Cornell Today and Tomorrow

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I INTRODUCTION

In forty years at Cornell I have participated in varying capacities in four major internal reviews of the university. As a fledgling administrator in Day Hall in 1972 I was given the task of supplying Engineering Dean Ed Cranch with data for a faculty-sponsored review that he was leading. Later that decade I was part of a Center for International Studies team that worked with Vice Provost Don Randel on another review. In 1995-96 I served on one of eight working groups to prepare an overview document on university stewardship for incoming president Hunter Rawlings. Early this decade I responded to President Lehman's Call to Engagement as an academic administrator and in my personal capacity.

My feeling about these efforts, and that of many people associated with them, is that, in the words of the Rubaiyat, we came out from more or less the same door as in we went.[1] For example, here is President Emeritus Dale Corson's evaluation of the state of higher education in 1990: "The major universities ... are in trouble, perhaps serious trouble. They do not have enough money, the economic outlook is grim, the public is loosing confidence and society is expecting more than ever."[2] This is even truer today, with greater intensity and urgency.

How can this be? How is it that the combined intellectual firepower of the most formidable system of higher education yet devised has been unable to attenuate the problems let alone solve them? Is it inability? unwillingness? distraction? denial? What are the roots of the problems? Do they stem from faulty policy, from rigid, outmoded or retrogressive structures, from deeper social and systemic forces? Which aspects may be

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[1] "Myself when young did eagerly frequent
Doctor and Saint, and heard great Argument
About it and about; but evermore
Came out by the same Door as in I went."
Edward Fitzgerald translation of The Rubaiyat of Omar Khayyam.

[2] "Universities are in Trouble," University Economics. To make the point in another way, this effort refreshes and expands upon a report I submitted in the "Stewardship" review in the mid-1990s. The analytical structure and majority of the problems addressed remain the same; data are updated to the extent possible.

resolved through unilateral action by schools and colleges? Which would require the cooperation of peers? of society beyond the academy?

This is an informal note intended to think through some of these concerns. It is more essay than report. Because it is directed at reflection rather than action, and because it would be an impertinence for a single individual to imply that he or she has the measure of the problems, it does not make recommendations, although suggestions are sprinkled through its pages. Its main purpose is to serve as a starting point for joint excursions into the issues by faculty and administration.

Its principle message is that we pay close heed to the unhappiness directed at us, even when we consider it unwarranted; that we venture beyond our parochial interests when considering remedies and stress service to society instead; that we not limit our imagination when contemplating the inevitable transitions, even when we anticipate that much of what we intend may not be attainable in short order; and that the faculty take leading role in this effort and the administration welcome the partnership.

Substantively, four crucial aspects of our circumstance stand out for overdue redress: the limitless lien on university resources of incompletely funded sponsored research; substantive and budgetary impacts of the tenured faculty's drift away from teaching; reconsideration of the conditions for academic tenure; and getting away from heedless competition.

An open, honest and comprehensive discussion will do much to advance the situation, regardless of where we end up or how we choose to proceed at its close. Proceed we will have to, and in as significant and resolute a fashion as we can, if we are to have any hope of avoiding future such rounds of crises.

I have relied on my own knowledge of the campus, plus data and information that were available publically and easily. More and better information will be required towards actually formulating policy and the included date would need to be double-checked carefully.

II STEWARDSHIP

The notion of stewardship has two parts. One is the static desire to preserve or conserve, the other is the more dynamic quest to improve. Full stewardship requires both. Even preservation alone is best achieved when change is harnessed in the effort to safeguard because effective stewards reform in order to retain.

Stewardship in a university combines four goals. The institution's resources, both physical and financial, need to be nurtured. So too do its organizational sub-parts – colleges, departments, institutes, programs, centers, and the administrative and service units. Third, its intellectual essence has to be tended in the persons of its faculty, students and researchers. Fourth and most important, an intangible combination of the first three has to be safeguarded. This is the idea of the university as a whole -- an indefinable aggregation of ideas and information, of humanity and reason, of imagination and analysis: a repository of knowledge, a home for institutionalized inquisitiveness; a caretaker of the caretakers of the future; society's cerebral servant.

Each of these aspects is different, yet all are interrelated and all indispensible. The last clearly is the most crucial. If we know who we are and what we are about, the care and evolution of the institution surely will follow. Without that, without a genuine appreciation of our intellectual and social mission, even the highest levels of technically proficient stewardship ultimately will prove inadequate and wasteful. More than anything else, good stewardship means creating a setting and an ethos where, now and for the indefinite future, the university community, however it may be constituted, remains confident that it has the quantity, quality and mix of resources that it needs to fulfill its mission as it conceives. That should be the goal.

III WHERE WE ARE

The proximate cause of this interest in stewardship is our budgetary situation. The past four decades have produced regular budget shortfalls for the university. Annual income and expenses have had to be reconciled either by raising extraordinary income or by

mandating across-the-board spending cuts or both. The current economic crisis once again has brought the matter to a head and no substantial or long-term relief is in sight.

Given the university's resolve not to dip into capital, two viable options obtain. We can, as in the past, undertake the sort of campus-wide retrenchment intended to balance income and expense that already is underway. This spreads the economic pain and provides momentary fiscal relief but does not do much to address the long-term core issues of an ultimately untenable situation. The second course and parallel course is to implement a strategic re-assessment and re-ordering of our goals, policies and procedures as a crucial step towards putting our long-term house in order.

The budgetary crisis may be the immediate cause for this effort but it is not the only one, nor is it the main reason. Our financial situation is a part of a larger economic and social convulsion that goes beyond us to affect all higher education and the larger society beyond that. For universities, the pressures have done more than just destabilize budgets. They have reduced our effectiveness, undermined our collegiality and lowered the social status of the academy.

Like many others, Cornell is in the unenviable position of having all our constituencies unhappy at the same time, at least in some measure. Faculty are disturbed by the budget cuts and the lingering financial uncertainty. The concern is enhanced by the perception that administrators, administrative expenses and ancillary operations have expanded relative to the academic mission. There also is a larger and longer-running apprehension about the commercialization of higher education. The perception, rightly or wrongly, is that these issues have been given short shrift by successive university administrations.

The morale of our staff is not high on any absolute scale but it is better than it might have been due mainly to the university's attention to and investment in staff issues over the last fifteen years. Nevertheless, and understandably, the goodwill created by these actions has diminished with the current series of retrenchments.

Undergraduate and gradate students complain about the incessantly increasing costs of attending school, reductions in financial support, inadequate faculty involvement and attention, service cutbacks, and the bureaucratization of service functions. Graduate students supplement that with distress about compensation levels, work conditions and relationships with academic mentors.

Outside the university, parents, the public at large, and, increasingly, state legislatures are grown incensed about the ratcheting costs of higher education, about seemingly flabby organization, careless management, and leisurely academic lifestyles. They grow more cynical regarding the intention and the ability of the academy to contain costs, they question the relevance of a growing amount of academic scholarship, and they complain about the inadequate preparedness of graduates to start functioning in the outside world.

All these are compelling reasons in themselves for a thoroughgoing self-examination, quite apart from whether or not our budgets balance. Our financial stress adds urgency to the situation but did not create it. That we have perhaps grown too large, too fast, or too haphazardly, and need to find ways to work more efficiently and equitably is undoubtedly the immediate concern, but it is a problem whose roots lie deeper. That is where we, and all of higher education, will have to look. Better-endowed institutions may be able to postpone this type of reckoning but will not avoid it. Sooner or later all of us will have to re-mold ourselves to fit the new social reality.

IV THE TASK

The stewardship of a large and complex institution like Cornell is in the hands of hundreds of people scattered throughout the university and beyond. No single person or entity can conceivably circumscribe the vast expertise needed for detailed advice. Thus an effort like this must be as much indicative as specific, emphasizing elements of principle and direction as much as concrete suggestions for action.

Mr. Cornell and his associates in their time performed just such a service for this university and for U.S. higher education. Their particular genius lay in reconciling in an organic way the needs of society and university. To that end they retained useful features of the received Oxbridge and European models and amended and discarded elements that did not serve the new American reality. Thus they made higher education universal beyond the privileged classes. They changed and enlarged college curricula to serve the needs of the new motors of economic development -- business and industry -- and deemphasized commensurately the needs of church, state, and landed-property. They radicalized the role of government by having it underwrite portions of public higher education. And they made a start towards gender and some racial equality.

The model had phenomenal success and today is the cornerstone of the quintessential U.S. university. During the intervening century and a half, however, the national and international reality that surrounds it has changed almost beyond recognition. With both knowledge and society drastically transformed, educators today are vastly overdue to do what Mr. Cornell and friends did in their own time -- take a close look, with maximum integrity, imagination and courage, at how the learned professions might be transformed to serve the new society.

V THE ROOTS OF THE CRISIS

What did we do to land in this situation? The current financial crisis is a good point from which to launch our inquiry because many of the conditions noted are linked to university finances. Our budget shortfalls are the cumulative result of countless decisions taken by generations of administrators and faculty over the last three or four decades. Nevertheless, it is possible to sift through them to identify a few key directions that we took, whether by choice or by default, that help to explain the liquidity shortfall in our ledgers and to discern the university's strategic priorities over that time.

A. Growth and expansion: dimensions

Looking back, the thing that stands out most clearly is that we chose to grow.

The growth manifested itself in many ways. We added new physical facilities and refurbished older plant, we created new academic and administrative units, we enlarged student-support areas, we added to the central administration, and we established campus(es) abroad.

In the thirty years between 1980 and 2009 we built 34 large structures of over 50 thousand square feet each and almost three hundred smaller ones (Table 1).

Table 1. Buildings constructed, 1980-2009, by size

000 SF	Number of Buildings
> 200	4
100-200	14
50-100	16
10-50	47
<10	244

Source: University schedule: New Construction/ Leased Buildings, 1980 to Present

The total accretion was in the order of 5.4 million square feet. We added 1.8 million square feet in the 1980s, a slightly fewer 1.4 million square feet in the 1990s and then raised the number to 2.2 million square feet in the 2000s.[3]

[3] This works out to 180,000, 140,000 and 220,000 SF respectively per decade. The October 7, 2003 Report on Capital Projects by the

Table 2 shows the addition of space by function.

Table 2. Buildings constructed, 1980-2009, SF by function

	000 SF
Science	1,561
Housing	1,213
Athletics	300
Libraries	299
Garage	290
Rob., Kenn., Com.	271
Administration	215
Statler	150
Schwartz/ Bailey	116
Ornithology	92
Law	70
TOTAL	4,578

Source: University schedule: New Construction/ Leased Buildngs, 1980 to Present

A third of the total was for science facilities (1.6 million square feet). The second largest purpose was student housing. This accounted for slightly less than a quarter of the total, or 1.2 million square feet. Athletic facilities, the library system and the central garage shared third place honors at a much-reduced 300 thousand square feet each. We added

university's Ad Hoc Alumni Committee states that we added on average 140,000 square feet per year through the entire 20th century, so the rate of accretion has risen in the recent past.

215 thousand square feet of administrative space (Thornwood, East Hill and Seneca Street). These projects, plus the Statler extension, the Schwartz Center, Bailey Hall, the Laboratory of Ornithology building and the Law School and CaLS extensions account for 4.6 million of the 5.4 million square feet.[4]

These are gross estimates meaning that they do not take into account spaces that were lost or replaced over the same period, for example, in Roberts and Sage Halls. Making this adjustment would reduce the net space added but probably not by much.

The same exercise, but based on building cost this time, would come up a different hierarchy, with science facilities most likely accounting for the lion's share of the expansion. It also would be useful to track the allocation of space over time by major category of use (teaching, research, administration, housing, dining and recreation) and academic unit (department, college, institute, center, program). The university compiles these data from time to time and current information may even exist.

The numbers of people who use these spaces also grew during those thirty years, but somewhat unevenly (Table 3).

Table 3. Growth in university populations, 1980-2009

	Percent growth
Graduate students	30
Professional students	50
All students	21
Tenure track faculty	5

[4] The October 2003 Alumni Ad Hoc Committee Report states that "a billion dollars had been spent over 5 years [1997/98-2002/03] and that

"Other instructional academics"	40
Total instruction staff	11
Academic non-faculty	30
Non-academic appointments (administration)	31

Source: Institutional Research and Planning: Faculty and Staff Trends

Despite our intention to cap enrollment, our students grew by 21 percent. The professional student body grew fastest at 50 percent, graduate students were next at 30 percent and the undergraduate population expanded the least at 15 percent. Because the starting distribution was weighted heavily towards undergraduates, the intra-student proportions remained relatively unchanged after thirty years: the undergraduates lost three percentage points to drop from 71 percent to 68 percent of the student body, and graduate and professional students each gained two percentage points to reach 23 and 10 percent respectively.

Our instructional staff grew by 11 percent, or only half as fast at the student body, thus adversely affecting our student: faculty ratio. Tenure track faculty grew even slower at 5 percent, or at only a quarter of the rate of the students. The fastest growth rate in instructional staff was registered by "other instructional academics," or instructors, lecturers and teaching associates. These 'contingent,' 'itinerant,' or 'outsourced' teachers grew by 40 percent or at eight times the rate of tenure track faculty.

Compared to the 21 percent rise in students, and 5 and 40 percent increases in tenure track faculty and "other instructional academics" respectively, our "academic non-faculty"[5] appointments grew by 30 percent, and non-academic or administrative

another billion was anticipated during the next 5-8 years." op. cit.

[5] Research associates, extension associates, librarians, archivists

appointments by 31 percent. Since a majority of academic non-faculty positions tend to be in the sciences, these growth rates seem to be in line with the growth in science and administration facilities.

A portion of the expansion in the university's administrative and support staff was the result of external mandates and of regulation regarding health and safety, the environment, historic properties, equal opportunity, national security and increased accountability in the use of public resources. Other elements of administrative growth, while not decreed, nevertheless also were unavoidable as in the case of electronic computing (Cornell Information Technologies). A few classes of increase had greater discretionary leeway such as the growths in our legal apparatus to deal with changes in intellectual property law and an increasingly litigious society, in public relations, in remedial education and in counseling and placement services. Finally, all this administrative growth itself needed to be coordinated and supervised, resulting in increases in the central administration, including at the uppermost echelons.

New centers, institutes and programs were significant contributors to the growth of the three decades. The Office of Sponsored Programs website currently lists 133 centers, institutes and programs, two-thirds of which were launched after 1980.[6]

Another major development was the expansion of the university into new areas of activity and geographic reach. The decades straddling the turn of the century witnessed the creation of administrations to participate in distance learning, to encourage faculty entrepreneurship and to incubate other businesses. We also moved abroad more forcefully than we had in the past. The most significant venture was the establishment of the Cornell Medical School in Doha in Qatar, but we undertook in addition major initiatives in China, India and Singapore, plus smaller ventures at other sites.

These expansions generated significant growth in our operating expenses (Table 4 and Appendixes 1 and 2).

Table 4. Financial changes, various periods

Category	Compound growth rate (percent)	Period
Operating expense		
Ithaca campus	4.8	1990-2010
Medical college	8.6	1990-2010
Total	5.9	1990-2010
Tuition	5.1	1990-2010
(Inflation)	2.8	1990-2010
Debt	11.8	1980-2010

Source: Cornell University Financial Plans, various years

Including the medical college, these expanded at a compounded rate of 5.9 percent a year between AYs 1990 and 2010, at a time when the inflation rate was 2.8 percent. The medical college made the larger contribution to this at 8.6 percent while the Ithaca campus' expenses went up by 4.8 percent a year.

To help keep up with spending we increased tuition at a compounded rate of 5.08% annually during those twenty years. The Ithaca campus and the university overall also became more dependent on tuition income during that time. Tuition's share of revenues and transfers grew from 25.5 percent to 37.6 percent for Ithaca, and 20.8 percent to 24.6

[6] 31 out of 50 centers,32 out of 37 institutes and 32 of 46 programs.

percent for the university at large. In contrast, its importance in medical college accounts dropped from 4.2 percent to 2.3 percent over that period.

We also registered a significant increase in our debt load. In 1980 it was $70 million. It grew three and a half fold in ten years to reach $250 million in 1990. In May this year it reached $1.96 billion, for a compounded rate of increase of 11.75 percent over the thirty years.[7]

Growth and expansion: drivers of cost

The cumulative decisions that have brought us to our current pass illustrate a wide range of discretionary authority. While none of the choices entirely were unconstrained, their degrees of freedom varied substantially such that some were more proactive or independent and others comparatively reactive and bounded. Between the two outliers was a group of nominally free but practically circumscribed decisions that in effect were mandated by circumstances if not by statute. Our discussion starts from the most constrained end and moves towards those with more flexibility. Needless to say, these categories and the elements they contain are suggestive. All may be amended depending on circumstances and outlook but the analytic concept remains.

1. EXTERNAL DRIVERS OF COST

There were four major external drivers of cost. One was the increase in the prices of essential goods and services: library books, utilities, insurance, healthcare coverage, retirement schemes, and litigation. A second was linked to the costs of complying with rising public expectations regarding student safety, local and national security, the environment, equal opportunity, historic properties, and accountability in the use of public resources. Many of these were in the form of unfunded mandates. The third was the decline in government support. The federal government reduced overhead rates for

sponsored research and stopped paying for the facilities in which its research was conducted. Washington also decreased its contributions to student financial aid. A further impact was indirect, as federal unfunded mandates on states pressured them to demote higher education into the second tier of budget priorities and subject it to large cuts. The fourth external driver was the pressure on parking spaces of the ever more ubiquitous automobile. Clark Kerr famously pronounced that a common grievance over parking was one of the three glues that held universities together.[8] Table 2 shows that in our case parking shared third place with libraries and athletics for new buildings made from 1980 to 2009. Adding new parking lots would increase its tally even further.

It is important to note that some element of discretion remained in even this relatively bounded end of the budget spectrum. We already have exercised discretion in responding to cost increases by reducing demand and shifting suppliers. We similarly had at least some flexibility in deciding how to meet government mandates and how to address diminishing public support. Thus even at this more constrained end it would be worthwhile to review systematically how effectively we have used what discretion we had so that we may derive lessons for the future.

2. INTERNAL DRIVERS WITH CONSTRAINED FREEDOM

Some of our choices were voluntary in name but not in fact. There were six main categories. The advent of computing mandated the creation of our information technologies establishment (CIT). Reductions in public student aid required a compensatory increase on our part to retain our needs-blind admissions. Enhanced concern over the mental health of students necessitated an expansion in student health services. Deteriorating secondary school education, even at the relatively elite level of our entrants, required the creation of remedial education. The increased competition for

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[7] In June 2009 the average debt of universities "with the biggest endowments" was $1.19 billon according to the Bloomberg News of January 28, 2010.

jobs for students has meant investment in placement infrastructure. Finally, and appropriately, we increased our voluntary contributions to local municipalities. Although none of these expenditures were externally driven or mandated, most were imperatives in every other sense. That said, the question still remains of how effectively or efficiently we used our resources in meeting these inescapable needs.

3. INTERNAL DRIVERS WITH GREATER DISCRETION

This leaves decisions that relatively were unconstrained – relatively because while they had more degrees of freedom, they nevertheless were subject to multiple internal and external pressures. Compared to those considered earlier, however, this set is substantially less proscribed.

This is a large group of decision areas and it needs to be further sub-divided. At the most constrained end of this least constrained group are decisions to expand the university's science footprint, to increase faculty salaries, to add to and update undergraduate housing, and embark on distance learning. In the middle, with more flexibility, are our decisions to strengthen the university's media capabilities and to establish commercial incubators. The choices with the greatest relative latitude related to investments in athletics and the decision to establish satellite campuses. Once again, this categorization is not sacrosanct but indicative.

The reasoning for expanding science was that a major university has to have a substantial scientific presence to be truly competitive. That being the case, we had to keep pace with our peers (who of course we also keeping pace with us) and making serious investments, particularly in computing and biological sciences. With the per capita cost of faculty laboratory needs skyrocketing, and the continuously accelerating

[8] The other two are administrative rules and money. The Uses of the University, 2001.

pace of scientific advance, this means a long-term commitment to not only expensive but also continuous investment and re-investment.[9]

The decision to bring professorial salaries in line with our peers also was driven by concerns about competition. We had fallen behind and feared attrition in our faculty ranks, particularly as regards our most renowned colleagues and the possibilities of attracting exceptional new scholars.

We noted earlier that student housing was the second largest expense where new construction was concerned. A portion of this investment funded an increase in on-campus beds (North Campus town houses and residence halls). This was a long acknowledged shortfall in our student support area and the issue here was less about need than about timing and the availability of resources. The second major component involved the demolition and re-construction of the west campus U-Halls and student union building. This time the outlay did not result in a net increase in beds, indeed, by some estimates, there are now a hundred or so fewer beds. The discretionary element in this decision therefore was higher in two regards. The first decision was to commit to expending resources on undergraduate housing with no net gain in the number of beds (albeit with significant improvement in the quality of undergraduate life). The second choice was to decide between saving partially, retrofitting and adding to the existing building stock, and demolishing it totally and building a-fresh. Finally, for both North and West campuses there existed also considerable leeway in determining the fit and finish of the new constructions. We decided that it was imperative to meet competition in this area too and thus built what are referred to here and elsewhere as country club dormitories.

The distance learning enterprise was appealing for a number of reasons. One was the benefit to our students from interacting in real visual time with peers from our other

[9] The cost of setting up laboratory space for a starting scientist and his or her research group is estimated to be above $ 1 million on average. The cost is commensurately higher to attract a more mature researcher. The rapid pace of scientific advances requires not only continuous updating of the labs but in addition a major overhaul every ten years or so.

campuses from other countries. A second was the added facility (no pun intended) in research collaborations. A third goal was to extend our reach, contributions and influence planet-wide, to make us the "Land Grant University to the World." The first two motivators are substantively different to the third where the level of discretionary decision-making is concerned.

The middle category of actions grouped by the amount of freedom of choice they contained relates to business incubators and the media. We invested in a business incubator to help faculty commercialize their discoveries in order to provide pecuniary benefits to them and to the university, to promote local economic development, and to demonstrate both the intellectual prowess and social contributions of the university. The drive for an increased media presence had several roots, including keeping up with our competition in an increasingly media fixated and dependent world. Although the tangible benefits of enhanced media coverage do extend through many aspects of our operations, from admissions to faculty recruitment to alumni relations, it would be useful to try to determine more specifically the cost-benefit balance.

The decision group with the greatest potential flexibility relates to our investments in varsity athletics and our satellite campuses. We field teams in 36 varsity sports, which places us around third among U.S. schools and universities on the list of sports supported.[10] It would be worthwhile to track the scholarly and other impacts of our varsity commitments on all students, and not just on athletes.[11]

The degree of flexibility available in all these decisions may be questioned, even for those where competitive pressures were highest, but it would be almost impossible to argue that the university was in any way compelled to establish satellite campuses. This is particularly true of the decision to begin medical college operations in Qatar. This is not to say that the venture may not be worthwhile, but it is to emphasize its discretionary

[10] We offer 36 varsity programs, Harvard 41 (the most). Ohio State and at least one other Ivy have 36. Princeton may have 38. It is possible that we are tied for 3rd.

nature and suggest a comprehensive review, almost ten years on, of what we have gained and what we have foregone. Most universities with medical schools have a hard time integrating them with the rest of the campus and we are no exception. Our task is made more complex by the physical separation of our two campuses. Presidents and provosts have noted repeatedly the "inordinate" amount of time that they have to spend on this aspect of their responsibilities. And yet we added another medical unit, this one much further afield.

4. BOTTOM LINE INFLUENCED DRIVERS OF GROWTH

Like our peers, we are responsible for our own finances, that is, we have to be concerned about covering our costs and balancing income and expense. Thus financial considerations are essential to our pedagogic decisions. Like Dicken's Mrs. Todgers[12] we are forced to gaze at the world with affection beaming in one eye and calculation shining out of the other. The balance between the two is critical for the social and ethical tenor of our institution.

From time to time commercial considerations take precedence over pedagogic ones. This too is acceptable provided it does not happen too often. In the last twenty years we have taken two and perhaps three growth-related decisions that were tilted more towards the proverbial bottom line than academic considerations. One was the expansion in professional masters degree programs. This came at a time when financial aid for "standard" undergraduate and graduate study was under stress but candidates for professional degrees were willing to fund themselves through loans because of their and their funders' confidence in substantially higher post-graduate earnings. The second case pertains to the greatly expanded undergraduate business program in CaLS. This area of study in one of the College's 22 departments now contains 25 percent of all undergraduates in that college.

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[11] The passage of Title IX was a clear factor in the expansion, but this law affected all schools and colleges, not only ourselves.

The third and less certain one concerns the Qatar medical campus. The Medical College Operating Plan for AY 2010 shows a contribution of $80 million from the Qatar Foundation. Since the Qatar campus' expenses are not broken out in the "Expenses and Transfers Out" part of the Operating Plan it is not possible to estimate the net effect of this arrangement on the Medical College and the university. In addition to purely financial considerations, there also is the question of the opportunity cost for our senior administration of the substantial additional managerial load.

C. Other Cost Considerations

So far we have considered the amount of freedom available in making the choices that resulted in our growth. But there also is the issue of how we executed the choices, that is, the manner in which we grew, for that too affects both the profile and the solvency of the university. Probably the best examples are our record in building construction, followed by our decisions regarding research funding and the organization of the university's support services.

1. BUILDING BUILDINGS

Reminiscing about his Cambridge years C.P. Snow wrote: "Of all the academic meetings I had attended, at least half the talking time, and much more than half the expense of spirit, had been consumed in the discussion of building. Whatever would they do when all the buildings were put up? The answer, I thought ... was simple: they would pull some down and start again."[13] Some years earlier he had put similar sentiments into the mouth of a college's prospective donor: "Some people [Sir Horace said] – and I include myself among them – might fancy that institutions like this are always tempted to put too much capital

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[12] Martin Chuzzlewit

[13] The Sleep of Reason, 1968, London: McMillan, p. 133

into bricks and mortar, do you know what I mean? We might feel that you didn't need to put up a new building, for instance.'[14]

We have noted the intensity and longevity of our construction activities. Our construction costs, although in line with those of our competitors, are on the high side.[15] To that we would have to add the significant extra expense of false starts, pre-construction delays, expensive re-designs, substantial retrofits and, in one case, complete demolition and reconstruction.[16] Exacerbating both is our recent increased proclivity to procure the services of media designers, as much as for their name as for their work.

It would be worthwhile to inquire into what if anything was done in response to the Alumni Ad Hoc Committee Report on Capital Projects of October 2003 and to conduct an updated review.

2. THE COST OF SPONSORED RESEARCH

There is no gainsaying the importance of our research for the investigators, for the university, and for portions of society. The researchers enjoy relatively unadulterated benefits, starting with the satisfaction of solving intriguing puzzles. The university benefits from the reflected glory of its researchers, and both parties gain from the potential commercialization that accompanies the results these days. An ever-expanding research program has been and remains an important if not prime objective of universities.

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[14] The Masters, 1951, New York: Charles Scribner's Sons

[15] Though higher than in the commercial sector. Report of Alumni Ad Hoc Committee on Capital Projects, October 2003. According to the report the jury is out when the comparison is made to government work.

[16] Some major examples are: two costly false starts were investments in designs for the business school to move to the crossing of Tower Road and Judd Falls Road and a new Welcome Center where Alumni House presently is located. The Schwartz Center, Sage Hall, Rhodes Hall and Milstein Hall were the focus of prominent delays and re-designs. The Statler Hotel was the object of a major retrofit when its floors were deemed unsafe. Martha Van Rensselaer Hall had to be completely demolished and rebuilt four decades after its opening because of construction errors.

It is rare for schools to fund their research internally. The major outside source over the last sixty years has been the federal government. This is true for Cornell too. Recently the private sector has taken a larger role in funding university research but the total is still less than 10 percent across all schools.

External funding for research is not entirely without cost to the institutions receiving the funds. Our own Dick Schuler estimated as long ago as 1987 that we collect on average only 80 percent of our fully allocated cost of research, meaning that we contribute 20 percent each time, and this figure has been borne out since in many scholarly contexts.[17]. The 20 percent must come from other major sources of income – tuition, endowment income and gifts. Thus the imperative to expand funded research indefinitely also is a formula for never ending pressures on university budgets. Our research program needs consciously and regularly to take that into account.

In addition to these money issues, sponsored research that is funded by corporations raises the further and as important question of its impact on faculty collegiality. Intellectual property and patent issues create intra-university barriers that tend to divide institution from employee, and colleague from colleague.

3. THE FLIGHT FROM TEACHING AND CONTINGENT FACULTY

The national trend over the past half-century in large research universities has been for teaching effectively to be underemphasized relative to research and publication.[18] Part time instructors, lecturers and teaching associates -- contingent faculty employed on an as-needed or contingent basis --today form half the instructional staff in degree granting institutions.[19]. Even more indicative of the tenure line faculty's proclivity to eschew teaching is that, at the national level, this 50 percent of our colleagues teaches 80-percent

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[17] Richard Schuler, "The 1985-86 Cost of Research and Scholarship at Cornell University," mimeo, Department of Civil and Environmental Engineering, September 1, 1987.

[18] 'Effectively' because for least half that time much lip service has been paid to reversing that trend.

of all post-secondary courses. At Cornell over the past thirty years this category of academic staff has expanded at eight times the rate of tenure line faculty (40 percent to 5 percent, Table 3).

The phenomenon remains widespread, intensifying and a cause for substantial concern. The worry is both budgetary and substantive. On the monetary side, we need to find additional resources beyond our tenure lines to hire contingent faculty to do the teaching that otherwise would be done by tenure line professors. When the teaching relief is arranged through sponsored research buyouts it become a double drain on university coffers. As just seen, approximately 20 percent of the professor's salary would not be recovered and in addition money would have to found to hire the adjuncts.

On the substantive side the outsourcing of instruction has a debilitating impact on the teachers and students. The human impact on contingent faculty of the incessant tension of semester-to-semester and even course-by-course employment is debilitating. Add to that their shoddy treatment even when employed, and their knowledge that the likelihood of breaking into regular tenure line service is low to non-existent because the logistics of itinerant teaching reduce the time available for research and writing to almost zero, and we begin to get the feel of such an existence.

The disadvantages for students are equally substantial. Itinerant faculty spend large amounts of time looking for work and then travelling to it such that very little remains for keeping up professionally. Their courses therefore tend to be unchanging and dated. The offerings also are less interesting in that these instructors do not have ongoing research and service experiences that enliven other courses. Studies have shown too that their grading standards often are lower compared to tenure line faculty because of their disproportionate dependence on positive student evaluations in being considered for repeat assignments.

Thus we tend to harm concurrently our two most valuable assets: our students and our (less fortunate) colleagues.

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[19] National Center For Educational Statistics,

4. FINANCIAL RESPONSIBILITY CENTERS (FRCs)

Financial responsibility centers (FRCs) or Tubs were created to have each part of the university pull its own weight. FRCs are given financial autonomy and made responsible for balancing their income and expenses. The central administration deals with them on an arms-length or market basis and bills them for centrally provided services.

The scheme has a number of advantages in theory. Decentralization increases administrative efficiency by reducing the amount of supervision that is needed. The central administration is spared the bother of day-to-day direction and FRCs gain flexibility and speed in decision-making. All going well, administrative ranks are shrunk.

But there are down sides too to FRCs. The reduced day-to-day financial supervision by the central administration also means a diminished role of the center in making more substantive decisions. The FRC is free relatively to chart its own course provided it can come up with the resources to follow it and this direction may or may not be in keeping with the overall goals of the institution. Second, FRCs generally are constituted from amongst the wealthier or more financially stable portions of the university[20] and their surpluses are not shared with parts of the university that do not have their advantages. Third, greater financial autonomy does not always guarantee more efficiency. (An example is the considerable imbroglio over the Hotel School building project for the expanded Statler Hotel.) Finally, the stronger FRCs have considerable leverage in dealing with the central administration when it comes to setting prices for services and deciding other terms and methods of association (though of course each side claims to be the victim of the other). Because of this, and contrary to theory, the center sometimes ends up subsidizing FRCs (the Medical College, e.g.).

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http://nces.ed.gov/programs/digest/d09/tables/dt09_243.asp

[20] This is commonplace much beyond universities. The financially strong often wish to separate to protect their income and assets from their poorer associates, e.g., Piedmonte and Lombardy in Italy and Punjab in India.

Evenness and reciprocity are key to a healthy long-term relationship between FRCs and university and it would be useful to investigate clearly the short and medium term effects of this arrangement for both university and FRCs.

5. ENTERPRISES

Our service enterprises were an early form of Tubs. Most serve captive clienteles (Housing, Dining, Facilities) though the Campus Store also has non-Cornell customers. Enterprises too have considerable flexibility in their operations provided they are able to cover their expenses. Two questions arise. One is to what extent they truly are independent, or if they are subsidized in some fashion. The second relates to their goals, values and modes of operation. These units have an impact on the tenor and operations of the university even when truly self-sufficient. For example, the campus store carries some 1,500 different styles and colors of clothing, 700 different gift items, approximately 50 types of supplies, and 30 styles of diploma and matching photo frames.[21] Is this the best use of prime central campus real estate that chronically is short of library space?

Enterprise units are chartered monopolies in the manner of the old English and European Colonial Corporations. Like their progenitors, they derive their territorial influence and standing solely from a higher authority, in this case the university and not the Crown. Thus they are not subject to competition to even the extent of regular monopoles and retain as a result a much better position to pass on extraneous or unnecessary costs to customers. The question of their internal efficiencies therefore becomes critical. The experience of the campus, based upon day-to-day interaction with the enterprises, and particularly with such outfits as CIT, PDC, and Stores, is that most of them could be substantially leaner.

D. Growth and expansion: governance

[21] Personal communication from Deputy Director of the Store.

We noted at the start that decision-making in a large and complex institution is multi faceted and diffuse. Nevertheless it is possible to note some overarching features concerning governance. Possibly the most important one, certainly from the point of view of finances, relates to budget protocols. A second is a culture of contentment among tenured faculty. Underlying both is the steady relinquishment by faculty of responsibility in university governance. Rounding out the list are the more structural issues of professorial tenure, the influence of size on governance, the increasingly shorter terms in office for senior management, and the relationship with our contract colleges.

1. THE SOFT BUDGET CONSTRAINT

We have three sets of budget protocols, for our endowed colleges, for contract colleges and for our professional schools. Undergraduate colleges receive annual appropriations from the central administration, as do some support units. (For contract colleges, the government's contribution is factored into the appropriation.) Professional schools and the remaining service departments function as FRCs or Tubs and develop their own budgets, balancing expenditures and revenues.

The bulk of our spending is on salaries (approximately 60 percent) with professorial salaries heading the list. Academic budgets in all three protocols are influenced heavily by the faculty's belief in its inherent right to receive university support for what each member deems absolutely essential work. In units with appropriated budgets professors lobby up the line through departments, colleges and centers through to the central administration. In FRCs they strive to convince their department heads and deans. In both cases the professoriate, exhorted by the administration, turns increasingly to sponsored research to help cover costs.

Thus the essential building blocks of our budgets are predicated on the self-perceived needs of the professoriate. We define to a considerable extent the substance and terms of our existence. Since study and research are its essence, these are given precedence. Teaching and service receive lesser weight. We decide what we want to work

on and then go about finding a way to do so. Doubtless this model has become more difficult to achieve recently but overall it is still in place, particularly for those fortunate to be tenured.

The arrangement brings to mind Hungarian economist Janos Kornai's formulation of the "soft budget constraint" in Soviet and Eastern European economics. In the lack of consumer input and market discipline, Soviet bloc managers would decide substantially on their own what and how much to produce, and then go about finding the resources to do it, overwhelmingly by lobbying higher-level bureaucrats and wheeling and dealing with peers. With no external (market) forces to either guide or discipline them, the results were wasteful. In some sense this is the way we operate.

This is most emphatically not a plea to make our universities any more market oriented than they are. It is a call to rationalize budget procedures, particularly for our highest spending categories, to provide social input beyond the self-determined needs of the professoriate. It is also a call for tenure line professoriate to acknowledge the very favorable conditions of our existence compared to the rest of society.

2. A CULTURE OF CONTENTMENT

These favorable conditions, whether we recognize them or not -- and especially if we do not -- have led the academy into what John Kenneth Galbraith once identified as a "culture of contentment" for U.S. society at large.[22] He argued in that case that larger social needs and grievances had gone unheeded because the groups in charge were satisfied with their own lot and unminding of others. Our attitude towards the problems of higher education is comparable.

The academy's culture of contentment is made evident in two ways. First, many of the problems and concerns that we have discussed here have been present for a very long time and little has been done to redress them. The most telling example is the apparently inexorably rising tuition. This has been an acute concern for students and families for at

least three decades but to no avail. The academy seems either unaware or unconvinced of the very real problem and the as-real resentment directed against us from the outside. Instead of giving this angst even lip service we bemoan the fact that the world misunderstands us and misconstrues our circumstances. Far from addressing the issue we attempt to justify the increases by stating ad infinitum that tuition income covers only a third of our costs and that despite the increases students keep applying to us in rising and record numbers. Neither response is pertinent and both are singularly insensitive. We would do well in this instance to heed President Lincoln's dictum that "[A] universal feeling, whether well or ill-founded, can not be safely disregarded."[23]

3. RELINQUISHMENT OF FACULTY RESPONSIBILITY

The faculty steadily has ceded responsibility for overall governance in the past few decades. The historically proscribed authority of the university senate is further diminished by low rates and enthusiasm of faculty participation. The professoriate also has yielded influence at the highest levels of administration. It is rare today to see members of the faculty in senior positions having to do with finance, facilities and administration.[24]

The reasons for this are many, clear and understandable but that does not reduce its significance or negate its impact. Essential professorial duties have ballooned to appropriate increasingly larger portions of the day. The emphasis on outside research funding forces an endless cycle of proposals and reports. The growing intensity and reach of scholarship, plus individual and institutional striving for the related media exposure, demand more travel. Explosions in the sources and amount of knowledge, and in modes of dissemination, make keeping up professionally substantially more time consuming.

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[22] The Culture of Contentment, Boston: Houghton Mifflin, 1992

[23] Peoria address.

[24] We have not had a professor heading the budget office since 1990, when Mal Nesheim was moved to provost. The dearth is even longer in facilities, where the last professor to head that area was Tom Mackesey.

Government mandates of various types require reams of form-filling and reporting. Committees have multiplied and meetings abound. With more students going on to higher degrees, and making more, and more frequent, job changes, the demand for recommendations has intensified and the letter writing season extended to envelop the whole year. Similar to the rest of the world, the time saving wonders of electronics have resulted in creating more work and not less. Attending to students is now on a twenty four hour cycle, more documents require swifter reading and responses, and severe reductions in secretarial support have replaced scholarly time with xeroxing, envelope addressing and licking stamps.

A second surrender of authority has been is to the dharma of the market. From setting faculty salaries to accepting the countryclubization of the campus to pursuing enrollment management and international expansion our moves have been dictated as much by our competitors' actions or threat of actions as by thoughtful introspection about our own values and directions.

An uncritical deference to market is in many ways a dereliction of responsibility. It is a handy substitute for decision makers to avoid uncomfortable situations and potentially harsh choices. Each party contends that it merely is keeping up with the others in what becomes an infinite and expanding loop. This is not to deny either the presence or the intensity of competition. But it is to urge that those in charge of the academy take time to reflect on just who is setting the rules and on what values are the standards set that all of us rush to comply with or emulate.

4. LENGTH IN OFFICE OF SENIOR MANAGEMENT

A lesser but still important structural issue is the reduction of length in office of the senior-most university officials. This is a general trend in higher education to which we also are party. We have been fortunate thus far in the average longevity of our presidencies and vice presidencies but this may decline in future.

Shorter lengths in office for senior officials mean less time to come to managerial terms with the enormity and complexity of the institution before beginning to take significant decisions. They reduce also institutional memory, another crucial potential asset in governing institutions of great reach and scope. While we would not wish to promote longevity in senor office merely for its own sake, we do need to be cognizant of this aspect of structural change as we move forward.

5. STUCTURAL ISSUES: ACADEMIC TENURE

Four crucial issues regarding governance relate to university structure and not to policy. The first three are common to many schools and we alone face the fourth.

The issue of the use and misuse of academic tenure has been crucial to university governance ever since this form of protection to thought and inquiry was instituted. The abiding question has been and remains how to maintain high scholarly performance in the absence of the ultimate sanction. A subsidiary concern is the difficulty of getting active cooperation in the administration of the institution from those whose essential livelihood is assured. A third element, subsequent to the abolishment of mandatory retirement, relates to the impact on long-term academic planning of the "excessive" longevity of service of even productive colleagues. Outside the academy, the public channels almost all aspects of its dissatisfaction with our affairs into apprehension about this privilege and calls for its elimination. Of the many urgent issues that face us, this possibly is the farthest reaching.

6. STUCTURAL ISSUES: SIZE AND OVERSIGHT

The question for universities of our size is not whether we are too big to fail but whether we are too big to govern for any common social good beyond the needs of the scholars who comprise them. If this becomes the case, we will still have failed, in mission if not longevity.

The European model on which we were patterned was comprised of groups of teachers and scholars of a size and a proximity that facilitated regular and substantive contact. It also had an overarching governing authority, the Church, that was clear in its purpose and strict in realizing it. All three conditions have been voided in the course of the transfer and transformation of the scheme from the Old World to the New.

Our model simultaneously has increased the size of the group of scholars and reduced their proximity. Universities have expanded by orders of magnitude. At the same time our inter-connectedness has declined beyond our own narrow areas of work. By choosing to dispense with the college centered model of Oxbridge we reduced workaday interaction between scholars from different disciplines who otherwise socialized regularly in required dining if nothing else. They also had a formal role in influencing other disciplines by virtue of participation in the election new College Fellows. We are in contrast significantly narrower in our knowledge and less placed to affect hiring decisions beyond our fields.

The oversight of the Church has been replaced in most cases including ours by supervision by boards of trustees. This has reduced the academy's connection with and obligation to outside social forces since elements of the university have an important say in electing trustees. While corporate heads are held accountable by customers and shareholders, and politicians by their electorate, we answer only to our board, which in substantial measure is composed of individuals chosen by us. No matter how we might evaluate the earlier connections between Church and university, their teachers and scholars were responsible and accountable to social forces beyond themselves.

7. STUCTURAL ISSUES: CONTRACT COLLEGES

Like all universities, we claim to be unique, and in one way we are. We are the only academic institution in the country that is a combination of privately endowed and publicly funded colleges. This arrangement has provided considerable benefit to us and to

the country. However, many things have evolved in the century and half since it was instituted, meriting consideration of some much needed structural change.

Federal and New York State contributions to the four contract colleges have declined steadily. Presently we receive less than half of what we expend on them and that trend shows no evidence of reversing. The Operating Plan for AY 2011 shows the level of support to be only 30 percent, with income from the State at $165 million against projected expenditures of $327 million.[25] However, the State also pays benefits at a rate close to 50 percent on all employees save those on grants and contracts, and it funds capital projects. These items do not appear in the operating budget. A subvention of this absolute size would remain useful if it came without accompanying strictures, but that unfortunately is not the case.[26] Dealing with the political and administrative apparatus that supervises these resources requires considerable, time, resources and patience, plus an acceptance of intervention in university affairs that the rest of the institution does not face.

We have long discussed taking the contract colleges private. To break free of the State would be a very expensive proposition, even if we reduced the overall budgetary needs of the four colleges by eliminating activities that exist presently only at the behest of the government. Amortizing $120 million, or seventy five percent of the current subvention, at 5 percent means raising an special corpus of $ 2.5 billion – equivalent to half our present endowment -- above and beyond our ongoing development targets.

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[25] Expenditure for the four contract colleges are estimated to run $326.7, $56.3, $60.5 and $124.8 millions for CaLS, Human Ecology, the ILR and the Veterinary College respectively, for a total of $568.3 million.

[26] Though NY State has reduced its strictures over time regarding the number of out of state students we may admit and given us the ability to set our own in-state tuition levels. Presently approximately 50 percent of statutory college students are from out of state and thus spay endowed tuition. Our in-state tuition now is over $20,000 a year. These adjustments have left our statutory colleges in better financial shape than most public universities. I am grateful to Ron Ehrenberg for these clarifications.

A second structural issue pertains to the composition of the colleges. Two of them are large (CaLS and the Veterinary School) and two are among the smallest at the university (Human Ecology and Industrial and Labor Relations). Human Ecology has four departments, two of which overlap with peers in other Cornell colleges. Public Administration and Management (PAM) is a good fit with CaLS' Dyson School, and we are possibly the only university with an interior design department (Design and Environmental Analysis, DEA) that is not affiliated with its architecture program. The ILR is even is smaller and more compact than Human Ecology and governed in effect as a single large department. There are opportunities here to consider some measures of rationalization.

A third concerns internal structure. One of CaLS' twenty-one departments, AEM, newly rechristened the Dyson School, enrolls a fifth of all of the college's undergraduates. The other twenty enroll many fewer undergraduates each and some have had no undergraduate presence at all. Moreover, the Dyson School as an undergraduate business program with much diminished connection to agriculture, science and engineering compared to its earlier Agricultural Economics, Agricultural and Resource Economics, and AEM avatars. This situation too calls for some consideration of structural adjustment.

8. STUCTURAL ISSUES: THE DESIGN PROFESSIONS

Another of Cornell's colleges with a long-standing structural issue is Architecture, Art and Planning (AAP). The college is small, with only three departments, and the size distribution between the three is significantly skewed, with the largest (architecture) being twice the size of each of the other two.

The college's small size raises persistent questions about the justification of the expense of a dean's office. The structural imbalance also causes ongoing governance problems between departments. Since the dominant department is architecture and the college small, there is an inbuilt tension between dean and department chair when the

dean too is an architect by profession. Deans pay particular attention to their largest departments, and to their professional homes, and the overlap in this case increases both scrutiny and the resulting sense of interference.

The central administration's solution every couple of recent decades has been to attempt to disband the college. This has not been possible for reasons that do not concern us here. What is pertinent is that a true long-term resolution to this structural problem would have to move in the opposite direction of enlarging the college. We return to this in the next section.

D. Growth and expansion: outcomes

The discussion so far suggests that our trajectory over the past four decades has been under- or a- planned at the central level, that such planning as has taken place at the unit level has been as much reactive than proactive, that competition, actual and perceived, and a disproportionate concern for the proverbial bottom line have had an important role in funneling these reactions, and that, partly as a result, the growth overall may be considered unbalanced by some criteria.

1. UNDER-PLANNED GROWTH AT THE CENTER

An important feature of our growth is that it has been to a considerable extent a- or under- planned at the central level, on intellectual as well as fiscal fronts. Such longer term planning as has taken place has been at department and college levels, and that mainly in the context of faculty searches.

Now it is the case that there have been major reviews of the university over the past forty years. Two of them were sparked by financial crises -- Engineering Dean Cranch's review of the very early seventies and the exercise just ended. Three others were linked to fledgling presidencies: one in the late seventies presaging the Rhodes presidency, a similar effort in1995 in preparation for the Rawlings era and a major exercise directed by President Lehman in person in 2003-04.

The faculty had a preponderant role in all the efforts though the Cranch Commission differed from the others by maintaining a more arms-length relationship with the administration during its investigations. That said, all the commissions proceeded in a like manner, with faculty groups and sub-groups from across the university working on different academic and administrative issues. The outcomes, not surprisingly, were long on loosely amalgamated laundry lists that combined the separate desires of the participating units, and deficient on analysis, that is, on how to get to the jumbled goals, and perhaps more importantly, on how and why the problems arose in the first place. As unsurprisingly, the follow-up therefore was weak. The outcome of the current exercise holds more promise though it too will fall short of the major retooling and re-directions that circumstances call for.

The lack of implementation is understandable for a number of reasons. The recommendations too often are overwhelmingly long lists of desirables, seldom prioritized, and often ambiguous and even contradictory. To the extent that the reviews are the progeny of financial distress, the edge of change dulls with the return to fiscal health. Third, the longevity in office of administrators at all levels (chairs, deans, presidents) has been declining of late, and there never was much institutional memory to speak of in the first place.

It could be argued that institutionalized long term planning in organizations as large and complex as ours would be an exercise in futility. Indeed, a strong case could be made that the source of our strength, and that of our peers, may be attributed to our innate flexibility and responsiveness to change. While this is no doubt true, it nevertheless is also the case that organizations as large and varied as ours need some form of central direction. The trick of course is to how to find a balance between the two.

With a hundred departments, a hundred and thirty-three centers, institutes and programs, and worldwide connections all driven by three thousand faculty members, it is clear that any long term planning must perforce be indicative, and directed at epistemology and pedagogic philosophy instead of micro-management. It is essential to

plan an overall direction even if its scope is expansive and its contours not fully defined. In its absence we can only continue to make relatively ad hoc decisions, many of which would be more focused more on resources than on pedagogy.

2. RE-ACTIVE AND BOTTOM LINE-DRIVEN GROWTH

A good portion of our decentralized growth has been as much reactive as proactive. This is true for both the academic and support sides of the university. Possibly the clearest example of the latter is the already noted "countryclubization" of the campus. This trend did not emanate with us but with some of our peers and we felt constrained to follow suit. On the academic side the issue concerning reaction is not so much about direction as about degree, particularly in the sciences. For example, in the discussions that led to our recent substantial investments in the marriage of computing and biology, our competitors' moves were an important element in setting our financial targets. Combining pedagogy and support services are decisions predicated substantially on college rankings.

We have noted three significant examples of growth that were influenced substantially by monetary considerations. We invested in professional masters programs when funding for academic masters and doctoral programs began to dry up and it became clear professional masters students were better placed to put together their own financing. The second case pertains to the steep increase in undergraduate business enrollment in CaLS and third was the expansion of our medical college overseas to Qatar. All three are useful for university and society. The point here, with apologies to T. S. Eliot, is not that we did the wrong thing, but the right thing for a reason that, while not exactly wrong, should perhaps not have been the prime motivator in an academic context. [27]

3. IMBALANCED GROWTH?

[27] "The last temptation is the greatest treason, To do the right thing for the wrong reason." Murder in the Cathedral.

Looked at from a strictly arithmetic viewpoint, our growth has been unbalanced (Table 5).

Table 5. Percent growth in operating expenses, by unit, in decreasing order, 1995-2010

	Compounded growth	
AAP		6.65
ILR	4.97	
Engineering	4.25	
Arts and Sciences		4.06
CaLS		3.77
Human Ecology		3.43
Hotel Administration	2.46	
Medical College		8.60
JGSM		8.39
Law		6.81
Veterinary Medicine	5.55	
Research Centers		3.80
Central Financial Aid	8.31	

Source: Cornell University Financial Plans, various years

For the undergraduate colleges the compounded rate in the “expenditures and transfers out” category between 1994-95 and 2009-10 varied from a low of 2.47 percent a year for Hotel to a high of 6.68 percent for AAP. Our three largest colleges averaged around 4 percent a year, with CaLS at 3.77 percent, Arts and Sciences at 4.06 percent and Engineering at 4.25 percent. Growth rates for the professional schools over the same period were substantially higher, between 5.55 percent for the Veterinary College and 9.13 percent for the Medical College. Only AAP was in this league from the undergraduate colleges.

Of the major non-college departments and divisions, central financial aid grew the most at 8.26 percent and student services the least at 2.68 percent. (The category of physical plant registered a negative 0.35 percent growth over the fifteen years. This number needs to be checked.)

These of course are merely arithmetic discrepancies. Their true nature and import may only be divined after a more substantive investigation that inquires into intra and well as inter college differences, differences between academic and non-academic expenditures, and between disciplines and fields of study. Such an exercise may find that the imbalance is even greater than that suggested by arithmetic alone. For example, we noted that our new building stock was heavily weighted towards the sciences (a third of all our building between 1980 and 2009). Clearly this outlay represented investment over many colleges but nevertheless can be considered lopsided when gauged in terms of disciplines. On the other hand a more exacting analysis may find on the contrary that our distribution of investment has been fully judicious.

An aspect of our growth that clearly is more imbalanced is in numbers of students and faculty, both within and between categories. Our student body grew 21 percent between 1980 and 2009 while our tenure track faculty expanded by only 5 percent and the entire instructional staff at only 11 percent.

Within the student cohort the ranks of professional students grew 50 percent, graduate students grew 30 percent and undergraduates only15 percent. On the faculty

side the “contingent” faculty grew at eight times the rate of tenure line colleagues (40 percent to 5 percent).

A further source of imbalance is the internal distribution of research shortfalls. We noted earlier the presence of incomplete cost recoveries from sponsored research. These deficits in sponsored research recovery are not charged only to their originating departments and centers but distributed across the institution. In the era of Tubs, this policy needs to be re-examined at the earliest for its impact on equity.

4. THE PLACE OF COMPETITION

Competition -- real and perceived, current and anticipated, as ethos and action -- has assumed a growing role in our decision-making and that of our associates. In part this is because education increasingly is a commodity and thus subject to market philosophies and rules. In part it is the result of transportation and communication advances that allow institutions that are so inclined to pit themselves against increasingly remote contenders. Whatever the causes, the notion of competition as an essential element of higher education has grown in both acceptance and intensity in the past half century.

The drive to excel, both for itself and to overcome others, is an important contributor to progress, but only when two conditions are present. One is that there be a clearly defined purpose to the contest. Taking competition’s archetype of business as an example, the twin goals of profit and growth are clear and uncontested. In the lack of these potential outcomes, business’ interest in competition wanes. The second and related condition for productive competition is that it be selective. Taking business again, firms seek to cooperate and even collude as much as compete, since heedless competition risks becoming harmful.

We have joined the rest of U. S. higher education in apparent disregard of both strictures. Our cohort seems incapable of expressing its goals much beyond the ubiquitous, nebulous and much abused “excellence.” As a result all of us appear to compete without limit, just for the sake of competing. The classic instance of this is the

constant push to increase the size of our applicant pools in order to lower our acceptance rates and thus appear more selective, in full knowledge of the fact that the number of seats at our institutions is fixed for all intents and purposes. In the paraphrased words of Duke admissions official Rachel Toor, we whip into a frenzy high school seniors (and their parents) so that more will apply so that we can reject more.[28]

This attitude permeates almost every aspect of the university to some extent at least, whether in direction or scope. The "countryclubization" of our campus is an example of the former. We probably would not have gone down that route had our peers not led the way and there is little chance of matching our wealthier competitors in scope.[29] Our recent investments in computational biology are an example of the latter, or competition's role in determining scope. Cornell scientists too were in the forefront of innovative work in this area but the size of our investment was affected significantly by the outlays of our peers. Our tuition setting algorithm similarly gives disproportionate weight to the forecasts of our peers' moves in this area and the competitive influence on salary decisions needs no elucidation.

A strongly competitive milieu with unequal competitors exhibits general behavior patterns that apply also to higher education. The powerful have an asymmetric say in setting the direction of the struggle. The presence of larger bankrolls provides wealthier schools the luxury to explore and experiment beyond their associates. Their chosen paths tend to become models for the others, reducing the potential for originality and self-awareness in academia as a whole. That all of us want to be Harvard in some measure is an expression not without merit.[30] Second, wealthier schools influence the terms of the struggle. The per capita student resources of a Harvard or a Princeton allow a flexibility of action and expenditure that less-endowed schools feel constrained to emulate, often to their detriment. Third, this type of competitive structure tends to widen financial

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[28] Admissions Confidential

[29] Princeton's recently completed Whitman College by itself cost as much as our five new West Campus Houses combined.

discrepancies over time, further strengthening the already strong. Fourth, the focus of the competition diverges from its original and more worthwhile intent to competing on secondary or auxiliary issues. In business this has meant shifting resources from trying to improve the proverbial mousetrap to investing them in advertising and product differentiation. In our context this translates into sizeable investments in ancillary activities such as countryclubization, addiction to media, going after trophy architects, etc.

VI THE WAYS FORWARD or WHERE ANGELS FEAR

So much for the easy part!

It may an impertinence to attempt the question of where we go from here, given the many recent works on the pitfalls of higher education by a large number of scholars and academic administrators with substantial experience and gravitas. On the other hand, as our own Glenn Altshuler wrote recently in a review of Louis Menand's The Marketplace of Ideas, some authors may feel "no great compulsion to prescribe ... and so ... despite some tantalizing hints ... [there is not] nearly enough about how to shake the system without breaking it."[31] Also, such schemes as have been proposed are for redress of the system of higher education as a whole, whereas we are concerned here with only our own institution.

We may group the possibilities for action in several ways. One is temporal, by whether the potential solutions are reachable in the short, medium or long terms. A second is by the source of the problem. Those stemming from bad policy alone would be relatively easily to resolve since decisions may be reversed. Those that arise out of structural impediments, whether inside or outside the university, would require more effort and time to make good. Impediments caused by larger social forces, for example, the commercialization of all higher education, are the most intractable and would be the

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[30] Especially Yale – sorry, couldn't resist that.
[31] "A look at teaching ills of top tier colleges."

most difficult to counteract. A third approach would sift solutions by whether we could address them unilaterally, or need the cooperation of our peers, or require even broader societal action to be successful.

No matter how we parse the analyses and remedies, we perforce will have to address two central causal factors: the inescapable, deleterious and cumulative impact on university budgets of an unlimited appetite for sponsored research, and the debilitating effects of engaging in competition merely for competition's sake. Also, it is clear a priori that many of these issues may not be resolvable except in the longest term, or only with significant disruption, and some not at all, but it nevertheless would behoove us to discuss them openly and sincerely.

We will take the third route, starting with relatively small steps that we might take on our own and working up to more complex solutions. Where applicable, we will distinguish between policy and structural causations. Throughout we will grapple with the vital issue of just what is our responsibility towards the society that supports us and provides us sustenance.

A. Going it alone: policy

These are areas where we might achieve substantial benefits on our own, without needing either the cooperation of our peers or the permission of the government.

1. ADMINSTRATIVE RATIONALIZATION

We have been effective at administrative rationalizations in the face of financial crises. This extends to the current round of cutbacks, during which we have curtailed costs, including payroll costs, in a sensitive and systematic manner. In earlier instances, once the crises passed, we returned to our freer-spending ways. An important question for the future is how to prevent such retrogression. Another and more important question is how to integrate the needs of business-denominated notions of efficiency ("bean counting") with the operations of a non-business enterprise (the imperative that a musical quartet

contain four players, no matter the relative "production" of the musicians, or the indispensability of the piccolo to an orchestra, even with very few notes played).

Both are momentous and contentious issues that may only be addressed through constant vigilance and cooperation on the part of administration and faculty. Setting up mechanisms to do this would not be difficult; the trick would le in keeping interest and commitment alive beyond crises.

2. FACILITIES

A significant part of any long-term resolution of costs would have to deal with the ways in which we build and maintain our physical plant. For new construction, we would glean significant benefits from finding ways of avoiding the false starts, re-designs, pre-construction delays and retrofits that have been a major part of our recent experience. We have taken beginning steps to steer clear of difficulties with local permitting bodies by establishing clearer and more respectful working relationships with them but more needs to be done. Bottlenecks and stumbling blocks vis-a-vis faculty are not as easily resolved. Though these relationships also could be improved, there is no guarantee it would be sufficient. The professoriate is known (notorious?!) for not paying attention to matters in which it has lesser interest and then complaining about being left out of deliberations.

The Alumni Ad Hoc Committee on Capital Projects reported in 2003 that our construction costs were on the high side compared to our peers, even after adjusting for our remote location. Given the volume of construction, even a few percentage points would make a significant difference to our budget. So far as is known, there was no follow up by the administration of the day to the committee's work and recommendations. The intervening period has not been long enough to make the report totally obsolete and it might be worth resuscitating and acting on it with appropriate adjustments.

Then there is the question of using big name or media designers. Signature architects charge substantially higher fees, sometimes by an order of magnitude and more compared to their less celebrated peers. Dealing with them often is problematic,

particularly as regards getting the attention of the principal(s) and exercising budgetary discipline. Occasionally their creations do not stand up to their promise.

The most common justification offered for commissioning super stars is that all societies need great architecture and that in our era it is our lot and indeed duty, together with corporations and foundations, to provide it. Two aspects of this proposition are eminently debatable. The first is the notion that it is one of our responsibilities to endow society with great buildings. The second is the association of outstanding design solely with the media stars.

A second justification maintains that works on campus by very well known architects provide universities with added visibility and standing that translate into obtaining more resources and better students. This assertion too needs to be examined empirically, given that dealing with stars carries with it substantial added financial as well as opportunity costs.[32]

One way of having our proverbial cake and eating it too would be to duplicate our experience with Mr. I. M. Pei and the Johnson Museum. We could take the trouble to find now, as we did then, successful designers with demonstrated skills and oeuvres who clearly were headed for high architecture acclaim but who were not yet media stars.

The principle issue related to buildings and grounds maintenance is the impact on costs of setting up the caretaking organization as a quasi-enterprise. This is dealt with in the next section.

3. ENTERPRISES AND QUASI-ENTERPRISES

The issue with the proper management of enterprises is not whether they are able to meet their expenses. That they are almost always able to do because of their fortunate situation in being chartered monopolies (section V.C.4). The more pertinent questions

[32] The best case study possibly would be the University of Cincinnati, which commissioned stars to design nine buildings in 14 years (Graves, Eisenman, Pei Freed Cobb, Gehry, Gwathmey Siegel, Mayne, Tschumi, Sueberkrop).

relate what costs they incur and how they mange to cover them. Do they undertake the careful husbandry that competitive organizations are constrained to adopt or do they rely on price manipulation that the lack of outside competition grants them? Unnecessary and wasteful outlays are still inefficient, even if enterprises are able to absorb them without running deficits through increased charges. The Alumni Ad Hoc Committee on Capital Projects pointed this out in the context of Facilities establishment: "Uncontrolled time and material billings ... can be, and often are, a source of friction and mistrust between user groups" and enterprise providers and are "alien to the collegial culture of the University community ... " [33]

The nature and structure of enterprise costs, and the manner in which they are covered, would be well worth examining in detail on a regular schedule. The Alumni Ad Hoc Committee Report would be a good start for this too and in addition we could update Dick Schuler's 1987 cost analyses.

4. ATHLETICS

Many questions come to mind. How did we end up among the top three or four institutions of higher education in the country in the number of varsity sports we support? Was this a conscious decision, and if so, whose was it and what were the reasons given for it? If on the other hand we backpedalled into this state, how did the expansion slip by those responsible for the larger picture? Given where we are, what are the benefits to the university from this investment, with particular reference to the larger (non-varsity) student body? How much do we spend per capita on varsity athletics and how much on the sports and recreation activities of the rest of the students, who should the main concern and beneficiaries of his aspect of our work? Do we wish to be a costless farm club for professional sports?

College and university athletic programs everywhere seem to have taken on a life of their own and we seem to be no exception. Given the other burdens of office, this aspect

[33] Report of Alumni Ad Hoc Committee on Capital Projects," October 2003.

of university operations is of lesser importance to the highest echelons of academic administration. It is enough if the programs take care of their own expenses, hopefully field winning teams, and gather at least a few championships. The rest is left to athletic administrators, alumni lobbies and the ever more powerful and intrusive world of commercialized varsity sports.

That has been our case too. Athletics is a quasi-enterprise whose various sources of independent income provide a budgetary cushion but also raise the same questions as for other enterprises about patterns of spending. We have had a string of strong athletic directors who were very effective at their task. (If exception is taken at the growth in the programs, the responsibility lies elsewhere, for the athletic leadership behaved as we would want it to.) Our pro-athletic alumni have been active and generous, providing moral and material support.[34] And judging by the corporate logos that increasingly are visible, it appears that we have done well on the sponsorship front too.

We need to take stock of our approach to varsity sport. The purpose of an athletics department principally is to cater to all the students, to provide them opportunities for recreation, and to help them nurture and build their bodies as they do their minds. Intramural competition is a critical element in this. Participating in inter-varsity competition is a second and ancillary obligation, regardless of how it has transformed itself. The issues to be resolved are the relative importance of the two for the well being of the university, and their combined weight when posited against the other academic and scholarly goals of the institution.

5. ENDOWMENT PAYOUTS.

The annual payout rate from the endowment recently has become a relatively contentious issue at the national level as lawmakers have challenged public institutions with large

[34] The number of coaches, assistant coaches and other positions endowed is most impressive for an observer whose academic department contains an illustrious scholar, officially named a “Father of the Field,” but who retired without being awarded a Chair.

corpuses, mainly universities and foundations, to justify what elected officials consider to be unreasonably low payouts. We need to evaluate this issue at a strategic level, beyond the practical decisions that the central administration and trustees take about this on an annual basis. We might consider a schedule for assessing broadly our payout policies at regular intervals in normal times, separate from financial crises-linked considerations.

Of course the problem with distributing a higher payout on a recurring basis is that, based on our history, we will find ways of spending the additional monies and still come up short.

6. OVERSEAS OPERATIONS

We have been an international university from our earliest times and have provided benefit to and benefited from our links with the world. Until very recently this mainly was at the level of individual faculty members or groups of professors making the connections and doing the work. While we did publicize our achievements, the media aspect was limited and minimal. So was the involvement of senior administrators, beyond inking formal documents and making occasional trips to work sites.

Both conditions seem to have changed. The media aspect of working abroad has gained in importance and the incidence of international travel by administrators is on the rise. Further, at least some of this activity seems to be driven by competition and concerns about keeping up with our peers' apparent or anticipated moves, as much as by substantive considerations.

It is time for us to take a careful look at our role in the world with an emphasis on three questions: (1) what is our interest in other nations and peoples? Do we venture abroad to further mainly our interests or in service of partners? (2) The response to this question will help answer the second. Who do we associate with when we are abroad? Is it only leading institutions like ourselves because we feel that we cannot collaborate with "lesser" partners or should we put our stature to work at the service of younger, smaller and less accomplished schools and colleges? (3) How should we deal with the perceived

and real competition for students and increasingly faculty from newer competitors in Australia, Singapore, the Middle East and others?

7. SPONSORED RESEARCH

I await the proverbial bolt of lightening as I write this.

We know that sponsors do not pay the full cost of the research that we do for them. Thus for every new sponsored project we undertake we concede consciously or subconsciously that we would have to find resources from other university coffers to cover the shortfall. Historically these subventions have come from tuition income and constitute an important impediment to our ability to limit tuition increases to inflation.

That being the case, it is time to reevaluate our policy towards sponsored research, even if we end up not changing it. Perhaps there could be a cap on the total amount of sponsored research we accept per unit time period based on estimates of our ability to fund the future shortfalls that come with it. Or, if it could be shown that different types of research result systematically in varying amounts or proportions of shortfall, perhaps we could attempt a form of weighted differentiation between disciplines and programs. We might include also non-monetary considerations in our decision criteria such as the potential impact of the research on internal cohesion and collegiality, particularly for corporate sponsors who tend to constrict the free exchange of information.

Undertaking such an exercise at a minimum will result in a better understanding of our situation, and more likely will enable us to come up with at least some ways to ameliorate it.

B. Going It Alone: Structure

Some elements of the current situation could not be resolved by changes in policy alone but require in addition structural changes.

1. RESTORING FACULTY OWNERSHIP

To attempt true structural change we would need to have a significant portion of the university faculty internalize the idea and lead the process of defining and achieving the new goals. We are far from that point. To the contrary, faculty involvement in university affairs remains on the wane. This is evident in the lukewarm response to the university senate. Service in the body aside, even participation through "mere" attendance is lacking. We do get involved at the level of departments and programs but both interest and availability seem to flag once the locus of activity becomes farther removed. This is for totally understandable reasons (Section V.E.3) but that does not detract from the point.

The evidence seems to be that the central administration and trustees are quite content with this status quo. Managing an institution as large and complex as Cornell is difficult enough without opening detailed decision making to some hundreds of knowledgeable, opinionated and argumentative individuals. So the voice and weight of the university senate has been reduced over the years, by administrative action and by faculty default, to institute a cycle of decline in involvement. The perceived lack of effectiveness of the body lessens the desire to serve or participate in it that in turn reduces its clout even further ...

Given the current reality, it may be impossible for faculty to regain involvement in the institution to the extent necessary to enact substantive change. The professoriate is stressed as it is and would be loathe to make the professional sacrifices necessary for serious participation in community governance. It is equally the case that neither trustees nor the central administration would favor a re-jeuvanted faculty. Without these significant adjustments, chances are that we will persist in our long-term predicament, to the detriment of all our constituencies.

2. WHAT WOULD WE DO IF WE BEGAN A-NEW?

A simplistic but effective way of beginning to think through structural issues would be for our faculty to undertake as a thought experiment an exercise to design a university from scratch. This is what Mr. Cornell did a century and a half ago and what a slew of countries are doing presently, many with the help of Cornell scholars and administrators, so why not turn this expertise inwards?[35]

The principle advantage of such an effort would be to distract the participants, even if imperfectly and temporarily, from inserting their narrow professional considerations into discussions of a larger social goal. We need to estimate the current and projected higher education needs of the U.S. objectively and holistically, and not in relation to ourselves. However, by doing that, we also will have created a potential template for our future selves and devised a direction in which to head to contribute to the nation's wellbeing.

3. COLLEGE REORGANIZATIONS

Sections V. C and E indicated that it might be to our advantage to consider changes in our college structures to adjust to a changing reality and to achieve savings. What follows are thoughts that, if not quite random, are nevertheless not well formulated, far from comprehensive, and not in any order of priority. They also do not deal with the myriad real and imagined problems of attempting serious change, including creating "hybrid" colleges with a mix of endowed and contract departments. Whatever the obstacles, it is my experience that if Cornell truly wants something, given enough time and planning, we achieve it.

Judging by enrollments, the undergraduate teaching focus of CaLS has shifted substantially towards becoming a prominent business program independent of agriculture

[35] Including our President Emeritus Rhodes who played a key role in designing the brand new King Abdullah University of Science and Technology in Saudi Arabia that opened in 2009 with a $10 billion endowment. India is building 10 new universities and China is concentrating on 9 top-tier institutions.

(Section V.E.7).[36] Looking to undergraduate business in Cornell as a whole, we have another, and earlier, stellar business program in the Hotel School. Where applied economics is concerned, there exists also the Policy Analysis and Management Department (PAM) in the College of Human Ecology. Finally, the Johnson School (JGSM) combines both business and applied economics education at the graduate level. So in theory at least there are potential synergies and economies to be had. Whether or not we make any adjustments, they are worth evaluating.

Closer to home, many of the structural problems with AAP would be attenuated if not resolved with the creation of a College of Design and Performing Arts. This college would have two Schools. The School of Architecture, Environmental Design and Planning would incorporate Architecture, Design and Environmental Analysis, Landscape Architecture, Fiber and Apparel Design, and City and Regional Planning. The School of Fine and Performing Arts would contain the Fine Arts Department and the Department of Theater, Film and Dance. The new college would be much larger, thus justifying a dean's apparatus and getting around the current structural imbalances in AAP (Section V.E.8). The linked departments would be closer to each other professionally in that their goal is creation and practice in addition to written scholarship. The shifts also would reduce the administrative loads in our two largest colleges, Arts and Sciences and CaLS.

These two structural adjustments, together with other complementary moves, just conceivably could reduce our number of colleges by one. With DEA and FAD in a new College of Design and Performing Arts, and PAM combined with AEM, ILR, Economics and Sociology in a College of Social Sciences, the remaining Human Ecology Department of Human Development could be moved to the College of Arts and Sciences, thereby re-constituting the university into six instead of seven undergraduate colleges.

[36] The change of name to the Dyson School is the latest iteration of a transformation in nomenclature that began a decade and more ago as the focus of the original Department of Agricultural Economics shifted beyond agriculture. The first change was to Agricultural and Resource Economics (ARME), followed by Applied Economics and Management (AEM).

This may seem eminently impractical from where we stand but it is worth discussing in a systematic way. The exercise alone will be worth it as it will open up new lines of communication and ideas, even if chose to do nothing at the end. If we decided to go ahead, fully or in part, the plan for re-organization could be implemented over a number of years, in appropriate stages.

4. CONTRACT COLLEGES

All the structural adjustments just noted involve the contract colleges to some extent or the other. An important issue specific to only that group is their potential privatization. Raising a large enough sum to amortize the income from the state clearly is a formidable obstacle. However, if this were attempted in the context of a medium to long term plan that rationalized and reconfigured the colleges such that their total budgetary need was reduced, and determined a multi year horizon for making the transition, it could bring the scheme into the realm of possibility.

But before that we need to decide if indeed we wish to cut these ties so completely. Our disenchantment stems more from the nature of the arrangement than the substance. The close link with New York State is valuable not just for the resources we receive but also for the opportunity to render public service through the Extension apparatus, and to use these special connections to influence public policy. A less drastic approach therefore might be to take to the State a (long term) plan suggesting how we would like to reconfigure the colleges and renegotiate our working relationships. This would involve changes in direction of the sort already have been happening (a move away from agriculture as a focus), re-organization to reflect the new social needs, and perhaps even a partial privatization that would put the corpus raising challenge within reach. As with other issues, the act of putting together a plan would be helpful in itself, even if nothing more came of it.

5. FRCs/TUBS

The structural issues with Tubs start with the cost containment issues that apply also to enterprises. If central oversight is limited to making sure that each Tub meets its own expenses, then consideration of what the money is spent on is lost. Tubs may meet their financial responsibilities successfully but still end up spending money on purposes and in quantities that may not be commensurate with other parts of the university or, and more importantly, conform to its values and principles. It would be useful to think about ways of working cooperatively with Tubs to counter this.

Two other issues are more specific to Tubs. One regards the disposition of surpluses. In the Tub model these are allocated at the discretion of the individual unit once it has paid the university for the "arms length" services provided. But this is an artificial notion of separation, created solely for managerial convenience. Tubs are no more "arms length" to the rest of the institution than other parts of the university. They are integral in every way save this accounting artifice, and contribute to and benefit from the Cornell association in equal measure with their counterparts. Why may we not try to work out a mutually acceptable protocol for them to contribute a portion of any surplus to sections of the institution that do not have their entrepreneurial opportunities, particularly in the humanities?[37]

The second item concerns the tendency for the Tubs model to erect barriers to open and uninhibited learning. The mantra of financial self-sufficiency from time to time promotes intellectual segregation on the campus. For example, the balance of trade calculation made by units regarding students taking courses outside their colleges and majors results in pressure to not study elsewhere. Taken to the limit, colleges have duplicated in house instruction for basic subjects like economics and mathematics. In addition to the economic inefficiencies of such arrangements, this scheme also deprives students from the having the positive experience of working through these disciplines in the company of peers from other disciplines and backgrounds.

[37] Some of our language programs, and the Theater, Film and Dance Department in particular could certainly do with some filial help.

C. Cooperating with others in the academy

Some initiatives require cooperation with our peers.

The way matters stand there are limited ways in which universities may smoothly reduce costs by sharing resources or coordinating functions with other institutions. Our situation in this regard is made more acute by our relative isolation. However, the few avenues that exist do offer promise.

1. SHARING RESOURCES

The sharing of library and information resources presently holds the greatest potential. The advent of electronics has opened up possibilities to share resources with more peers over greater distances worldwide. Advances in transportation enable us also to share physical resources such as books more widely than in the past.

Our libraries already are leaders in these efforts and it would be worthwhile to institutionalize processes of paying continuous attention to these sorts of collaborations across the rest of the university.

2. PURCHASING EFFICIENCIES

Our ongoing administrative reform has as one of its goals the rationalization of purchasing procedures and products over the Ithaca campus. Many of the items will be common to other schools too. Could such coordination be extended beyond our confines to further increase purchasing power?

D. "Colluding" with peers with government involvement

To address some of our deeper problems we would have to cooperate with peers to an extent such that, in lack of government awareness and approval, it would count as

collusion.[38] (We also could take unilateral action but that would be tantamount to suicide.) We should instead take the initiative and make the strongest possible case to the federal government that it involve itself – indeed, lead -- an inter-university collaboration to deal with the more critical issues of higher education including and especially those related to holding the line on costs. A key charge in the Justice Department's 1991 complaint was that schools were colluding to raise tuition (and thus increase costs).[39] Here we would be seeking just the opposite – the active assistance of the government to reduce costs.

Three prime targets for attention are ending the harmful aspects of internecine competition, amending the conditions of academic tenure and returning teaching to the heart of the academic enterprise.

1. REDUCING THE ARMS RACE

Most institutions of higher education are agreed that a not insignificant portion of the resources we expend on competing with each other are wasteful, either because they do not deliver the desired competitive edge, or because they bid up costs by providing levels of service beyond what might be appropriate.

The drive – and not infrequently, machinations – to rise in the standings of commercial rankings of colleges and universities is an example of the former. The purpose and the methods of the surveys have been decried for decades. In 2007 a few score college presidents started a movement to counter them. But the efforts have faltered, in part because to be effective they would need a much larger and more focused mobilization.

[38] In May 1991 the Justice Department filed a complaint against eight Ivy League schools and MIT alleging collusion to raise tuition rates and reduce financial aid for certain admitted applicants. The nine settled by signing a consent decree to not do that in future. The investigation eventually covered 57 colleges and universities.

[39] The other was to reduce financial aid.

The “countryclubization” of campuses is doubtless the best example of the second syndrome. Improvements to the living and recreation environs of students in the recent past have been more lavish and so more expensive than they needed to be. This too is acknowledged almost universally but administrations still are loath to chart an alternate course in the face of the ever-present threat of competition.

These and other such outcomes of needless competition could be addressed, but only through a concerted and joint effort by a majority of schools and colleges, for which move we would need the federal government’s approval and, ideally, leadership.

2. ACADEMIC TENURE

Academic tenure increasingly is under attack. The public views it as an unnecessary and outmoded privilege accorded a group of people whose social standing is anyways in decline. More germane to this discussion is the attitude of academic administrators and government officials. A longstanding worry about tenure has been the potential negative impact on faculty productivity and collegiality once that status is achieved. To that has been added concerns about the impact on faculty longevity in office of the 1978 and 1986 amendments of the 1967 Federal Age Discrimination in Employment Act abolishing mandatory retirement. In addition to the unhappy prospect of having to retain underperformers indefinitely, administrators also are further hampered by a new element of uncertainty in planning for academic transitions, particulary in today’s rapidly changing environments.

There ought to be at least one section of society that is able to speak its mind without fear or favor. For good or ill, the tenured professoriate is that group today. Despite the problems just noted, and the additional irony that tenured faculty are as likely to be bastions of the status quo as fearless questioners, it would be socially harmful to remove this institution. However, there are ways of disposing of the proverbial bath water without sacrificing the baby.

Tenure is a privilege that becomes an enforceable right on the basis of a specific legal arrangement. Colleges and universities are not bound by law to offer this benefit to their teachers and scholars. Neither does the government have a say in defining the rules of tenure. For example, we could amend the amount of time that an assistant professor would need to spend before coming up for tenure without having to clear that with officialdom. That being the case, we might explore, in conjunction with our peers and the government, adjusting the terms of tenure at the other end of the academic life cycle. The new tenure track appointment would include the condition that at some appropriate and mutually acceptable age faculty would give up their tenure (with appropriate recognition and felicitations) but not their position. They would revert to the types of three and six year contractual appointments that they had started with, and remain in harness for as long as they wished, since they would retain fully their legal right to determine their own retirement date. This proposal of course would apply only to future tenurees.

The issue of post tenure job performance may be addressed in similar fashion. Sabbatical leaves also are not a right but a privilege. As such their rules too might be amended to incorporate a pre-sabbatical review by the department and dean. This would be less intense than the tenure review with a relatively greater focus on internal service as opposed to professional standing. Colleagues who did not meet pre-established standards would forego their sabbatical leave for one cycle. The review also would also be used to suggest ways in which the department and faculty member's goals could be better aligned, particularly regarding teaching needs. The JGSM has had such a scheme in place for some time, so we have an functioning in-house model to consider for generalizing.

Both schemes very likely will face opposition from the professoriate. Faculty should recall that the prime purpose of tenure is to safeguard society and not their employment. Conversely, those who would abolish it should remember that they are part of the society that the scheme exists to protect. An open and detailed discussion about the merits and demerits of various schemes to rationalize it will do a service to academy and society, even if the conclusion at the close is to let matters remain as they are.

3. A RETURN TO TEACHING

It is no exaggeration to say that most calls to reinvigorate tenure line teaching so far have been honored mainly in the breach. Such protestations aside, contingent faculty now teach 80 percent of classes in post-secondary institutions in the country and the rate of increase in our use of contingent instructors also has been large (Section V.C.3).

This aspect of our existence epitomizes the main impetuses acting upon and the main outcomes of higher education. The academic life no longer is a vocation in the sense of a calling to study and educate but a profession to be pursued for pecuniary benefit and intellectual stimulation. Superimposed upon with the forces of commoditization or commercialization that also have gained ground, the combination has resulted in an institution that increasingly puts self above society, and personal convenience and gain above service.

The drift away from teaching is neither fluke nor exception but the intended consequence of a long-term shift in professional ethos aggravated by heedless competition. Reversing it will not be easy (as we already have experienced) for it is not a matter of convincing intelligent people of good will (which the professoriate and administration mostly is) to do the “right thing” but of changing substantially and universally the proverbial rules of the game to redress the gross imbalance and restore teaching to its rightfully more prominent place.

Whatever may be attempted on this score, the post tenure review of the previous section should have an important place in the effort.

VII OUR CALL NOW

Higher education in the country has been mired in a low-intensity crisis for thirty years. We are part of that situation. Students, parents, employers and public officials have been hurting and complaining. Contingent faculty have been hurting but not complaining (much). The tenured professoriate also has come under pressure but is far less affected

than the other parts of the academy and society. To date our response mostly has been to deny, neglect and dismiss the concerns. This attitude has served only to deepen the crisis and diminish our social standing.

The country's higher education system remains indisputably the best in the world. Cornell is an integral part of that standing. But to remain a model our peers and ourselves have to undertake serious and urgent reform. Cornell can and must lead this effort, starting with the broadest possible reconsideration of who we are and what is our societal purpose.

The discussion will have to be pursued within our walls and outside them, with peers large and small and with other sections of society. We will need to search out ways to make the reflection open, honest, detailed and far ranging as possible, to eschew timidness and self interest in developing remedies, and to institutionalize the process beyond this round of deliberations. To achieve this we will have to restore to the professoriate a sense of ownership of the institution of higher education beyond our narrow selves.

We may attempt some of the resulting changes unilaterally but for the most important ones we will have to recruit both academy and society. This surely will require significant re-adjustments in attitude and become a long, possibly tedious and certainly contentious task but we must prevail. The problems we face are grave but not intractable provided we are willing to face them and to change. In the lack of that we will have failed tomorrow's youths and the society to which we owe our livelihood and great privileges.

Olpadwala

Appendix 1: Composite Operating Plan by Division, Ithaca Campus

Revenues and Transfers In (dollars in thousands)

Resources	1989-1990 Plan	CAGR between 1989-1990 Plan & 1994-1995 Plan	1994-1995 Plan	CAGR 1994-1995 Plan & 1999-2000 Plan	1999-2000 Plan	CAGR between 1999-2000 Plan & 2004-2005 Plan	2004-2005 Plan	CAGR between 2004-2005 Plan & 2009-2010 Plan	2009-2010 Plan	CAGR between 1989-1990 Plan & 2009-2010 Plan	CAGR between 1994-1995 Plan & 2009-2010 Plan
Tuition & Fees	188,220	9.07%	290,565	5.95%	387,834	7.01%	544,338	5.20%	701,513	6.80%	6.05%
% of Total Resources	25.48%		31.51%		33.14%		35.37%		37.58%		
Investment Distributions/Income	36,823	9.52%	58,025	12.86%	106,227	7.68%	153,819	10.29%	250,961	10.07%	10.26%
% of Total Resources	4.99%		6.29%		9.08%		9.99%		15.88%		
Unrestricted Gifts	10,613	6.63%	14,627	16.33%	31,155	1.91%	34,254	0.37%	34,900	6.13%	5.97%
% of Total Resources	1.44%		1.59%		2.66%		2.23%		1.87%		
Restricted Gifts	15,745	18.63%	36,997	1.26%	39,395	11.56%	68,064	-6.36%	49,000	5.84%	1.89%
% of Total Resources	2.13%		4.01%		3.37%		4.42%		2.63%		
Grants and Contracts	152,760										
% of Total Resources	20.68%										
Sponsored Programs (direct)			168,726	3.88%	204,129	5.98%	272,905	2.91%	315,063		4.25%
% of Total Resources			18.30%		17.44%		17.73%		16.88%		
Sponsored Programs (F&A/indirect costs)			45,467	0.87%	47,478	7.91%	69,475	2.76%	79,592		3.80%
% of Total Resources			4.93%		4.06%		4.51%		4.26%		
Indirect Cost Recoveries: Sponsored Programs, Tuition Retainage, All Other	72,669										
% of Total Resources	9.84%										
Institutional Allowances			536	-49.28%	18	31.95%	72	-100.00%	0		
% of Total Resources			0.06%		0.00%		0.00%		0.00%		
State Appropriations	125,264	0.65%	129,394	2.64%	147,388	-1.77%	134,781	4.36%	166,846	1.44%	1.71%
% of Total Resources	16.96%		14.03%		12.60%		8.76%		8.94%		
Federal Appropriations	17,430	1.82%	19,079	0.03%	19,107	-0.22%	18,899	-1.04%	17,938	0.14%	-0.41%
% of Total Resources	2.36%		2.07%		1.63%		1.23%		0.96%		
Physician Organization (Medical Faculty Practice Plan)	0		0		0		0		0		
% of Total Resources	0.00%		0.00%		0.00%		0.00%		0.00%		
NYPH (purchased services) (NY Hospital/joint activities)			0		0		0		0		
% of Total Resources			0.00%		0.00%		0.00%		0.00%		
Enterprise Sales & Services	66,749	5.34%	86,596	1.86%	94,965	4.08%	115,982	1.92%	127,529	3.29%	2.61%
% of Total Resources	9.04%		9.39%		8.12%		7.54%		6.83%		
Qatar Foundation											
% of Total Resources											
Other Services and Sources	43,484	6.80%	60,425	5.24%	78,009	4.62%	97,764				
% of Total Resources	5.89%		6.55%		6.67%		6.35%				
Educational Activities & Other Sources									123,304		
% of Total Resources									6.61%		
Subtotal In-Year Revenues			**910,437**	**4.89%**	**1,155,705**	**5.50%**	**1,510,353**	**4.33%**	**1,866,646**		**4.90%**
% of Total Resources			98.73%		98.77%		98.13%		100.00%		
Transfers In From Endowment			1,779	49.54%	13,304	4.93%	16,925	-19.05%	5,882		8.30%
Transfers In From Plant (Plant Funds)							11,830				
Subtotal Transfers In			1,779	49.54%	13,304	16.67%	28,755	-27.19%	5,882		8.30%
% of Total Resources			0.19%		1.14%		1.87%				
Increase/Decrease in Restricted Fund Balances	-1,334										
% of Total Resources	-0.18%										
Use of Prior Year's Designated Fund Balances	4,679										
% of Total Resources	0.63%										
Total Resources**	**738,598**	**4.54%**	**922,120**	**4.88%**	**1,170,152**	**5.63%**	**1,539,108**	**3.93%**	**1,866,646**	**4.74%**	**4.81%**

*Investments for the 2009-2010 Plan is made up of the following categories: endowments and other funds; undergrad financial aid withdrawal; pooled balances fund; and separate investment
**Total Resources is the sum of Subtotal In-Year Revenues, Subtotal Transfers In, Increase/Decrease in Restricted Fund, and Use of Prior year's Designated Fund.

Expenditures and Transfers Out (dollars in thousands)

Department/Division	1989-1990 Plan	CAGR between 1989-1990 Plan & 1994-1995 Plan	1994-1995 Plan	CAGR 1994-1995 Plan & 1999-2000 Plan	1999-2000 Plan	CAGR between 1999-2000 Plan & 2004-2005 Plan	2004-2005 Plan	CAGR between 2004-2005 Plan & 2009-2010 Plan	2009-2010 Plan	CAGR between 1989-1990 Plan & 2009-2010 Plan	CAGR between 1994-1995 Plan & 2009-2010 Plan
Agriculture & Life Sciences			145,937	2.45%	164,726	5.54%	215,733	3.34%	254,192		3.77%
% of Total Expenditures			15.94%		14.19%		14.09%		13.68%		
Architecture, Art, & Planning			8,828	5.71%	11,653	6.51%	15,974	7.75%	23,199		6.65%
% of Total Expenditures			0.96%		1.00%		1.04%		1.25%		
Arts & Sciences			93,719	4.14%	114,800	5.96%	153,307	2.13%	170,333		4.06%
% of Total Expenditures			10.24%		9.89%		10.01%		9.16%		
Engineering			72,325	2.97%	83,722	7.29%	119,028	2.53%	134,868		4.24%
% of Total Expenditures			7.90%		7.21%		7.77%		7.26%		
Hotel Administration			30,603	4.74%	38,583	2.07%	42,753	0.61%	44,078		2.46%
% of Total Expenditures			3.34%		3.32%		2.79%		2.37%		
Human Ecology			31,788	2.92%	36,705	4.54%	45,818	2.86%	52,754		3.43%
% of Total Expenditures			3.47%		3.16%		2.99%		2.84%		
Industrial & Labor Relations			22,233	6.79%	30,883	4.93%	39,278	3.22%	46,019		4.97%
% of Total Expenditures			2.43%		2.66%		2.57%		2.48%		
Johnson School			15,594	9.84%	24,933	7.47%	35,741	7.89%	52,242		8.39%
% of Total Expenditures			1.70%		2.15%		2.33%		2.81%		
Law School			11,806	4.39%	14,636	7.28%	20,802	8.80%	31,710		6.81%
% of Total Expenditures			1.29%		1.26%		1.36%		1.71%		
Veterinary Medicne			50,215	6.97%	70,338	5.93%	93,828	3.78%	112,927		5.55%
% of Total Expenditures			5.48%		6.06%		6.13%		6.08%		
Research Centers			60,847	5.74%	80,443	1.89%	88,335	3.80%	106,437		3.80%
% of Total Expenditures			6.65%		6.93%		5.77%		5.73%		
Other Academic Programs			60,481	8.82%	92,277	3.49%	109,554	6.41%	149,433		6.22%
% of Total Expenditures			6.61%		7.95%		7.16%		8.04%		
Centrally Recorded Financial Aid			60,875	7.09%	85,731	8.99%	131,853	8.87%	201,681		8.31%
% of Total Expenditures			6.65%		7.38%		8.61%		10.85%		
Student Services			77,828	1.05%	82,014	5.34%	106,356	1.69%	115,642		2.68%
% of Total Expenditures			8.50%		7.06%		6.95%		6.22%		
Administrative & Support			70,074	6.34%	95,299	4.38%	118,054	11.13%	200,096		7.25%
% of Total Expenditures			7.65%		8.21%		7.71%		10.77%		
Physical Plant			86,533	4.53%	107,981	2.61%	122,820	-3.90%	100,668		1.01%
% of Total Expenditures			9.45%		9.30%		8.02%		5.42%		
All Other			6,125	-8.77%	3,871	12.66%	7,025	-213.10%	-13,000		-205.15%
% of Total Expenditures			0.67%		0.33%		0.46%		-0.70%		
Subtotal Expenditures			**905,118**	**4.68%**	**1,137,819**	**5.18%**	**1,464,683**	**4.18%**	**1,797,104**		**4.68%**
% of Total Expenditures			98.85%		97.99%		95.66%		153.71%		
Transfers to Endowment			4,839	15.71%	10,038	-9.42%	6,121	-32.06%	886		-10.70%
Transfers to Plant Funds	-2719	-215.96%	5,701	18.55%	13,348	35.21%	60,309				
Other Adjustments	0										
Subtotal Transfers Out			10,540	17.28%	23,386	23.22%	66,430				
% of Total Expenditures			1.15%		2.01%		4.34%				
Total Uses of Resources	**734,314**	**4.51%**	**915,658**	**4.87%**	**1,161,205**	**5.69%**	**1,531,113**	**3.95%**	**1,858,729**	**4.75%**	**4.83%**
Net From Operations	**1,565**	**32.79%**	**6,462**	**6.72%**	**8,947**	**-2.22%**	**7,995**	**-0.20%**	**7,917**	**8.44%**	**1.36%**

Appendix 2: Composite Operating Plan by Division, Ithaca Campus and Medical College

Revenues and Transfers In (dollars in thousands)

Resources	1989-1990 Plan	CAGR between 1989-1990 Plan & 1994-1995 Plan	1994-1995 Plan	CAGR 1994-1995 Plan & 1999-2000 Plan	1999-2000 Plan	CAGR between 1999-2000 Plan & 2004-2005 Plan	2004-2005 Plan	CAGR between 2004-2005 Plan & 2009-2010 Plan	2009-2010 Plan	CAGR between 1989-1990 Plan & 2009-2010 Plan	CAGR between 1994-1995 Plan & 2009-2010 Plan
Tuition & Fees	197,778	8.83%	301,931	5.90%	402,215	6.89%	561,311	5.29%	726,391	6.72%	6.03%
% of Total Resources	20.82%		23.70%		24.62%		23.96%		24.62%		
Investment Distributions/Income	47,689	8.16%	70,599	12.72%	128,458	7.19%	181,771	10.27%	296,364	9.56%	10.04%
% of Total Resources	5.02%		5.54%		7.86%		7.76%		10.05%		
Unrestricted Gifts	14,668	5.64%	19,299	13.45%	36,272	0.43%	37,063	-0.19%	36,710	4.69%	4.38%
% of Total Resources	1.54%		1.51%		2.22%		1.58%		1.24%		
Restricted Gifts	27,033	17.26%	59,922	5.13%	76,970	16.04%	161,911	-7.60%	109,050	7.22%	4.07%
% of Total Resources	2.85%		4.70%		4.71%		6.91%		3.70%		
Grants and Contracts	193,414										
% of Total Resources	20.36%										
Sponsored Programs (direct)			218,912	4.29%	270,020	7.06%	379,856	2.59%	431,605		4.63%
% of Total Resources			17.18%		16.53%		16.21%		14.63%		
Sponsored Programs (F&A/indirect costs)			64,764	3.01%	75,103	8.24%	111,563	2.04%	123,395		4.39%
% of Total Resources			5.08%		4.60%		4.76%		4.18%		
Indirect Cost Recoveries: Sponsored Programs, Tuition Retainage, All Other	89,540										
% of Total Resources	9.43%										
Institutional Allowances			1,846	-4.81%	1,443	69.07%	19937	9.27%	31,063		20.71%
% of Total Resources			0.14%		0.09%		0.85%		1.05%		
State Appropriations	126,626	0.46%	129,591	2.64%	147,592	-1.78%	134,924	4.36%	167,042	1.39%	1.71%
% of Total Resources	13.33%		10.17%		9.03%		5.76%		5.66%		
Federal Appropriations	17,430	1.82%	19,079	0.03%	19,107	-0.22%	18,899	-1.04%	17,938	0.14%	-0.41%
% of Total Resources	1.84%		1.50%		1.17%		0.81%		0.61%		
Physician Organization (Medical Faculty Practice Plan)	107,970	9.77%	172,087	5.93%	229,585	7.85%	334,975	9.32%	522,956	8.21%	7.69%
% of Total Resources	11.37%		13.51%		14.05%		14.30%		17.73%		
NYPH (purchased services) (NY Hospital/joint activities)			42,879	1.62%	46,478	9.03%	71,600	5.89%	95,300		5.47%
% of Total Resources			3.37%		2.84%		3.06%		3.23%		
Enterprise Sales & Services	70,739	5.48%	92,366	2.33%	103,639	4.25%	127,607	3.14%	148,952	3.79%	3.24%
% of Total Resources	7.45%		7.25%		6.34%		5.45%		5.05%		
Qatar Foundation									80,453		
% of Total Resources									2.73%		
Other Services and Sources	47,733	7.11%	67,284	4.04%	82,032	16.03%	172,524	2.84%	198,502	7.39%	7.48%
% of Total Resources	5.03%		5.28%		5.02%		7.36%		6.73%		
Educational Activities & Other Sources									156,965		
% of Total Resources									5.32%		
Subtotal In-Year Revenues			**1,260,559**	**5.13%**	**1,618,914**	**7.41%**	**2,313,941**	**4.94%**	**2,944,184**		**5.82%**
% of Total Resources			98.94%		99.08%		98.77%		99.80%		
Transfers From Endowment			12,650	1.83%	13,853	4.09%	16,925	-19.05%	5,882		-4.98%
Transfers From Plant (Plant Funds)			812	7.08%	1,143	59.58%	11,830				
Subtotal Transfers In			13,462	2.18%	14,996	13.91%	28,755	-27.19%	5,882		-5.37%
% of Total Resources			1.06%		0.92%		1.23%				
Increase/Decrease in Restricted Fund Balances	1,114										
% of Total Resources	0.12%										
Use of Prior Year's Designated Fund Balances	8,127										
% of Total Resources	0.86%										
Total Resources**	**949,861**	**6.05%**	**1,274,021**	**5.10%**	**1,633,910**	**7.47%**	**2,342,696**	**4.72%**	**2,950,066**	**5.83%**	**5.76%**

*Investments for the 2009-2010 Plan is made up of the following categories: endowments and other funds; undergrad financial aid withdrawal; pooled balances fund; and separate investment taxable debt.

**Total Resources is the sum of Subtotal In-Year Revenues, Subtotal Transfers In, Increase/Decrease in Restricted Fund, and Use of Prior year's Designated Fund.

Expenditures and Transfers Out (dollars in thousands)

Department/Division	1989-1990 Plan	CAGR between 1989-1990 Plan & 1994-1995 Plan	1994-1995 Plan	CAGR 1994-1995 Plan & 1999-2000 Plan	1999-2000 Plan	CAGR between 1999-2000 Plan & 2004-2005 Plan	2004-2005 Plan	CAGR between 2004-2005 Plan & 2009-2010 Plan	2009-2010 Plan	CAGR between 1989-1990 Plan & 2009-2010 Plan	CAGR between 1994-1995 Plan & 2009-2010 Plan
Agriculture & Life Sciences			145,937	2.45%	164,726	5.54%	215,733	3.34%	254,192		3.77%
% of Total Expenditures			11.57%		10.23%		9.28%		8.67%		
Architecture, Art, & Planning			8,828	5.71%	11,653	6.51%	15,974	7.75%	23,199		6.65%
% of Total Expenditures			0.70%		0.72%		0.69%		0.79%		
Arts & Sciences			93,719	4.14%	114,800	5.96%	153,307	2.13%	170,333		4.06%
% of Total Expenditures			7.43%		7.13%		6.59%		5.81%		
Engineering			72,325	2.97%	83,722	7.29%	119,028	2.53%	134,868		4.24%
% of Total Expenditures			5.73%		5.20%		5.12%		4.60%		
Hotel Administration			30,603	4.74%	38,583	2.07%	42,753	0.61%	44,078		2.46%
% of Total Expenditures			2.43%		2.40%		1.84%		1.50%		
Human Ecology			31,788	2.92%	36,705	4.54%	45,818	2.86%	52,754		3.43%
% of Total Expenditures			2.52%		2.28%		1.97%		1.80%		
Industrial & Labor Relations			22,233	6.79%	30,883	4.93%	39,278	3.22%	46,019		4.97%
% of Total Expenditures			1.76%		1.92%		1.69%		1.57%		
Johnson School			15,594	9.84%	24,933	7.47%	35,741	7.89%	52,242		8.39%
% of Total Expenditures			1.24%		1.55%		1.54%		1.78%		
Law School			11,806	4.39%	14,636	7.28%	20,802	8.80%	31,710		6.81%
% of Total Expenditures			0.94%		0.91%		0.89%		1.08%		
Medical College (academic/clinical)			285,240	5.41%	371,190	10.94%	623,824	11.14%	1,058,038		9.13%
% of Total Expenditures			22.61%		23.05%		26.83%		36.08%		
Veterinary Medicine			50,215	6.97%	70,338	5.93%	93,828	3.78%	112,927		5.55%
% of Total Expenditures			3.98%		4.37%		4.04%		3.85%		
Research Centers			60,847	5.74%	80,443	1.89%	88,335	3.80%	106,437		3.80%
% of Total Expenditures			4.82%		4.99%		3.80%		3.63%		
Other Academic Programs			60,481	8.82%	92,277	3.49%	109,554	6.41%	149,433		6.22%
% of Total Expenditures			4.79%		5.73%		4.71%		5.10%		
Centrally Recorded Financial Aid			66,054	6.98%	92,567	8.91%	141,856	8.91%	217,334		8.26%
% of Total Expenditures			5.24%		5.75%		6.10%		7.41%		
Student Services			77,828	1.05%	82,014	5.34%	106,356	1.69%	115,642		2.68%
% of Total Expenditures			6.17%		5.09%		4.57%		3.94%		
Administrative & Support			103,142	5.64%	135,729	11.57%	234,651	-3.14%	200,096		4.52%
% of Total Expenditures			8.17%		8.43%		10.09%		6.82%		
Physical Plant			106,209	5.21%	136,930	3.44%	162,136	-9.09%	100,668		-0.36%
% of Total Expenditures			8.42%		8.50%		6.97%		3.43%		
All Other			6,125	-8.77%	3,871	12.66%	7,025	-213.10%	-13,000		-205.15%
% of Total Expenditures			0.49%		0.24%		0.30%		-0.44%		
Subtotal Expenditures			**1,248,974**	**4.89%**	**1,586,000**	**7.30%**	**2,255,999**	**4.82%**	**2,855,142**		**5.67%**
% of Total Expenditures			98.99%		98.47%		97.04%		97.42%		
Transfers to Endowment			5,839	11.45%	10,038	-9.42%	6,121	-0.79%	5,882		0.05%
Transfers to Plant Funds	-3008		6,909	16.19%	14,632	33.83%	62,809				
Other Adjustments	-271										
Subtotal Transfers Out			12,748	14.12%	24,670	22.81%	68,930				
% of Total Expenditures			1.01%		1.53%		2.96%				
Total Uses of Resources	**939,602**	**6.07%**	**1,261,722**	**5.00%**	**1,610,670**	**7.62%**	**2,324,929**	**4.75%**	**2,932,737**	**5.86%**	**5.78%**
Net From Operations	**6,980**	**12.00%**	**12,299**	**13.57%**	**23,240**	**-5.23%**	**17,767**	**-4.11%**	**14,404**	**3.69%**	**1.06%**

Note:
Total Uses of Resources for 09-10 Plan includes Subtotal Debt Repayment and Subtotal Transfers.

Olpadwala