Redrawing the Boundaries

Introduction

Today, I would like to focus my remarks on an issue
at the core of the modern university--
...an issue of great concern to many our our faculty...
...and an issue of great concern to me:

How can we provide an environment on this campus that responds
adequately to the dramatic intellectual changes occurring in
the nature of teaching and scholarship conducted by our faculty?

Here I will focus in particular on the balance between the disciplines
and interdisciplinary or cross disciplinary scholarship and teaching.

UM Traditions

The University of Michigan has long been known as
a national leader in interdisciplinary activities.

All around us are extraordinary examples
...the Institute for Social Research
...the Howard Hughes Medical Research Institute
...the Institute for Humanities
...the Rackham School of Graduate Studies itself
and literally hundreds of other institutes, centers, programs,
seminars, and other informal groups.

I remember Sheldon Danziger of Social Work telling me that one
of the principal reasons he left Wisconsin for Michigan was
the degree to which Michigan encouraged, supported, and
sustained interdisciplinary research and teaching.

And yet, despite our accomplishments in the past, despite our
strong reputation for interdisciplinary work,
there is also a very strong sense among our faculty that
we are simply not doing enough.

Let me illustrate with three different perspectives:

Perspective #1: Concerns from Within the University

Once each month over the course of the past year,
Provost Whitaker, Dean D'Arms, and I have drawn together

faculty from widely different parts of the campus to spend an evening at the President's House to discuss what they believe are the principal challenges before the University in the decade ahead.

Although such meetings frequently begin with the usual "topics of the day" such as state support, student behavior, or federal research policies, each of the discussions has rapidly evolved to focus on the changing nature of scholarship itself.

Indeed, if there was a single dominant theme of these meetings throughout the year, it was the faculty's great frustration with degree to which the rigidity of the traditional disciplines constrain their teaching and scholarship. Most faculty believe their work is increasingly interdisciplinary in nature, but that the difficulties in crossing disciplinary boundaries within the University are preventing them from keeping pace with intellectual change.

In fact, one group actually made a list of the enemies of creative scholarship:

...curriculum specialization,

...disciplinary boundaries,

...provincialism,

...an "impacted wisdom group" of faculty,

firmly entrenched in narrow disciplinary areas

unwilling or unable to recognize broader scholarly efforts.

Yet another frustration was the tendency of most of our programs, as Paul Courant puts it,

to stress "small think", highly focused, incremental scholarship in narrow disciplines,

rather than "big think" , broad, interdisciplinary efforts that aim at profound issues.

These same concerns are shared by many others on our campus. For example, in a recent survey conducted of faculty members with interests in environmental issues, 74% stated their belief that our present academic climate did not adequately encourage

or support interdisciplinary efforts.

Perspective #2: Concerns from Outside the Academy

Interestingly enough, exactly the same concerns are expressed by scholars across the nation and by their research patrons as well.

It has become clear that an increasing fraction of contemporary research occurs either across disciplines or at disciplinary boundaries. Further the distinction between basic and applied research, between relevant and irrevelant scholarship, has blurred considerably.

In response to these intellectual changes, major funding agencies are moving away from traditional disciplinary perspectives, both in their own internal organizational structures and in the manner in which they fund research at universities. Most attention has been focused on the various large scale center programs such as the NSF Science and Technology Centers.

However, perhaps even more important, is the rapid increase in the federal support going to small teams of investigators spanning several fields rather than to single investigators within a given discipline. Indeed, the traditional model of research, that represented by the lone principal investigator leading a small group of PhD students supported by modest grants, is rapidly becoming the exception rather than the rule.

Further, there is a growing sense both at the microscopic level of benchtop research to the macroscopic level of federal research policies that the present disciplinary structure of the American university is rather ill-suited to respond to the changing intellectual nature of scholarship. Indeed, many view the organization of the university today as not only obsolete, but furthermore hindering the ability of scholars to address the most interesting and important research areas. Hence a key motive behind many of the new programs introduced by funding agencies is stimulating dramatic change in

the organization of research and teaching within the university.

As many of you know, in August, the National Science Board, which I currently chair, formed a special federal commission to examine just such issues.

The Commission is a very distinguished group, chaired by Bill Danforth, president of Washington University, and Bob Galvin, CEO of Motorola, and includes, among others, Frank Rhodes, Ian Ross, Lew Branscomb, John Armstrong, and Donna Shalala.

The Report of this Commission will be submitted to the NSB on Friday, November 20. While the Report itself is still embargoed, let me read you several of the conclusions and recommendations from the preliminary drafts.

1. Disciplines are merging. Today's research discoveries converge closer to their adjacent disciplines. A stronger quest for compounding benefits from interdisciplinary integration and cooperation is urged. Nature knows nothing about disciplinary boundaries.

   (Note Donna Shalala, Chancellor of UW, responded...

   "But nature also doesn't have to worry about tenure...")

   And therein lies part of the problem: the university culture which

   tends to discourage and constrain such efforts.

2. There is a similar convergence between science and technical professions such as engineering, arising both from the stronger basis in theory and data in every discipline that create increased demand for scientific research from every stage of the innovation process.

3. The NSF's incentives should encourage interdisciplinary work. Rules, processes, and size of grants should be examined with that in mind. The essence of this idea is to entertain the concept of incentives in the management of NSF's affairs.

Pespective #3: A Personal Perspective

If you will indulge me for a moment,
I would like to add one other data point...
...a personal perspective...and perhaps a caveat...
Perhaps both my sensitivity to the importance of
interdisciplinary teaching and scholarship arises in part
from the fact that my own education, research, and teaching
has fortunately been spared from the restrictions of
disciplinary boundaries.
During my undergraduate years at Yale, we were required to study
master both a major and minor concentration...with roughly
the same number of hours devoted to each.
And while my major involved a combination of physics and
electrical engineering, my minor area of study was pscyhology...
...more specifically, child psychology!
(Guess that explains something, doesn't it!)
Life was pretty much the same during my graduate studies in Pasadena,
since Caltech has never had much respect for the disciplines.
My PhD diploma reads "Engineering Science and Physics"
which means that my studies and research roamed far and wide
across the landscape of both basic and applied science.
Indeed, Caltech offered only a one-term course in the particular area
of my dissertation, nuclear reactor physics, and like most
Caltech graduate students, I was expected to define my own
area of interest, not to fall into a disciplinary trap.
At Michigan, I was fortunate enough to belong to a department,
Nuclear Engineering, which also had little respect for
disciplinary boundaries or the distinction between science and
engineering. It encouraged work on important problems--
and frankly didn't give a damn whether others classified the
work as engineering, physics, chemistry, mathematics,
or even social science.
All that mattered was the importance of the problem
...and the quality of the work.

My department at Michigan had a very simple philosophy...

...attract the very best faculty you can find

...and recruit the very best graduate students

without regard to disciplinary background

and let them do what they believe is important and interesting!

(And it worked, since the UM Department of Nuclear Engineering has been a national leader throughout all of its 40 year history.)

As a result, I was not only allowed, but encouraged, to wander

all over the intellectual landscape, ignoring the lines drawn

in the sand by conventional disciplines...tramping across them.

To illustrate, both my teaching and scholarship have ranged from

some of the most fundamental areas of physics and mathematics

...the many body problem

...non-equilibrium statistical mechanics

...functional analysis

to some of the most applied areas of engineering

...supercomputers and computer simulation

...nuclear systems safety

...robotics and automation

to a variety of physical phenomena

...from solids to liquids to plasmas

...from nuclear fission reactors to "inertially confined TN fusion"

...from molecular dynamics to stellar structure

My scholarly activities span a broad range of groups, to which I belong...

...American Nuclear Society

...American Physical Society

...Institute of Electrical and Electronics Engineers

...National Academy of Engineering

...AAAS

...and, of course, the National Science Board

Am I a physicist...a chemist...an astrophysicist...a nuclear scientist

...an engineer?

Who knows? Who cares?

Most of the folks I work with don't know...and fortunately they don't care.

All that counts is the quality of my work.

Discussions with University Leaders

To gain a better understanding of these issues, over the past couple of months I have been chatting with a number of our faculty members who lead interdisciplinary efforts, including:

James Winn, director of the Institute of Humanities

Tachi Yamada, chair of Internal Medicine

Lynn Conway, Associate Dean of Engineering

Jim Teeri, co-director of the Global Change Program

Francis Collins, director of the Molecular Medicine Institute

....among many others

From these discussions I have gained a much better appreciation for many of the particular challenges.

Among the range of concerns expressed by these faculty are:

i) a faculty performance evaluation and reward system than encourages specialization,

ii) the difficulty that administrators and faculty groups such as curriculum committees have in understanding and appreciating the quality of interdisciplinary teaching and scholarship,

iii) the strong disciplinary control of resources,whether dollars, space, or faculty lines, and

iv) even the psychological need we all have to belong to a discipline, a clan instinct, if you will.

In a recent paper he has written on this subject, James Winn wistfully conjectures: "Perhaps wehn some interdisciplinary faculty become top level administrators, they will be able to persuade their colleagues

that the structure of the Univesity needs to reflect the changing structure of our knowledge."

Perhaps that time has now arrived...a "nondisciplinarian" has become president! Hence, let me respond to James's challenge by laying

out both what I see as the challenges and the opportunities.

First the challenges.

Some Particular Challenges

1. **Deification of the Disciplines**

It is certainly true that the academic disciplines today
tend to dominate the modern university,
whether in the areas of curriculum, resource flow,
administration, or rewards.

Further, it also seems clear that increasing specialization
has led many of our colleagues to focus their loyalties
more on their various disciplines than the institution,
thereby losing that sense of a community of scholars
so important to a University.

As we attempt to build stronger and stronger programs
in the traditional disciplines, we also tend to create
strong centrifugal forces which threaten to fragment
our cherished goal of a community of scholars.

Mention Bill Frye's last lecture to this body on "Comity"...

2. **The Faculty Reward Culture**

Over time, we have seen a faculty performance evaluation system
develop that strongly rewards specialization.

Indeed, we need only look at the narrow definition of
new faculty positions--James Winn's example of
a scholar in feminist criticism of Victorian novels.

We have developed a business style of faculty reward
that uses very crude measures of faculty achievement,
generally in terms of quantity of publications rather than
quality of scholarship, not to mention teaching.

And of course, a faculty member soon learns that the best way
to conform to this system, to produce more, is to specialize
even further--that second or third book of feminist criticism
of still more Victorian novels.

In a very real sense, we have been forcing our faculty

into narrow disciplinary roles because of our failure
to develop more sophisticated measures of faculty achievement.

Further, until we start hiring people rather than filling slots,
we are doomed to continue down the ever narrowing path.

3. Tribal Pressures: The Need to Belong

But there is another related issue here.

As Lynn Conway points out, there is a certain degree of
clan instinct at work. Most of us feel most comfortable belonging
to a group, a tribe, a discipline.

Indeed, we even define ourselves by our discipline
rather than our own activities.

In a sense, we need our disciplinary cultures and
resist interdisciplinary scholarship and teaching.

Indeed, our research proposal review panels and curriculum committees
frequently look down on such broader efforts as simply
hodge-podge collections of watered down efforts.

Yet, there are a few of us who stress doing things
--their research or teaching--rather than allowing themselves
to be pidgeon-holed into a discipline.

In a sense, these all too rare individuals develop an intellectual span
that not only carries them across disciplinary boundaries with ease,
but allows them to colloborate with colleagues from quite different fields.

It is a great challenge to the University to encourage more such "doers"
rather than just "belongers"--and to portray and protect their work
so that it will be better accepted and tolerated
by the disciplinary clans.

4. The Impact on Teaching

Harold Shapiro notes that disciplinary narrowness may be one of the

reasons for the perceived deterioration in the quality of UG education.

"There is a growing sense that the competitive demands of specialized scholarship and other developments have placed an irreparable rift between graduate and undergraduate education and may have impaired the capacity of research universities both to remain centers of modern scholarship and to fulfill their broader educational functions.

The real problem is that teaching and research may be too closely related.

At the root of our unmet challenge in undergraduate education is the failure to distinguish between the transmission of knowledge and the development of a capacity for inquiry, discovery, and continued learning.

The predicament is that the faculty is transmitting what they know --and love--with little awareness of what the student needs to learn."

There is a growing sense that most of what passes for liberal studies and general education is so out of touch with today's world that it is simply beside-the-point.

The curriculum bears little connection to contemporary reality, and even when it does, it is in such a fragmented form that little useful understanding is possible.

Chief among the flaws is the inadequacy of current disciplines to deal with the inherent "messiness" or complexities of real world issues: hunger, conflict, pollution, and so on.

Students, intuitively aware that this is the case, tend to treat general education requirements merely as meaningless hurdles to be gotten over by any means possible.

Since fewer and fewer faculty are interested in teaching these courses,

quality is in rapid decline on both sides.

We are relying too heavily on multiple but unconnected perceptions

arising from the disciplines--which once served us well,

but are now inadequate for dealing with the increasingly complex

world in which we live.

The rigid institutionalization of specialized disciplines is a barrier

to both creative thinking and curricular change.

The disciplines need to be integrated, and in some cases,

seriously reformed.

This will require considerable restructuring of our educational institutions.

The Zoology of Interdisciplinary Teaching and Research

Of course these is a broad spectrum of interdisciplinary activities,

ranging from the most traditional and focused of disciplines to

activities which have no disciplinary roots whatsoever.

Let me sketch a possible classification:

1. The Traditional Disciplines

Most of us have our base academic appointments in a

traditional academic disciplines--more specifically,

in a given department or school, associated with a

well-recognized scholarly area.

Departments have responsibility for setting standards,

conducting evaluations, monitoring quality, and making sure

that both the department and the university has

a clear sense of its particular mission.

Finally, since the department is designed to provide faculty

the freedom to pursue their own intellectual development,

it is the organizational unit most suited to adjust

institutional values and individual strategies
to become effective agents of change.

Yet we mustalso consider carefully the degree to which
the disciplines should be allowed to constrain truly innovative
scholarship and teaching. As James Winn puts it,
while we always take care to understand and appreciate
the tradition of the disciplines, we must also recognize
the degree to which they can exclude or punish those who take risks.

2. "Stapled Together"Interdisciplinary Activities

Some believe that there is a certain faddish nature
to interdisciplinary work, and that efforts to stimulate this activity
are, in reality, just causing people to staple together unrelated projects
into proposals so that they appear more interdisciplinary.

3. Interdisciplinary Teams

Of course, most of our faculty frustrated with our traditional disciplinary
structures seek to work with colleagues from other disciplines
to address important research problems or develop new
curricula that span disciplinary boundaries.

In these activities, each faculty member brings their particular
disciplinary knowledge and skills to the team.

4. Simply doing, rather than belonging...

Then too, there are those among us who simply do things...
...outstanding teaching and research...
but who are difficult to categorize.

These, too, are explorers, roaming across the various disciplines,
without regard to disciplinary boundaries.

5. Working on the Exponential Part of the Knowledge Curve

Yet there is another version of interdisciplinary activity,

that conducted by those rare individuals, blessed with such great intellectual span, that they can work across disciplinary boundaries.

While these faculty members are among the most valuable in the University, since they have the capacity to create entirely new fields of knowledge, they are frequently also the least understood and appreciated, since we tend to see only the tip of the iceberg of their activities, as viewed from our own disciplinary perches.

One of the great challenges of research universities is how to encourage more people to work down in high impact --yet also high risk--areas without unduly jeopardizing their academic careers.

We must stimulate more of a risk-taking intellectual culture in which people are encouraged to take bold initiatives. From this perspective, it is important to jar as many people as possible out of "conventional wisdom" by fostering experiments, recruiting restive people from outside of the university and turning them loose, "causing trouble" by making conventional paths less appealing than unconventional ones.

Some Opportunities

1. UM Fact of Life #1: Counterflows of Resources

Interestingly enough, there is considerable flow of resources across rather than through the disciplines.

More specifically, the resources for instruction (in the University, the so-called General Fund resources) flow down along disciplinary lines, that is, to the schools and colleges, the departments and programs.

Yet the resources for research (the Extendable Restricted Fund) flow across disciplines, since external funding agencies rarely respect disciplinary lines and in fact, as we have noted,

tend to favor interdisciplinary research efforts.

Yet, while there is a balance in resource flow along and across the disciplines, other forms of power and authority clearly are captured by and reinforce the disciplines, since they control new faculty appointments, tenure and promotion decisions, salaries, and the allocation of discretionary resources.

2. UM Fact of Life #2: Funding the New at the Expense of the Old

A second fact of life characterizing most universities is the degree to which proposals to launch new initiatives generally win out over those to sustain or strengthen ongoing programs.

Funding the new at the expense of the old is not surprising, since new proposals tend to capture both the imagination and attention more easily.

Yet there is a more fundamental issue here. The capacity to innovate is critical to all institutions, and particularly to universities.

Indeed, even during times of steady-state or declining resources, universities must commitment themselves to "innovation through substitution" strategies.

3. Darwinian Strategies

Perhaps the most straightforward action would be to more easily allow the creation within the University of alternative intellectual structurs that are "nondisciplinary" in nature.

These new units could then compete with conventional disciplines within a "free market" system for funding, faculty, students, and perhaps even degree programs.

Through this compeitition, they could then stimulate change in the disciplines--essentially a process of natural selection and evolution.

One can accelerate this process through budget mechanisms aimed at transferring resources from old to new programs.

For example, in the late 1970s the University of Michigan instituted a "Priority Tax", in which all academic units

were taxed 1% of their annual budget each year,
and this resources were then channeled through
a "priority fund" to support new initiatives.

A caveat here: While encouraging the easy formation of
such interdisciplinary efforts is important, so too is
the recognition that they should also be easy to
discard when they have outlived their usefulness.

We need to adopt different operational rules for different activities.

For example, in the disciplines...in which tenure rests...
the premise is usually that the discipline will be continued
unless there is good reason for discontinuing it.

Perhaps interdisciplinary activities should operate under
sunset provisions...or at least the premise that they
will disappear unless they can continually demonstrate
their quality and importance.

4. Matrix Organizations

Many of the important challenges facing our society--and calling
upon the resources of the University--simply cannot be confined
to a single discipline or academic unit.

Issues such as global change, K-12 education reform,
rebuilding our national infrastructure require both a perspective
and a set of resources spanning the University.

Let me give an example. While certainly our School of Education
must be a key player in addressing the great challenges before
K-12 education in our state and nation, it is also clear that
other parts of the University are also critical to this effort.

The social sciences provide the understanding of cognitive processes
and social structures so critical to learning.

Social Work must deal with the broader social fabric
in which our schools--and families--must function.

Our Business School is needed for the management and financial issues.

Both our social sciences and our Institute for Public Policy Studies

can play key roles in the public policy issues concerning K-12 education.

Even Engineering is important, since technology will play an increasingly critical role in the classroom.

Clearly we need new structures, spanning the University and coordinating its resources, to deal with such broad challenges as K-12 reform.

Other Ideas for Stimulating Intellectual Change

1. **Faculty Appointments**

One approach would be to create a group of University-wide professorial chairs that would allow faculty with broad interests to roam widely across the University, teaching and conducting research wherever they choose.

More specifically, we might try to raise the funding for some 20 to 30 such chairs, seeking endowment adequate to fund cover both compensation and support--perhaps an endowment of $2 million per chair.

Such University Professorships would not only provide faculty with unusually broad interests and intellectual span more opportunity for interdisciplinary teaching and scholarship, but they would serve to cross-pollinate across disciplinary units.

2. **Sabbatical Leave**

A fundamental purpose of the sabbatical leave is intellectual renewal.

Yet, many faculty, because of family responsibilities or financial constraints, are forced to either forego this opportunity or to take an on-campus sabbatical leave, essentially locking their office door for a term or two and working on their research.

Mary Brake has posed an interesting alternative.

Suppose we were to actively encourage faculty to take a sabbatical leave teaching and conducting research in a different school, intellectually far-removed from their home unit.

For example, a humanist might spend a sabbatical in

a professional school such as Medicine or Business Administration.

An engineering professor might spend a sabbatical leave in History or Social Work.

A medical faculty member could take a leave in Law or Philosophy.

Not only would such leaves provide a exciting, different experience for the visiting faculty member, but these visitors might stir up things a bit in their sabbatical home.

3. Faculty Roles

Part of the problem, I believe, is that we tend to structure and evaluate faculty roles far too narrowly.

We fail to acknowledge that faculty interests and skills evolve over time.

As faculty members become more experienced, their greater breadth of knowledge gives them more capacity for integrative and applied scholarship.

Ernest Boyer suggests that we should recognize this by developing what he calls "creativity contracts", arrangements by which faculty members define their professional goals for a multiple year period, possibly shifting from one scholarly focus to another.

For example, a faculty member might devote most of his/her early career to specialized research. Later the scholar might wish to examine integrative questions--taking time to read in other fields, write interpretive essays or a text book, or spend time with a mentor on another campus to discuss the implications of their work. Still later, the creativity contract might focus on an applied project, one that would involve the professor in school consultations

or as an advisory toa government body.

Furthermore, we should stress to senior faculty members both our belief that these broader, occasionally high risk, activities are of great importance and encourage them to become engaged.

4. Merging of Graduate Education Programs

Is higher education stepping up to the challenge of training scholars and teachers so that they become more adept at finding, adapting, and using the best ideas--both old and new?

Jim Teeri notes that the recent surveys conducted in support of the Global Change Project noted that many faculty believe the single biggest problem we face today is funding the resources to support graduate students interested in interdisciplinary studies. Indeed, it is frequently difficult for such graduate students, interested in broader studies, to even find a place in a university compartmentalized into narrower and narrowing specializations.

Many universities are reorganizing their teaching and scholarship, particularly at the graduate level, to move away from specialization.

For example a number of universities, including Stanford, MIT, Harvard, Washington, have merged their biological sciences activities into broad divisions, admitting graduate students to the general division and encouraging them to affiliate with various interdisciplinary institutes, centers, and laboratories.

I believe that we should seriously consider more mergers and integration. Of course, challenging LS&A to merge its current 22 deparments and dozens of programs into perhaps 3...

...literature, science, and the arts

...or, more specifically, humanities, the natural sciences and the social sciences

would require more of a culture change than could be imagined.

But many others are doing this...and we should think carefully about such mergers at Michigan as well.

5. A Different Approach to Undergraduate Education

Perhaps the same integrative approach should be explored for undergraduate education.

Today most undergraduates will face a future in which they will change careers many times.

Education will, of necessity, become a lifetime commitment.

Hence, a specialized undergraduate major or concentration seems the wrong approach.

Wouldn't it be interesting to design a far broader undergraduate education that would prepare a graduate to move in almost any direction...

...to any type of further professional study or training

...even to further graduate study in any disciplinary area...from the humanities to the sciences

Perhaps we could call this rennaisance degree:

... B. L. L....a bachelors of liberal learning...

Is this possible? I believe so.

Would students be interested? Certainly the best would be.

Should Michigan take the lead in developing such a degree?

...An interesting question...

Some Bolder Approaches

The Collaboratory

Clearly as knowledge becomes more integrated, rapidly changing, and less tied to conventional disciplines, communication among scholars, fields, institutions, sectors, and even nations becomes ever more important.

Let me give you an example of what I mean.

Since the business of the university is knowledge, let me suggest that the impact that the extraordinary advances in information technology could have--likely will have--profound implications. Technology such as computers,

networks, HDTV, ubiquitous computing, knowbots, and other technologies may well invalidate most of the current assumptions and thinking about the future nature of the university.

Will a "university of the 21st century" be localized in space and time, or will it be a "metastructure," involving people throughout their lives wherever they may be on this planet--or beyond?

Is the concept of the specialist really necessary--or even relevant--in a future in which the most interesting and significant problems will require "big think," rather than "small think?"

Will intelligent software agents roam far and wide through robust networks containing the knowledge of the world and instantly and effortlessly extract whatever a person wishes to know?

Will lifestyles in the academy (and elsewhere) become increasingly nomadic, with people living and traveling where they wish, taking their work and their social relationships with them?

In the spirit of these questions, perhaps we should pay far more attention to evolving new structures more appropriate for the evolving information technology.

At an NSF workshop in 1989 Joshua Lederberg and colleagues proposed an alternative structure for teaching and research: the “collaboratory”.

The collaboratory is envisioned as an advanced, distributed infrastructure which would use multimedia information technology to relax the constraints on distance, time, and even reality.

It would support and enhance intellectual teamwork in both research and teaching.

In fact, there is a growing consensus that the next major paradigm shift in computing is in the direction of the collaboratory and that

not only research but a vast array of human team activities in commerce, education, and the arts would be supported by variants of this vision.

Perhaps some form of the collaboratory is the appropriate infrastructure ("tooling") for the "learning organization" becoming popular in the business world;
perhaps it is the basis for the world universities in the next century.

It could well become the generic infrastructure on which to build the work place of the emerging information age.□

The University within the University

Suppose we were to create within the University a "laboratory" or "new" university that would serve as a prototype or testbed for possible features of a 21st Century university.

The "New U" would be an academic unit, consisting of students, faculty, and programs, with a mission of providing the intellectual
and programmatic framework for continual experiment.

We would see this as a highly interdisciplinary unit with programs organized around such overarching themes as global change, social infrastuctures, and economic transformation.

It would span undergraduate, graduate, professional, and continuing education, bringing together students, faculty, and alumni
to pool knowledge, work in teams, and address real problems.

It would be a crucible for evolving new disciplines through interdisciplinary collaboration.

Its programs would promote the transfer of knowledge to society through collaboration, internships, and exchanges of students, faculty, staff, and professionals.

The "New U" would also be a place to develop new structural models
for the university, to experiment with lifelong education, new concepts of service, faculty tenure, leadership development,

and community building.

Concluding Remarks

It is important that we step back and recognize that
the intellectual character of the university is dynamic.
Achieving the appropriate balance between the disciplines
and interdisciplinary teaching and scholarship is
one of the major challenges before the modern university.
Yet this is not a new challenge, since the birth of, competition among,
and disappearance of scholarly areas has always been
a critical part of our University's history.
What we regard as entrenched disciplines have changed
considerably from their past and continue to do so today.
Today we have entered a period of great intellectual change and ferment.
New ideas and concepts are exploding forth at ever-increasing rates.
We have ceased to accept that there is any coherent or unique form
of wisdom that serves as the basis for new knowledge.
We have simply seen too many instances in which a new concept
has blown apart our traditional views of the field.
The capacity for intellectual change and renewal
has become increasingly important to us as individuals
and to our institutions.
Our challenge, as an instititution, and as a faculty, is to work
together to provide an environment in which such change
is regarded not as threatening but rather as an exhilarating
opportunity to conduct teaching and scholarship of
even higher quality and impact on our society.
I look forward to working closely with you to address
these important challenges and opportunities in the months ahead.