been disappointing.

Other fields may not have a strong enough record to support strategic investment. Energy sustainability may be too far behind the curve to contribute to the long-term reputation of the university. Neuroscience and brain plasticity are not currently among the stronger areas of research in CNAS. "Origin studies" an area proposed by the CNAS chairs, includes a number of productive, well cited scholars, both in CNAS and CHASS, but faces limited grant opportunities.

Topic Areas:

Environmental Change and Sustainability

Total publications	3,178
Total citations	66,333
Average h-factor	16
Total grant dollars	$64,804, 059
Participating Faculty:	59

This information spans eight Departments, three Colleges, and three research centers (CCB, CE-CERT, APRC). Total grants for all units with participating faculty was $199,526,789

Human Health and Well-Being

Total publications	2,055
Total citations	66,266
Average h-factor	15
Total grant dollars	$69,810,751
Participating faculty	61

This information includes five departments in CNAS and one research center (the Stem Cell Center).

Nano-scale Materials and Engineering

Total publications	1,818
Total citations	62,055
Average h-factor	26
Total grant dollars	$100,666,251
Participating faculty	26

This information includes faculty from five departments, two Colleges, and one research center (CNE).

Secure and Sustainable Food Products

Total publications	3,651
Total citations	99,303
Average h factor	15
Total grant dollars	$106,275,558
Participating Faculty	87

This information spans eight Departments, three Colleges, and two research centers (CEPCEB and IIGB). Total grants for all units with participating faculty was $172,842,361

III. Illustrations of Interdepartmental Campus Strengths in Social Science and Humanities Fields

CHASS, GSOE, and SoBA will be integral to any strategic investment plan that can be embraced by the entire campus community.

Most fields in the arts, humanities, and social sciences (including Business and Education) face more challenging funding environments. At the same time, strategic investments in these fields often require minimal infrastructure and staff support and therefore can be cost-efficient.

We investigated nine potential areas of strategic investment in predominantly non-STEM fields: (1) children at risk; (2) decolonization and critical ethnic studies; (3) digital arts; (4) global health policy; (5) higher education organization and policy; (6) Internet marketing; (7) Latin America; (8) race, ethnicity, and immigration; and (9) urban/suburban sustainability. Again, these should not be interpreted as an exhaustive set of possible strategic investment areas.

We report on five of the areas that showed promise in this analysis; two other areas with good levels of publication, citation, and consulting/grant activity (Children at Risk and Internet Marketing) include fewer than ten participating faculty members at this time.

Topic Areas:

Global Health (includes several STEM faculty members)

Total Publications	552
Total Citations	15,447
Total Grant Dollars	$11,900,000
Participating Faculty	15

Higher Education Organization and Policy

Total Publications	274
Total Citations	3453
Total Grant Dollars	$9,600,000 (Higher Education grants only)

Participating Faculty	14

Latin America

Total Publications	336
Total Citations	4227
Total Grant Dollars	$3,300,000 (Latin America grants only)
Participating Faculty	33

Race, Ethnicity, and Immigration

Total Publications	213
Total Citations	4202
Total Grant Dollars	$2,200,000
Participating Faculty	15

Urban/Suburban Sustainability (includes several STEM faculty members)

Total Publications:	405
Total Citations:	6714
Total Grant Dollars:	$15,400,000
Participating Faculty:	13

IV. Conclusion

Quantitative data about research productivity should inform decisions, but quantitative data alone are not sufficient. Senior administrators should also engage in assessments of the leadership; the successes and failures of prior histories of interaction; competitive advantages over other nationally-recognized programs; ways the group addresses global, national, state, or local concerns; structural gaps that would need to be filled for UCR to have a national or international presence; and prospects for continued or improved success in grant competition and graduate student training and placement. The University must also determine whether it has sufficient resources to meet infrastructure requirements.

Investments, once made, should be reviewed on a regular basis and redirected if the University finds that it is not achieving anticipated returns.

UCR 2020: Academic Excellence Subcommittee Structure Working Group

Special Topics Paper #5: Admissions and Enrollment Management

This document discusses two issues that recurred in virtually every conversation with the deans, and are supported as well by the quantitative data comparing UCR to the AAU Comparison 11 and other UC campuses.

1. Admissions

Nearly every dean to whom we spoke expressed a strong desire to enroll more qualified and better prepared undergraduate students. Some deans also favored decreasing the size of the undergraduate population to focus scarce resources on delivering a higher quality education to admitted students.

It is not surprising that deans (and many faculty members) are interested in gradually increasing the number of better prepared undergraduates. Better prepared undergraduates mean more interesting classes and more enjoyment for faculty in the teaching process. Better prepared undergraduates also bring a critical mass for discussion of ideas and setting higher performance standards in classes.

Student high school grades and, to a lesser extent, SAT scores are directly connected to success in college. UCR currently records high levels of failure (C- or below in pre-calculus math (between 25 and 40 percent, depending on year and class) and English Language Writing classes (between 17 and 25 percent, depending on year and class). Grades in introductory courses, such as calculus, biology, chemistry, business, and English composition also show high failure rates.

UCR spends millions of dollars mounting courses that are not normally considered introductory college-level courses (yet are UC or UCR requirements) and providing supplementary instruction for these students. Cutting down on the number of students who require these courses would lead to savings in the provision of support services.

Over the last four years, UCR undergraduates have had average high school GPAs in the range of 3.3 to 3.4. Their average SAT scores ranged from 1550 to 1570, with a 20 point improvement over the last four years. Their 25-75 percentile range is 450-560 in verbal and 470-560 in math. These test scores are below each one of the AAU Comparison 11.[1] They also fall below those of at least two California State Universities, Cal Poly San Luis Obispo and San Diego State University. The average uncapped high school grade point averages of UCR students fall in the range of 3.3 to 3.4, again below those the AAU Comparison 11 and other UC campuses. Meeting the profile of AAU members will

[1] The AAU Comparison 11 are: Iowa State University, SUNY Buffalo, SUNY Stony Brook, Texas A&M, University of Arizona, UC-Davis, UC-Irvine, UC-Santa Barbara, University of Kansas, University of Missouri-Columbia, and University of Oregon.

mean significant improvement in the academic qualifications of the UCR student body. At the same time, it is important to recognize that UCR's six-year graduation rates are close to the middle of the AAU Comparison 11, though they lag significantly behind other University of California campuses. The campus does a relatively good job graduating students, given the academic profile of the students it enrolls.

The topic of admissions is highly charged. Legitimate disagreements exist between those who place the highest value on the public service commitments of the University and those who are more interested in improving the reputation of the University by attracting larger proportions of high-achieving undergraduates. At a time when the State provided funding for every UC-qualified student and the campus had embarked on a growth strategy, enrolling students from the bottom of the UC-eligible pool made good economic sense, and it led to UCR's recognition as a campus strongly committed to providing opportunities to first-generation students. However, conditions have now changed: the State is not funding every UC-eligible student and a growth strategy based on in-state students is, in all likelihood, no longer feasible. Continued concentration of enrollment at the low end of the eligibility pool has become costly, not only to the campus's reputation and faculty morale, but financially as well. With continued funding from UC for the Blue and Gold program, and increased willingness of students to take on loan commitments, the University can continue to admit UC-eligible students from the lower end of the eligibility pool, but it will not achieve the profile of an AAU institution if it continues to do so.

Some argue that the campus cannot improve the academic profile of its incoming freshmen, because of the demographic composition of the communities it serves. Data indicate that this argument is incorrect. Many communities in the UCR service area include large numbers of honors students who would give greater consideration to UCR if it enrolled a higher proportion of students like themselves. Moreover, some programs at UCR have succeeded in enrolling students whose mean SAT scores and GPAs are a standard deviation or nearly a standard deviation above the UCR mean. These departments include Art History (cumulative SAT on all three tests =1750), Comparative Literature (1750), French (1900), Creative Writing (1695), Economics/Administrative Studies (1755), Economics/Law and Society (1760), Chemical Engineering (1880), Environmental Engineering (2140), and Physics (1704). The CHASS recruitment campaign last year also revealed that more qualified students (in the high school GPA range of 3.5 to 3.9) will enroll at UCR if they are contacted by faculty members who discuss the benefits and opportunities of a UCR education.

The University should strategize to meet two goals: continued commitment to access and diversity and the enrollment of academically stronger students. The campus can be proud of its accomplishments in the areas of access and diversity. UCR's score on the U.S. News diversity index (.73) is higher than all but one UC campus (UC Merced), and it greatly exceeds each one of the AAU Comparison 11, which range from .21 to .59.[2] In

[2] The diversity index calculates the probability that two people picked at random will be of a different race and ethnicity. Created by Shawn McIntosh of USA TODAY and Phil Meyer of the University of North Carolina in 1991, the Diversity Index is based on the five federally recognized racial categories (African-

addition, UCR has one of the highest proportions of Pell grant recipients in the country, at over 40 percent, an increase of 14 percent in 15 years. While gradually raising its standards for admission, the University should not lose track of the strength and resource that the campus's diversity provides. Diversity is one important element of the campus that sets it apart from its competition. It should be encouraged, embraced, and utilized as a valuable asset.

The question for the campus is how to affirm its commitment to the mission of access, while gradually improving the academic qualifications of its enrolled undergraduates.

The results of the CHASS recruitment campaign indicate that students in the next higher stratum of academic accomplishment (uncapped high school GPAs of 3.5 to 3.9) are as diverse, in terms of race and ethnicity, as the students the campus currently enrolls. (African-American students are an exception, and special efforts will be necessary to recruit students from this group.) Analysis of applications for fall term will allow the campus to understand the impact of admitting higher proportions of this group on the socio-economic diversity of the campus.[3]

UCR has some of these building blocks of excellence, but it needs to work much harder on recruiting top students, finding scholarships for the best of them, providing academically challenging programs across campus, and improving an honors program that currently seems to be as much about social service as about teaching students to be analytical, curious, self-learners who are motivated to move to the next stage of their academic careers. The campus can do a better job of marketing to high-achieving students by emphasizing the qualities high-achieving students (and their parents) value most: academic rigor, academic opportunities, and high achieving peers.

The campus community should also ask whether the current index used by the Admissions Office is helping UCR select the students who are best suited to succeed at UC. In national studies, the primary predictors of student success are high school grade point average, grades in advanced placement courses relevant to the student's intended major, SAT reasoning scores, SAT scores in the subtest(s) relevant to the student's intended major, class rank, and "effective follow-through," sometimes measured by holding leadership positions in more than one high school organization. (Conscientiousness, which is difficult to measure from applications, is another important predictor.) The current Academic Index Scale, used by the campus, includes high school grade point average, and SAT scores, but may not weigh them correctly for their predictive value. It does not include other variables relevant to student success, and it includes some variables that have no predictive value.

Americans, Asian-Americans, Hispanics, American Indiana, and non-Hispanic whites. The diversity index ranges from 0.0 to 1.0. The closer a school's number is to 1.0, the more diverse the student population.

[3] It is worth noting in this context that many institutions are moving toward a broader conception of diversity than that which has prevailed at UCR, one that includes religious, political, intellectual, and geographic forms of diversity as well as racial-ethnic and socio-economic diversity. In the context of an academically vibrant campus, all forms of diversity can be enriching.

In addition to working with what may be an outmoded admissions index, UCR Admissions has been hampered by a mindset rooted in the past when the campus experienced persistent difficulties meeting its enrollment targets. Anxieties were heightened by the failure to bring in sufficient students during a two-year experiment with selective admissions. Meeting enrollment targets is essential to the financial health of the campus, and must remain a central focus of Admissions. Nevertheless, conditions have changed, and so should the mindset of UCR Recruitment and Admissions.

With these considerations in mind, the Academic Excellence Subcommittee recommends the following:

1) At a minimum, Recruitment and Admissions must receive much greater input from the academic side of the campus, and be led by a professional committed to improving the academic profile of incoming students and to working with the Deans toward this end. Two other options should also be considered: Moving Recruitment and Admissions to a new or existing office on the academic side of the campus, or devolving recruitment and admissions functions to the Colleges.

2) Holding Recruitment and Admissions accountable, not only for meeting enrollment targets, but for raising the average GPA and SAT reasoning scores of enrolled students. This includes regular monitoring of the extent to which improvement in undergraduate GPAs and SAT scores affect the racial-ethnic and socio-economic composition of incoming classes.

3) Working with the Academic Senate's Admissions committee to revise the AIS to improve its capacity to identify students likely to succeed at the UCR of the future.

4) Intensive marketing of the new image of UCR as an academic leader, as well as a campus that welcomes high achieving students from all backgrounds.

5) Marketing the research opportunities for high-achieving high school students.

6) Expanding recruitment campaigns across campus modeled on the successful CHASS and BCOE campaigns.

7) Recommitment of the Honors Program to an academic mission of the highest quality. This recommitment should include the possibility of reforming the Honors Program as a selective, academically focused Honors College in which students can have the opportunity to graduate in three years; as well as hiring an academic coordinator whose job it is to help students with their fellowship and graduate admissions applications and to keep track of student honors.

2. Enrollment Management

Enrollment management at UCR has been focused, primarily, on recruitment, enrollment, and financial aid for admitted students. A broader conception of enrollment management is now necessary. The broader conception must align demand for courses with supply of courses, and determine how qualifications for admission should vary across Colleges and departments within Colleges.

The campus faced a crisis of unmet demand for W 10. This crisis was the result of over-enrollment of students due to exceeding enrollment targets, cutbacks required by decreased state funding, and lack of communication between the Registrar's Office, which monitors demand for courses, and the Dean's Office's which provide the supply of courses.

Over the next several years, several forces in the environment are predictable, and each one bears on the ways the campus will manage enrollments:

a) Higher education enrollments tend to be counter-cyclical relative to the economy, so that we can anticipate a high SIR rate during the current period of high unemployment, as well as higher retention;

b) The campus enrollment target is lower, so it will have fewer spaces for new freshmen;

c) UC-Berkeley and, to a lesser degree, UCLA are shifting a higher proportion of admissions to out of state students, which means that in-state students, looking for a UC education, will likely have fewer opportunities at these campuses;

d) Budget cutbacks have led to a reduction in the number of sections and courses offered on campus and will continue to be a factor;

e) We have no reason to believe that funding from the state will be higher -- and indeed we should plan for the opposite.

Unless the campus plans carefully, with these and other unusual circumstances in mind, we will face an enrollment situation that is less manageable in the coming years. Recent work by John Bound and his colleagues at the National Bureau of Economic Research indicates that "cohort crowding" is a primary cause for declining four and six-year graduation rates in the nation's public colleges and universities.[4] They find that while students in the nation's public colleges and universities are somewhat less well prepared for college than previous cohorts, the main cause of declining completion rates are larger classes, narrower offerings, and fewer student services.

[4] John Bound, Michael Lovensheim, and Sarah Turner, "Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources." NBER Working Paper. 1556. December 2009. www.nber.org/papers/w15566.

One cardinal principle should be that every student be guaranteed at least 12 units of course work each term. Ideally, every student should be guaranteed at least 15 units of course work each term, so that he or she can make timely progress to a degree.

The campus needs to know every term how many seats, distributed among the Colleges, will be necessary to accommodate enrolled and newly admitted students, controlling for voluntary withdrawals and voluntary part-time enrollments. Statistical predictive models should be designed to aid in these determinations.

With these issues in mind, the Academic Excellence Subcommittee recommends the following:

1) A committee should be formed to determine the qualifications the Colleges and departments wish to set for admission. The committee should study the effects of these qualifications on patterns of admission and enrollment, and it should be based on campus wide consultation. Changes in policies in one College inevitably affect the demand for courses in the other Colleges.

2) Predictive models should be designed, based on historical data, on the number and distribution of seat requirements for enrolled and newly admitted students.

3) Based on these models, those responsible for enrollment management should coordinate the Colleges' supply of courses with the student demand for courses, keeping in mind the principle that every student should be guaranteed at least a minimum of 12 units of course work. Discussions should be held every quarter between the Registrar, the Associate Vice Chancellor for Enrollment Management, and the Dean's designates about the supply and demand for courses based on student numbers, projected student movement within and between Colleges, student withdrawals, and budgetary constraints.

UCR 2020: Academic Excellence Subcommittee Structure Working Group

Special Topics Paper #6: Budget Processes and Structures

I. Introduction

In discussions with the deans of UCR's various divisions, schools, and colleges, several important issues were frequently reiterated. One that is beyond the direct purview of this committee, but which nonetheless has direct relevance to the campus's mission of academic excellence is the financial management system and budgetary process. In an attempt to assess current attitudes and practices regarding UCR's financial management of the academic enterprise, a brief discussion of the most commonly identified issues (and some potential solutions) follows.

II. Issues

A common complaint among the deans was the lack of clarity about how and why particular budgetary decisions are made. Time and again, the budgetary process was described as one of central command and control. Two deans independently commented that this is the only university with which they have been associated where monies are routinely moved into and out of accounts without explanation. Several deans articulated the belief that financial decisions take precedence over academic ones. The result is often difficulty in implementing new or different approaches to academic concerns.

Deans also complained that while decision making and financial control is heavily centralized, accountability is localized. Deans further evinced frustration at attempting to get clear and direct financial information to support their own initiatives. While there seems to be a great deal of detailed information available, the Deans complained that it was difficult to get data that provided useful information on the relation of funding to expenditures. As a result, several of the deans commented that they kept their own records in an attempt to explain and understand costs and revenues.

Faculty involved in budgetary decisions (especially those who have served on the Academic Senate committee for Planning and Budget) likewise complained about the lack of transparency and seeming unwillingness of the Budget Office to cogently explain its workings. While faculty recognize that the detailed workings of the budget and budgetary decision making may be quite intricate and complex, they also believe it to be possible to offer a "30,000 foot view" that provides an understandable overview of the budget process. As one faculty member put it, "there should be a greater effort made on the part of the budget office and the campus as a whole to teach the fundamentals of our financial model, so that the faculty can grasp its basic functioning and contribute usefully to debates about the allocation of resources."

Another common complaint by faculty and administrators alike was that the campus seems to run on a cash-management model that is counter productive to meeting long term goals at the college or division level. Such a system appears to put academic decision making in the hands of the financial managers, who have not been completely transparent in their methods. There is not a sense that the EVC/P has been in control of budgetary decisions and that "the accountants are deciding where the University should spend its money" rather than advising the academic administration on the means by which to find (or leverage) funds to meet academic needs and goals.

III. Potential Solutions/Recommendations

A. Budget Transparency

Above all a more transparent system of financial management is necessary at UCR if the campus is to sustain a strategic plan. It is imperative that both stakeholders and those charged with making academic decisions be as fully informed as possible about budgetary consequences. For a variety of reasons, including relative instability in upper administration positions, attempts to establish a clearer budgetary process have not been successful.

B. Potential Budget Models:

One solution discussed in committee was the appropriation of a Responsibility Centered Management (RCM) system for the budget. Such a model means that funding for units would be more closely tied to their abilities to generate revenue through fees, tuition, and indirect cost recovery (ICR) on external grants. It also means that costs would be closely tracked and would be attributed to the units. While some advantages—such as greater transparency of fund use, increased flexibility of units to adjust to shifts in resource demand, and an increase in incentives to colleges to recruit and retain major could accrue from adopting such a model, the cost of changing from our current incremental model would be prohibitive. Also, there would be disproportionate disadvantages to some colleges, such as Engineering, which rely on non-college resources for much of its lower division teaching; there would be a greater possibility of pushing costs down to programs and college without adequate backstopping; the propensity for "siloing" among colleges would increase dramatically, potentially undercutting and complicating attempts at cross-disciplinary (and cross-college) cooperation.

C. Recommendations

Because using a RCM model for allocating and tracking resources and expenditures would require such extensive training and adjustment for the campus at a time when we may well have to be particularly nimble in our financial decisions, and because it tends away from cross college cooperation, this committee does not recommend its adoption at this time. However, it may be salutary to emulate an RCM model for the purpose of tracking costs relative to expenditures in order to give senior academic management a

better idea of the financial stakes involved in any significant undertaking—or for that matter in the day to day operations of the campus.

The committee also recommends that any budget model revision abide by the following principles:

1. Understanding the basic workings of the budget model should not require expertise in financial matters. The model should be easy to explain, understand, and implement.

2. Colleges should be able to make a reasonable projection regarding their future resources.

3. The model should take into account—and explain clearly—the differentiated costs for delivering instruction across disciplines. The model should recognize that upper division and graduate courses generally cost more per student than lower division and service courses; further, there is a significant difference in cost of instruction between laboratory and lecture courses that must be taken into account.

4. Interdisciplinary programs are critical to our future; the budget model must provide adequate financial feedback for these undertakings in order to encourage collaboration between disciplines.

5. The budget review process should discourage both administrative and programmatic redundancies.

6. An "information-rich" discourse on the budget must be fostered.

7. Service units should be subjected to constant scrutiny for efficiency, effectiveness, and proper incentives must be established to encourage such efficiencies and effectiveness.

8. The new EVC/P must gain a thorough understanding of the budget and education senior management in its functioning.

9. A "budget school" conducted by the EVCP should be held to educate deans and V-C's on the workings of the budgets. The deans should be encouraged to share this information as broadly as possible across their constituencies.

10. The campus should develop a "bird's eye" view of campus budgetary processes, allocations, decisions, etc (akin to the model used by UC, Santa Cruz) in an effort to clearly explain the general workings of the campus's financial model and budgeting.