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Time is not on our side

Part 2 of 2

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<u>Time is not on our side</u>

<u>(Part 2 of 2)</u>

This is part two of an article focusing on the financial dynamics facing Berkeley and, to some extent, the entire public higher education sector in California. The first part made the argument that the current policy mix regarding our financial situation is not consistent with maintaining the level of access and excellence that Berkeley has achieved. It argued that the consequences of current policies and the attendant financial projections pose a direct threat to both the economic and social benefits that derive from having a vibrant and first-class university, or cluster of universities, devoted to teaching and research. While other countries and states are trying to build this type of capacity to generate growth and innovation, the financial realities embodied in the current set of policies seem likely to put what is regarded as the best public higher-education system in the world on a path of decline.

But I promised that this second part would be more uplifting by focusing on possible solutions. Let's start by looking at where Berkeley is at the moment, using the type of metrics that are most meaningful to our important stakeholders — students, donors, research partners and the state. Concern has been expressed that we do not hold ourselves accountable in terms of results and outcomes, choosing instead to take refuge in looking at inputs. So let's look at what the output data says.

Figure 1 below shows how many students Berkeley graduates, time to degree in semesters (you can divide by two to get years), graduation rates (e.g., 82% of undergraduate students graduate from Berkeley in 4.5 years), the degree of satisfaction of our students, and student indebtedness after graduation (for those who have any debt). Not only does Berkeley do remarkably well across all of these metrics, but each metric shows an improving trend.

Figure 1. Some Result and Outcome Metrics for Berkeley

	2007-08	Trend	2011-12	% Chg
Degrees Awarded				
Bachelors	6765		7,315	8%
Masters	2347		2,493	6%
Doctoral	865		887	3%
Time to Degree*				
Freshmen Single Majors	8.02		7.96	-1%
Freshmen Multiple Majors	8.35		8.29	-1%
Transfers Single Majors	4.43		4.35	-2%
Transfers Multiple Majors	5.18		5.16	0%
** in semesters*				
Freshmen Graduation Rates				
4-Year	66%		72%	6%
4.5 Year	78%		82%	4%
6-Year	90%		91%	1%
Undergraduate Satifaction**				
Overall Academic Programs	84%		84%	0%
** range of somewhat to very satisfied*				

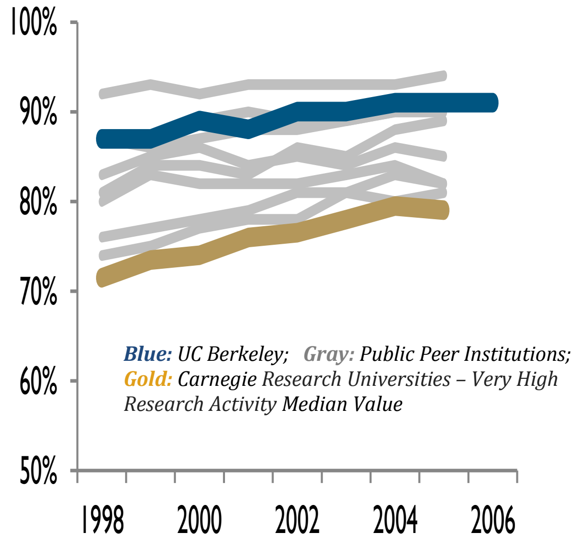
	Berkeley	California	Nation
UG Indebtedness	$17,000	$18,800	$26,600

The following figures (2-7) show how Berkeley compares to its peers. Figures 2 and 3 show that Berkeley's tuition is less than a third of the cost to attend similar private universities, but Berkeley scores higher than most in terms of graduation rates.

Figure 2. Tuition and Fee Comparison Table

Peer Undergraduate Tuition and Fees (2011-12)		
	Resident	Non-Resident
Stanford	$40,926	$40,926
MIT	$40,732	$40,732
Yale	$40,500	$40,500
Harvard	$39,851	$39,851
Princeton	$37,855	$37,855
Michigan	$12,634	$37,782
Berkeley	$12,834	$35,712
UCLA	$12,686	$35,564
Virginia	$11,794	$33,782
Texas	$9,346	$31,102
Illinois	$14,414	$28,556
Wisconsin	$9,671	$25,421

Figure 3. Graduation Rate Comparisons for Fall-Entrant Freshmen Cohorts



In addition, Berkeley has achieved these results while still adhering to one its fundamental purposes: to act as a catalyst for social mobility. Berkeley educates almost as many low-income students as all of the eight Ivy League universities combined (measured by the most objective measure available: recipients of federal Pell Grants; see Figure 4). Additionally, we now have a much more diverse student body than at any time in our history (Figure 5).

Figure 4. Pell Grant Awards

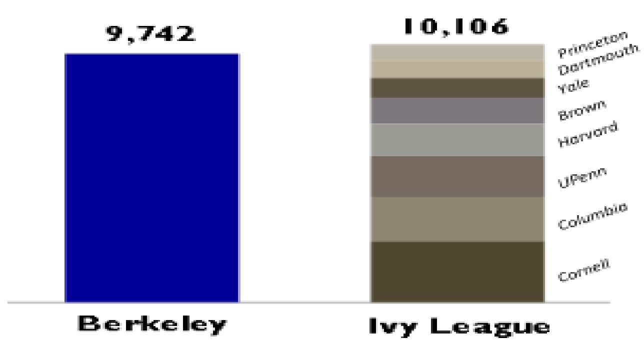


Figure 5. Undergraduate Underrepresented Minority and International Students (year average)

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Undergraduates	24,334	24,800	25,291	25,255	25,581	25,478
UREM	3,760	3,904	4,032	4,009	4,162	4,275
% UREM	15%	16%	16%	16%	16%	17%
International	667	935	1,268	1,677	2,239	2,597
% International	3%	4%	5%	7%	9%	10%

Also, Berkeley is ranked third in the world using the Shanghai Jiao Tong University methodology, which focuses on quality of faculty and research (Figure 6) and has the highest number of National Science Foundation Graduate Research Fellowship recipients of any university (Figure 7).

Figure 6. Shanghai Jiao Tong University Rankings

Top 10 universities in 2013

1 – Harvard, 100

2 – Stanford, 72.6

3 – Berkeley, 71.3

4 – MIT, 71.1

5 – Cambridge, 69.6

6 – Cal Tech, 62.9

7 – Princeton, 61.9

8 – Columbia, 59.8

9 – Chicago, 57.1

10 – Oxford, 55.9

Figure 7. NSF Fellowship Recipients

National Science Foundation Graduate Research Fellowships (cumulative 2001-2011)		
1	**University of California, Berkeley**	**1,333**
2	Massachusetts Institute of Technology	1,242
3	Stanford University	1,070
4	Harvard University	847
5	University of Michigan	399
6	University of Washington	369
7	Cornell University	342
8	Princeton University	314
9	Georgia Institute of Technology	286
10	California Institute of Technology	278

Based on these data (and we could provide much more), Berkeley is an example of a publicly owned institution that produces world-class results at a lower cost than its private peers. This is a laudable result that should be celebrated. Yes, there are very real challenges, but generalized statements that do not reflect the very real differences that exist between the higher education institutions within California are unlikely to be useful. Instead, we need a conversation that reflects the actual diversity and complexity of the existing higher education system – both its strengths and weaknesses. The objective would be to produce a strategic plan that supports each institution to build on its relative strengths rather than policies that result in convergence towards the average.

To pick up on this last point, the next logical question is: how has Berkeley achieved these results despite the significant cuts in state funding?

On the revenue side, Berkeley has been relatively successful at increasing two of the "other" three sources of revenue defined in part 1: namely, competing for research funding and increasing philanthropy and partnerships. Berkeley has also benefited from an increase in tuition. Here are some details:

- The revenue derived from research contracts and grants increased from $471 million in 2002-03 to about $650 million in 2013 (unaudited as of this writing), a significant achievement given the highly competitive nature of this market. However, as explained in part 1, current federal and state budgeting priorities will make this very difficult to replicate in the future.[1]

[1] Sequestration has already led to a decline in federal contracts and grants.

- Philanthropy and investment income grew from $188 million in 2002-03 to $304 million in 2012-13 with Berkeley placing 9th relative to all private and public universities for money raised in 2011-12[2] — another significant achievement. While we are determined to maintain a healthy expansion in philanthropy, it is unrealistic to believe that our donors will provide the only source of revenue growth. Philanthropy, by itself, cannot fill the inevitable "financing gap" discussed in part 1.
- Net student tuition and fees were about $203 million in 2003 and about $640 million in 2013. It is a common mistake to view this as simply the result on an increase in undergraduate in-state tuition. At Berkeley there was also an increase in professional degree supplement fees covering more programs, the creation of new self-supporting postgraduate degree programs and a steady expansion in the size of the undergraduate student body by adding more out-of-state students. These students pay close to the actual average cost of an undergraduate education at Berkeley, which is about 60% more than the tuition currently mandated for in-state undergraduates. As discussed in more detail below, there is a great deal of misinformation surrounding the impact of tuition costs and the composition of the student body. Our financial aid system protects low-income students against increases, and provides a significant measure of relief for students from families with annual income up to $140,000. It is also a fact that a proportion of the increase in student tuition and fee revenue comes from federal and state budgets via Pell and Cal grants and not low income students.
- It is also noteworthy that "other revenue" sources increased during this period. These consist of a multitude of "non-core" activities such as summer school classes, extension courses, executive education, sale of merchandise, athletic events, etc. Berkeley has now expanded its Operational Excellence effort, which was initially focused exclusively on cost-saving reforms, to include net revenue-generating projects. We are building a portfolio that includes both large and small projects, generated by all parts of campus, including our academic departments. But this requires us to be afforded the decision-rights to be nimble and responsive at the campus level.

On the cost side, the picture is mixed. While we have cut administrative costs in an orderly and structured way, primarily via the OE program outlined in part 1, we have also cut costs by delaying necessary investment in systems, staff, and the infrastructure of campus. We have recently begun to reverse this latter trend, but the backlog is significant. In addition, Berkeley is building a capacity to use digital technology to enhance teaching while maintaining current pedagogical standards and the student experience. Berkeley has established a resource center exclusively to enable us to benefit from the rapidly changing developments in this area, including the use of hybrid or combined residential and digital learning. Berkeley was also the first university to join Harvard and MIT to establish EdX, which is a massive open on-line course (MOOC)

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[2] Berkeley placed first in terms of fundraising if one focuses on universities that do not have a comprehensive medical school. See http://chronicle.com/article/Sortable-Table-Money-Raised/137399/.

platform designed to provide online courses globally for free, or at a low cost, combined with a serious effort to do research on the effectiveness of this new form of teaching.[3]

The overarching purpose of the preceding paragraphs is to demonstrate that Berkeley has weathered the past series of state cuts remarkably well by taking proactive measures on both the revenue and expense sides. However, as explained in part 1, the current policy mix means that about 73% of our future revenue base will be "constrained" due to decisions made off campus. To recap, state appropriations may increase by about 4.5% annually over the next four years, which results in a 0.6% increase in total university revenue over the period; student fees have been frozen; and we assume, perhaps optimistically, that Berkeley can secure a larger share of the diminishing federal and state research funding pool to hold this source of revenue constant in nominal terms.[4] Yet, with costs sure to increase for reasons beyond our control – inflation, labor contracts, healthcare costs, pension fund contributions, etc. – we estimate that a significant structural deficit will begin to emerge at Berkeley. In short, the path we're on is not sustainable and time is not on our side. Something has to change.

While none of the solutions I present below for discussion are easy (or can be fully developed in this article), the intention is to stimulate an informed debate about real alternatives to meet goals that I believe to be widely shared.

First, one of the main drivers of the increase in Berkeley's cost base is related to benefits, primarily the cost of the pension and health plans. The employer's contribution to the UC system pension program increased from 10% of salary costs last year to 12% this year.[5] Under current policies, the contribution rate will increase to over 18% of salary costs in order for the actuaries to consider the pension plan adequately financed. The need for such a large increase in contributions arises due the extended holiday (20+ years) that all three of the contributors (the employer, the employees and the state) took due to a temporary overfunding of the plan. If no change is made, we estimate that Berkeley's operating costs will increase by more than $120 million by 2018 due to the pension contribution rate alone.

Currently, the state has decided that it will not reinstate its past practice of meeting part of the pension plan costs separately from its contribution to the UC operating budget.[6] This is the case even though it does so for the other two parts of California's three-part

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[3] As a consequence of joining EdX as its third member, and the contribution we have made to the software platform, Berkeley chairs the EdX consortium of member universities and has a non-voting seat on its board.

[4] Obviously, less research funding will imply lower costs, but there are very real fixed costs associated with developing a research capacity (building and faculty), and there are overlaps that help support the undergraduate program.

[5] Neither the contribution rate nor the benefit plan is determined at the campus level.

[6] Both employees and employers reinstated their payments. The impact on the campus budget is estimated in the preceding paragraph. Given that the base salaries of most employees have increased in only two of the last five years, and by less than the rate of inflation, the impact has been a decline in their real net salary.

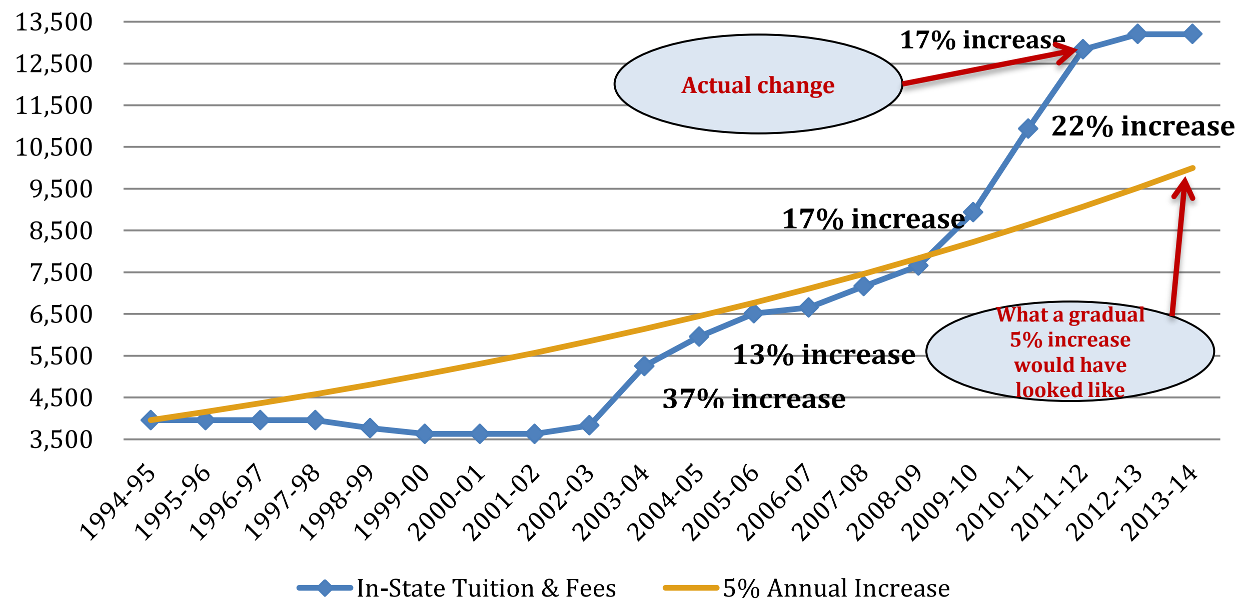
higher-education system (the California State University and California Community College systems). On the benefits side, a reform was enacted 5 years ago that resulted in some reduction in costs. Another review may be necessary.

Second, the state has made it clear that it will no longer issue bonds to finance the capital costs associated with meeting the seismic challenges represented by older buildings or the creation of new and necessary infrastructure to continue conducting first-class research and teaching. Consequently, Berkeley is moving toward integrating the capital costs of its infrastructure into campus and department budgets, as part of its wide-ranging budget reform effort. But, every dollar spent on debt service is a dollar not spent on meeting the operating costs of teaching and research or in containing tuition. This situation is clearly not sustainable.

Third, the Regents followed the governor's lead and decided to freeze student tuition and fees, a source that accounts for 28% of our total revenues. While there are those who believe this policy benefits our low- and middle-income students, they overlook the degree to which financial aid protects the needy and the extent to which these very students stand to be harmed by a start-and-stop approach to tuition hikes in the future.

Figure 8 below shows the past trajectory of in-state undergraduate tuition since 1995. It also shows what tuition would have been if tuition had been increased at a steady and predictable rate on a yearly basis. The "steady rate" was picked to yield the same amount of total revenue over the period. In other words, both lines generate the same amount of revenue for the university over the period.

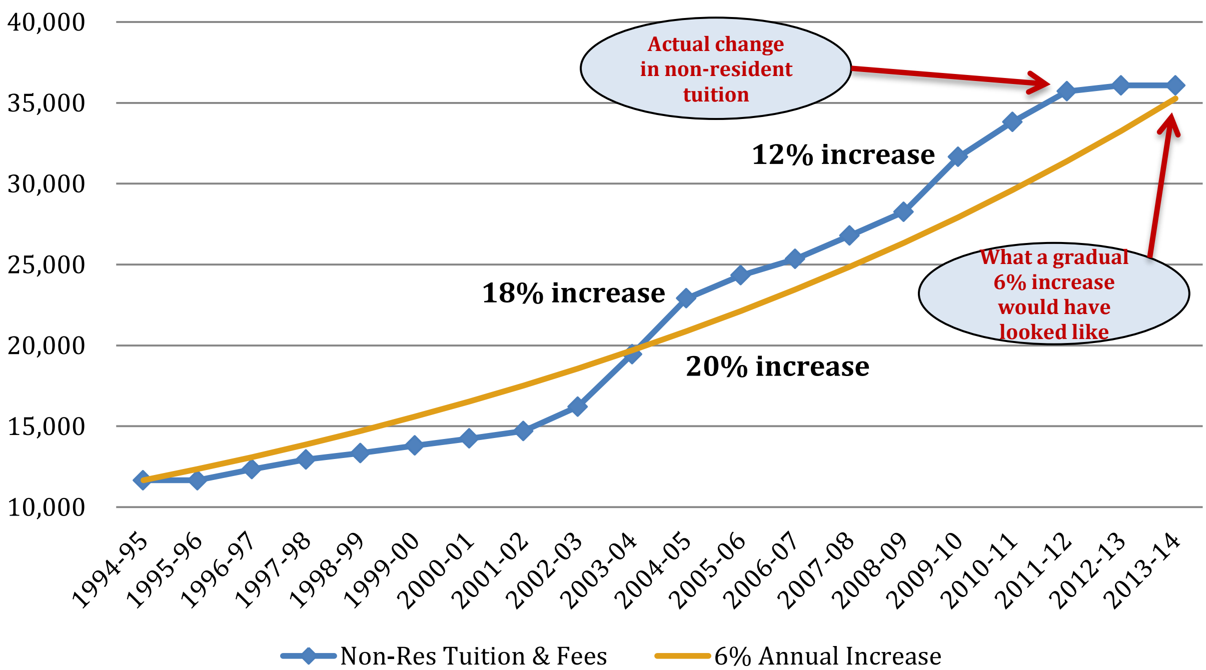
Figure 8. Comparison of In-State Tuition and Fees and 5% Annual Increase



What this shows is that the past process of determining student tuition and fees has resulted in an outcome that not only generates massive uncertainty, where flat periods are followed by large increases, but it also eventually leads to a higher level of tuition — in essence, a higher end point. Students, their families and the campuses are clearly worse off. We are aware that the idea of a more regularized and predictable schedule for tuition increases has been discussed in Sacramento, and believe that the time is ripe for more detailed analysis and discussion of this reform.

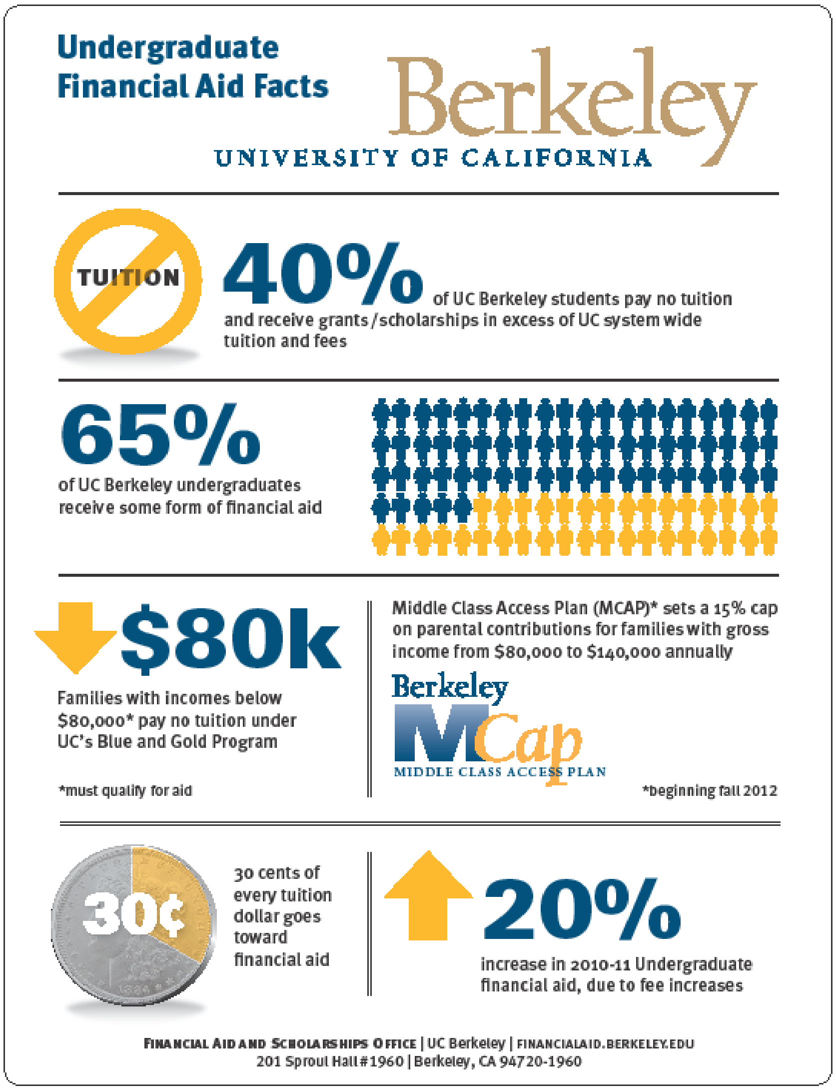
Figure 9 shows the same for out-of-state student tuition. The same result holds, but the difference between the two lines is less, as is the volatility. Perhaps this is because out-of-state tuition is a less sensitive subject and thus can be left to track more closely the actual change in costs of providing the desired education.

Figure 9. Comparison of Non-Resident Tuition and Fees and 6% Annual Increase



Furthermore, freezing tuition does not assist those from low- and middle-income families. The financial aid system at Berkeley protects families with incomes up to $140,000 from future tuition increases (assuming that family incomes do not rise).

- Due to the combination of Pell/Cal Grants and UC's Blue and Gold Program, families with incomes below $80,000 do not pay any tuition. If tuition goes up, they are unaffected.[7]
- In addition, last year Berkeley introduced its "middle-class action plan" (or MCAP; see data below), which is designed to address middle income families not supported by those need-based programs. Under MCAP, Berkeley guarantees that a family will only pay a fixed proportion (15%) of its family income for tuition while attending Berkeley. Thus, for those families that earn between $80,000 and $140,000, their family contribution does not increase even if tuition does.



[7] Freezing tuition helps the state (and federal) budget by reducing the increase of the cost of Cal (and Pell) grants. However, this is not the rationale that is used to freeze tuition.

It is important to understand that the current financial aid system redirects about one-third of tuition and fees to pay for those undergraduate students from lower- or middle-income families. There is a redistribution from higher-income and out-of state students to assist those less fortunate but just as capable. This is one of the ways in which Berkeley fulfills its public mission. Thus, those who argue for reducing the number of out-of-state students should reflect on the financial implications of this decision. They should also reflect on the implications for the diversity of our student population in an age of increased globalization.[8]

At the graduate level, about 60% of the graduate fellowships budget is funded from return to aid on graduate tuition. These funds allow us to compete successfully for the best graduate students from all over the world, which in turn has a material impact on the quality of the research that Berkeley can perform. If there is no increase at all for long periods of time it diminishes our ability to compete. When this is coupled with the impact that "sequestration" has on the number of student instructors that receive funding it should be clear that this is not a viable strategy.

Fourth, Berkeley can generate additional revenue and increase efficiency further. While great strides have been made, or are under way, more can be done. To realize this potential, Berkeley will need to become more nimble and more ready to seize those opportunities that are consistent with its fundamental mission, values and purpose. But this requires two changes:

- We must be ready to constantly evolve and adapt, to question the status quo and to accept that the past public policy consensus embodied in the Clark Kerr Master Plan of 1960 sadly no longer exists. While the passage of Proposition 30 is encouraging (as is the avoidance of further cuts in state funding that its defeat would have triggered), it seems likely that the state will not go back to providing the level of support that it did 20 or even 10 years ago. It seems equally probable that anticipated increases in state funding, although welcome, will not come close to meeting future needs.
- More decision rights need to be delegated to the campus level. We are fully prepared to be held accountable for output-based measures of performance, but to be held accountable we must be able to make decisions in a timely way based on our detailed understanding of campus level realities and opportunities. Governor Brown made the following statement about the need to let schools make decisions if they were to be held accountable:

This year….. I ask you to consider the principle of Subsidiarity. Subsidiarity is the idea that a central authority should only perform those tasks which cannot be performed at a more immediate or local level. In other words, higher or more remote levels of

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[8] About 20% of Berkeley's undergraduate student population is from out-of state, compared with 36% at Michigan (http://provost.umich.edu/college_portrait/2012/index.html) and 31% at Virginia (http://avillage.web.virginia.edu/iaas/instreports/studat/dd/enrl_va.htm), two public universities that are often compared with Berkeley — but usually without reference to this point.

government, like the state, should render assistance to local school districts, but always respect their primary jurisdiction and the dignity and freedom of teachers and students.

Subsidiarity is offended when distant authorities prescribe in minute detail.
--Governor Brown, State of the State, January 2013

In conclusion, the current set of policies do not put Berkeley, or the UC system, on a sustainable financial path. Over time, these policies and the associated governance structure will lead to a decline in both the access to, and excellence of, a Berkeley education. This is a tragedy, given the societal and economic gains that result when there is access to a vibrant and world-class higher-education system and research capacity. Changing this trajectory will require a change in policies and practices. It will require a serious debate, informed by facts and coupled with a commitment to implement difficult reforms at many levels.

Such a strategy requires all parties — the state, the Regents/UCOP and the campuses — to play their part. Each must take responsibility for implementing those reforms that fall within their remit and be accorded the freedom to take the necessary action. There is no single silver bullet. We require a comprehensive strategy, which reflects clear priorities and is linked to meaningful campus-specific measures of performance.[9]

I also think the nature of the debate has to change. In addition to making difficult choices, we should recognize and build upon those parts of the higher-education system that work well. The UC system is seen as a tremendous accomplishment that other states and countries would like to emulate. History will judge us poorly if our collective inability to take corrective measures results in its decline. Time is not on our side.

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[9] The most recent effort of the state to define performance metrics at an aggregate level for a higher education system that is highly differentiated level proved unsuccessful. This is not surprising. The three parts of California's higher education system are very different across the board, as are universities within the UC system. To treat the parts of either group as the same is destined to produce deeply sub-optimal results.