

# ACADEMIC AFFAIRS/PROVOST'S OFFICE

## HUMPTY DUMPTY AND CSU: PIECING PARTS TOGETHER

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Northridge

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2007

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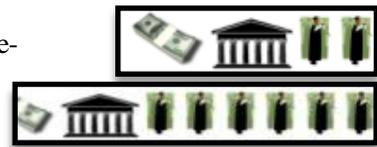


## HUMPTY DUMPTY AND CSU: PIECING PARTS TOGETHER

The CSU faculty contract should make us think about finances broadly. The issue is not that the settlement is undeserved; to the contrary. However, the contract exceeds the funding in the Compact with the Governor. That is not unusual, and that is the point. For years, unfunded mandates and funding below cost have bedeviled CSU. Examples abound. We must be ADA compliant on the web; we slice elsewhere to pay for this. We need up-to-date information systems; we re-allocate to support the changes. Contracts, benefits, and cost of living accelerate. Re-allocate! Humpty CSU is rocking on the wall. We can wail, we can blame, we can pray. Alternatively, we can seek new revenues and align incentives with them. To keep ahead of inevitable re-allocations and inflation, we need to generate—through a combination of sources—the equivalent of a 10% fee increase (\$250-\$350 per FTES) each year. We can surpass this goal if we accomplish two tasks. We must withdraw hope from the general fund that no longer subsidizes higher education sufficiently; we must invest our hope in more entrepreneurial activities. We must disentangle learning from those of elements teaching and technology that consume time and resources unproductively.

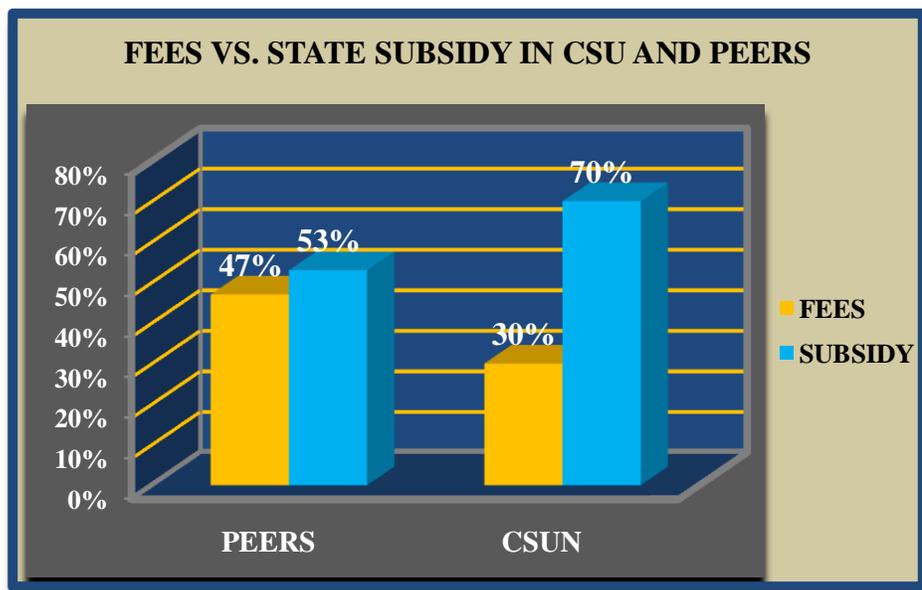
### FEE, FI, FOE . . .

Re-allocations ignite chain reactions. Funds for personnel in general are re-allocated to increase salaries for individuals in particular. As a result, productivity, expressed as full-time equivalent students divided by full-time equivalent faculty (FTES/FTEF), increases. Usually, so does the percent of part-time employees—those with lower wages and benefits than permanent employees. Add the occasional budget cut, as the state accommodates either changing priorities or diminished revenues. Unless we think creatively, pressures on productivity make an individual person’s workload intolerable. Money matters master us; we no longer master them.



Why is Humpty rocking unsteadily? Since 2004, we have lost \$12 million out of a \$120 million budget in Academic Affairs to cuts. The recent contract re-allocates \$12 million to fund what the Compact did not anticipate. The higher education price index

suggests that we lose 3% of purchasing power—say, \$4 million—each year. All this totals nearly \$30 million—25% of the division’s budget. The chart to the left shows the difficulty if we expect the state to help a lot more. California provides more general fund dollars than other states do to their MA-1



universities. Given the pressure on the budget for transportation, health care, prison, and K12, the state will not bless us with a windfall. Moreover, neither CSU nor CSUN has behaved like Scrooge. No bags of gold coins are wedged under the floorboards. California like the nation has become a fee-for-service society. In CSU, we remain reluctant to use fees strategically. A fee increase is the emergency lever that we yank to avoid catastrophe.

### 10% SOLUTIONS?

Because of the volume of full-time equivalent students (FTES), other sources for revenues cannot trump fees. A 10% fee increase in each of two years would add \$11 million. (My figures are illustrative, not



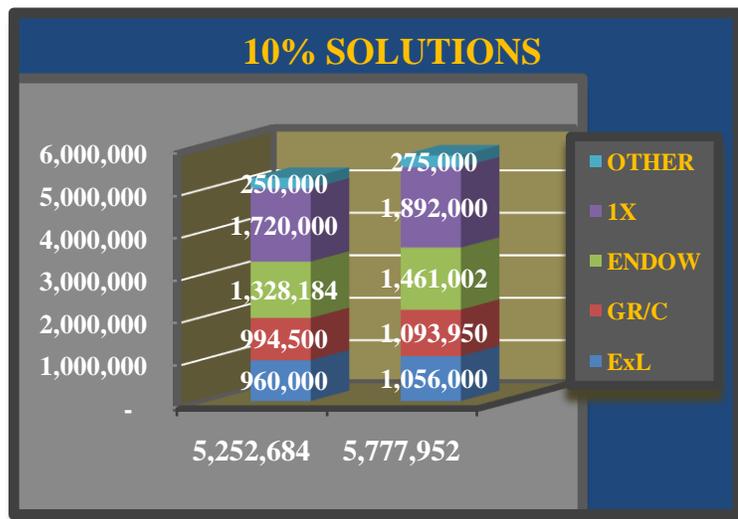
exact: 26,600 FTES x (\$7,800 general fund+ (66% x 3,000 fee)), with 33% of fees set aside for aid.) An average of a 5% increase each would require supplementary efforts.

These efforts can bring significant dollars to campus. They must be encouraged, but they do not trump fees. Take Extended Learning (ExL), for example, in the next chart. It generates about \$12 million annually. However, most of this supports operations and faculty salaries. Perhaps 8% can be funnelled through state trusts, to benefit the general fund. These dollars are

valuable because they are unrestricted, undesignated.

Likewise, grants and contracts generate \$17 million each year. Most of that underwrites the direct expense of the projects. Nearly 13% supports indirect costs that CSUN incurs—operations, logistics, support salaries—on behalf of these projects. Left for general distribution is nearly 45% of this indirect amount, \$1 million. Designated for research, but not limited to a specific project, these dollars are helpful to general activities.

Advancement assists. Still, it has limits. A university spends fourteen cents to raise a dollar. In money, as in nature, it takes energy to make energy. Endowed reserves are subject to this law. One spends interest (@4%), not principal. Principal grows to the extent that some interest returns to it (@2%) and is not paid out to programs. Some interest pays managers (@2%) who invest principal profitably, we pray. Also, few endowments are unrestricted. They often fulfill purposes that do not align with basic needs that are unmet by a diminished general fund. So, a \$52 million endowment, like CSUN's, typically yields about



\$1million accounting for the costs, commissions, and proportions for non-academic and restricted uses. Similarly, we can raise one-time (1X)—that is, non-endowment—funds in the range of \$10 million each year. But the yield that is both unrestricted and focused on academic programs follows a similar pattern. The cost of advancement work and the tendency of donors to focus on lectures, scholarships, and physical projects typically drive 80% of these funds to purposes other than basic needs unmet by the general fund.

When one accounts for another \$250,000 from University auxiliaries and licenses, CSUN can realize \$5 million annually for basic needs unmet by general funds. A healthy increase of 10% raises this amount by \$500,000. That is not negligible, but not a substitute for fees. Market critics complain that universities can secure solvency if they court corporate investment in programs that yield job-ready graduates. But the hot pursuit of such support is no excuse for a hit-and-run on the university’s mission. Direct activities of grants, advancement, and extension must supplement, not sap, the general fund; this fund enables the mission. A crucial measure of the utility of these activities is the amount of indirect and/or unrestricted funds from the activity. Otherwise, to receive is but to give—not a winning strategy.

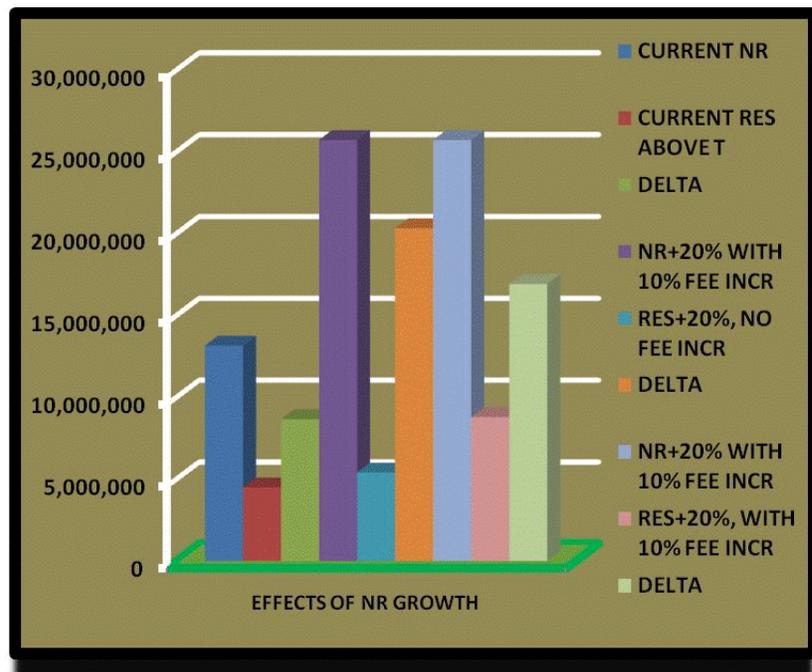
### NON-RESIDENTS

Universities like CSUN come late to advancement, grants, and contracts in a market in which Bruins and Trojans dominate. We lag in critical infrastructure. In research universities state of the art labs are staffed with graduate students and technical assistants. Federal and corporate funds underwrite big science. In turn, big science produces marginal gains (indirects) and spins off licenses that enrich the universities. As indicated above, we must be intentional and pragmatic about our efforts in these areas, neither inflating prospects nor disparaging efforts.

But we also have other routes to follow. I turn to fees again because of volume. While I focus on non-residents, a similar argument can be made for niche graduate programs, if indeed fees (and general funds) are allowed to exceed cost. Else, we rob from Peter BA to educate Pauline MBA.

There are strong socioeconomic arguments for courting non-residents, especially for programs in which CSUN has capacity. Recently, the state withdrew general fund support for non-residents because CSUs keep

\$350 per credit, a surcharge that is not applied to residents. Yet K12 is unable to pump sufficient math and science talent into the pipeline to colleges and to the professions. At the same time, the biotech corridor in San Diego, Silicon Valley along the Bay, and the digital media grid in the San Fernando Valley have



rescued California from dependence on a military industrial complex that withdrew soon after Vietnam. Immigration sustains the industry, capital, and tax revenues that underwrite the public good.

Besides filling up programs and plugging gaps in the economy, non-residents provide a financial bonus. 1,500 non-resident FTES bring in \$9 million more than the same number of residents in excess of the state's target for us. A 20% surge in NR enrollment with a 10% fee increase annually nets \$ 20 million over similar growth in residents, if the resident see no fee increase. The difference reduces to \$16 million when residents have a 10% fee increase. The investment required—the energy to produce this enrollment—is the amount of resident fees that would have supported teaching anyway—about \$3,000 per FTES. A non-resident strategy can boost CSUN funds in the short-term, and continue to internationalize the campus. Hollywood and Vine become Valley and Globe.

### INCENTIVES

Such solutions are controversial. For instance, academic thresholds for non-resident admission must satisfy the legitimate concerns of faculty. There is a paradox, which other states like Michigan have accepted. Funding imbalances that are internal to the state are remedied by a differential charge to applicants who are external to it. Solvency strains the quality of equity. Also, we must align faculty incentives with these efforts. Would it be likely that any university would garner unrestricted funds from grants, contracts, etc., if these activities did not also enrich salaries as well as research? At CSUN the trade-off works like this. Two-thirds of the full-time faculty who do extra work earn extra salary—nearly 11% of the base salary of the entire full-time faculty. Such alignment invites criticism that either extra work dilutes focus on core work, or that the capacity for extra work shows that, normally, faculty are under-worked. But unless the tooth fairy delivers bags of money to CSU or unless we can legislate change in human motivation, such criticisms lead to dead-ends.



Universities rarely align incentives for students with increases in fees. It can be done. At Cal Poly SLO, students voted for a substantial fee increase, 10%-20% above the current fees depending on the college major. The fees were routed to the colleges and departments that generated them. Student committees, advised by faculty, determined what to spend on. Common sense and the greatest good won out. Students calculated that \$300 in fees per year (\$1,200 over four years) could generate dollars to open sections and quicken time to degree. Fees, room and board, books, and loss of work income easily surpass \$10,000 for a semester. SLO students pay extra fees because fees pay!

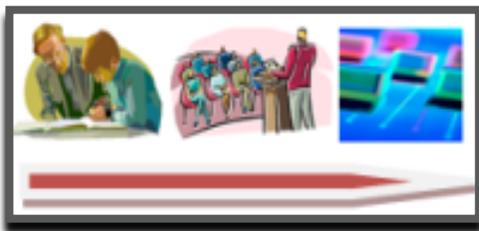
Have we considered other ways to align incentives for students with fee increases that can expand academic offerings? For example, imagine a course in which each year 2,000 students spend \$50 each on textbooks. That course could be English, Math, communications, etc. Is it possible for CSU/N faculty to work together on equivalent e-texts that departments agree to require at \$25 per head for access to a restricted web site? Students save half the cost, but the department generates \$50,000 in unrestricted trust dollars, if CSU codes allow. In turn, faculty—as teacher-scholars in Boyer's mold—can gain professional credit for published work, if it is peer reviewed. (See links from CIELO for practical examples.) Are the revenue and credit worth the effort? Well, are there many better ways to address the learning needs of our students than to tap the knowledge of professors who are situated here, know the Valley, and understand local K-12?

Consider the financial implications for a student. On average, a student spends \$1,500 on transportation to CSUN. If hybrid courses reduce one-round trip each week, a student could save \$500 in a year. Reduce book costs (\$1,200) by 20%, and a student saves \$240. If CSUN uses fee increases, in part, to reduce total cost for a student, fees can pay here, too. Right now, the CSU project on the Digital Marketplace and the effort to start up hybrid courses are working on the scaffolding—the web architecture, policies, and technologies—for such an approach. However, the technical system is not the solution. Cultural change is. Can we create new funds instead of react to cuts? Can we align personal incentives with these aims, so that neither students nor faculty feel that CSUN has fleeced them for the gold?

### **TRANSFORMATION: FROM WORKLOAD TO WORK EFFECT**

Earlier, I mentioned that pressures on the budget, unless countered creatively, make workload intolerable. In CSU, as across the nation, student-faculty ratios and the proportion of temporary faculty have climbed since the late '80s. Social costs have devolved upon the states, leaving less for higher learning. In addition, rising benefits and operational expenses for information technology, fuel, and various mandates have squeezed academic program budgets. At the same time, challengers like the University of Phoenix have entered the market. They use mass marketing, flexible offerings, liberal standards, and competitive pricing to wedge into higher education's supply of older students.

Arthur Levine has argued that mature sectors in the economy like public higher education are burdened by custom and cost over time; they do not respond deftly to challenges. Do we want to go the way of the U.S. railroad and car industries? Battered by the increasing cost of materials and labor, as well as by price-slashing international competitors, the auto industry has teetered on the parapet for several decades. Several Humpties have dumped over the side. This danger has darkened an industry that, despite its intransigence on fuel, has used technology to gain productivity without plunging labor back into satanic mills.



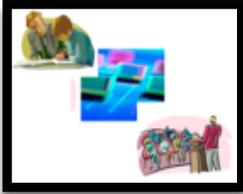
Academic programs have capitalized on technology to advance research. In the main, however, academic transformation through technology has not affected the standard classroom, excepting the occasional powerpoint, video, or supplementary lab at a bank of computers. Indeed, according to the folkways of the university, the trend from an idealized mentor and tutee, to the sage on the stage, to

Lyotard's network of teaching computers is a nightmare from which some of us hope to awake.

Our relationship with technology is paradoxical. We want teaching unchanged, but we want gadgets that always are changing. We cherish technologies as if they were crystal balls. Peering into them, we seem to go virtually anywhere anytime without leaving where we are or changing what we are doing. We are addicted to costly upgrades because we believe that delivering more information faster transforms learning. Yet we resent transformation. Witness our hostility to the routinized scripts of information systems that cannot accommodate unique practices. That resentment both underscores the individualism and localism that distinguish the American university and exposes its vulnerability. Freed from central control, innovation can thrive, but so can archipelagos of disciplinary and pedagogical tribalism.

Over the ages repetition has conferred on the routines of pedagogy the aura of inviolate rituals. No longer are we robbed when we teach. But we still stand behind the pulpit of pedagogy. We must recognize that pedagogical rituals are routines. Long ago, scholars adapted liturgical routines to secular education. Now we need to subject our routines, however hallowed, to reformation. Why? For the sake of students, professors, and the university.

To gain time for professors to reflect, create, and, yes, help to run the university (which many do selflessly), we must be iconoclastic and analytical. We need to redistribute teaching time. This approach places more responsibility for some learning tasks on students. Students can accomplish virtually and



independently some tasks that are routinized. Technology increasingly can be designed to organize and evaluate such work. However, face-to-face interactions between teacher and learners should remain the core of pedagogy. Such meetings should be viewed as clinical transactions between professional and learner/subject. The meetings should focus on the interpretation of complicated matters and the diagnosis of learners' results. Such intense interaction requires active conversation. But not all teaching and learning require such intensity.

Of course, the large lecture depends on the distribution of tasks to lecturer and discussion assistants. Resentment against academic transformation by technology adds a chapter—for some—in the longer book of educational declension. Right now, 2% of CSUN's classes run with more than 100 students. There are few large classrooms on campus. Thus, should we want to resort to more large lectures in order to free up the time of faculty who otherwise would teach one of multiple sections of a course, we are stymied. However, if we create virtual space and time to replace the actual lecture hall for a proportion of the week, then we recycle space over more courses. Both the economics and pedagogy of this hybrid can work, but the logistics should not be underestimated. In a lecture course, a professor whose annual salary and benefits amount to \$108,000 for three credits over 15 weeks can teach, say, 25 students for one-ninth of his salary, about \$12,000. Were she and nine colleagues to teach 250 students, the cost would be approximately \$120,000, excluding operations. In the traditional lecture model, this professor and ten graduate assistants could do the job for perhaps 40%-50% of that amount.

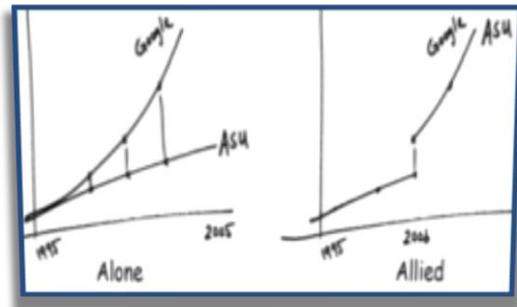
With fewer graduate students than at an R1 and with high demand even for small rooms, CSUN has problems implementing satellite sections that graduate students teach proficiently. So, the questions then become:

- Can we design courses that reserve lecture time for essential material that charismatic experts convey? That is, can we redistribute teaching so that professors gain flexibility in time and location? Can we refashion pedagogies such that we re-allocate routinized learning to programs in the learning management system (LMS)?
- Can we then use synchronous and asynchronous groups, led by graduate students and lecturers, that replicate the function of discussion sections?
- Can we routinize self-help and quizzes so that students can pace and assess themselves before we assess them? In a sense, this re-allocates elements of learning from the teachers' responsibility to the students' accountability.
- Can we do this in such a way that we can recoup 20% of large class space without overwhelming the scheduling office with demands for satellite sections?

- Can we recoup at least 25% of the cost of multiple sections taught by multiple professors?
- Would this leave sufficient margin for technology and technicians, given that cost would be spread over many instances of such a hybrid model?
- Could we achieve marginal savings of \$5,000 to \$10,000 in each such effort? That would make the yield from \$100,000 to \$200,000 for a department.
- Through the appropriate uses of technology, can we make teaching more consistent across otherwise disparate sections of courses so that we improve learning and course completion?

Such innovation will be wasted if we do not establish the elements in an LMS that we use most often. Gimicky add-ons that we rarely use are like leather seats and chrome hubcaps. They lure us into purchases that do not increase the miles per gallon.

Need this be so? ASU has partnered with Google Apps to bundle email, a web publisher, and collaborative utilities. The package relies on advertising, not fees, for revenue. ASU has wagered that Google will be more stable and more innovative than ASU could, if it ran all this in-house. What is the trade-off? As big as ASU is, it will not dictate changes to Google. We must choose an LMS carefully. Ought we to buy and scale up leading-edge or user-tested technology? Will service suffer if we rent or subscribe, not buy? Do we trust that off-site partners will guard our data and survive economically?

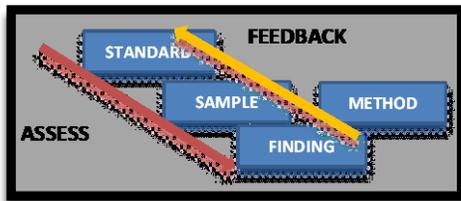


Because budget and technology support teaching, they must be reviewed together. Resources, faculty morale, and student learning hang in the balance. We must understand the difference between add-ons and transformation. Then we will be able to re-allocate to, not from, the general fund so that we can learn how to use the full capacity of our systems to enhance teaching and learning.

### **THINGS FALL APART; WHY THE CENTER CANNOT HOLD**

Higher education frustrates because funds do not match demands, and demands do not align with incentives. Some say it is not run like a business. The opposite is true. A university such as CSUN is a conglomerate of competing product lines (majors), bolted to a generic chassis (GE), vaguely subscribing to a common brand (Matador), and inured to government subsidies that no longer suffice. Faculty and administrative leaders walk around the rusting enterprise, perplexed, ducking the odd mandate that policymakers heave over the fence.

What to do? Reason will never re-align funds, demands, and incentives completely. Reason is not a match for habit. But we can make an inroad if we subscribe to “less is more.” In funding, we accomplish this by focusing on those few efforts that, in our context, are likely to produce large results without immolating mission and personnel. In assessment we do so by focusing on effects that, like well-chosen pieces of a puzzle, indicate a large picture that we can surmise without filling in laboriously.



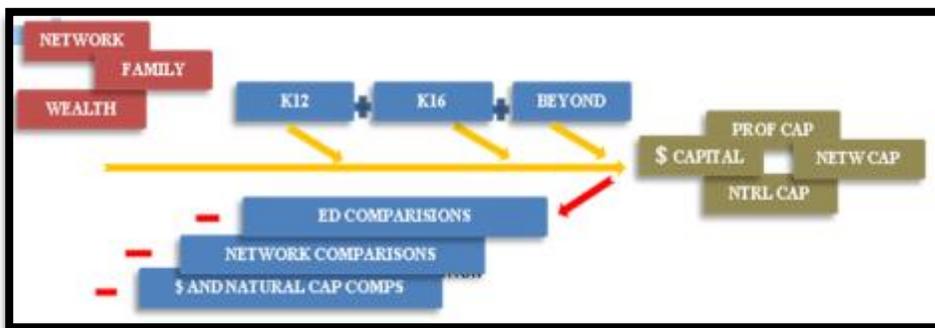
Our current model for assessment is admirable. Using mainly home-grown methods, we induce from samples how well our students have learned what we presume to have taught. There are a few value-added variations that measure the learning gained over time rather than performance against a stipulated standard. Since these efforts (more than 50)

occur mainly at the program level, we have difficulty determining a university effect. Imagine this diagram repeated 50 times, with each instance then shuffled into an untidy pile.



Obviously, WASC, CSU, and accrediting groups pressure us this way. WASC at least gives lip service to university effect as an aim of assessment. Once we account for the sources and levels of support, as well as the preparation and social context of students whom we admit, we can isolate our influence on what students learn and what they do with the learning.

We can chart these effects either against our past effects and/or against peer institutions—with equivalent characteristics. For the former, the benchmark is the past; for the latter, the benchmark is the peer mean.



In the chart to the left, the red boxes indicate the students and backgrounds, while the green represent the capital graduates leave with—professional, financial (\$), natural (health, life style), and network (social

capital)— and presumably “invest.” Above the gold line are the segments of education that CSUN students progress through; each stage adds to or subtracts from the final capital. Below the gold line are the elements we discount (see the red symbols), as we isolate CSUN differentials.

A few examples can illustrate how the model works. The point—to be sharp—is together evidence about how well we operate. Do we improve as resources change, as students change? Have we identified “improve?”

- Nationally, college graduates have been shown to earn about \$1.7 million more, over a lifetime, than high school graduates. Do we match up? Do taxes that they pay over a lifetime correlate in any way with investing fees and general fund in education at CSUN?
- Is there quantifiable evidence, either direct or indirect, that CSUN graduates have a greater effect on clients and projects through their jobs than non-CSUN graduates, in those professions like teaching, accounting, engineering, nursing, and social work in which we specialize and for which there are identifiable academic pathways? How do graduates fare on licensure examinations, as early indicators?
- How well does the institution show, through the performance of its students on assessments like NSSE and CLA that tease out attitudes towards learning and critical thinking skills, respectively?

Do these results correlate with campus experiences in organizations or with pathways through and key assessments in GE?

- Employers regularly cite the importance of critical thinking, writing, speaking and group work for job success. For those majors that do not track directly into career paths, what is the evidence that they add value to these skills as they are acquired in GE? Do graduates find these skills useful, in fact; do they credit CSUN majors in this preparation? (Underlying these queries is the assumption that we would use resources more effectively if we assessed common outcomes across the arts and sciences, instead of testing for canonical knowledge; sampling would be easier and methodologies could be less idiosyncratic, more subject to scrutiny from a variety of perspectives.)
- Are such indicators linked to levels and sources of resources? Do performances fluctuate with resources and/or the preparation of students?
- When we account for those who drop out, how do the constant dollars per graduating FTES, after six years, compare with peer figures and/or previous CSUN data?
- What are the relative costs and benefits of investing in the various ways of supplementing the general fund?

Policymakers and the public perhaps prefer one number that registers effectiveness, much like the scorecard that a figure-skating judge displays at the Olympics. We are too complex for that. Still, less is more. For the public, a series of symbolic indicators, which are scaled appropriately, can indicate trends without obscuring details. A chart, like the one on the right, can track major fields, symbolize trends clearly, explain the trends as percents in change, and present a current value. Dashboard indicators like these enable rapid integration of resources, costs, and effects.

We intuit a relation between resources and effectiveness. Do we want to do something about that? If we do, how do we track the effects of changes? How do we display them so that people not only hear but see that we endorse a culture of evidence?

INDEX	SINCE 20XX	% CHANGE	CURRENT
GEN FUND	↑		
FEES	↑		
ENTRPRNRL	↑		
GRAD RATE	↑		
GEN F PER FTE GRAD	↑		
CLA VALUE ADDED	↑		
NSSE			
SATISFCTN	↓		
% ITEMS TO STNDRD ON ASSESS	↑		
LIC PASS %	↑		
SAL 10 YR OUT, CNSNT \$\$	↑		
JOB EFFECT	→		
SOCIAL CAP	↑		
HEALTH PRAC	↓		

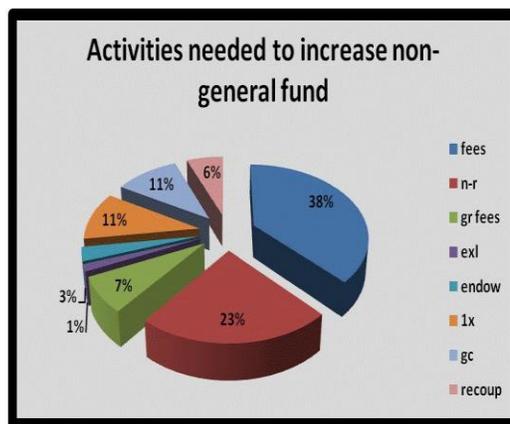
### EIGHT STEP PLAN FOR SUCCESS

We end where we began. With Humpty. We can sing-song through the nursery rhyme. We can incant Yeats' lines about gyres and centers not holding. We can diagnose that the the world has shifted but that our paradigm in higher education lags. So what? Insight is meaningless unless we do something with it. We must be visionary and pragmatic at the same time.

Were FTES to remains the same for ten years (it had better not!), a 10% fee increase in each of ten years would yield more than \$45 million. We might not agree on a fee increase as the sole answer, but the \$45 million is necessary. How do we get there? We must act strategically, following these eight steps:

**STEP 1.** We CSU and CFA (if not the lion and the lamb, then the donkey and the mule) must lobby for at least an annual 5% fee increase, with increased tolls on degrees like the MBA that contribute to high lifetime earnings. We could gain \$25 million to \$30 million through such efforts. Increasing fees increases class availability. That decreases time to completion. To get these constituencies to agree will require open dialogue on budget plans. This effort must begin campus by campus.

**STEP 2:** Were we to increase non-resident FTES by 20% over ten years and their fees by 10% annually, we could add well over \$20 million. This has been a winning strategy—out-of-state-tuition—for many R1s. Our location in LA, surrounded by a network of first-generation friendly community colleges, favors this approach. We can implement this without system approval.



**STEP 3:** ExL has identified a winning strategy in off-site professional programs, and it is going on the international market with several of them. They can double earnings, adding another \$1 million before ten years pass. We must be as opportunistic as the entrepreneurial schools, but with much better quality control.

**STEP 4:** A robust but reasonable plan to double the CSUN endowment over ten years could realize \$2 million more in yearly payouts. Advancement must lead the colleges in such an effort, a precursor to a more substantial campaign. We also must grow one-time gifts by no less than \$5 million. Annually, funds raised should exceed \$27 million. This is possible. Our best year in fund-raising neared this mark. The campus opened fifty years ago. Its graduates, therefore, are entering the stage when they distribute wealth. It is the right time to raise funds.

**STEP 5:** We should be able to pump up grants and contracts, by \$7 million to \$10 million each year. This will produce another \$1 million in indirect reimbursements. We know this increase is possible. We have new faculty. We have jump-started with matches, released time, and seed funding; their vitae show that they will thrive. The high water marks for grants and contracts are at least \$5 million more than the average return over the last three years. Growth in these areas, as in ExL has a natural incentive. Faculty can increase income while augmenting disposable funds for their departments and colleges.

**STEP 6:** We should set a goal of reducing overall costs—travel, texts—to students by at least 10%. Hybrid courses and accessible, faculty-developed texts could be the means to this end. The courses reduce travel to campus; the digital materials bypass middle booksellers. Through user fees, we should recapture for CSUN 50% of the savings, providing a win-win of at least \$2 million to \$4 million for students and CSUN. Right now 10% of CSUN FTES results from on-line experiences; and we have not mounted a concerted effort. Doubling this is certainly possible if we try. The saving in faculty time and the gains in instructional consistency are motivations, too. Faculty and administration, working with students on fee committees and with each other on curriculum and budget, can bring about these changes.

**STEP 7:** We must knock technology out of the saddle and mount up ourselves. Enthralled with newness, we shy from radical change. We add gadgets that increase our routes to information but that decrease the funds available for instruction. Administrators and faculty technology committees must channel

expenditures toward those technologies that abet basic change in teaching and learning. Right now, we teach 10% of total FTES in virtual and hybrid formats. Doubling that amount to 20% over ten years, we can minimize our environmental footprint on traffic and campus space. The redistribution of teaching into separable activities can uncouple faculty from dedicated spaces and times, provide consistency in formats across multiple sections, and clarify what students must learn on their own, apart from teachers.

**STEP 8:** Successful change requires ongoing assessment. If we do not monitor performance, then we do not have meaningful information to guide us. Right now, most assessments extract the evidence of students' mastery from sample writing, tests, and performance. In other words, they are direct assessments that presumably align with curriculum and the way that we teach it. However, learning is embedded in institutional structures—classrooms, technological formats, and teaching strategies, as examples—that, at the end of the day, have costs. If we want to learn about the cost effectiveness of our approach to learning, and if we want to discover the social impact of what students learn, we must transform assessment. New measures must reveal the differences between entry and exit knowledge to show the value that we add. Factoring costs will allow us to see where and to what effect we spend. Then we should try to link learning to the social effects of graduates, when feasible, through indirect appraisals like surveys and income estimates.

In effect, we ought to define knowledge not as an “is” but as a potential “does.” Unleashed in action, students' knowledge produces results. We must charge committees like Educational Policy and Academic Resources to work with the assessment representatives. Together, they must narrow the range of assessments and focus on the links among teaching, learning, and value added to society.

**STEPS 1-8** will increase non-general fund resources by considerably more than \$45 million. Remember that this sum is the yield of much larger accumulations of capital over time. \$1 million added to the annual payout from the endowment implies that the endowment has grown by \$50 million--\$5 million in each of ten years. Non-general funds almost will match general funds after ten years. After twenty years, we will be much less dependent on the state. University autonomy is not a gift. We must earn it, and we must preserve it.