Research, graduate education, and undergraduate education “are intertwined. Vigorous research activities are integral to developing a quality graduate program. And a mature graduate program is essential to the quality of undergraduate education, which is enhanced by the work of inspiring young scholars in the undergraduate classrooms and laboratories.”

At UC Santa Cruz, there is no shortage of ambition. Our immodest aspiration, articulated in numerous public documents, is to achieve first-rank as a research university while remaining devoted to excellence in undergraduate education. And we hope to accomplish our goals even as we are caught in an historical moment when every UC campus is being asked to accommodate increased enrollments on diminished budgets.

The WASC review process has helped us make progress toward our goals. We have crafted our Educational Effectiveness Report in a fashion that is intended to foster dialogue on the campus. It is for that reason that our in-depth essays have sought not to hide the challenges we face but rather to expose them. At present many in the administration and the Academic Senate feel that our internal dialogues are more likely to bear fruit because of this process. Almost universally, administrators and faculty at UC Santa Cruz are grateful for the feedback of the WASC visiting team and of the WASC Commission given at the end of the Preparatory phase. We anticipate – and will value – further advice during the closing stage of the review.

The present brief essay aims to rehearse again some of the major themes of our self-study and to analyze the implications of our analyses. The essay progresses in three sections. First, we summarize the major themes of our review. We then pause briefly to situate our present concerns within an historical context. We conclude by outlining some potential consequences of the analysis we have conducted.

**Central Themes**

**Improving both Undergraduate and Graduate Education**

How can we grow our graduate programs while maintaining our traditions of close attention to undergraduate education? This question is at the core of our Institutional Proposal, our Preparatory Report, and our Educational Effectiveness Report. The team that visited UC Santa Cruz in February 2004 apparently found the question to be a compelling one.

Preparation of the Educational Effectiveness Report has precipitated extensive dialogue on the campus about the question of balancing graduate and undergraduate education. From the discussions, three principles have emerged that:

- In setting priorities for resource allocation, long-term assessments of educational effectiveness, broadly construed, must be considered.
- In setting priorities for growth in graduate programs, advantages and disadvantages of various alternatives for the undergraduate program must be considered.
- In setting priorities for continued excellence in undergraduate programs, advantages and disadvantages of various alternatives for support of the graduate program must be considered.

Many in the Academic Senate and in the administration recognize potential synergies between undergraduate and graduate education. There are myriad ways in which graduate students contribute
to the education of undergraduates. In the physical & biological sciences, the social sciences, engineering, and the arts, graduate students function as helpful mentors to undergraduates in both laboratory and classroom settings. The nature of scholarship in the humanities, where it is rarer to speak of laboratories or studios, does not as easily lend itself to “vertical teams” in which more advanced students work side by side with less senior students. But even in the humanities it is possible to conceive how graduate students might interact with and contribute to the learning of undergraduates in ways that enhance the educational outcomes of traditional faculty-student interactions. Graduate students in all disciplines, for example, might be more effective advisors to undergraduates than are some faculty.

Just as graduate students can be seen as bringing benefits to the undergraduates, so can undergraduates be seen as benefiting graduate students. Throughout the social sciences, the physical & biological sciences, and engineering, many of our advanced undergraduates serve as assistants to graduate students as the latter undertake research independently or in collaboration with faculty. In addition, graduate students benefit in a number of ways by having the opportunity to assist in teaching, and experience themselves the benefits of working with our most engaged undergraduates. Graduate students require the income that comes with being a teaching fellow, and enjoy having an opportunity to engage in university teaching, for many of our graduates will go into teaching careers. They also benefit from the intellectual discipline of explaining to others the fundamentals of their disciplines. Finally, anecdotal evidence shows that our most engaged undergraduate students are as adept at providing challenging stimulation for graduate students as they are for the faculty.

Mutual benefits notwithstanding, there are potential pitfalls inherent in attempting, in the current resource climate, to expand graduate education without damaging undergraduate education. These must be acknowledged and monitored as part of academic planning and resource allocation. In what ways might the growth of graduate programs be detrimental to undergraduate education? At a basic level, the answer involves two things: money and faculty attention. For every new student whom the university takes, we receive from the state of California, via the Office of the President of the University of California (UCOP), approximately $7,700. No distinction in growth funding is made between graduate and undergraduate students. Yet, graduate students are, at least presumably, more expensive to educate than undergraduates, primarily because of the faculty time they absorb and the costs of student support. The campus must be both clever and realistic if it is to insure that future growth in undergraduate enrollment does not absorb a disproportionate share of the marginal increases in state support. In this area, attention to educational effectiveness should guide our assessment of how efficiently we use our resources in both undergraduate and graduate education.

Culture of Evidence

In the process of crafting the Educational Effectiveness Report, laying out for ourselves and for the WASC commission the decisions that we face as a campus, we have come to appreciate that our campus has not uniformly mustered good information about important topics. Until recently, the central administration had not standardized the range of data that they require from the academic divisions. We have, furthermore, only recently begun to regularize the transmission of existing data to all who might benefit in a manner that makes its value clear. Too often, useful reports prepared by the Office of Institutional Research have not found their way to receptive audiences who might benefit from their work.

Our resolutions to collect and utilize data are evident in our in-depth essays. Especially with respect to advising, we need good data to preserve our excellence in undergraduate education. Exhibit E makes very clear that we also need to learn from programs and departments what they envision as the educational outcomes they seek for their undergraduate students. Currently, every program publishes a mission statement. But only two of our programs (computer engineering and electrical engineering) have fully articulated their educational objectives with learning outcomes. Yet, until programs articulate their objectives, it is hard to determine if programs meet their objectives.
Similarly, as is clear from our in depth analysis concerning graduate programs, we see that the first step in sensible growth is to collect specific types of data. If we are to make the best and most efficient use of our limited resources, we need to systematize basic information about the recruitment of students and about the quality of their lives on campus.

As we become increasingly invested in information technology, we will be able to collect better data in cost effective ways. Both the Graduate Admissions Review Process (GARP) and the Academic Information System (AIS) hold out the promise of permitting large amounts of data collection and analysis. Nonetheless, it takes resources to collect data. Campus discussions have made it evident that we need to continue to be thoughtful about which data we seek to find and disseminate in order to insure that valuable time and attention are not devoted to research and data collection which do not then get used effectively to resolve questions and support thoughtful planning at all levels.

**IN HISTORICAL CONTEXT**

In 1994, UC Santa Cruz went through its last re-accreditation. The WASC visiting team at that time wrote a long report on the state of the campus. Within the report were numerous specific suggestions intended to improve the institution.

Scrutiny of the 1994 report reveals that many of our current issues were anticipated ten years ago. In 1994, UC Santa Cruz was struggling with the question of how to increase the percentage of students who were graduate students. Acknowledging the high cost of living in Santa Cruz and also noting the sense of isolation that can come from the physical challenges of our beautiful campus, UC Santa Cruz and the WASC visiting team brainstormed about ways to ameliorate the living conditions of graduate students. At the same time, the campus was seeking to make changes in the delivery of its undergraduate curriculum – and specifically to enlarge class sizes – in such a way as to preserve what was felt to be a distinctive approach to undergraduate education.

Issues of diversity were of critical importance. An overhaul of the advising system seemed not just advisable but imperative. The 1994 WASC visiting team repeatedly marveled at how the faculty at UC Santa Cruz were able to accomplish so much in terms of teaching and research on such constrained resources. Suggestions were made about the advisability of finding extramural grants and other funds to decrease the campus’s reliance on shrinking state funds. The visiting committee warned that decentralized decision making without decentralized responsibility for the management of resources would impair the institution’s ability to coordinate academic and financial planning.

Although some of our current themes echo the last review, in many ways the campus of today differs profoundly from what WASC visitors found here in 1994. Ten years ago the faculty ranks had been depleted by the Voluntary Early Retirement Incentive Programs. Many of the pioneers of the campus retired, and others who remained on active duty apparently felt somewhat at odds with new recruits. The visiting committee suggested ways to help foster a sense of community among the faculty. The quality of teaching by ladder faculty and by graduate students was reported to be uneven. No word was even whispered about growth. There were no enrollment pressures. No one had conceived of the Silicon Valley Center. The School of Engineering did not exist. The development office was reactive rather than proactive, and the campus had a million fewer assignable square feet of office, classroom, and residential space than it has today.

Examining our central conundrum – how to increase the quantity and quality of graduate programs in ways that also enhance undergraduate education – in the light of the last decade allows us to see that UC Santa Cruz today has begun to solve the dilemma by facing some issues about enrollment management. Ten years ago our enrollments were essentially static. Currently, we are working on a Long Range Development Plan that would allow a campus average FTE enrollment of up to 21,000. The task of managing our enrollments today differs dramatically from the task that faced the campus ten years ago.
IMPLICATIONS

Managing Undergraduate Enrollments

UC Santa Cruz has an ethical responsibility to help educate its portion of the state’s youth. In very real material terms, it is also in the university’s self interest to educate its share of these students because state dollars flow to the campus as a function of enrollment. But income from enrollment increases must be deployed effectively to provide capacity for educating the students and at the same time contribute to the base budget of the institution. Further, we must be mindful that the recent relatively rapid increases in enrollment – and hence state funding – are not likely to continue in the future.

The WASC review has triggered a set of discussions about one way, potentially, to limit growth in the costs of undergraduate education while meeting our allocated enrollment targets. A key to success in this regard is that our total enrollment is projected to grow much more slowly over the next few years than it has in the past few years. Hence we have an opportunity to realize a larger proportion of that incremental growth as graduate expansion. Continued success in growing graduate enrollments will allow the undergraduate population to grow much more slowly. Further analysis will be needed to make realistic projections of the share of future growth that will be allocated to undergraduate enrollment.

But we can already anticipate the question of how that growth should be divided between freshman and junior transfer admits. It seems possible that by increasing slightly the proportion of transfer students we could well stabilize our entering freshman cohort size, allowing for some much needed breathing room for programs to assess their effectiveness in serving those populations. It would also relieve budget pressures on programs that are formula funded based upon the entering freshman class. It might also enable a certain degree of internal enrollment management since transfer (but not freshmen) admissions can be more selectively directed to programs with underutilized capacity. While this might be possible and desirable in principle, it is clear that current transfer application and yield rates would not support this strategy and that further analysis is required.

Entering students generate one-time costs and require specialized support. Consequently improved retention has potential positive economic benefits. One outcome of the recent budget reduction exercises and this review is a renewed motivation for developing data to support improved retention as a matter of educational effectiveness as well as resource management.

However it is not realistic to think that UC Santa Cruz could develop enough additional transfer enrollment to meet all of its anticipated undergraduate enrollment growth. The admissions office and the Senate Committee on Admissions and Financial Aid believe that UC Santa Cruz would not be able to yield that many transfer students without vigorous (and costly) intervention and outreach. This is an area in which further research is needed in the short term to resolve the question of whether it would be desirable and if so, feasible. In any event it is clear that the pace of growth at the undergraduate level will slow substantially and so entering freshman cohorts are likely to remain similar to recent levels in the near future.

Our considerations suggest the following recommendation:

- In consultation between the Academic Senate and the administration, the campus should examine the possibility of absorbing future mandated enrollment increases primarily in graduate and upper-division transfer enrollment, rather than in freshman admissions.

Managing Graduate Enrollments

Campus-wide discussions related to the WASC review have surfaced different conceptions about the motivation for and character of increased graduate enrollments. Together the Academic Senate and administration need to consider tradeoffs between different models of graduate growth. As a campus, we need to decide whether or not to transform the Department of Education into a School of Education. If such a transformation seems advisable, what should the new school look like? Where are our
special strengths? What aspects of education should we emphasize in our curriculum beyond our current focus on diversity and second language learning? We also need to think about whether other professional schools might be consistent with our mission. Would UC Santa Cruz benefit from developing a School of Public Policy and Resource Management? If so, how might such a school be developed? What about a School of Business or Management? What special opportunities should be pursued in Silicon Valley and elsewhere off campus? In each case, the attractions of new and potentially highly visible extensions of campus programs must be realistically weighed against their start-up costs, the likelihood that their enrollments would generate an appropriate proportion of their operating expenses, and the opportunity costs to existing programs or desirable extensions of them.

This review has stimulated productive discussion on many issues. We believe that it will be sustained as we anticipate the resolution of the search for a permanent Chancellor. We aim at insuring that the incoming administrative leadership will find a campus prepared to move expeditiously in resolving as many of these questions as we can so that we can focus on realizing plans.

Looking Beyond the Divisions

Discussions in the WASC Steering Committee and WASC-related conversations in various committees of the Academic Senate have also brought into high relief an observation that has important implications for educational effectiveness. Several bodies have recognized that narrow conceptions of how to influence educational effectiveness may stifle creative problem solving. The measure of educational effectiveness is student learning, and so it is easy to fall into the trap of imagining that we should assess and influence educational effectiveness simply by looking at classrooms nested in departments. But student learning happens in a number of ways and through a number of processes far removed from the classroom and outside the boundaries of departments (and even divisions). The rich material and web-based resources provided by the University Library, for example, are critical to graduate and undergraduate students’ education in ways that go well beyond the formal curriculum.

As noted by our Senate Committee on Educational Policy, our external review process looks at specific programs and departments with a department internal focus. But it does not as effectively address the context created for it by the academic division that houses the program. Is there value in conducting similar assessments of how effective particular divisions are in supporting the educational effectiveness of their programs? How can academic divisions achieve their missions effectively in the most economical fashion? These are issues that deserve airing in a manner that is productive for the members of the division. A process that parallels that for departments might be helpful in separating healthy programmatic debate from the individual decanal reviews.

Additional factors, well beyond the jurisdiction of divisions, also have important consequences for our educational effectiveness. Right now UC Santa Cruz is undergoing a transformation of its information technology (IT) system. A well-functioning IT system is crucial to nearly all aspects of the university’s mission, providing vital access to everything from research and teaching materials to student records, business transactions, budgetary information, and institutional analysis. Like other institutions grappling with both the costs and the challenges of transition in this area, we are currently struggling to find the right strategy for investing in support technology to insure ongoing benefits to the campus enterprises.

Investment in other areas which may seem removed from educational effectiveness must be reconciled with direct investment in instructional and research activities and student support. For example, expanded child care facilities may seem a topic far removed from the classroom. Yet the issue is a critical factor in faculty and student morale. When faculty parents have their young children safe and well cared for, they boost their effectiveness as teachers.
ANTICIPATION

We are eager not to lose the momentum that has come from the broad campus participation in the WASC review process. In the period intervening between the submission of this report and the February visit of the WASC team, the administration will look for opportunities to resolve some of these issues, bringing together the present campus administrative and senate leadership to further discuss openly and honestly the issues that face us.

We look forward to engaging in further discussion with the visiting team. We hope that our strategy in laying out this report will provide many areas for engagement with the members of the team. We look forward to the results both as an opportunity to demonstrate our core commitment to effectiveness and as a way of drawing on informed external advice on these issues.