

## **Senate Appropriations Committee: April 24, 1989**

### **Introductions**

Blenda Wilson...Chancellor, UMD  
Clint Jones...Chancellor, UMF  
Chuck Vest...Provost, UMAA  
Tom Roach...Regent

### **Proposal...**

Raised a number of issues...  
...reaction to Executive Budget Recommendation  
...REF  
...State Equity Plan  
...Formula Funding  
...MLK Program  
...Student Financial Aid  
...and so on...

We have responded to all of these issues  
in writing and we will be happy to elaborate  
further this morning...

However, all of these issues touch on a subject  
of much broader importance...

The role that higher education can play...indeed,  
must play...in the future of this state...and  
the budget needs of our institutions necessary  
to allow us to play this critical role...

If you will permit me, I would like to first make  
several observations from this broader  
perspective...

### **My own concerns...**

As you know, I am a scientist and engineer  
by training and background...

I must also confess I tend to be one of those  
people who lives more in the future than in  
the present or the past...

Over the years, I have become increasingly convinced  
that education -- or more generally, the development  
of human capital -- will become the dominant issue  
for our state, just as it will be for our nation, in the  
1990s and beyond.

Yet I also fear that few have realized the enormous  
changes that our society is going through as it  
approaches the 21st Century.

In a very real sense, we are entering a new age...  
what has been termed, an "age of knowledge",  
in which knowledge...that is, educated people  
and their ideas...will become the keys to  
our future...

And in this knowledge-intensive future, research  
universities such as the University of Michigan  
will become the cornerstone of our prosperity  
and well-being...

For their educated graduates, to be sure,...  
but for so very much beyond this that we  
all too frequently take for granted.

### **The Many Michigans...**

A modern research university such as the  
University of Michigan has many faces...

There is the Michigan of those marvelous Saturday  
afternoons in the fall as 105,000 fans cram into  
Michigan stadium to watch the Wolverines...

Or perhaps the Michigan of the Big Chill...

The tradition of student involvement helping to awaken the

conscience of a nation...

The Teachins of the 1960s against the war in Vietnam  
EarthDay in the 1970s to raise concerns about the  
environment

Our celebration of Martin Luther King Day last month  
with an educational experience involving thousands  
to highlight the importance of tolerance and  
mutual understanding

There is also the Michigan as seen by the over half-million  
patients a year who are treated by the UM Medical Center,  
making the finest medical care in the world available  
to Michigan citizens...

Or the Michigan as Silicon Valley East, working closely  
with Michigan industry and government to build the  
high-tech infrastructure to create new companies  
and new jobs to strengthen and diversity our  
existing industrial base...

...with exotic new technologies such as  
integrated manufacturing systems  
machine intelligence  
optoelectronics  
computer networks

...a new \$5 B infrastructure in the southeastern  
Michigan area

Or the Michigan which attracts to our state almost  
a quarter of a billion dollars of federal R&D each  
year...not to mention many of the world's  
leading scientists and engineers

And, of course, there is the Michigan as the educator,  
attempting to provide, in the words of one of our  
first presidents, "an uncommon education for the  
common man"...providing an education for Michigan  
youth as good as any available in the world...  
to over 300,000 alumni...  
150,000 in the state of Michigan alone!

It is important to note these different perspectives of the  
University because all too often we tend to think of these  
marvelous and complex institutions in one-dimensional images  
that reflect only our particular interests or needs of the moment...  
...when we read about student unrest on our campus...  
...or see Michigan lose at the buzzer against Indiana...  
...or open the tuition bill for our son or daughter...

### **Challenges for Today--Opportunities for Tomorrow**

Think about it for a moment...

The students we are educating today will spend most of  
their lives in the next century...they will be citizens  
of the 21st Century...

This compels us to ask whether  
the university as we know it today is really  
prepared to educate the citizens and serve the  
society of the 21st Century?

While it is always risky to try to predict the  
future, three themes of 21st Century America seem clear:  
i) the changing nature of the population of our nation  
ii) our growing dependence on the global community  
iii) our shift from a resource-intensive to a knowledge-  
intensive society

Let me consider each of these themes for a moment...

#### **1. Demographic Change: Diversity and pluralism**

America is changing rapidly today...

Our population is aging as the baby boomers enter

middle age, and the number of young adults declines. Indeed, today there are already more people over the age of 65 than teenagers in this nation...and this situation will continue for decades to come. The United States will simply not be a nation of youth again in our lifetimes. This fact poses a most serious challenge to institutions such as universities which have traditionally served the young. But there is a far more profound change occurring in the population of our nation. The United States is rapidly becoming the most pluralistic, multicultural nation on earth. Those groups we refer to today as "minorities" will become the majority population of our nation in the century ahead...just as they are today throughout the world. In this future, the full participation of currently underrepresented minorities will be of increasing concern as we strive to realize our commitment to equity and social justice. But, in addition, this objective will be the key to the future strength and prosperity of America, since our nation cannot afford to waste the human talent represented by its minority populations, this human potential, cultural richness, and social leadership. If we do not create a nation that mobilizes the talents of all our citizens, we are destined for a diminished role in the global community, increased social turbulence, and most tragically, we will have failed to fulfill the promise of democracy upon which this nation was founded. This is probably the most serious challenge facing American society today. While it is true that universities cannot solve this problem alone, we must not use this fact as an excuse for doing nothing. Rather we must intensify our efforts to seek full participation of underrepresented minorities among our students, faculty, staff, and leadership. As both a reflection and leader of society at large, we have a special challenge and responsibility to develop effective models of multicultural, pluralistic communities for our nation. We must strive to achieve new levels of understanding, tolerance, and mutual fulfillment for peoples of diverse racial and cultural backgrounds.

## **2. The Internationalization of America**

It will be a future in which America will become "internationalized"... in which every aspect of American life must be viewed from the broader context of participation in the global community... Whether through travel and communication, the arts and culture, the internationalization of commerce, capital, and labor, we will become increasingly dependent on other nations and other peoples. Further, as the destination of roughly half the world's immigrants, the United States is rapidly becoming a "world nation" with strong ethnic ties to every part of the globe. Understanding cultures other than our own will become necessary not only for personal enrichment and good citizenship, but indeed, necessary for our very survival as a nation. If our institutions are to serve America in its role as a member of the global community, we must think and act more

imaginatively, more aggressively, and more strategically to strengthen our role as truly international centers of learning.

### **3. The Age of Knowledge**

Looking back over history, one can identify certain abrupt changes, discontinuities, in the nature, the very fabric of our civilization...

There are many who contend that our society is once again undergoing such a dramatic shift in fundamental perspective and structure as we enter a new age, an age of knowledge.

The signs are all about us.

Today we are evolving rapidly to a new post-industrial, knowledge-based society, just as a century ago our agrarian society evolved through the Industrial Revolution.

New ideas and concepts are exploding forth at ever increasing rates...

In many fields, the knowledge base is doubling every few years...indeed, in some fields the knowledge taught undergraduates becomes obsolete even before they graduate!

The typical college graduate of today will likely change careers several times during a lifetime...

Hence a college education will only serve as the stepping stone to a process of lifelong education... and the ability to adapt to...indeed, to manage change...will become the most valuable skill of all.

As our society becomes ever more knowledge-intensive, and hence ever more dependent upon educated people and their ideas...

It will become ever more dependent upon our research universities as primary sources of new knowledge and those capable of applying it.

As we enter this new age of knowledge that is our future, it is clear that we will become ever more dependent on our research universities as primary sources both of new knowledge and those who can apply it.

Hence our institutions will face a period of unusual responsibility, challenge, and opportunity in the years ahead.

But I believe we will also face a period of major change.

In a very real sense, the university as we know it today was invented to serve an America of the past...  
...a nation characterized by a rather homogeneous, domestic, industrialized society.

It is becoming increasingly apparent that it is time to develop a new model of higher education--- to re-invent the university, if you will--so that it is capable of responding to the needs of the highly pluralistic, knowledge-intensive, world nation that will be the America of the 21st Century.

#### **Concerns...**

Needless to say, these same challenges of pluralism, of globalization, and of this age of knowledge that is our future will pose great challenges and demand similar changes in our state.

Indeed, I am personally convinced that Michigan faces a very unusual period of challenge in the decade ahead...a watershed, in a sense, from which we can either emerge as a national leader...or as an also run...an economic backwater

My central theme is that education, broadly defined, will be the pivotal issue in determining which of these two

alternative futures will be Michigan's.  
Indeed, I am absolutely convinced that the dominant issue of the 1990s--both for this state and for this nation--will become the development of our human resources.

**Clouds on the Horizon: Some warning signs...**

**WARNING SIGN 1: Michigan is slipping**

No question that we have lost lead in many areas

Industrial productivity and heavy manufacturing

Steel, durable goods, ...

The bad news for Michigan is obvious...

Industries of great economic importance to our nation such as steel and automobiles have fallen victim to intense competition from abroad...

Plants have closed...our cities are filled with chronically unemployed...which may well exceed 10% along the I-75 corridor...

In Michigan we no longer worry about nuclear war and and the bomb because we believe that

"The odds are greater that America will be bought up by the Japanese than blown up by the Russians..."

Michigan's per capita income has now dropped below the national average...

Michigan has dropped to 20th in per capita income (and at \$15,393 is now slightly behind the national average of \$15,481)

Our unemployment rate consistently is at the top...

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To do this, all the major inputs into our economy--quality of workforce, amount of capital investment, level of technology, and skills of managers--must be as good as the equivalent inputs going into the economics of our major competitors.

**WARNING SIGN 2: A Serious Skilled Manpower Shortage**

Traditional source of human capital for business and industry, that of young adults, is declining rapidly as we slide down the backside of the postwar baby boom.

25%-30% falloff in HS graduates by 1992

Composition of young adults is also changing...

By 2020 30% will be composed of Blacks and hispanics... students who have not traditionally had the opportunity for the education necessary for knowledge-intensive careers.

**WARNING SIGN 3: Labor force faces a particular challenge...**

Michigan is undergoing dramatic change in industry...

Unskilled labor will lose relevance in a world dominated by microelectronics, computers, and automation.

Statistical quality control and just-in-time inventory systems require production workers with mathematical abilities that are far beyond the present level.

Of all the inputs into our economy, the quality of our workforce is probably the most critical.

There is a very serious question as to whether we are providing adequate educational resources to produce the quality of workforce necessary for the knowledge-intensive future of this state.

**Warning Sign 4: The Dangers of Underinvestment**

Perhaps the most ominous dark cloud on the horizon of all is the

increasing evidence that we as a people we have not yet recognized either the nature or the magnitude of the investments we must make to achieve prosperity in an age of knowledge.

Over the past several years, numerous studies have suggested that Michigan is seriously underinvesting in its "knowledge infrastructure"...by as much as 30% to 40% relative to other states.

Particular concern has been focused on the "education pipeline" in Michigan...from pre-school through K-12 education through higher education to lifelong education.

Interestingly enough, studies performed by both the Democratic administration and the Republican Senate agree with this prognosis...and yet nothing has happened...and we slip even further behind!

The challenges faced by K-12 education were well-summarized in a recent editorial in a Detroit paper:

"If Michigan is to prepare tomorrow's workers for tomorrow's jobs, major structural changes are needed in public education, both in classroom quality and in the adequacy and fairness with which the system is financed."

Yet, we continue to be paralyzed in our efforts to come to grips with school finance reform or major structural changes necessary to achieve quality in public education.

The situation is somewhat different yet no less acute for higher education in our state.

While the quality of Michigan higher education today is very high, the long term prognosis remains guarded...

Despite herculean efforts by the Governor and the State Legislature in recent years to restore adequate support for higher education in Michigan after the devastating cuts of the early 1980s, we continue to fall further behind the national average in state support.

Whether measured in terms of state appropriation per student or fraction of our tax dollars directed toward higher ed, it is clear that in comparison with other states, our present level of public support is simply inadequate to maintain over the long run a system of higher education that is competitive on a national basis.

Our state has dropped from 5th in the nation in its support of public education to 35th...the bottom third!!!

Indeed, we have dropped to 32nd in tax revenue for higher ed--7.8% compared to 11.4% for California!

We are being outspent by 30 - 40% in state support per student...

Not simply by prosperous states like California...but by neighbors such as Indiana and Ohio!

Over the past 10 years, high tech states such as California, New Jersey, Massachusetts, and New York have seen real dollar increases in higher education appropriations of roughly 20 to 30%. In sharp contrast, over this period Michigan has declined by 4.5%...

Certainly these states are prosperous...but they are also investing substantially more of their resources in higher education...in preparation for a knowledge-based future...than are we.

This has given public higher education in Michigan some capacity to face the devastating impact of the past decade...but it is rapidly losing this capacity...and there seems little doubt

that the quality of our system will probably be gone in the next 10 to 20 years if the present trends of inadequate state support coupled with tuition constraints continue.  
And what will then happen to Michigan. We will become a "have not" state, competing in low wage industries in dying industries. We will have rejected the age of knowledge!  
Intense international competition, turbulent markets, rapid technological change present new challenges to our future.  
To stand still...to fail to make the investments in our research universities so necessary for tomorrow...is to lose the race for future prosperity and well-being of our citizens.

### **Concluding Remarks**

#### **To You...**

Higher education represents one of the most important investments a society can make in its future...since it is an investment in its people...  
It is indeed the case that our state and our nation have developed the finest systems of higher education in the world...  
But we must also remember this resulted from the willingness of past generations to look beyond the needs and desires of the present and to invest in the future by building and sustaining educational institutions of exceptional quality--  
Institutions that have provided those of us in this auditorium today with unsurpassed educational opportunities.  
We have inherited these marvelous institutions because of the commitments and the sacrifices of previous generations...and it is our obligation as responsible stewards--not to mention as responsible parents--to sustain them to serve our own children and grandchildren.  
It seems clear that if we are to honor this responsibility to future generations, we must re-establish the priority of both our **personal** and our **public** investments in education, in the future of our children...and hence in the future of our state and our nation.

#### **To Us...**

In a very real sense, our state has entrusted to us its most valuable resources...its youth...and its future.  
To be responsible stewards of the public trust, it is clear that we must strive to achieve greater cost-effectiveness in our use of public funds...and I can assure you that we intend to do just that.  
But even beyond this, we must become staunch guardians for the quality of our institutions...  
For in education, as in every other aspect of American life, quality will be the key to our future.  
Hence, to us falls the responsibility of taking the forceful and courageous actions necessary to sustain and enhance this quality...in the long run the people of this state both demand and deserve nothing less!

### **The Need for a New Coalition**

Today Michigan faces serious challenges that will clearly determinine its future prosperity and well being...  
the challenge of pluralism...  
the challenge of participation in a global community...  
the challenge of the Age of Knowledge  
the challenge of change itself...  
If we are to respond, we simply must reorder the priorities of this state...  
We must shift away from the temptation to address only the needs and desires of the moment  
And, instead, we must begin to make some of the key investments

necessary for the long term...  
The key investments in our people...  
in our children...  
This is not just the worry of local communities or  
state government or public institutions  
It is everybody's concern!  
Each of us must step forward and unite to  
face the challenge of the future.  
We must work together to build new coalitions including  
the public and private sectors...state government,  
education, business, industry, and labor...to  
develop an agenda appropriate to secure the  
future of our children, our state, and our nation.  
Michigan continues to be blessed with abundant natural resources,  
a people of great strength, and a system of higher  
education of a quality envied by the rest of the  
nation...indeed the world!  
But, the writing is on the wall...  
If Michigan is to prosper in the age of knowledge  
that is almost certainly our future, we must join together  
now to restore both our public and  
personal investments in education...  
...in our people and their ideas...  
...in our children...  
...and in our future

### **The Costs of Higher Education**

#### A Perspective

- i) Let's first put tuition in an appropriate perspective...an education at the University of Michigan is one of the greatest bargains in our society.
- ii) The \$3,000 tuition represents less than 1/4 to 1/5 of the actual cost of an education.
- iii) In fact, the cost of a degree at our institutions is only \$10 K to \$12 K... less than the cost of a low-end Chevrolet... ...and yet this investment will be paid off in only a couple of years following graduation because of the very high earning capacity of our graduates.
- iv) In fact, tuition is not the major cost of attending a public university...rather it is room, board, books, travel, and such... the same expenses young adults would have to pay whatever they did...even if they were to stay at home!!!
- v) Further, the financial aid programs of the University guarantee that any Michigan resident unable to meet the cost of tuition room, board, and other expenses will receive financial adequate to allow them to attend the University.
- vi) There is a certain irony here, since one of the principle reasons for the increasing tuition levels is because this revenue provides the funds necessary for our financial aid programs. Indeed, last year, 75% of our tuition increase went right back into financial aid!  
In a sense, we ask those who can afford it

to pay a somewhat higher fraction of the real costs of their education so that those less fortunate can be provided with the aid they need.

And even for those paying the sticker price are paying only a small fraction of the real cost of their education.

- viii) I should also note that tuition costs in Michigan have not increased as rapidly as they have across the nation over the past decade... nor as rapidly as they have in other midwestern states. Unfortunately, it is also the case that growth in state support of higher education in Michigan has also lagged behind the national and midwest averages, leaving our institutions somewhat at risk.
- vii) Needless to say, attempts to artificially constrain tuition levels will, in the end, not only degrade the quality of education in our institutions in the face of limited state support. It will also prevent us from providing the financial aid so needed by those from impoverished backgrounds.
- viii) **As I told the Detroit Economics Club, if one wants to pay bargain basement prices for higher education, sooner or later you are going to end up with bargain basement quality...but, quite frankly, I do not believe the people of Michigan will either be satisfied or well-served by a second rate system of higher education!!!**

#### CPI Index

CPI measures things like the costs of housing, food, etc.

But suppose you were required to live in a bigger and bigger house each year... then, don't you think that your costs would increase more rapidly?

Well, that is just what is happening in higher ed since in many fields, the amount of new knowledge doubles every five years or less.

#### The Age of Knowledge

In many fields, the knowledge base is doubling every few years...

Is it not understandable, therefore, that both the amount of education...and the costs of that education...should similarly increase in real terms...

costs

Computers, laboratory instrumentation, medical devices,...all so very necessary to the education and training of tomorrows professionals...all cost money...

#### Basic Nature

Colleges are both energy-intensive and labor-intensive, and these are the costs which have increased most rapidly over the past two decades.

#### Other unusual costs:

Books and periodicals up by 150%

Supplies and materials up by 120%

Services by outside contractors by 100%

#### Tax Bills

Because colleges are labor intensive, they pay high employment taxes in relation to their total revenue...and these can exceed the total of employment taxes and income taxes paid by less labor-intensive organizations that have ways to shelter their income.

Further, colleges are being taxed in many new ways (FICA, UBIT,...)

#### Catchup

Colleges are still trying to make up for cost increases over the past 10-15 years, including expenses that they deferred during periods of high inflation, when tuition increases were considerably below inflation rates.

Of particular importance has been the loss in income suffered by faculty during inflationary periods (20% of purchasing power during early 1980s)

Higher costs of making capital investments has put pressures on colleges. Many campus facilities are several decades old and in need of substantial repair.

#### New demands:

Energy conservation

Government-mandated requirements

...handicapped

...safety

...affirmative action

#### Inadequate support from traditional sources

No student, including those who pay full tuition, is paying even close to the real costs of their education. In public institutions, generally they pay between 10% to 25% of the real costs. In private institutions, it is 40%.

However this can only be done by maximizing income from sources other than tuition.

Colleges have had to increase borrowing, not only for investment, but also for working capital because many traditional sources of funds have dwindled or are no longer available.

#### Capital facilities

Only 3 buildings in 25 years at UM...\$72 M...

...yet state should have been investing \$20 - \$30 M per year

Federal government has had no major facilities program since early 1960s...

Furthermore, has provided little help for equipment

#### Student Aid

Federal programs have dried up or switched to loans ...they have not kept pace with the costs of education

Colleges now must provide more aid than ever... since 1980, has doubled to \$6 B.

Higher tuitions from those who can afford to pay enable other less fortunate students to attend.

#### Research

Federal funds for research have declined dramatically... In past 20 years, have dropped from 30% of total to just 12%.

#### Private giving

Private gifts account for less than 6% of total revenues...

Bottom Line

As a result, colleges have been forced to raise tuition and R&B to levels of cost-recovery, since other sources of revenue have deteriorated.

Impact of Lower Tuition

Less funds from tuition will result in cutbacks in the quality of instruction.

Investment

The money invested in a college education results in about a 10% return annually due to higher salaries commanded by college graduates.

Hence, tuition should more properly be thought of as a long-term investment (such as a house) that must be financed over the long term--and that will earn a good return over the long term.

### Other points

1) Task Force on Costs of Higher Education

2) CPI Estimates:

Our folks are now projecting a CPI of 5.5% in FY90, and a HEPI of 7% or so.

If the Legislature is unable to improve on the Governor's recommendation of a 3.7% increase, then the arithmetic is clear:

Without major increases in tuition approaching the double digit level, we will have no choice but to implement major program cuts (and possibly enrollment reductions).

3) MET

Good Intent...but in serious need of modification

i) Seriously underfunded...

- Impact of tax rulings
- Requires long term real return of over 15%!
- First round of contracts will cause \$100 million shortfall  
...who will pay? The taxpayer or the institutions?
- Indiana model: Redeemable SCH

ii) Highly regressive social income transfer program:

- Takes both tax dollars and financial aid dollars from those who can least afford higher ed and transfers them, in effect, to high income families (Note Zip Code information)

iii) Convey false perception of real costs of education

- Not tuition (\$12,000 per year less than car...)
- Rather room, board, books, supplies
- E.G. At UM, budget is \$8,500  
Tuition is \$3,000 (or 35%)