

December 7, 1999

The Dale R. Corson Symposium at Cornell, December 6-7, 1999

Text for a talk entitled "Financing Cornell in the 21st Century"

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INTRODUCTION

You might wonder what I, a retired Cornell physicist, am doing here on the platform, in the midst of a collection of experts and university leaders ?

There are two reasons: The first is that it's wonderful to be able to participate in this grand testimonial to Dale Corson. When my wife and I came to join the physics department at Cornell in 1954, Dale and Nellie Corson were among the warmest welcomers. Since that time, our interaction has been a wonderful mix of the professional support which he has given to me, as to so many others at this institution, and a continuing family friendship. After living across the road from one another on South Hill for 40 years, on what was sometimes called "Physics circle," we now find ourselves again living across the green in the Kendal of Ithaca community. Fate must be saying something.

The second reason for my presence is that I was persuaded by our Moderator and Dean of the Cornell Faculty Bob Cooke to act as chair of a task force of Cornell Faculty members of the Board of Trustees, present and former, to look at some long-range aspects of Cornell's financial policies -- hence the title, "Financing Cornell in the 21st Century." I've been reasonably close to and interested for some time in the question of how to realize all of our ambitions for Cornell within realistic fiscal constraints. This interest began with my own membership on the Cornell Board of Trustees in the late 1970's and early 1980's.

This Faculty Trustees' Task Force is still in the early stages of its work. It is important to note that my comments today stem from my own personal judgments, not from concerted work by the Task Force. The Task Force expects to have some better-digested ideas to present to the community at the end of this academic year.

Motivation for establishment of the Task Force:

For some decades, the annual cost of education for each student at Cornell and many similar institutions has risen at roughly 2-3% above the rate of rise of many other costs in our society. During some time periods, this rate of rise has been roughly matched by other economic indicators such as overall productivity in American society or disposable family income per capita. But during other periods (notably the 1980's), the total cost and more significantly, the fraction of that cost borne by students and their families, galloped well ahead of such indicators, with consequent stress for students, their families, and the society in general.

The private colleges and universities, such as Cornell, have been granted a remarkable financial reprieve by the U. S. economic boom of the late 1990's. Nevertheless, at Cornell a number of signs of future financial stress are visible on the current scene. History says that the good times will not roll on forever. We need to plan ahead. A long term financial strategy for Cornell (coming to fruition on a 5-10 year time scale, perhaps) which can prepare for bad economic times as well as good economic times seems essential.

Relationship to Previous Talk by Prof. Ehrenberg

Some of the themes and judgments highlighted by Ehrenberg will appear again here. You'll find very little disagreement between him and me as to how the present general inability to control costs has evolved, even though the pathways by which the two of us have arrived at that agreement are rather different. Ehrenberg approaches the subject informed by his profession and his study, backed up by a tour of duty on the other side of the administration/faculty fence. I approach it as an interested and moderately well-informed amateur with a rather different professional background, but perhaps most usefully with 45 years of varied experience in this wonderful institution.

Structure of the talk:

Obviously, in 25 or 30 minutes, even if I were both wise and omniscient, I could not address in a useful way very many details of such a huge topic as indicated by the title of my talk.

After a few bits of history, I'll focus on three, loosely connected themes:

Theme #1. There is a somewhat loose nature to much of current financial decision-making at Cornell -- particularly in the limited attention given to

downstream costs of program decisions.. I'll give an example or two as an illustration of this characterization.

Theme #2: Cornell's PEOPLE and their interactions: The key to sound financial decision-making in an institution as complicated as Cornell ultimately depends upon the actions of PEOPLE. Thinking of three groups of actors on the scene -- central administration, faculty, university trustees --What are the prospects for a major advance directed toward SHARED RESPONSIBILITY AND SHARED DECISION-MAKING?

Theme #3. Cornell must be itself! While we will inevitably react to outside forces, let's KNOW when these are driving us, and make some decisions as to which forces are either consistent with our vision or are so irresistible that we must accommodate to them -- the others we SHOULD resist.

A few historical trends to set the stage. The first step in trying to look into the future is to examine the past -- how did Cornell get where it is today? Are there recent trends whose extrapolation into the future give one worries?

First --some relevant numbers over the past 50 years (1950-2000).

- Viewfoil #1: Students, faculty, total building area 1950-2000
- Viewfoil #2: The rise (1950 - 1970) and flattening off of federal support of research.
- Background changes in U. S. society -- with backdrop of Viewfoils #3 and #4 displaying tuition growth over recent decades and changing income distribution in the U. S. We see the post-war (1950-1970) rise in productivity, disposable family income, etc., the bad scene of the 1980's (static real family income, high inflation, tuition costs galloping far ahead of CPI or productivity -- note this is the period in which the upper part of the U. S. income distribution began to separate), the go-go 1990's and growth of the Winner-take-all Society. The 1990's also is the scene for the current phenomenon which has been dubbed the "Arms Race", carried by most strongly among the private colleges and universities, for attraction of top-notch students.

[The flavor of the current Arms Race is beautifully captured by a quote from the Cornell Chronicle of November 11, 1999, from the manager of the "The Marketplace," a new Cornell student dining center:

"We tried to create a new atmosphere for freshmen. We know that students coming to Cornell today are not looking for traditional cafeteria fare. Their tastes are more sophisticated. They are used to fine dining and restaurant fare, and we need to be competitive with that."

Wow!]

- Viewfoil #5: Changes in financial aid and financing thereof

Comment: Over the period from 1989 to 1999, inflation-adjusted financial aid dollars coming directly from Cornell sources (either gifts, return from gifts or direct budget appropriations) grew at approximately 7% per year, with a total of about \$63,000,000 for the current academic year. A good part of this increase has resulted from some remarkably generous and focussed giving by Cornell alumni and others. But suppose this 7% per year rise were to continue for another ten years. Even the recent generous gifts to "endowment" are likely to be swamped by such a demand.

Now, on to the main subject:. Financing Cornell in the 21st Century

Worries, generated by inside or outside forces

One issue:. Can we distinguish rising costs which genuinely contribute to more effective education from those driven by outside forces or attitudes in U. S. society as a whole not directly related to the fundamental educational enterprise?

- An example of an arena in which outside forces mix with an excessively loose internal decision-making structure, particularly with regard to attention to downstream (i.e., later consequences of immediate decisions).

The Computer (The Cookie Monster again!) -- Viewfoil #6

Disclaimer: I'm not trying to play the "Grinch who stole Christmas" against Dan Greenberg's evangelistic picture of the future -- I'm focussing on a very limited example to make a point.

All Universities; as well as other components of modern American society seem like sheep walking peacefully to to the financial slaughter in the hands of the "software upgrade/hardware upgrade/..." ratchet. It is really not a law of nature that we buy onto every software upgrade.

Let me give one specific, even rather homely, example of the rather special way in which the computer drives costs. The Cornell network has an access interface called "Bear Access." After operating for a period of time, it was decided by the local computer folks that "We can do it still better with another revision" -- which led to a 1998 upgrade. This change affected computer users all over the campus in various ways. But so far as I've been able to determine, by conversations with knowledgeable people, the basic management questions were never asked-- specifically, "What are the downstream costs of making this upgrade? What is the fan-out benefit/cost ratio?" There are two cost implications of every such computer system change: (1) Staff time is eaten up in the process of getting on top of a new system, (2) Every upgrade occupies more memory and asks for more speed. This often results in running over some threshold in local computer memory or speed -- and, whether they like it or not, departments all over campus are forced into one more hardware update.

We see here an example of the peculiar human response to the "computer revolution." There is something about the dynamic of the computer-driven revolution which causes a suspension of normal budgetary discrimination and, sometimes, even a suspension of judgment. To overly simplify, but not too much, large systems such as universities and the people within them seem to drift inexorably to the conclusion that we MUST have the latest enhancement, no matter what its cost or whatever other good is pushed aside by the need to replace hardware at frequent intervals or retrain office staff AND faculty.

Don't misunderstand me. I'm not suggesting that we become a coterie of Luddites -- only that we gather the information to make sure we know what we're doing.

[Disclaimer: No criticism of our new Cornell VP for IT, who has just recently come on board. I wish her good luck in a quest to tame the Cookie Monster.]

The inadequate attention to downstream costs inherent in my simple computer example appears in decisions about capital investments and personnel additions. [This problem has, of course, been noted many times over the years, but I see in some recent local examples no sign that it is being thoughtfully addressed.]

Now, looking ahead. How can we take charge of our own future ?

Rather than continue to talk about financial specifics, for most of the rest of my time I'm going to center in on Theme #2: PEOPLE The key to sound financial decision-making in an institution as complicated as Cornell ultimately depends upon the actions of people. I'll put forward the thesis that changes in the behavior of PEOPLE, rather than financial savvy, will ultimately support Cornell's wise management of its resources in the 21st Century: I'll be focussing on the concept of Shared Responsibility -- Shared Decision-making.

- An important background factor -- Viewfoil #7

Memory Time scales and commentary thereon:

Faculty membership on Faculty Senate Committees -- 3 years

Students -- 4 years

Second level administration -- 4-10 years (Or even less)

Upper administration -- 10 years

Trustees -- 10-20 years

Specific programs -- 15 years ??

Third level administration -- 20 years

Comments: Many of the people in sub-deanly roles in the colleges form the engine room of effective service to students and faculty.

Doubling time for cost per student at 3%/year above CPI -- 23 years.

Faculty -- 30 years

Doubling time for cost per student at 2%/year above CPI -- 35 years!

Buildings -- 50-100 years

This time scale suggests that proposed construction of a major new building in response to a particular need with a naturally short time scale needs to be looked at pretty carefully.

Note one of the interesting properties of exponentials. We could slow down the doubling time of cost per student by 12 years in the span of one faculty career period by reducing cost/student by 1%!

"Shared Decision-making?" -- more importantly, Shared RESPONSIBILITY -- where I'm thinking about Administration -- Faculty -- Trustees as the interacting entities. In my opinion, here is the key area in which real change is essential. Whether this real change is possible remains to be seen.

First, an assertion: The perspectives of faculty and administration (and Trustees, to lesser extent) must change in order that they be part of the solution, not just part of the problem.

Administration, Faculty and Trustees are currently, to a considerable extent, prisoners of their own perceptions.

- Viewfoil #8 -- Perception #1: The faculty sees the administration as responsible for administrative bloat, possessing an edifice complex, sacrificing faculty interests in order to get its strokes from alumni, trustees, large donors; unwilling to use burgeoning "endowment" funds, etc.

- Viewfoil #9 -- Perception #2: Administration sees "the faculty" as a whole as an inchoate, self-serving group, protecting its local turf, only partially informed and likely to lapse into finger-pointing at the drop of a hat.

(My description of these perceptions is obviously a caricature -- but there is enough truth in them that they need to be taken importantly into account in design of a new system of Shared Responsibility and Shared Decision-Making.)

Trustees?? Members of our Board of Trustees are dedicated and generous supporters of Cornell -- however, they have a perception problem also.

-- Their picture of Cornell is, to a considerable degree, that carried away from their undergraduate days, 25 years ago. Cornell has changed a lot, and its needs are, in many areas, quite different.

-- The Trustees are drawn, almost universally, from the layer of the American socio-economic structure which has found itself running away from the pack in the U. S. boomtime of the 1990's. The view from the top of the economic heap inevitably colors judgment in various areas of the making of a financial policy for the university.

So what about Shared Responsibility and Incentives

First, a few comments about ways in which I believe faculty members must broaden their perspective in the arena of university financing.

An example of failure on the part of faculty to escape their innate perceptions and, thus, fail to share responsibility -- I'm talking about "Buildings." Contrary to one of the assertions in the cartoon which represents a very common faculty perception ("Administrators have an edifice complex") most academic buildings are built in response to faculty needs, demands, etc., not to independent administrative initiative.

Another central issue: Are mechanisms in place to phase out programs which no longer contribute in an effective way to the University's 21st century goals?

An underlying principle: "Faculty have tenure, but programs and building space assignment do not."

Ultimately, the faculty must make it possible to move in new directions by substitution rather than by accretion.

There are some similarities here to the situation described in a famous piece by the biologist/ecologist Garrett Hardin in 1968 entitled "The Tragedy of the Commons." Hardin was speaking of the community area used in times past for grazing domestic animals. Briefly stated, Hardin's point was that for the individual farmer to add one more grazing cow on the Commons supports that particular farmer's self interest, but the summation of added cows destroys the Commons.

Message to Cornell: We must modernize by substitution. New programs must not be the equivalent of a few more cows on the commons.

Yes, it is true that "Faculty solidarity" can prevent accomplishment of the admittedly difficult job of deciding when an academic program is no longer sufficiently mainstream to meet the tough test of competing for resources with a new and obviously timely push. Such decisions CAN be done within a homogeneous entity such as an academic Department -- but VERY hard to do when the push comes from outside the department.

To reach a state in which individual departments or other collective entities can take into full account the needs of the university at large would clearly require both new attitudes and, probably, some new machinery.

Comment: Back to time scales -- For effective participation, membership on a faculty committee dealing with financial policies needs a cycle longer than three years.

And whatever machinery is constructed, strong and confident leadership at the College Dean level is clearly essential.

But, you'll say, are there incentives for such farseeing restraint? (A straightforward example of an incentive for faculty -- fix senior faculty salary problem, over the course of a few years, by faculty joining in design of program for "Change by Substitution, not Addition."

Incentives for the top administration to participate whole-heartedly in shared decision-making are not so obvious. Presidents and top level administrators get their personal satisfactions by doing something new! And their natural time scale (10 years) is such that the accumulating effects of the 2% or 3% effect over that time scale are not catastrophic. It is here, in its interaction with the top administration, that the Trustees can be most effective, by insisting on the long-term view of financial policy.

Is this picture of fully engaged planning between central administration and a suitable faculty structure unrealistic? Maybe so. HOWEVER, if the two sides in Northern Ireland can get a common government going, maybe there's even hope for my dream!

In conclusion, back to Theme #3: Cornell must be itself !

Don't try to be like Harvard, Princeton or CalTech (or anyone else for that matter)

[We need to figure out how to free ourselves from the pernicious effects of such things as the USNWR ratings. Such an effort would clearly require cooperation among institutions.]

Play to strengths, rather than spending time and money trying to fill gaps
Examples of special strengths and characteristics: -- Viewfoil #10

- A beautiful campus in the remarkably unspoiled region of upper New York State. It is sometimes uplifting just to walk around this place!

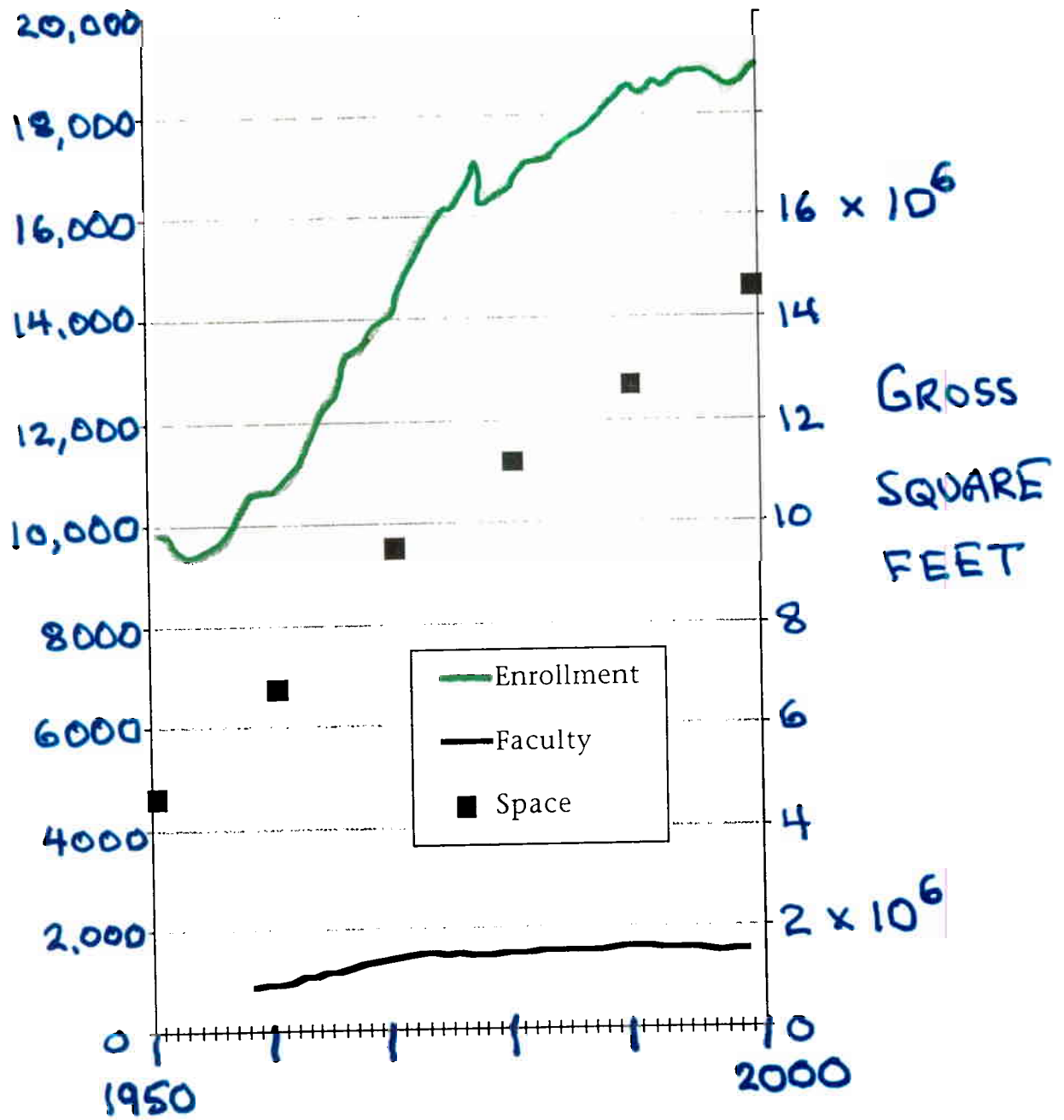
- Cornell is a fundamentally democratic enterprise -- the "blue-collar Ivy League school," with a diverse undergraduate student body (where "diverse" extends far beyond the PC issues of race and color, to diversity in value structures and world views within the student body as a whole).

I am reminded of the old saw which lists the Ivy League schools in the following way: "Harvard, Yale, Dartmouth, Princeton, Brown, Columbia, Penn and, perhaps Cornell."

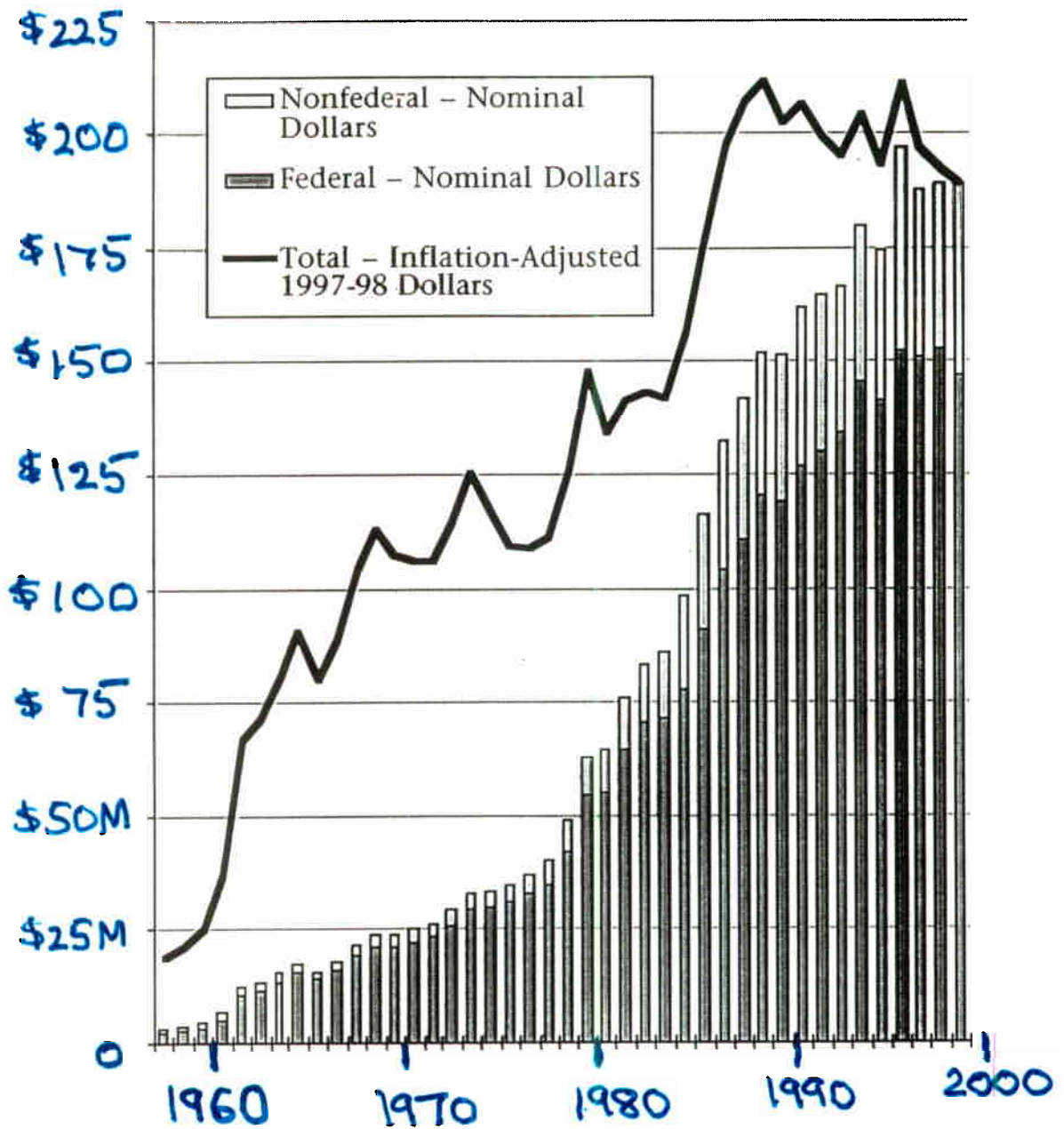
- Great strengths in
 - The internal balance wheel of the College of Arts & Sciences
 - Many fields of science and technology
 - the International scene. In this world of global communication and global interaction, concern for impact of the human population on the earth (international issues of population, food, land use, water sources, human aspirations and technical fixes for certain problems) will be a central issue of the 21st century. Cornell has a remarkable breadth of faculty expertise across this spectrum. **It is important to note that many of these strengths lie in the statutory colleges!**

The financial health of the Statutory Colleges at Cornell is integral to the overall health of the University. This fact is recognized and is a central concern to the current university administration. But they may need help in the form of really creative thinking on the part of faculty as well as segments of the population statewide. Are there realistic ways to move from the present precarious financial situation to one of optimism and strength, in which the key importance of Cornell, statutory AND endowed colleges, to the long range health of New York State is recognized throughout state and legislature.

In closing: Cornell is one university. Let's revel in its diversity and build the financial structure it deserves!

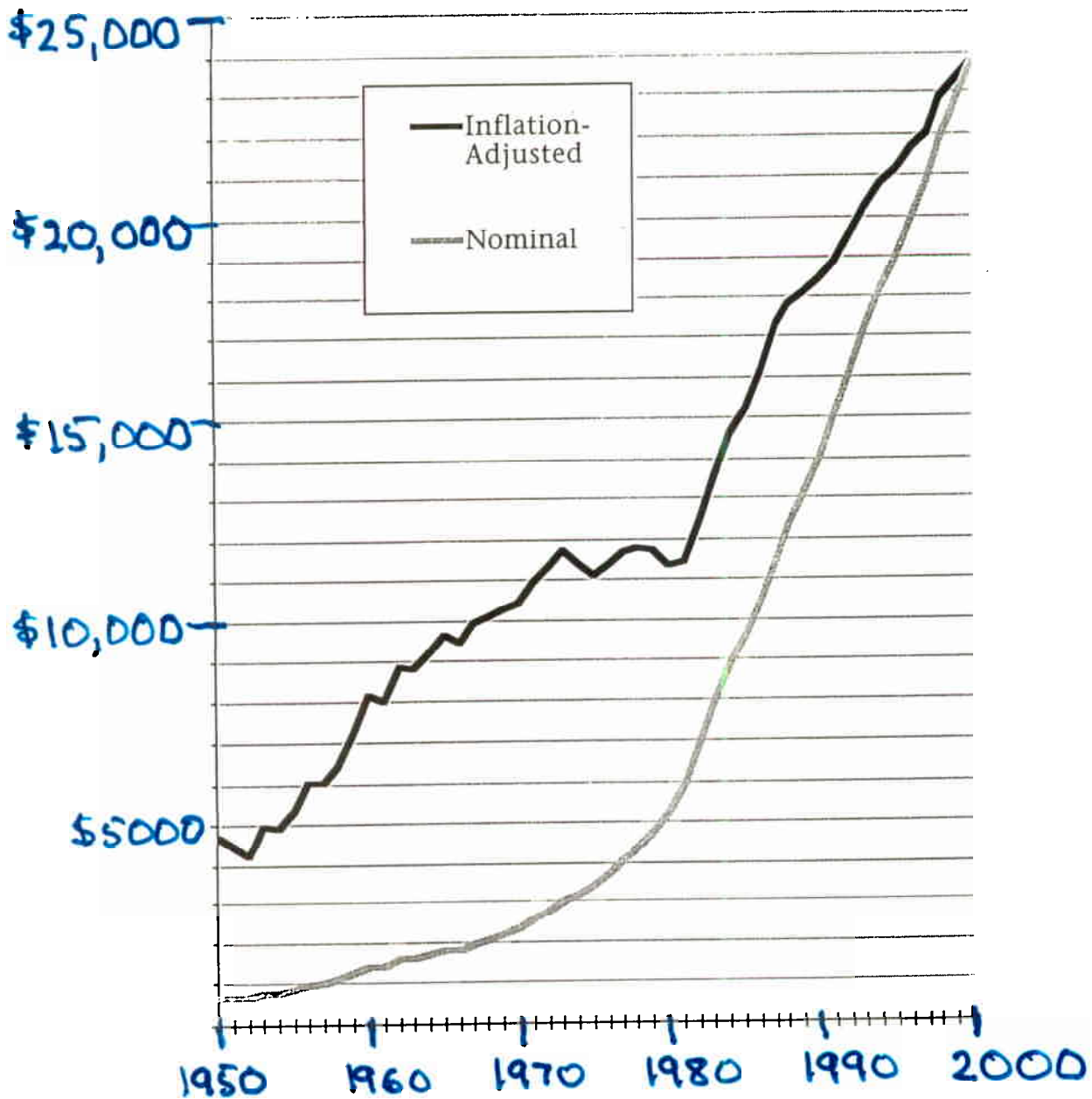


Changes in Ithaca Campus Enrollment, Faculty Count, and Physical Space



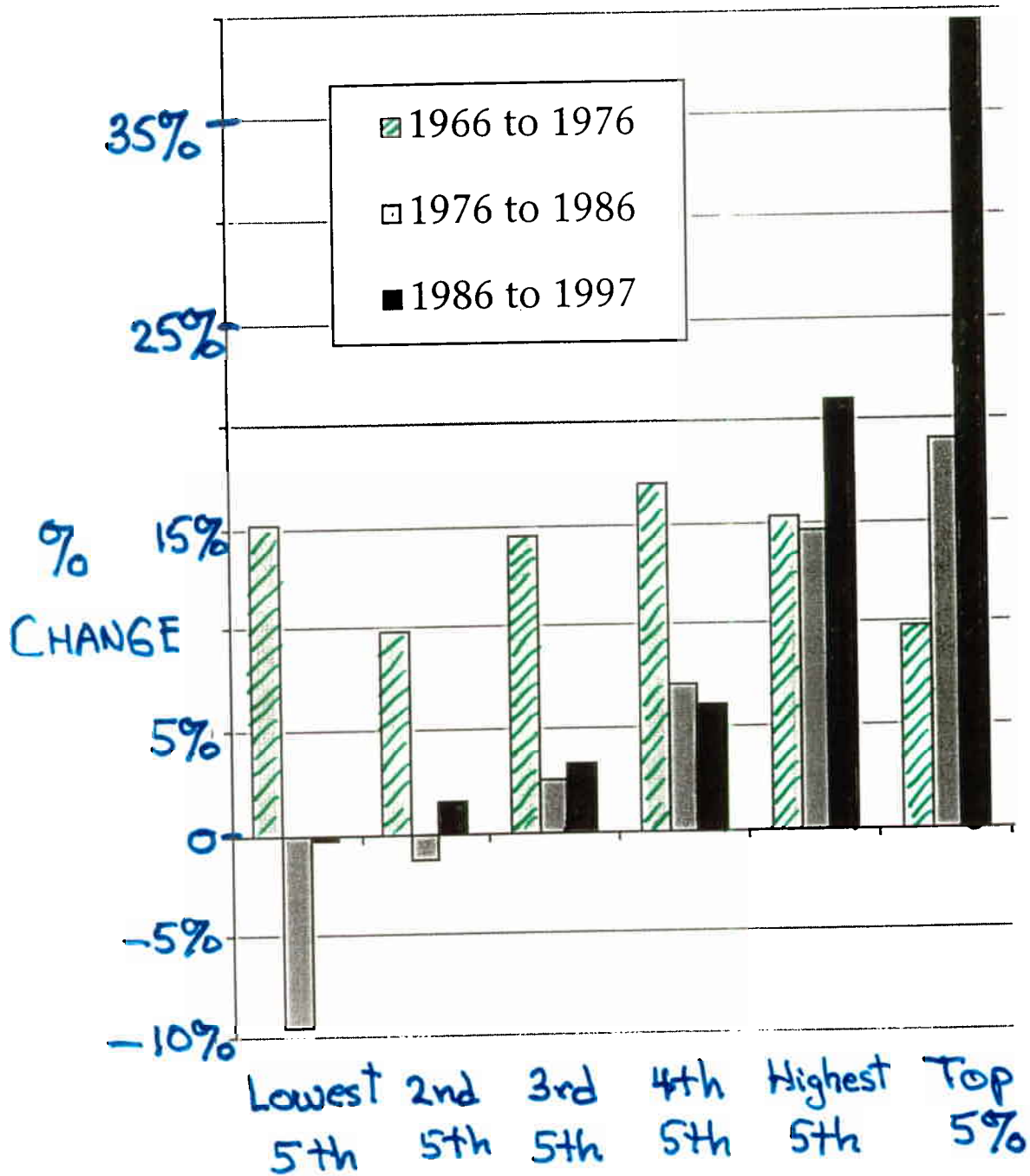
Sponsored Research – Ithaca Campus

(direct and indirect costs)

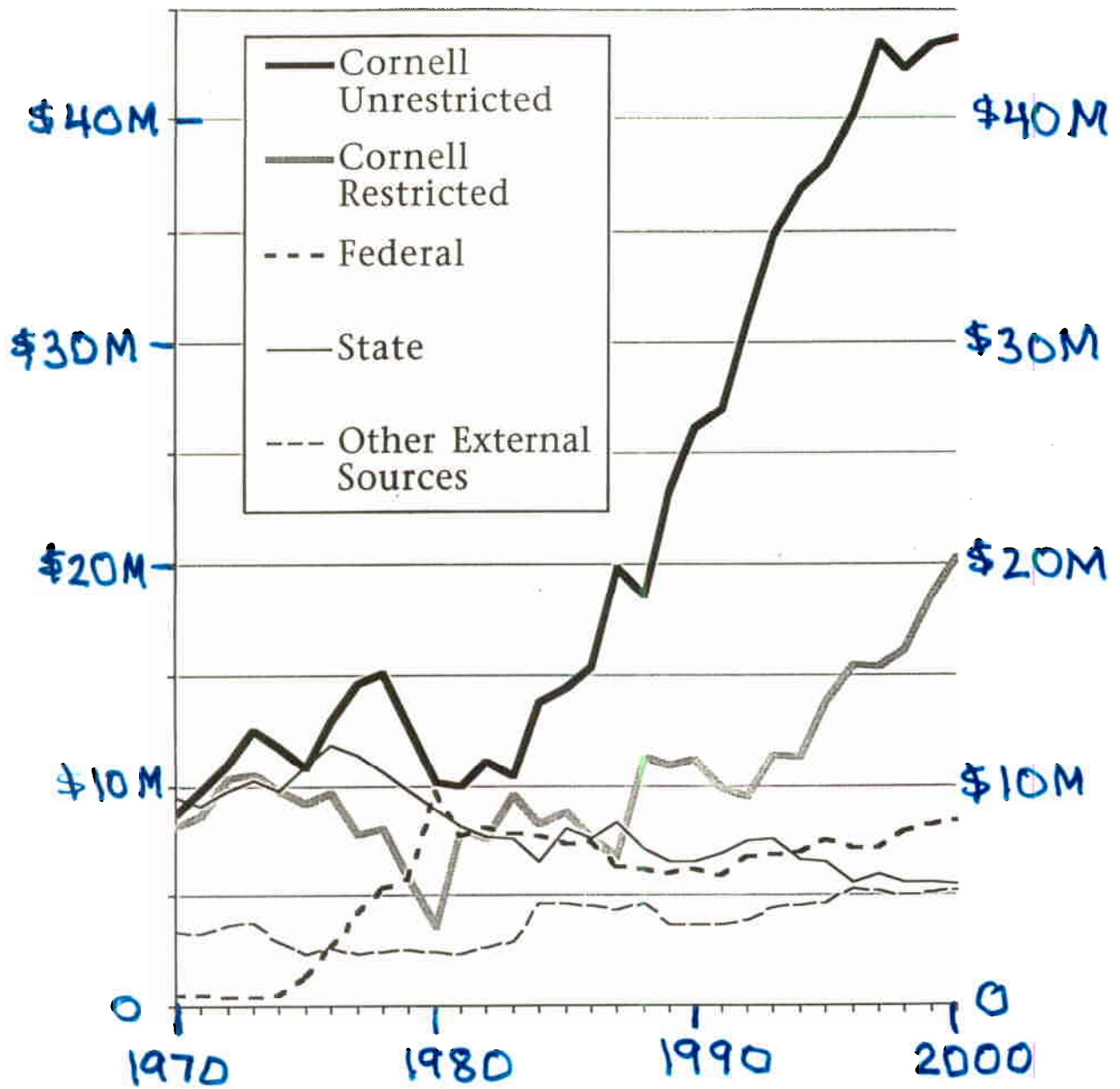


Undergraduate Tuition – Endowed Ithaca

(in nominal and inflation-adjusted dollars,
with inflation for 1999-00 projected)



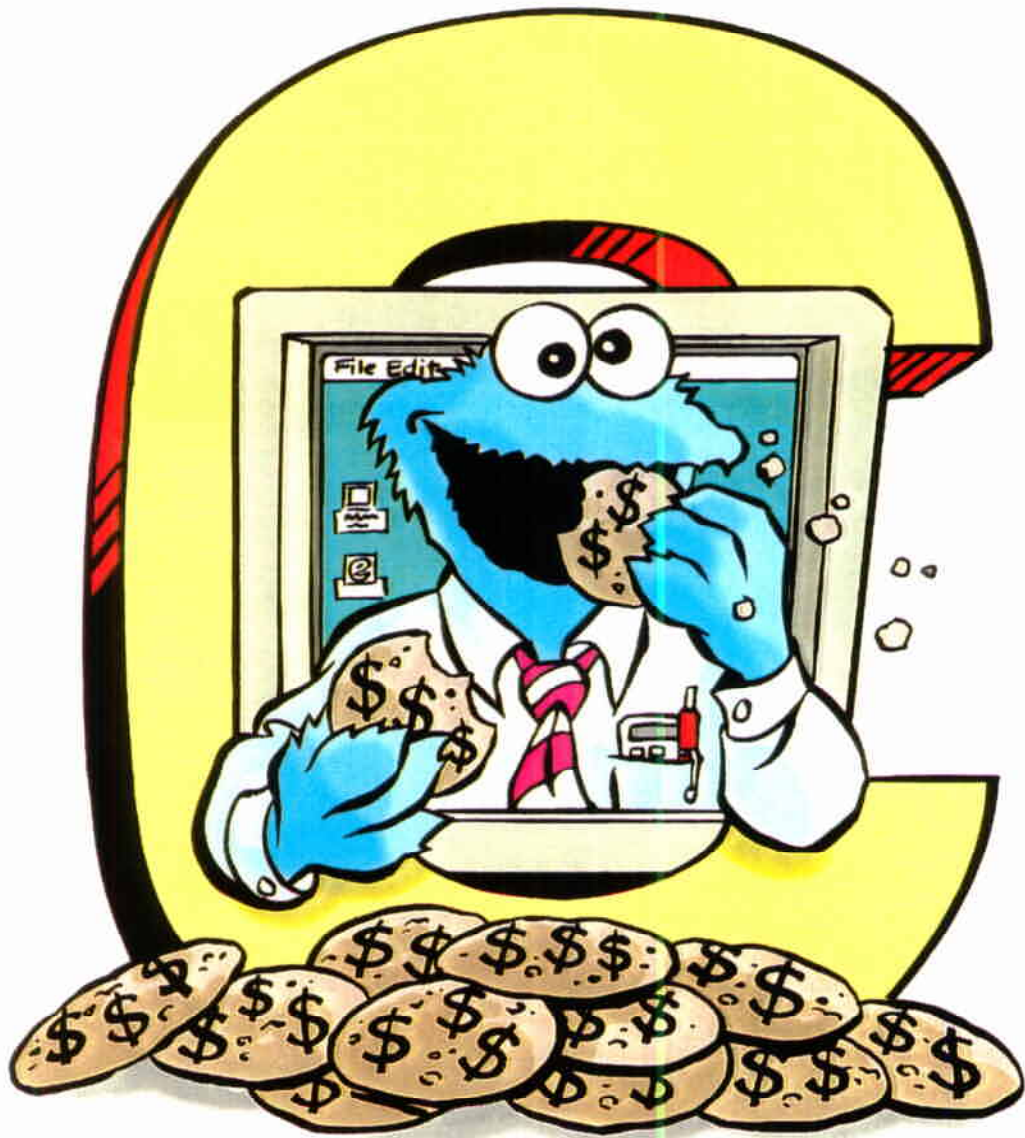
Change in Average U.S. Family Income
 (in inflation-adjusted, 1997 dollars)



Sources of Support for Need-Based and Merit-Based Undergraduate Grant Aid

(in inflation-adjusted dollars, with values for 1998-99 and 1999-00 projected)

C is for...



computer



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Faculty membership on Faculty Senate Committees

4 years

Students

**4 -10 years
(or even less)**

Second level administration

10 years

Upper administration

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University Trustees

15(?) years

Special academic programs

20 years

Third level administration

23 years

Doubling time for cost per student at 3%/year above CPI

30 years

Faculty

35 years

Doubling time for cost per student at 2%/year above CPI

50-100 years

Buildings

Administrators, bah!

- Administrative bloat
- Have an edifice complex
- Sacrificing faculty interests in order to get strokes from alumni, trustees, large donors
- Squirreling away "endowment" funds



Those faculty folks —
-self-serving, protecting
their own turf
-ill-informed
-easily lapsing into
finger-pointing
at "Day Hall."



Examples of special Cornell strengths and characteristics:



- A fundamentally democratic enterprise — the “blue-collar Ivy League school”
 - Great strengths
 - An internal balance wheel — the College of Arts & Sciences
 - Many strong fields of science, applied science and technology
 - In this world of communication and global interaction, Cornell has relevant knowledgeability and connections in areas of
 - Feeding the world
 - Land use
 - Water resources
 - Human development
 - International area studies programs
- Many of these strengths lie in the statutory colleges!*
- Beautiful campus in this remarkably unspoiled region of upper New York State
 - Your Choice