

## Michigan: UM Importance

### Let me ask a few questions:

- How many of you graduated from UM?
- How many of you have relatives who graduated from UM?
- How many of you have either been treated yourself or had relatives treated at UM Medical Center?
- How many of you have been entertained by cultural events of UM?
- How many of you are Michigan Wolverine fans?
- How many of you have benefited from economic development activities of the University?  
(While you may not realize it, you all have...)
- How many of you have benefited from the research activities of the UM?  
(The fact that you are not speaking German or Japanese...  
...as a result of having lost WWII...  
...or suffering from diseases such as polio  
...indicate that you all have...)

### My Message

- My message today will be suffer from both of my character flaws as a scientist/engineer...  
...it will be a vision of the future...  
...and it will be unusually candid.
- In a nutshell, as I look to the future, I am sensing an ever-accelerating pace of change in our society, in our state, in our nation, in our world.
- Yet I also fear that few have realized the enormous changes that our society is undergoing as it approaches the 21st Century.
- We are becoming more diverse, more pluralistic as a people. Indeed, almost 90% of the new entrants into our workforce during the 1990s will be people of color, women, or immigrants.
- Our economy and commerce are becoming every more interdependent with other nations as the United States becomes a world nation, a member of the global community.
- And we are rapidly evolving into a new post-industrial society, in which the key strategic resource necessary for prosperity and social well-being has become knowledge itself, that is, educated people and their ideas.
- The themes of change,
  - i) the growing pluralism of our society
  - ii) our evolution into a world nation, ever more tightly coupled to the global community
  - iii) and our rapid transition to a knowledge-based economyare not themes of the future...  
...they are themes of today...  
...and they are already dominating every aspect of American life.
- It is clear that the key strategic resource of our society has become knowledge itself...  
that is, educated people and their ideas.
- Knowledge will play the same role that in the past were played by natural resources or geographical location or unskilled location...
- In the pluralistic, knowledge-intensive, global future that is our destiny, it is clear that the quality of and access to  
...education in general

...higher education in particular  
...and great research universities  
such as the U of M most  
specifically of all  
are rapidly becoming the key determinants  
of the strength and prosperity of our state.  
But here there is some good news...

America is particularly well positioned,  
since our research universities are clearly  
the envy of the world, as evidenced by the  
extraordinary demand by graduates of  
every country to see advanced education  
and training in the United States.

Indeed, higher education is not only our nation's  
highest quality, but also probably also its most  
competitive industry as measured by the  
test of the marketplace!

Further, Michigan is particularly well-positioned  
from this perspective, since our state has  
built over the years not only one of the  
strongest systems of public higher education in  
the nation, but possesses several of the world's  
leading research universities.

But, now for the bad news...and the candor...

We--that is YOU AND ME--seem hell-bent, both as a nation  
and as a society, on destroying the extraordinary  
resources represented by our research  
universities, just as we are entering an  
age of knowledge in which they will become  
our most valuable resources.

Indeed, a tragic combination of public  
misunderstanding, short-sightedness,  
and downright selfishness, is now threatening  
to constrain and hamper our universities...

Leading to the frightening prospect that we will  
manage to destroy our international competitiveness  
of higher education just as we have many other  
American industries.

In my home state Missouri we have an old saying  
that the best way to get a mule to move  
is to first hit it over the head with a 2x4 to get its attention.

Now that I have your attention,  
let me explain more clearly what is at stake here...

#### **The view from Michigan..."the Rust Belt"...**

While people generally look at the midwest as a relic  
of America's industrial past, let me suggest that in  
many ways, it can also be viewed as America's  
future.

For it is in the industrial midwest...in Michigan...  
that we have had to learn how to adapt to  
a brave, new world of intense economic  
competition...

We have learned through the school of hard knocks,  
as we have fought and scratched and clawed our  
way back from the economic brink to achieve prosperity.

We have had to build new coalitions involving  
the public and private sectors...state government,  
education, business, industry, and labor...to  
develop an agenda appropriate to secure the  
future prosperity of this state.

I am absolutely convinced that our State faces a very unusual

period of challenge in the decade ahead...a watershed,  
in a sense, from which we can either emerge at a  
national leader...or as an also run...  
or perhaps even worse...as an Appalachia...

Quite frankly, the choice will be ours...whether we choose  
to continue our tendency of recent years to spend our  
resources only to meet the needs or desires of the moment...  
or whether we can develop the vision, courage, and  
discipline to invest in the future of this state...not just for  
this year or next...but for the next generation...our children...

### **The Bad News of the past several years...**

Familiar Ills which dominate the headlines

The budget deficit

The trade deficit

Displaced workers

Marginal Industries

More serious

Trade deficits show little improvement despite a sharp  
drop in the dollar

Past areas of strength such as steel and durable goods  
manufacturing are declining

Even industries like semiconductors and computers are  
vulnerable to competition from abroad

Facts of life:

7-fold increase in international trade since 1970

Market for nearly all significant manufacturing industries  
has become world-wide

70% of goods we produce now must compete against  
merchandise from abroad

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...

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...

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..."

What is happening?

The world economy is now in control

However, it is misleading to blame all our ills on  
international competitiveness alone!

Something else is happening...

### **The Challenge of Change**

1. Demographic Change: The New Majority

America is changing rapidly...

When we hear references to the demographic changes  
occurring in our nation, our first thought probably  
focuses on the aging of our population.

It is indeed true that the baby boomers are now entering middle age,  
and their generation has been followed by a baby bust...  
in which the number of young adults will be declining over the

remainder of this century by roughly 20%.  
Indeed, today there are more people over 65  
than teenagers in this country, and this situation will  
continue for many decades.

Further, the growth rate in both our population and workforce is  
is declining to the lowest level in our nation's history.  
America will simply not be a nation of youth again in your  
lifetimes.

Yet, there is a far more profound change occurring in the  
population of our nation.

America is rapidly becoming the most pluralistic,  
multicultural nation on earth.

Women, minorities, and immigrants now account  
for about 90% of the growth in the labor force.

By the year 2000, they'll represent 60% of all of our  
nation's workers!!!

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.

And women have already become not only the predominant  
gender in our nation and our institutions, but they are  
rapidly assuming their rightful role as leaders of our  
society.

What most don't realize is that the social and racial mix  
of these cohorts will be enormously different from  
what it was in the 1960s and 1970s.

The 21st Century will be the first post-European century  
in American history.

An absolute majority of young people born in US  
in the 21st Century will be born of parents  
of other than European background...  
Asian, African, Hispanic

And this will represent a major change in the  
character of our society.

In this future, the full participation of currently underrepresented  
minorities and women 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 those currently underrepresented in our society,  
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.

But there are other important challenges associated with  
such demographic change.

In particular, it is important to realize here that 21st Century

America will NOT be a melting pot in which all  
cultures are homogenized into a uniform blend --  
at least not during our lifetimes.

Rather, it will be pluralistic...composed of peoples  
of vastly different backgrounds, cultures, and  
beliefs...peoples seeking to retain their cultural  
roots...to maintain their differences and identities.

Our challenge will be to find the common bonds and  
values that unit us, even as we learn to respect and  
value our differences.

The growing pluralism of our society is one of our greatest challenge as a nation...yet it is also among our most important opportunities, since it gives us an extraordinary vitality and energy as a people.

## 2. The Internationalization of America

The second theme is triggered by an event that happened from almost exactly two decades ago...when Apollo 11 set down on the Sea of Tranquility to put man on the moon.

The image I have in mind is that extraordinary photo of the earth taken by Lunar Orbiter as it circled the moon...  
...an image that dramatically revealed how nations and peoples are passengers together on spaceship Earth.

It was a portent of today, a time in which all aspects of American life are becoming increasingly "internationalized", in which our nation has become a member of a truly global community.

Whether through travel and communication, the arts and culture, the internationalization of commerce, capital, and labor, we are becoming increasingly dependent on other nations and other peoples.

The world and our place in it have changed.

The fact is that a truly domestic US economy has ceased to exist.  
...It is no longer relevant to speak of the Michigan economy or the American economy...

Our economy...our companies...are truly international, spanning the globe...and intensely interdependent on other nations and other peoples.

We are no longer self-sufficient or self-sustaining. We are not immune to the shocks of the world society.

As the recent events in China and the Soviet Union make all too clear.

But beyond commerce and national security, there is an even more important reason to pay attention to the trends of internationalization...

The US has become the destination of about half the world's immigrants  
Probably 10 million this decade alone...

With falling fertility rates, immigration will soon become the main determinant of the variability in our population.

As we have been throughout our history, we continue to be nourished and revitalized by wave after wave of immigrants, coming to our shores with unbounded energy, hope, and faith in the American dream.

Yet today, in a very real sense,

America is evolving into the first true "world nation", with not simply economic and political but also ethnic ties to all parts of the globe...

From this perspective, it becomes clear that understanding cultures other than our own has become necessary not only for personal enrichment and good citizenship, but indeed, necessary for our very survival as a nation.

## iii) The Age of Knowledge

But there are even more profound changes underway...

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

The Renaissance, the Age of Discovery, the Industrial Revolution

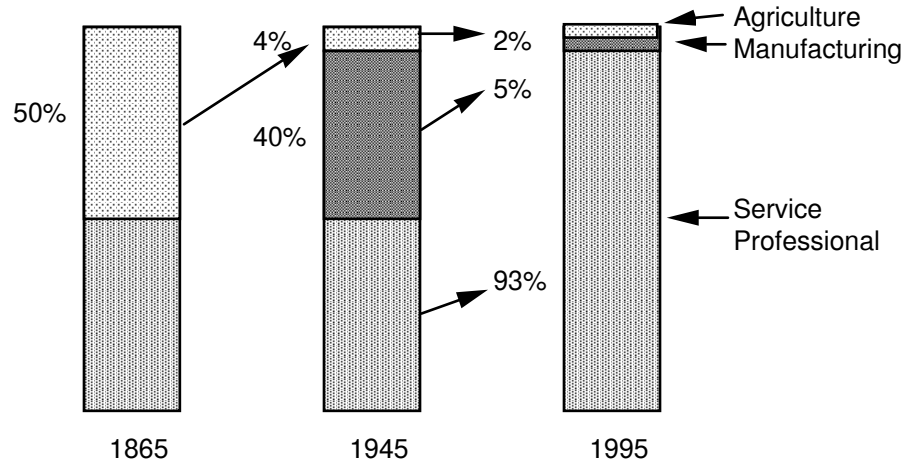
There are many who contend that our society is

once again undergoing such a dramatic shift in fundamental perspective and structure.

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.

Some examples:

1. Industrial production is steadily switching away from material and labor intensive products and processes to knowledge intensive processes:
2. Our nation's future has probably never been less constrained by the cost of natural resources.
3. Increasing manufacturing production has come to mean decreasing blue collar employment!



4. We are in the midst of an information revolution that is changing the basis of economic competitiveness and world power. Today information and data flow quickly across continents, oceans, and nations. What's more, these new technologies magnify the effects of change. "Today the velocity of change is so great... that the tectonic plates of national sovereignty and power have begun to shift" (Walter Wriston)

In a sense, we are entering a new age, an age of knowledge, in which the key strategic resource necessary for our prosperity, security, and social well-being has become knowledge--educated people and their ideas.

We're emerging from the economy of the industrial revolution--an economy confined to and limited by the earth's physical resources--into an economy of the mind, an era in which there are no bounds on human imagination and the freedom to create is the most precious natural resource"

But the whole thrust of the information revolution is to decentralize power away from both government and corporate bureaucracies back to the individual.

Key element in transformation, is the emergence of knowledge as the new critical commodity, as important as mineral ores, timber, and access to low skilled labor were at an earlier time.

This new critical commodity knows no boundaries.

It is generated and shared wherever educated, dedicated, and creative people come together...and, as we have learned, it spreads very quickly.

The knowledge revolution is happening worldwide and at a very rapid rate.  
It is clear that the key strategic resource of our society has become knowledge itself... that is, educated people and their ideas.  
Knowledge will play the same role that in the past were played by natural resources or geographical location or unskilled location...  
In the knowledge-intensive future that is our destiny it seems clear that education in general...  
...higher education in particular...  
...and the research university most specifically are rapidly becoming the key ingredients determining the strength, prosperity, and social-well being of our nation.

#### General

Transition from linear to nonlinear world  
...from a world of gradual change to a world of revolutionary change  
Deterministic to stochastic  
“Ill-posed”--unstable dependence on initial conditions or perturbations (“butterfly effect”)  
Unusual importance of young or newly-initiated in triggering change.

#### 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 and our nation.  
The America of the 20th Century that we have known... was a nation characterized by a rather homogeneous, domestic, industrialized society...  
But that is an America of the past.  
Our students will inherit a far different nation... a highly pluralistic, knowledge-intensive, world nation that will be the America of the 21st century  
Of course, these themes of the future, the changing nature of the American population... our increasing interdependence with other nations and other peoples... and the shift to a knowledge-intensive, post-industrial society.  
Are actually not themes of the future...but rather themes of today...  
...in a sense, I have simply been reading the handwriting on the wall...  
Yet I also fear that few have realized the enormous changes that our society is going through as it approaches the 21st Century.  
Indeed, I am personally convinced that we face a very unusual period of challenge in the decade ahead...a watershed, in a sense, from which we can either emerge as a world 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...and America's.  
Indeed, I am absolutely convinced that the dominant issue of the 1990s will be the development of our human resources.  
Previous economic transformations were closely associated with major public investment in infrastructure such as railroads, canals, electric networks, and highways.  
In the coming economic transition, an equivalent infrastructure will be an educated population.  
Hence the challenge before higher education is the

challenge before America...  
And the actions we must take...  
...and the investments we must make...  
...will clearly determine our capacity to  
respond to this future...

### **The "Pipeline Problem"**

But here we face very serious challenges...  
...clouds on the horizon...  
and they involve the knowledge and skills of our people  
Yet here we are in real difficulty, because we are not  
educating enough new people to maintain the  
strength and prosperity of our nation.

This has become known as the "pipeline problem", since  
it involves the full spectrum of education,  
from preschool through K-12 through higher education  
to lifelong education.

#### **K-12 Education**

By any measure, K-12 is in serious trouble.

We are "A Nation At Risk"...

Our education system simply has not responded to the  
challenges of the age of knowledge...

Note: it is bad enough that...

10% of Americans are illiterate

25% now fail to complete high school

Our students bring up the rear in most international comparisons

Compared to students in 15 other nations, US high school  
seniors scored among the bottom fourth on calculus and  
algebra achievement tests.

International Association for Evaluation of  
Educational Achievement (IEA)

US was 14th of 17 for 8th graders

US was 11-13 of 17 for 12th graders

Bottom 25% of US students were scoring at  
chance level, indicating that they were  
scientifically illiterate

The coins of the realm in the age of knowledge will be  
science, mathematics, and technology...

But most American high school students are not developing  
these skills. Only 7% of the 17 year-olds tested are  
prepared for college-level science courses.

We are a sports-oriented society,  
and we like to frame issues in the language of the playing field  
like "being Number one".

But folks, this isn't a game we are talking about today,  
this is a deadly serious matter of raising  
a generation of American who will be able to  
hold their own in an increasingly competitive,  
increasingly complex, increasingly science-oriented world.

The 13 year olds who were tested in this study

will be in college in a four years...

those of them who don't drop out first,

and will be in the work force in ten...

those of them who end up well-enough educated  
to get and hold a job.

Looked at in those terms, the lack of preparation  
for further education and future employment  
that these American teenagers demonstrated  
is nothing short of frightening.

We hear along about the 21st century, but this sounds remote.

These kids that test at the bottom of the heap  
in world terms will be the backbone of our labor force



at the turn of the century...  
...and will be running our country in 2025!

#### College Education

While higher education in America is the strongest in the world, we also face serious human resource problems here:  
Dominant factor controlling the production of college graduates is the size of the college-age population, which will decline until the late 1990s  
Traditional source of college students is declining  
25%-30% falloff in HS graduates by 1992  
Composition of college age population is also changing...  
By 2020 30% will be composed of Blacks and hispanics...  
students who have not traditionally chosen S&E careers.  
The fastest growing pool of youths has the lowest participation rate in college and the highest dropout rate in high schools -- not to mention the least likelihood to study science and math.  
This shortfall has been compounded by the alarming recent trend for students away from knowledge-intensive majors such as science and the liberal arts to "let me get out fast so I can become an investment banker and make a bundle" majors.  
Over period from 1966 to 1987, proportion of students who intended to major in physical sciences has dropped from 3% to 1.3%; in mathematics, the decline was from 4% to less than 1%.  
Freshman plans to pursue computing careers is down more than two-thirds since 1982, from 8.8% down to 2.2%.  
After recording big increases during late 70s and early 80s (increasing to 12%), engineering has dropped by almost one-third since 1982 (now down to 8.6%).

#### Graduate Education

Over the next two decades, PhD replacement needs will double in all sectors (academic, industry, government)  
For example, 25% of engineering faculty will retire in next 6 years  
On the basis of BS production alone, PhD production will decline by 20% in the decade after the mid-1990s.  
More than 60% of E&S PhDs are now foreign  
Indeed, foreign students account for nearly 85% of growth.  
It is bad policy to be dependent on an unpredictable resource and not to be able to meet more of our needs with American talent.

#### Conclusions:

- i) If we couple demographics with student preferences, we have got a timebomb on our hands...
- ii) Just as we are becoming increasingly dependent on knowledge-intensive fields...and educated people, we are facing serious shortfalls in the availability of college graduates in key areas.
- iii) It is clear that our strength as a nation will depend on our ability to attract more talented students into these fields

#### **Governor's Higher Ed Taskforce**

The Commission clearly identified the fact that "public higher education in Michigan is at a crossroads".  
It noted that per capita support had fallen from 1979 to 1983 from 14th to 37th.  
Further, it noted that Executive Order cuts had played havoc with planning, resulting in maintenance deferrals, equipment purchase cuts, and eroded support for fundamental activities-- all at a time when other states were increasing support for their systems of higher education.  
It also credited Michigan's universities with launching

a systematic process of improving efficiency and redirecting the system. In particular, it noted that from 1980 to 1984, over 100 programs were eliminated, thereby indicating the creativity and adaptability of the system.

It concluded that if nothing was done, higher ed in Michigan was likely to face a future in which mediocrity is coupled with inaccessibility, a totally unacceptable results for Michigan's citizens. "To provide wide access to a higher education system of mediocre quality is to perpetuate a hox on Michigan's citizens".

### **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.

While we all give the "age of knowledge" lip service, the evidence suggests that in reality, we long for a return to the agricultural and manufacturing economies that once made us reach...

1. For over two decades, US investment in civilian R&D has dropped while that of our competitor nations has risen rapidly. US investment in civilian R&D as a percent of GNP is now less than that of any other developed nation
2. 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.
3. 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."

"What is required is a strengthened commitment in Lansing to school finance reform and improving the quality of basic and higher education, and a greater political willingness to stand up to special interests who would thwart those long-term goals to pursue short-term objectives. The opportunity to eliminate chronic unemployment in Michigan may be never more within our graps than between now and the end of the century. The alternative is a growing mismatch of job opportunities and job training that threatens not only the state's recent prosperity, but its very solvency."

(Free Press editorial, 1/5/89)

Earlier this year we learned that Michigan ranks 48th in the nation in the rate of retention to H.S. graduation.

I cannot believe that we as a people can accept that kind of performance.

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.

4. 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...

Michigan Rankings:

Total state appropriation per student (CC + U): 46th

Total state appropriation per student (4 Y): 32nd

State appropriation per capita: 24th

Increase over past 10 years: 45th

Increase over past 2 years: 42nd

Over the past two decades, the State of Michigan has dropped from the position of a national leader (ranked 6th in 1965) in its public support of higher education to among the lowest in the nation (ranked 37th in 1989)

- i) Appro per student 43rd
- ii) Appro as % of tax 37th
- iii) Two year % inc 42nd
- iv) Ten year % inc 45th

Our state has dropped from 6th in the nation in its support of higher education to 35th over the past two decades... into the bottom third!!!

As a highly industrialized state undergoing a dramatic change to a knowledge-intensive economy, Michigan is critically dependent upon quality higher education. Yet Michigan has now fallen into the bottom ranks of industrialized states in its support of these critical resources.

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!

Indeed, one measure of the importance of higher education in the state budget is the ratio of tax dollars per enrollment ratio... a measure by which Michigan ranks 47th in the nation!

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.

#### 5. Threats to autonomy...

But political efforts to set tuition levels in Lansing rather than on our campuses raise another even more serious threat.

The traditional autonomy of governance of Michigan's public universities has been the critical factor in sustaining program quality while continuing to serve the state in spite of sharp erosion in public support.

This autonomy allowed Michigan's universities to take strong internal actions, reallocating resources, redefining priorities, and increasing tuition levels to partly compensate for reduce public support.

In recent years, however, even as state appropriations have been declining, the political pressure to restrict tuition levels to artificially low levels has increasingly threatened this autonomy.

While such political efforts have been portrayed as an effort to protect access (affordability) to public education in Michigan, they have had just the opposite effect by slashing financial aid programs.

It is clear that these forces from Lansing are being driven by not by concerns about access, but rather by fears that the Michigan Education Trust program, a prepaid college tuition program developed and financial on the assumption of low tuition levels, will become financial insolvent.

## 6. Risks to the U of M

The state's flagship institution, the University of Michigan, is at particular risk.

Despite its critical role, the U of M has been particularly disadvantaged in its efforts to achieve adequate state support in recent years.

Due in part to the intensely political dynamics of legislative process--and to the absence of any public policy in higher education --the University has consistently been given the lowest priority in state appropriations for several years.

- i) It has ranked last, 15th of 15th, in five of the last six appropriation years
- ii) The combination of low priority within the legislative appropriation process and the general erosion in state support of higher education has led to a situation in which state appropriations to the University have exceeded the inflation rate in only four of the last 10 years.
- iii) Over the past two decades, the U of M ranks last among Michigan's public universities in the growth in state appropriation.
- iv) A similar picture of eroding priorities appears in the U of M's share of state capital outlay support for academic facilities, where again it ranks last in state support over the past two decades.
- v) Indeed, during this period the State has provided funding for only two new academic facilities on the Ann Arbor campus... and then only at a 50% participation rate.
- vi) Over the past two decades, Michigan's peer public institutions have been receiving an average of \$25 - \$30 M per year for facilities. In sharp contrast, the U of M has received less than \$4 M per year!
- vii) As a result, the inventory of critical facilities needs of the University has now swelled to over \$200 million.

As with the state's other public universities, the constitutional autonomy of the U of M has been the key factor enabling it to sustain the quality of its programs and its capacity to serve the state in the face of eroding state support.

The University has been able to sustain---at least for the moment---its quality in the face of these declining appropriations only by a combination of extraordinary internal management actions.

These difficult actions were necessary to focus resources on only the very highest priorities, intensified efforts to attract resources from the federal government and the private sector, and the need to increase tuition and fees.

The impact of these efforts is obvious as state appropriations became a dwindling proportion of the University's operating funds. In FY90, state appropriations will have slipped to less than 44% of its General Fund (unrestricted) revenues and less than 15% of its total revenues.

Further, even this strategy of internal prioritization and

the development of alternative sources of support has been threatened by recent efforts by Lansing to interfere with the University's autonomy in the areas of tuition, nonresident enrollment, and even curriculum and faculty hiring.

It seems clear that such efforts, if successful in the face of inadequate state appropriations, will cause serious and permanent damage to the University.

### **What's Going On Here?**

Something has changed in America...

You know, I was brought up in a long tradition in which one's first responsibility was to one's children. My parents scrimped and saved for my college education... ..and my wife and I have done the same for our daughters (who, since they attended eastern private universities, have taken essentially all of the savings we have been able to muster over the past 20 years)

Saving for a college education came first...

...before a house, before a fancy car, before an exotic vacation

But today's generation is different...

...the "me generation" of the 1960s has grown up into comfortable Yuppiehood...

...it is bad enough that they have not saved for their children's college education

...and not supported adequate tax programs to support higher education

...but they have actively encouraged government at both the state and federal level to intervene in an effort to hold tuition levels to unrealistic low levels...

(either not realizing or perhaps not caring that they were undermining the quality of the education their children would receive at these bargain-basement prices--and depriving many others from less fortunate backgrounds of the opportunity for a college education because of the erosion of financial aid programs in the face of inadequate tuition revenue).j

Our approach to education...like to so much else in life

these days...can be summarized by that T-shirt slogan:

"Eat dessert first, life is uncertain"

We see ourselves caring about the future, but we are not preparing for it.

"American's look ahead 10 minutes while

Japanese look ahead 10 years..." (Morita, Sony)

"The last ten years have witnessed the substantial abdication by our governments of their responsibility in critical society areas, including education". When matched against the Japanese commentary, it is virtually cause and effect.

Without the opportunity for all Americans of limited or virtually no real income to obtain the benefits of an outstanding education, the class gap will continue to grow. And we will develop an educational elite in the 19th Century European tradition, to be sure, with all of its unfortunate results.

Japanese trade negotiations:

US should upgrade schools, invest in scientific research, close the Federal deficit, and take other drastic steps to improve American industrial competitiveness.

"If the US wants Japan to change its system, the US must

be more ready to correct its own shortcoming. We can't solve our trade imbalances looking at Japan alone."

American high schools and colleges must upgrade the teaching of mathematics, science, and foreign languages.

Yet the writing on the wall could not be clearer:

As we prepare to enter the Age of Knowledge, our ability to sustain the strength of our state and our nation...to achieve the quality of life for our citizens...will be determined, more than any other factor, by how we develop, nurture, and educate that most precious of resources, our people.

Hence, let me conclude my brief remarks by tossing at you--and at me--several challenges:

### **Transition**

Undergraduate Education

Michigan is making a transition from an industrial to a knowledge-based economy

What can we do in the near term to sustain our investments in key resources until the new economy builds strength

We need to form a partnership...

universities

states

parents

all making sacrifices and commitments

UM is willing to take responsibility for our role

...producing better graduates

...better linkages to the private sector

But we ask that the state and parents do the same.

What can be done?

As alumni, citizens, and voters, I urge you to insist that...

1. State government cease its efforts to interfere with the capacity of Michigan's public universities to govern themselves--particularly during a period of serious financial stress caused by inadequate state support.
2. State government develop and implement a strategy to restore an adequate level of public support for higher education to raise Michigan from the bottom third to the top third nationally in state appropriations per student (although this is still far below our historical position).
3. State government bring to an end the present freeze on capital outlay appropriations for higher education (now entering its fourth year) and begin to deal with the seriously deteriorating facilities on our campuses.

### **Concluding Remarks**

#### **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!

### **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 gathering 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.

### **The Challenge to Us All...**

Today Michigan faces serious challenges that will clearly determine 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...

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