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## ABSTRACT

This document records responses by University of California President Richard C. Atkinson to questions posed by the California Citizens Commission on Higher Education regarding issues and challenges facing California's colleges and universities. Responses indicated that (1) state funding constraints make access to education the principal policy issue facing the state as well as higher education; (2) funding pressures and diversion of resources to undergraduate education threatens the quality of university research programs as well as the state's economic development; (3) students will have to bear an increasing share of the cost of their education in the form of higher fees, especially in professional programs; (4) the university is committed to diversity and student academic outreach programs; (5) the university conducts research, trains faculty, and collaborates with other educational institutions, including K-12, helping them fulfill their public purposes; (6) the question of whether there is a substantial and continuing oversupply of Ph.D.s is complex and important; and (7) the university is deeply concerned about the status of state and federal funding for research and sees a need to link research to its application in business and industry. (PGS)

**Answers by UC President Richard C. Atkinson to  
Questions from  
The California Citizens Commission on Higher  
Education**

**January 23, 1997**

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***On January 23 President Atkinson and other educational leaders met with the California Citizens Commission on Higher Education to discuss issues and challenges facing California's colleges and universities. The 24-member Commission is conducting a year-long review of California higher education under the chairmanship of J. Paul Getty Trust President Harold Williams and Occidental College President John Slaughter. The Commission plans to present, in early 1998, an agenda of reform recommendations to political, civic, business, and educational leaders.***

***Below are President Atkinson's responses to questions raised by the Commission.***

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## **1. What are the comprehensive policy issues which face all of California higher education?**

Public higher education has been the infrastructure upon which the economic success of the State of California rests. The research contributions of the University of California first built California's scientifically based agricultural sector, then sparked California's development as the leader in aerospace, biotechnology, computer technology, and other scientific and technologically based industries. The University's academically oriented graduate programs supply the state and nation with a pool of trained researchers and teachers who are necessary contributors to the next round of scientific, technological, and intellectual advancement in all fields. A large proportion of the state's physicians, lawyers, and veterinarians are graduates of UC's professional schools. Undergraduate programs at the University and State University provide a route of access into highly skilled and productive employment for all California graduates who are eligible for entry into their programs. The Community Colleges provide an additional level of access for all students who might benefit from higher education, in addition to providing vocational training for students who do not seek a bachelor's degree.

The principal policy issue facing not only higher education, but the State of California as a whole, is whether the State will continue to fund access to higher education for California high school graduates at the levels promised in the 1960 Master Plan for Higher Education. This question becomes particularly significant at a time when non-Caucasian students have become the majority in each of California's public segments of higher education.

The Commission must understand that California's system of publicly supported higher

education is threatened by the dual problem of a projected 45 to 50 percent increase in student demand over the next ten years and State funding constraints that, if left unchanged, will reduce the proportion of the State budget dedicated to higher education. In addition to a projected operating budget deficit, an acute shortage is projected of capital funding to build the new space needed for this surge of enrollment.

We also must recognize that the success of California's system of public higher education is not simply based upon the numbers of students who go through its institutions. Those students receive a high-quality education that is generally superior to that available at comparable public institutions. The question of access must be evaluated in the context of access to high-quality programs and their success in enabling students to attain degree and career objectives.

## **2. What is most important for the Commission to know about the University of California?**

UC is the state's research university, which requires a robust program of graduate education and research to thrive and meet the economic, social, and cultural needs of California and its citizens.

Reduction in funding, coupled with pressures to divert resources from research and graduate education to the undergraduate program, are doubly threatening to the quality of the University and the vital role it has in the state. Taken as a whole, the University of California has developed the most productive research faculty in the world. The UC faculty attracts over ten percent of all federal research funding into California, an amount in excess of \$1.2 billion. In turn, the research and intellectual climate University campuses create attracts commercial investment within the region. Pressure to divert faculty research efforts to accommodate unfunded undergraduate access will undercut the University's contribution to the state's economic development. That in turn will erode the state's continuing ability to fund higher education and its other programs. We believe that diminution of UC's research and graduate programs will also undermine the quality and prestige of its undergraduate education,

That we are urging the Commission to focus on seeking adequate funding to support the state's higher education enterprise will come as no surprise. But I would also like the Commission to understand that the University has taken dramatic internal actions to become more efficient and effective in the last few years. We have had no choice given the magnitude of the budget cuts that all of higher education sustained in the early 1990s. Our budget documents detail many of those actions--administrative restructuring, increased faculty effort, etc. As one example, we have restructured our internal budget process--how we allocate funding to the campuses--to move away from formula-driven decisions to decisions that are more focused on the goals of the institution. In particular, we have given the campuses more flexibility in how they decide the mix of graduate and undergraduate enrollment, resulting in our ability to accommodate more undergraduates.

In that context, I also want to clear up the myth that UC has focused on graduate education to the exclusion of undergraduate education. Chart 1 shows that since 1960, the proportion of graduate students at the University of California has declined from 29.4 percent to 18.4

percent. Note also that the ratio of graduate to undergraduate students at UC is significantly lower than such ratios in private research universities.

The Commission should also know that declining State support since the 1960s has resulted in a deteriorating student/faculty ratio. Chart 2 shows that the ratio has deteriorated from 14.7 to 1 to a currently budgeted student/faculty ratio of 18.7 to 1. This is less favorable than the 17.8 to 1 average ratio of our four salary comparison public universities and much less favorable than the 10.4 to 1 ratio of the four private universities used by the State for salary comparison.

### **3. What areas should the Commission address as its highest priorities?**

The Commission should address the state's need to recognize the historic and continuing importance of its system of publicly supported higher education to the health of the state economy and provide leadership to develop revised funding mechanisms to ensure adequate support for education in California, from kindergarten to graduate school.

The shorthand we often use for the enrollment issue discussed previously is "access." In addressing the urgent access issue, the Commission needs to keep in mind the question, "Access to what?" To a program where most never finish? To the lower division? To a baccalaureate degree? To advanced degrees and training? To high quality programs? Much of the policy work done to date focuses on how we can or cannot provide access into a program of higher education with little focus on the results or quality of those programs.

### **4. If you could change one fundamental aspect of California's Master Plan for Higher Education, what would that be?**

The success of California's Master Plan for Higher Education is the envy of the world. No other state or nation has created a system of higher education that even comes close to the great systems of California, in terms of research productivity and in the quality of graduate and undergraduate education programs.

The Master Plan's formula for specialization of function between defined segments of higher education and layers of access to public higher education has produced an elite educated workforce for California while providing access for all eighteen-year-old and older students who can profit.

In the past two decades California has re-engineered, refinanced, and reformed almost all of its public institutions. Of them all--the courts, the legislature, the state's highways, the K-12 education system--only the University of California and the California State University remain as shining examples of institutions that are the best of their kind in the world. That stature results from the brilliant concept of the Master Plan and from California's historic commitment to higher education.

The problem facing California higher education does not stem from the Master Plan. Tinkering with the covenant between the State, her institutions of higher education, and the people of California that is contained in the Master Plan will not resolve the problem of

access and inadequate levels of support.

That does not mean, however, that all of the principles contained in the Master Plan are inviolate. Historically the State has provided virtually a full subsidy to undergraduate education. If the State reduces its commitment to maintaining the strength of California's public higher education institutions, other means must be found to maintain access and quality. One of the means that will become necessary is that the consumers of educational services, the students, will have to bear an increasing share of the cost of their education in the form of higher fees. Thus, public higher education needs to develop a fee policy that will both insure institutional stability with respect to revenue, and stability and certainty on the part of students with respect to the nature of their share of the costs of their education.

We discuss in our answer to Question 9 below such a fee policy that we are developing with CSU as well as selected professional programs where we already charge higher fees. There is also a discussion there of my idea for creating new self-supporting professional masters' degree programs for working adults.

**5. You have indicated that the University will continue to have the diversity of its student body as a high priority. If Proposition 209 is upheld, what policies or strategies will the University use to promote that goal?**

The University is committed to enrolling a diverse student body drawn from all sectors of California's population. Not only is this principle affirmed in the University's admissions policy, but commitment to diversity is also expressed in SP- 1, the Regents' resolution barring preference for admission on the basis of race, sex, color, ethnicity, or national origin. Following adoption of SP 1, The Regents appointed a Task Force of education leaders, State policy makers, and corporate leaders to study ways in which the University can improve educational opportunities for disadvantaged students. This Outreach Task Force has met over the past year and is in the process of developing new initiatives that will result in greater access to the University, on a competitively eligible basis, for students who otherwise might be unable to achieve their academic potential. The Task Force will present its findings in the early spring of this year.

Individual campuses are also in the process of reviewing their outreach programs for the purpose of expanding and improving efforts that contribute to higher achievement among low-income and disadvantaged students.

We are pleased to note that the Governor's budget recommends adding \$1 million to expand student academic outreach efforts to our already substantial investment in outreach programs. These programs are aimed at increasing the enrollment of high-achieving disadvantaged students.

**6. The University has a particular mission and role in California higher education. Within that role, how can the University best help the other segments, including K-12, fulfill their public purposes?**

The University of California will best serve the State of California as a whole by maintaining excellence in the parts of its mission that are unique to the University, research and graduate education. The University's prestigious and excellent undergraduate program is a direct result of the excellence of its faculty, who are attracted to the University because of the quality of its research program.

The University and the State University are exploring opportunities for increased cooperation in numerous areas. There already is substantial collaboration in joint doctoral programs and in programs working with the public schools.

The University works closely with the community colleges to enhance academic programs that enable community college students to transfer into the University. Creating strong and successful transfer programs is essential to preserving the promise of the Master Plan. UC currently maintains a ratio of 40 percent lower division to 60 percent upper division undergraduates to ensure there are upper division spaces in the University for successful California Community College transfer students. There is also the potential for UC involvement with the community colleges in the workforce training area, in which UC researchers and specialists in high-technology industries can help set up programs to train and retrain workers for those research-intensive industries.

CPEC and the Intersegmental Coordinating Committee of the California Educational Round Table are creating joint programs among the segments to establish standards and assessments for K-12 students, develop common gateways for college applications and information about program requirements, reduce the need for remedial education, provide more advanced placement opportunities in the high schools, and use college students to tutor K-12 students.

With respect to K-12 education, the University's research role encompasses research into learning techniques and learning technologies that will enhance teaching in the primary and secondary levels. Specifically, the University is working on an initiative that will help K-12 teachers use instructional technology in the classroom. The University's role also includes graduate education for faculty who will teach those in the credentialing programs at the University of California, at CSU (the state's largest trainer of teachers) and at the independent colleges and universities. The University also has a major public service role in continuing education of teachers through such activities as the subject matter projects which attempt to keep K-12 teachers current about the latest thinking and discoveries in a range of disciplinary areas. The University is heavily involved in studying and developing assessment techniques and competency levels for K-12 students.

UC has recently published a compendium of its activities with respect to K-12 education, and copies have been provided for members of the Commission.

## **7. What is the best role for the independent institutions to play in California higher education?**

While this question is best answered by representatives of the independent institutions, I



would like to note that UC historically has supported the choice aspect of the Master Plan embodied in the Cal Grant program. Cal Grants allow needy and meritorious students to receive state scholarships to attend an institution of their choice, including private independent institutions. Adequate funding of Cal Grants will help relieve some, but by no means all, of the enrollment pressure facing public higher education. Part of our concern over relying solely on independent institutions to pick up excess demand is that a logical free-market response of private educational institutions to an excess of demand for higher education could be higher fees, rather than expanded capacity. Also, in looking at the capacity of the independent universities, one needs to look carefully at whether the private institutions capable of expanding are comparable in terms of quality to UC and CSU. However, as the merger between UCSF and Stanford hospitals and joint research projects like the Keck Telescope demonstrate, there is potential for public-private partnerships to achieve State educational objectives.

**8. Can the UC expand access to undergraduate education without incurring all the expenses associated with increasing the size of a full-fledged research institution? In other words, can the University increase undergraduate enrollments without increasing graduate enrollments or expenditures?**

As noted, its research and graduate education responsibilities are the things that distinguish the University of California from the State University. If the Commission's goal solely is to increase undergraduate enrollment, the Commission's response should focus on expanding the State University. If the Commission believes that access to the kind and quality of educational program historically available to students enrolled at a University of California campus, a campus of a great research university hosting a research university quality faculty, then the Commission must recognize that such an education requires a commitment to maintaining a full-fledged research institution. That commitment includes a commitment to graduate education, although I do not believe that there are fixed rules defining the ratio of graduate to undergraduate students.

**9. Is it good public policy for University campuses or certain programs to be allowed to charge "what the student market will bear"? Is this necessary to make up for State General Fund Cuts?**

As also noted, the State of California has thrived in part because of the research and education to its work force resulting from California's historic commitment to highly subsidized public higher education. I believe that "good public policy" is to continue the state's commitment to low-cost access for California high school graduates. Maintenance of that commitment is especially important as the demographic make-up of the state is transformed from a Caucasian majority to a significantly more diverse society.

I do not believe that State policy makers will abandon the state's historic commitment to publicly supported higher education nor do I believe that we should base policy decisions upon that assumption. Thus, market-based fees are not "necessary to make up for State General Fund cuts" as the question suggests. However, in the event that the State is



unwilling or unable to maintain its quality research and education programs, rather than diminishing the strength of the University of California, or limiting enrollment growth to the degree allowed by state funding levels, I would pursue a policy of increased fees.

The most important policy issue is creation of stability and certainty with respect to fees. Large increases in times of economic downturn, as we have witnessed in the early part of this decade, are not a good solution. To some extent fees should broadly reflect changes in ability to pay. Thus, a fee policy indexed to California personal income might provide both stability to the institution as a revenue source and to students who would have some objectively measurable expectation with respect to their share of the cost of their education. We are working with CSU on developing such a policy.

It should also be noted that with the fee increases of the early 1990s, UC also pursued a policy of redirecting approximately a third of the revenues from those increases back into financial aid. UC has the largest financial aid program of any university in the country and we have the largest number and proportion of low-income students in our history.

I also believe that some programs should be developed on a self-sustaining (full fee) basis. These include selected professional degree programs and master degree programs for working adults.

The University has already embarked on a policy of charging differential fees for selected professional schools (medicine, dentistry, veterinary medicine, law, and business). By adopting a policy that such fees will be phased in to approximate charges at comparable programs around the nation, the University is recognizing that earning a degree in these programs benefits the individual as well as the state.

While the growth of professional part-time adult education outside of UC Extension was not originally contemplated as an element of the University's mission under the Master Plan, it represents an important and growing need for California. The University is planning to develop new part-time or alternatively-scheduled professional Master's degrees programs. These programs would combine the developmental and marketing skills of University Extension with the academic strengths of departments, schools, and colleges. These programs would supplement current University Extension programs (over 400,000 enrollments annually) that reach beyond the confines of the existing campus environment, providing benefits to populations not currently served by the University.

These professional degree programs would be developed without State funds. Since these programs are aimed at individuals who have already received a baccalaureate degree and who are already in the work force, State subsidies are not appropriate. However, fee structures could be developed to create financial aid programs targeted to needy individuals.

**10. Several authorities around the country now recommend a reduction in the number of graduate students and graduate programs because of a substantial and continuing oversupply of Ph.D.'s. Do you agree with this recommendation? Is downsizing the graduate enrollments a good direction for the University of California? In view**

**of enrollment projections and fiscal stringency, should every UC general campus maintain a comprehensive array of graduate programs?**

My views on graduate education are contained in detail in remarks that I made to the Conference on Graduate Education in the Biological Sciences in the 21st Century on October 2, 1996. The views that follow are drawn from those remarks.

Despite problems in a number of fields, it is disturbing to hear some people make the blanket statement that we are training too many Ph.D.'s. Certainly physicists and humanists will resonate with that notion. But to jump to the conclusion that the nation faces an across-the-board oversupply of scientists and engineers is inaccurate and misleading.

I'm enthusiastic about recommendations to reduce time to degree. I also support the idea that the training of Ph.D.'s should be more versatile so that they have greater opportunities in the job market.

The University of California is a major player in graduate education. We produce about 10% of the nation's Ph.D.'s. Until this year, we have had a formula-driven budgeting process for graduate enrollments that makes little sense in the current environment. To greatly simplify, from about 1960 until this year, the number of doctoral students in a given discipline was principally determined by the number of undergraduates in that discipline. A large number of psychology undergraduates translated into a large number of psychology graduate students. The formula wasn't quite that simpleminded -- and did take account of field-to-field differences -- but that was the basic idea. With much discussion among the faculty and little public fanfare, we've changed our budgeting process. The change takes effect this year. No longer will we tie the number of graduate students to undergraduate enrollment, field by field. We now have a budget process in which departments will not lose budgetary support if they cut back in their graduate enrollments. Until last year departments had to have large numbers of graduate students in order to receive the full set of rewards that the system had to offer. We are now changing our budgetary system so that the number of Ph.D. students in a department is driven more heavily by the job market and employment opportunities.

The training of Ph.D.'s to meet the nation's needs is one of the most important questions facing higher education, now and into the twenty-first century. We must be very careful about how we think about graduate education and the marketplace -- taking into account both short-term and long-term perspectives. We would do ourselves and the nation a disservice if we came to a blanket generalization that our research universities are producing too many Ph.D.'s. The problem is too complex and too important to the nation's future to yield to simple-minded solutions.

These remarks do not answer the last question, whether every UC campus should have a full array of graduate programs. If by a "full array" you mean that every campus should have every discipline and every subfield, I believe that is neither necessary nor desirable on every campus. Nor is that currently the case within the University. For over a decade, concerns about redundancy have been actively addressed by the University. Every

proposed graduate program undergoes systemwide review by the Office of the President and the Academic Senate with these concerns in mind. In the past few years, the Academic Vice Chancellors have been working closely with faculty in selected disciplines (e.g., physics, history, engineering) to foster more inter-campus collaborations and reduce duplications of subfields in faculty hiring. I repeat, however, that strength in research and graduate education is the hallmark of a University of California campus. Every campus of the University of California needs to strive for excellence in research and graduate education in fields that are appropriate to the particular campus.

**11. Recently, Neal Lane, Director of the National Science Foundation, wrote that "the long-term budget outlook for research and development in general remains grim, and the United States stands to lose world leadership, not only in science and engineering but in our overall ability to compete with other nations in the technological market." How does UC plan to deal with these prospects?**

As Dr. Lane's statement suggests, funding for research and development is pivotal to the United States' leadership position in science and technology which directly affects the nation's ability to compete in world markets. The University of California is deeply concerned about the status of funding for research at both the state and federal levels. Our principal response is continued advocacy about the importance of basic research to the state and nation.

At the national level we are directly and indirectly involved with policy makers at all levels of government with respect to research funding issues. We participate in national organizations focused on research issues, and maintain a direct federal relations office in Washington, D.C. At the state level, we continue to stress the importance of research to the state's economy and the University's contribution in that area.

In terms of the federal R&D picture, many scientific societies and associations are urging their individual members to be active in Washington, and UC has stepped up its efforts in this regard. One thing we know for certain is that there is often an even greater impact on lawmakers when patients who were healed, local businesses which were served, parents, students, and industry leaders speak to their congressional representatives on behalf of the University, rather than depending solely on University administrators and individual researchers--however brilliant-- to explain why it is so important to continue to fund research.

I agree completely with Neal Lane, who talks of the "citizen scientist" and advises faculty to speak to their neighbors, local businesses, and chambers of commerce and to seek opportunities to educate the taxpayers who are footing the bill for all this research and show them the benefits. These voters, in turn, should be encouraged to write to their congressional representatives and to vote for those who support these activities. In this way alone will there be the broad unassailable support for research and higher education which we need to get through the coming lean years.

As support in the U.S. for R&D shifts, in relative terms, toward increased reliance on the

private sector, we must invest in university/industry partnerships that put the products of university research directly to work in the economy. California, in particular, needs to invest in the emerging industries that are replacing our defense-based industries. Biotechnology, pharmaceuticals, science-based agriculture, software, multi-media, communications -- all of these are generating research breakthroughs that will have major commercial applications, create new jobs, and increase state revenues.

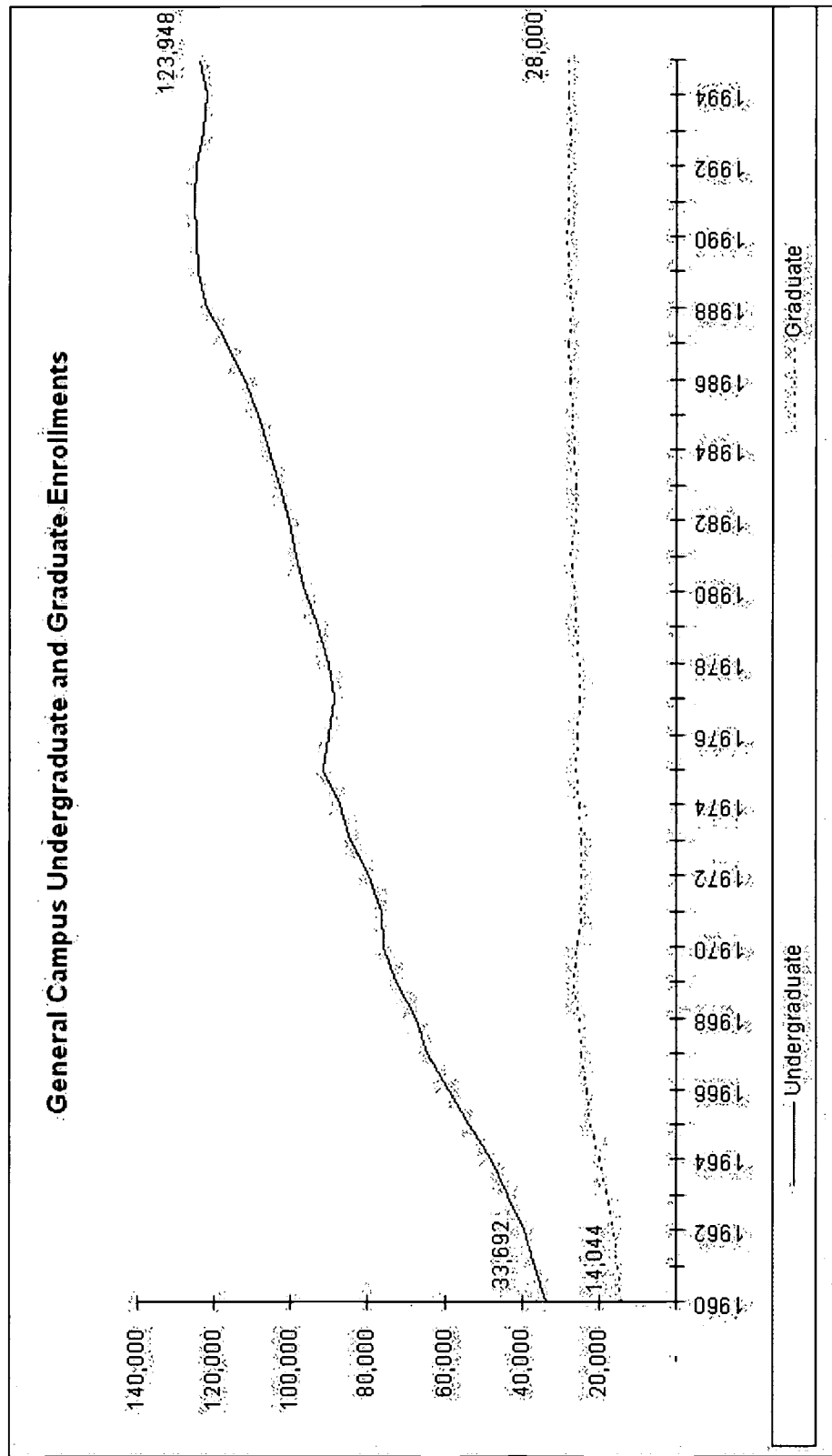
UC already has a number of successful programs that are boosting productivity and helping create jobs in these sectors--UC MICRO, which aids California electronics companies in developing the technologies for new products, STAR, which acts as a powerful magnet for joint investment in UC research by biotechnology firms, and UC CONNECT, which links high-technology entrepreneurs with financial, technical, and managerial resources.

But we need to do even more to build the bridges to link research performed in universities and its application by business and industry. To this end, I am delighted to note that the Governor in his budget has proposed to make permanent the \$5 million he provided in state funding last year for UC's Industry-University Cooperative Research Program, which joins UC researchers and students with industrial partners to develop technological innovations that drive the state's economy, attract investment, and provide jobs. Combined with \$3 million in university funding, the matching grant program is expected to generate \$10 million from private industry.

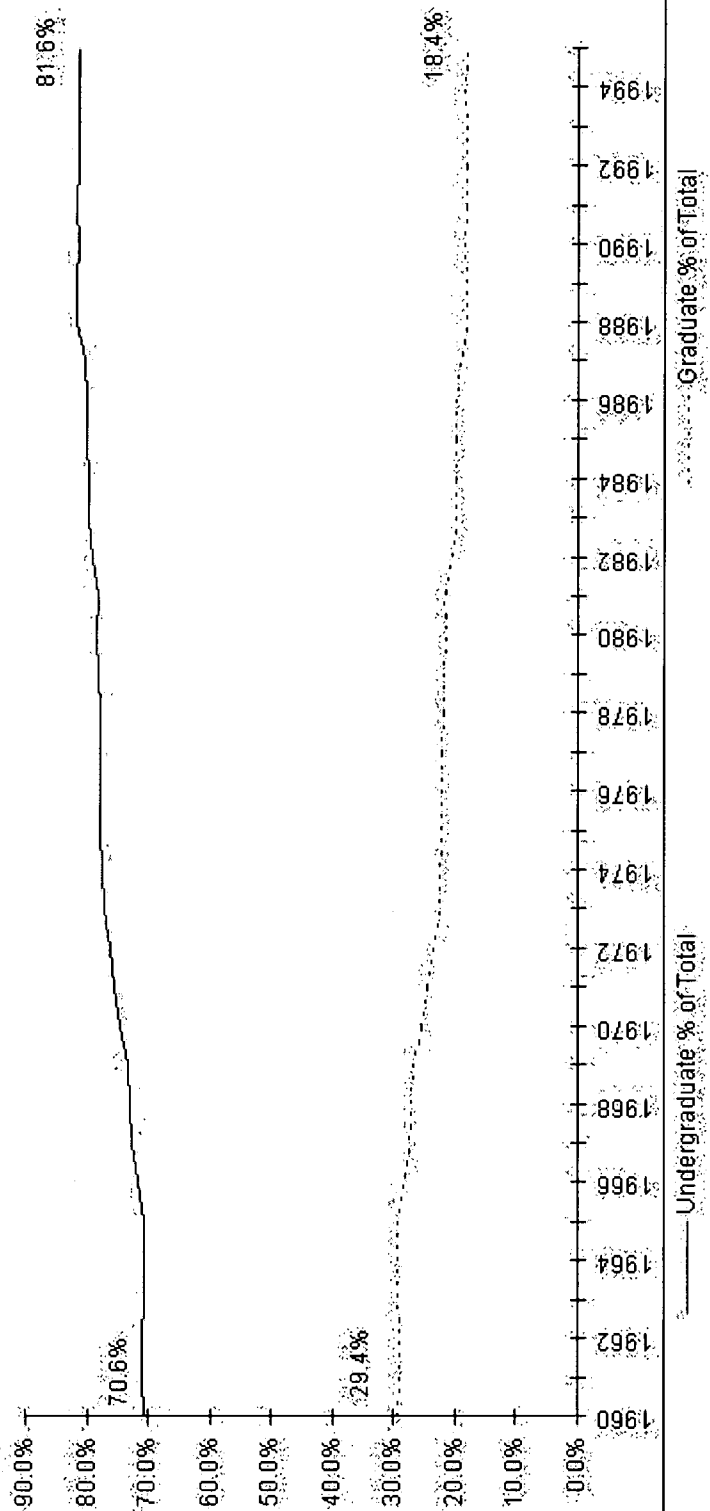
In addition to budget issues, we remain concerned that research dollars be allocated on the basis of peer reviewed proposals, rather than on the basis of regional interests. That system is good for the nation in the sense that limited research resources are expended on the best proposals. Also, because of the strength of its research faculty, the University of California has prospered in this competitive environment.

# University of California Undergraduate and Graduate Enrollments 1960 to 1995

*Fall Headcount*

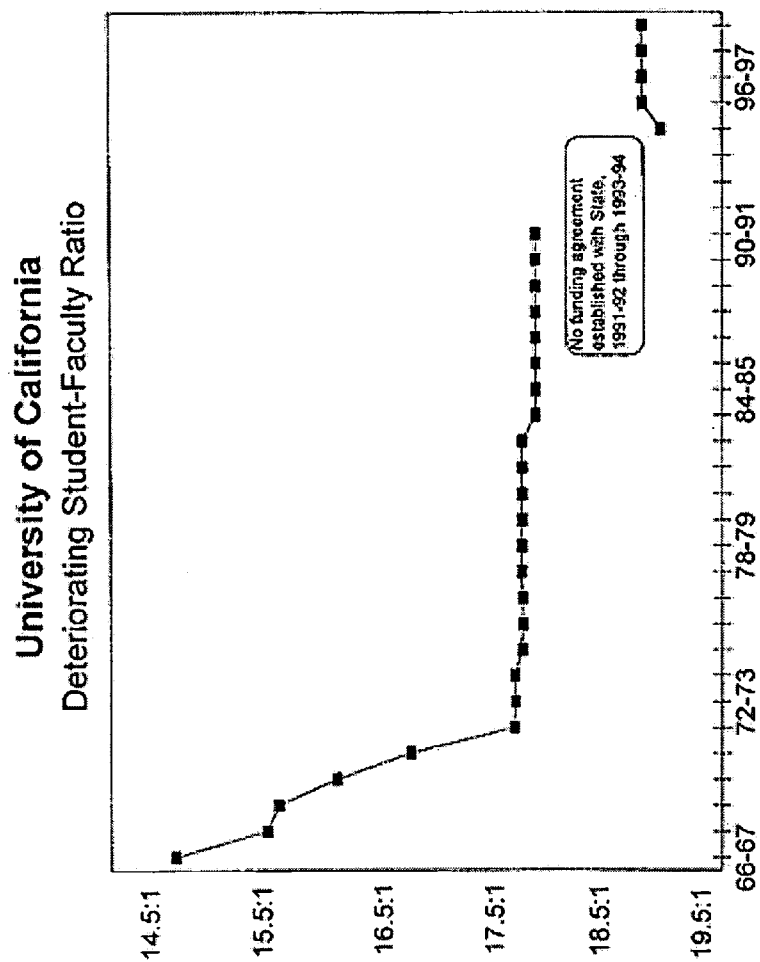


# Undergraduate and Graduate Students as a Percentage of Total General Campus Enrollment



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