May 6, 1991

TO: Members of the Twin Cities Assembly

FROM: Task Force on Liberal Education

SUBJECT: The Final Report

Attached you will find two documents: 1.) a full copy of the Final Report of the Task Force on Liberal Education, and 2) an Executive Summary of the Task Force's final recommendations. The Summary offers a more accessible overview of our work, but we hope you will take the time to examine the larger text as well, for it is there that we offer full explanation of our work.

Over the past three months we have consulted widely, listened carefully to the criticisms and advice we have received, reconsidered many of our initial recommendations, and made significant changes in both recommendations and rationale. So that you can readily identify those changes they are italicized in both documents.

In this cover memo, we want to call the most important of those changes to your attention.

In Section I.B., we have clearly differentiated the traditional and innovative aspects of the full Liberal Education Agenda.

In Section II.A., we have added "aesthetic judgment" to the "Attitudes and Qualities of Mind" characteristic of a liberal education.

In Section II.B., we offer a clearer explanation of the purposes and content of the New Student Colloquia.

In Section II.C., we have added awareness of aspects of Western Civilization and aesthetic sensitivity to "The Broader Agenda" to be served by the Diversified Core. We have also explained again the advantages of the Diversified Core over our present distribution system and emphasized more strongly the obligation of all faculties on the Twin Cities Campus, including those from the professional schools as well as the undergraduate colleges, to contribute courses to the Diversified Core. In the Appendix, we have given greater emphasis to the need to strengthen students' mathematical thinking.

In Section II.D., we offer a clearer rationale for the recommendation that each major program offer its students a small interactive class dealing with the intellectual foundations, ongoing development and broader implications of the major.

A new Section II.E., titled "The Designated Themes of Liberal Education," incorporates our previous discussion of the importance to liberal education of introduction to Cultural Diversity, International Perspectives, and Citizenship and Public Ethics, and adds a fourth Designated Theme, "Environmental Education."
the new Section II.E. indicates, we have maintained the previous six course requirement for the Designated Themes, but now recommend that students take at least one course in each of the four Themes and allocate the other two courses in keeping with their own interests. As before, we call for Designated Theme courses to be spotted throughout the Core Curriculum, undergraduate majors, and course electives. Finally, we have redefined the "Cultural Diversity" requirement to focus on the United States; clarified the educational purposes of the "International Perspectives" requirement; retitled and significantly recast the description of "Citizenship and Public Ethics"; and developed a broad new Designated Theme in "Environmental Education." Several altered Recommendations reflect the new configuration of this Section.

A new Section, II.F., discusses the importance of practical learning and offers students the option of connecting a Practicum experience to one of their Designated Theme courses. This Practicum could be counted toward the six course Designated Theme requirement.

In another new section, II.G., we describe ways in which faculty can help students gain perspective on distinctive aspects of the Western Tradition.

Section II.H., dealing with "Fundamental Skills and Competencies," remains much as before.

The final section, II.I., dealing with the Council on Liberal Education, contains new language asking colleges to hold closely to the all-campus liberal education requirements. It also contains a final recommendation asking that collegiate proposals for augmenting the all-campus requirements be discussed with the Council on Liberal Education.

The Final Report of the Task Force on Liberal Education is the product of more than a year's intensive work. We look forward to the discussion and Assembly action on May sixteenth.
Executive Summary
of the Final Report
of the
Task Force on Liberal Education

This Summary provides a list of the formal recommendations contained in the Task Force's Final Report, together with a brief explanation of each recommendation. Full arguments in support of the recommendations may be found in the Final Report. Changes in these final recommendations are given in italics. The recommendations are numbered sequentially in parentheses.

Strengthened Advising and New-Student Colloquia (Section II. B.)

1. The University should develop a comprehensive, campus-wide strategy for improving academic advising, especially in relation to liberal education outcomes.

This is necessary because of the decentralized nature of student advising. While advising is in principle best done in the individual units, the need for overall improvement, including adding resources, dictates that the Provost's Office should have this responsibility.

2. The University should develop "New-Student Colloquia," with the goal of implementing them for all newly entering students.

Students entering the University are often unclear about what their educational goals, especially in relation to liberal education, should be. Passage through large classes seldom helps them to achieve this understanding. These small colloquia will provide a classroom experience which will help them to understand the University's expectations and to articulate a provisional plan for their education.

The Diversified Core Curriculum (Section II. C.)

3. There should be a Diversified Core Curriculum structured around discipline-based and interdisciplinary fields of knowledge, guided in its development by clearly stated educational objectives, and consisting of a limited number of courses developed specifically to serve those objectives. The broad purpose of this curriculum should be to help students engage the full agenda of liberal education.

The current distribution requirements, which can be satisfied in various units by choosing from as many as 500 courses, should be replaced by a much smaller number of courses specifically designed to achieve a range of specific liberal education objectives. This will assure that those students whose experience with a given discipline is limited to the Diversified Core will gain as deep an understanding as possible of that field.
4. The Diversified Core Curriculum should be structured around the following fields of knowledge and associated ways of knowing, and carry the following course requirements:

--The Physical and Biological Sciences: 3 courses. At least 1 course having a laboratory or field experience designed to introduce students to the intellectual basis of experimental science should be taken in each of these two broad fields of science.

--History and the Social Sciences: 3 courses. These courses should be distributed across several of the Social Sciences. At least 1 course should emphasize "the historical perspective." It is expected that courses in the historical perspective will be offered by a number of departments.

--The Humanities and the Arts: 3 courses. These courses should be distributed across at least two of the following categories: 1) literature, 2) philosophy, and 3) the visual or performing arts.

--Mathematical Thinking: 1 course. This requirement should be met through one of the following options: 1) a newly designed course dealing with "Critical Concepts in Mathematics," 2) calculus or other traditional math courses, 3) formal logic or any other courses that emphasizes mathematical modes of thinking rather than computational skills.

(This totals 10 courses.)

Educational breadth is an essential element of liberal education. Graduates should thus have an understanding of each of the broad fields of knowledge that organize human understanding. Within these fields of knowledge, students should explore several disciplines or interdisciplinary areas.
5. The Diversified Core should help students to:

--understand their own personal experiences more deeply and develop their capacity to empathize with the experience of others, especially of those who are different by virtue of race, gender, or culture.

--encourage ethical reflection and a sense of civic responsibility;

--prepare for responsible citizenship by providing an understanding of and strategies for dealing with social issues such as technology and society, the environment, multiculturalism, and the international dimensions of contemporary life;

--become aware of some of the manifold ways in which contemporary life has been shaped and influenced by the intellectual and aesthetic traditions, the moral and religious values, and the economic and political structures of Western Civilization--and by those of other cultures;

--acquire habits of disciplined learning, intellectual curiosity, and independence of mind;

--think critically, follow trains of reasoning, detect fallacies in arguments, discern unstated assumptions, and know how to construct, in speech or in writing, a sequence of logically connected and complex ideas;

--increase their aesthetic sensitivity; improve their power of distinguishing what is well done from what is poorly done; and enhance their capacity to recognize a well-turned sentence, a handsome building, an elegant proof, or a graceful move by a dancer or athlete; and

--develop essential skills and competencies such as writing, speaking, and calculating.
The courses in the Diversified Core should go beyond standard introductory courses in order to help students cultivate the qualities of a liberally educated person.

6. A Council on Liberal Education should be formed, consisting of faculty, academic staff, administrators and students from across the Twin Cities Campus. The Council should have the responsibility for admitting courses to the Diversified Core Curriculum and overseeing its development.

Because the Diversified Core Curriculum must be carefully balanced, because its courses must have special characteristics, and because many of the recommendations contained in this Report will need careful thought about implementation, a campus-wide Council on Liberal Education, composed of faculty from across the Twin Cities Campus will be needed to oversee the implementation and to evaluate proposed courses.

7. Courses in the Diversified Core should be approved for a fixed period (perhaps five years) and be subject to systematic review and re-approval by the Council on Liberal Education.

Since courses evolve and their instructors change, and since the qualifications for inclusion in the Diversified Core are rigorous, courses in the Core ought to be periodically reviewed.

8. Courses in the Diversified Core Curriculum should be taught by regular faculty from across the Twin Cities Campus as an integral part of their teaching load; proper incentives should be provided for teaching in the curriculum; workshops and other appropriate forms of faculty development should be offered; and the faculty reward system should give full value to this teaching.

If the Diversified Core is to serve its purpose of providing undergraduates with their fundamental grounding in liberal education, it must become a major priority of the University and of the units charged with teaching it. Furthermore, successful development of the appropriate courses will require faculty support and retraining.

9. Students should be encouraged to register for one-third of their Diversified Core courses after they have accumulated 90 credits.

Too often liberal education requirements are seen as a sort of hazing one has to endure to get to one's major; yet to get the most from a course outside one's own field often requires one to be educationally sophisticated. Upperclass students will do better with the issues to
be raised in Diversified Core courses, and a significant fraction of these courses ought to be taken at that stage.

**The Undergraduate Major** (Section II. D.)

10. Upon admission to the major and in preparation for the initial meeting with an advisor, students should prepare a brief statement describing the ways in which study in the major will advance their educational goals.

Too often students choose a major without carefully considering how it will help them accomplish their educational goals. They should reflect on this issue before beginning a major.

11. Faculty responsible for each major program should provide a concise statement of the major's requirements and educational rationale in the appropriate college bulletin and develop a more extended description for distribution to present and prospective majors.

Such a statement will help students to accomplish the previous recommendation, as well as to aid them in thoughtfully choosing a major.

12. The relationship of the major to liberal education should be discussed throughout the major course of study, and students should be required to explore the relationship of their particular specialty to broader issues of society and human life.

The purposes of liberal education should permeate the whole University experience, including study in the major. This will insure greater emphasis on liberal education values and greater coherence in students' undergraduate learning.

13. Study in the major should strengthen students' ability to write and talk, formally and informally, about issues related to the major field of inquiry; express ideas in a logical and coherent fashion; and think critically about the subject matter of their discipline.

We should educate our students not just to retain information, but also to be able to analyze and use it. The major is the most appropriate place to help students develop these skills.

14. Each major should provide its students with a small group or seminar experience in which the foundations, ongoing development, and
broader implications of the discipline are examined.

Students learn a great deal from one another and from trying out their ideas in an atmosphere of open discussion. Such an experience is difficult or impossible in a large class setting. Students, moreover, are likely to be most thoughtful about their field of specialization. Thus no major will be truly effective without providing this opportunity.

15. All majors should require their students to engage in a creative or research activity or project that demonstrates clear understanding of the discipline's subject matter, modes of inquiry, and particular insight into the human experience. Such projects should be evaluated by the faculty and carry appropriate academic credit.

The University of Minnesota is a research university; one of the major activities of its faculty is scholarship. We would be denying our students part of the unique experience we can provide if we failed to give them opportunity to share this endeavor. Furthermore, a liberally educated person must have some direct sense of how new knowledge is created and understanding is achieved.

**The Designated Themes of Liberal Education** (Section II. E.)

16. Students should be required to take a total of six courses distributed across the following four Designated Themes: Cultural Diversity, International Perspectives, Citizenship and Public Ethics, and Environmental Education. Students should take at least one course in each of these Themes. The remaining two courses should be selected according to the student's interests.

In addition to the intellectual tools and understandings provided by familiar fields of knowledge, liberal education must introduce students to new areas of scholarly inquiry and offer them new perspectives on the world in which they live. Each of these Themes addresses important new areas of scholarly inquiry and deals with social issues of lasting importance.

17. Courses dealing centrally with each of the four Designated Themes should be developed, as appropriate, in the Diversified Core, in undergraduate majors, and elsewhere in the curriculum. All Designated Theme courses should be approved by the proposed Council on Liberal Education, be reviewed by the Council periodically, and carry appropriate Special Designators in college bulletins, quarterly class schedules, and other information sources.
Because students' interests change and because liberal learning should continue throughout the undergraduate years, courses dealing with the Designated Themes should be spotted throughout the Diversified Core and elsewhere in the curriculum.

18. No course in the Diversified Core should carry more than one Special Designator in addition to its field of knowledge category.

While many courses in the Diversified Core will carry Special Designators, many others will not. It is important that no Diversified Core courses carry too heavy an educational load, and that students take a full range of Diversified Core courses.

19. Courses outside the Diversified Core should carry no more than two Special Designators. A course that carries two Designators may be used by any student to meet only one Theme requirement.

Faculty should be encouraged to develop Designated Theme courses throughout the curriculum, but care should be taken that artificially complex courses not result and that students not select their courses simply because they fill multiple requirements.

20. The administration should seek ways to assist and coordinate practicum and experiential learning activities in the areas of Citizenship and Public Ethics, perhaps by creating an interdisciplinary academic Center for the Study of Citizen Ethics that would bring together into a single unit the work already being done on campus regarding courses and activities in citizen participation, ethical reflection, and community service.

Such a Center would focus the efforts of a wide variety of faculty and students, focus attention on the many issues this subject touches upon, and provide coordination for the various volunteer and experiential offerings at the University.

**Practical Learning: Designated Courses with a Practicum** (Section II. F)

21. Students should be allowed to take five (instead of six) Designated Courses, if one of those courses involves an approved practicum.

Students should be encouraged to consider the values of practical learning, especially in connection with course study in the Designated Themes.
The Western Tradition (Section II. G.)

22. Faculty throughout the University should find opportunities to point out to students how extensively their modes of inquiry or the disciplines they are pursuing, have their origins in, or are bound up with Western (or, when appropriate, with non-Western) traditions, values, and achievements.

Though a majority of our undergraduates have spent most of their lives within Western culture, they often have too little explicit understanding of its history, values, and philosophical foundations. Many courses should help foster a judicious appraisal of the West's achievements as well as a clear acknowledgment of its continuing problems.

Fundamental Skills and Competencies (Section II. H.)

23. One of the following alternative assessment and placement procedures concerning students' writing skills should be employed: 1) writing Portfolios, containing a variety of written texts, presented by freshmen and transfer students at the time of admission to the University, or 2) a writing test administered at the time of admission to the University, or 3) other appropriate means of placement.

The University should evaluate the writing skills of every freshman and transfer student. Until high schools require sufficient writing so that a writing portfolio will be available for every student admitted, tests or other means should be used for assessment of writing skills when a portfolio is not available.

24. All entering students should enroll in a Composition or Rhetoric course devoted to instruction in writing. Based on a writing assessment, students should be assigned either to "intensive" or "standard" writing courses. Because of the importance of effective writing to academic success, students should enroll in these courses as early in their University career as possible. As at present, students may test out of this requirement.

A mastery of composition skills is crucial for success at the University. The diverse skill levels of entering students require that several options among composition courses be available.

25. All courses in the Diversified Core Curriculum should have a writing component and selected courses in that curriculum, as well as in regular departmental and program curricula, should be designated as "Writing
Courses designated as "Writing Intensive" should have an appropriate designator affixed to their course number in catalogues and class schedules. Students should be required to complete at least four such courses and should distribute them across their "lower division" and "upper division" work. These courses shall be in addition to the Composition and Rhetoric courses described above. It is expected that Upper Division Composition and Rhetoric courses as well as "Senior Project" courses should carry the Writing Intensive Designator. The Writing Intensive Designator may be added to any course already carrying a Special Designator.

26. Every senior project should include a writing component and faculty should be responsible for the evaluation of such written work.

Writing improves through practice, and students should be able to write effectively in a variety of disciplines. In order to make writing a common part of the student's education, a variety of courses, including some in the Diversified Core, should have a significant writing component. In order to get frequent writing experience, it's important that students take such courses at both the lower division and upper division levels. Most particularly, the senior project in the major should have an appropriate writing component so that students will have an experience writing in the subject they know most about.

27. The University and the Council on Liberal Education, should investigate possible models for introducing a speaking requirement into the curriculum for undergraduates.

28. The University should allocate resources to ensure that students who need help with their speaking are provided with special course work or workshops.

Effective speaking is a very important skill for students to have. However, at present, there is considerable disagreement within the University as to how a speaking requirement might properly be implemented. Exploration of the possibility of such a requirement should go forward and resources should be provided to students who need help with speaking.

29. The University should establish a goal of second language proficiency at the level usually attained after two years of University study for all Twin Cities Campus graduates. Each undergraduate college should begin planning toward that goal, while the University should work toward
identifying the resources necessary to implement a campus-wide requirement.

30. The University should work actively with the State Department of Education and school systems to further strengthen language instruction so that the majority of students entering the University place well into the second year of University language study.

In an era of internationalism, knowledge of a second language is of major importance to a liberal education. However, the level of language preparation of the average student at the University, even taking into account the new preparation requirements, would require a large infusion of instructional resources if proficiency at the second year level of university study were to be required. If the high schools were to provide significantly more language instruction, a campus-wide requirement would become feasible.

**Overseeing the Liberal Education Agenda: The Council on Liberal Education**
(Section II. I.)

31. A Council on Liberal Education should be created consisting of faculty, academic staff, students, and administrators from across the Twin Cities Campus. The Council should have responsibility for: 1) developing and overseeing the Diversified Core Curriculum, including admitting courses to it; 2) certifying the appropriateness of all courses carrying such special designators as Writing Intensive, Cultural Diversity, International Perspective, Environmental Education, and Citizen Ethics; 3) working with appropriate administrative officers to oversee implementation of other initiatives for strengthening liberal education described in this Report; 4) working with appropriate university agencies to develop plans for evaluating the success of these initiatives; 5) developing additional recommendations concerning policies and requirements for further strengthening liberal education on the Twin Cities Campus; and 6) generating a continuing dialogue about liberal education through a campus-wide program of speakers, colloquia, and workshops.

Implementation of the preceding recommendations will require significant effort in course evaluation and curriculum planning. Cooperating with and coordinating the activities of various university agencies, solving the problems that arise as the revised curriculum is put in place, and continuing the work begun by this Task Force will all require significant faculty effort. A campus-wide Council on Liberal Education is the appropriate body to carry out these functions. A major task will be to turn these general recommendations into
operational policies. Such a Council will assure that the spirit of these recommendations is carried out as they are implemented.

32. The All-Campus liberal education requirements should be accepted as policy by each undergraduate college on the Twin Cities Campus, and collegiate proposals for augmenting those requirements should be discussed with the Council on Liberal Education before going into effect.

Such a policy is in keeping with the University's efforts to simplify access for new students and ease student transfers across college lines. It will also ease advising and program planning, help fashion a stronger sense of intellectual community on the Twin Cities Campus, and provide the public with a clearer statement of the faculty's shared educational values.
A LIBERAL EDUCATION AGENDA
FOR THE
1990s AND BEYOND
ON THE TWIN CITIES CAMPUS
OF THE
UNIVERSITY OF MINNESOTA

The Final Report of the
Twin Cities Campus Task
Force on Liberal Education

May 6, 1991
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Appendix: Description of and Rationale for the Fields of Knowledge in the Diversified Core Curriculum
I. A. The Challenge

In January 1990, President Hasselmo challenged the faculty, students, and staff of the University to join him in an "Initiative for Excellence in Undergraduate Education." In presenting his "Initiative," the President spoke eloquently of the University's "fundamental mission" in undergraduate education. While other colleges and universities also educate the people of our state, observed the President, the University of Minnesota has an obligation to provide "a special kind of undergraduate education" grounded in the research and artistic activities of the faculty and given social purpose by the University's land-grant, service mission.

There is much to be done if we are to accept President Hasselmo's challenge and meet our responsibilities in undergraduate education. Nothing is more important to that effort than renewing our commitment to liberal education. Providing students with a liberal education appropriate for our times and suited to their diverse educational needs goes to the very heart of the University's undergraduate mission. It speaks as well to the faculty's ability, across this sprawling, complex institution, to find agreement on basic educational values and come together as an academic community.

Responding to the President's "Initiative," Provost Leonard Kuhi and Professor Warren Ibele, Chairperson of the Twin Cities Assembly Steering Committee, together appointed the Task Force on Liberal Education for the Twin Cities Campus. Recognizing that "there are few issues as important as the one that we ask you to take up" and that "what we ultimately do with our advising structure, financial aid, and program and faculty development should be guided by our educational goals as articulated in our liberal education curriculum," Messrs. Kuhi and Ibele called on the Task Force to:

- Articulate, for undergraduate education, goals which are broad enough to encompass the intellectual diversity of the Twin Cities Campus colleges;
• Review the current provisions for liberal education which obtain on the campus and make recommendations to change or improve those policies;

• Recommend the organization and procedures for a continuing policy review group to work with the faculty to oversee the liberal education curriculum, assess the extent to which it achieves its stated goals, and monitor any new policies and requirements as they are implemented.

The Task Force was asked to prepare a Draft Report for discussion and debate by the University community by the end of Fall Quarter, 1990, and a final report by the Spring of 1991. This document constitutes the Task Force's final report.

Reaffirming our commitment to liberal education is of fundamental importance because it lies at the center of the University's undergraduate mission, affects thousands of students, and serves the social, cultural and economic well-being of the state. It is also timely because more than twenty years have passed since we last debated the meaning and purposes of liberal education at the University of Minnesota. During those years, remarkable changes have transformed the fields of knowledge that we teach, the social makeup of the faculty, the educational goals of our students, and the social and economic environment in which the University exists.

There is, however, another reason for us to consider liberal education once again. Our present all-campus liberal education requirements, established more than two decades ago, are defined almost entirely in terms of educational breadth. According to those requirements, students graduating from each of our undergraduate colleges must take a certain number of courses in each of four broadly defined fields of knowledge. For this University, at that time in its history, the distribution system then devised represented an impressive step forward in assuring that all students would gain at least some exposure to a liberal education.
Time, however, has called into question many of the assumptions on which those requirements were based and the educational agenda they were intended to serve. New definitions of what it now means to be liberally educated are urgently needed. Our present system, moreover, has become increasingly ineffective in meeting its own stated goals. Because there has been no authorized body to insure that the distribution system continued to serve its intended liberal education purposes, it has come to serve an array of different and sometimes competing purposes instead. As a consequence, the phrase "liberal education" has little meaning for many of our students.

Even this extensive litany fails to capture all the pressures calling for educational reform. Over the past decade, a chorus of complaint has charged the nation's colleges and universities with slighting the liberal education needs of their students and thus misserving the larger society. Many of those complaints have been uninformed or misdirected; some have been explicitly political in purpose. Others, however, have been driven by justifiable concern over the inability of many college graduates to communicate effectively, frame logical arguments, understand the importance of scientific or humanistic inquiry, demonstrate a working knowledge of important factual information, display a basic understanding of the international context of contemporary life, or appreciate the social diversity underlying our democratic order. Taken together, these criticisms have challenged faculty and administrators across the nation to re-examine the education they provide.

Closer to home, the results of an exit survey of 1989 University of Minnesota graduates, while providing a generally favorable evaluation of the undergraduate experience, offered troubling commentary on the special frustrations of the lower division years, the questionable value of our present distribution system, the limited help students receive in strengthening their communication skills, and the lack of student insight into the international dimensions of contemporary life. It is time, indeed past time, to redefine what we mean by liberal education and how we present it to our students at the University of Minnesota. Given its
importance, the faculty have a responsibility to provide students with a program of liberal education that is coherent in content, clear in its purposes, challenging to students, and comprehensible to the people of the state.

Though our letter of appointment carries the date February 9th, 1990, the Task Force actually began its work during the Spring Quarter. The Task Force's 26 members brought a deep commitment to undergraduate education, and a variety of perspectives to the Task Force's work. Much of Spring Quarter and early summer were devoted to the preliminary work of becoming better informed about the major issues of liberal education and setting parameters for our assignment. As part of that process, we examined documents describing the University's present distribution requirements; studied a variety of University planning reports and mission statements touching on undergraduate education; sampled the extensive scholarly literature on the content and purposes of liberal education; and surveyed reform statements from other institutions, especially large, public, research universities such as our own. Working subcommittees took on the assignment of framing specific issues and developing preliminary proposals for Task Force consideration.

By the beginning of Fall Quarter, with our agenda more clearly in mind and our thinking about that agenda beginning to take shape, we began active consultation with faculty, student, and administrative groups. As the Fall Quarter progressed, we met with the Curriculum or Educational Policy Committees of many undergraduate colleges, a variety of student groups, the Senate Consultative and Educational Policy Committees, two large gatherings of undergraduate advisors from across the Twin Cities Campus, administrative bodies such as the President's Cabinet and Staff Coordinating Group, and the Board of Regents. In each of these meetings we took the opportunity to stimulate our colleagues' thinking about liberal education and solicit advice. Those conversations have informed our own discussions and enriched the recommendations of this Report. Our subcommittees also consulted with faculty and staff on a range of specific issues particular issues.
In an effort to sample faculty opinion and solicit faculty advice more fully, we mailed a questionnaire to all regular faculty on the Twin Cities Campus. The responses provided essential guidance for our deliberations and have also been incorporated in the language and substance of our Report.

Only once in a great while do we have the opportunity to alter fundamentally the course of undergraduate education at the University. This is one of those opportunities. This Report describes a "Liberal Education Agenda for the 1990s and Beyond" that takes up President Hasselmo's challenge and offers a new vision of liberal education suited to these times and appropriate for the students of this University.

I. B. A Liberal Education Agenda for the 1990s and Beyond

For over two centuries, educators have debated the "true nature" of liberal education. During that time, the debate has shifted in response to changes in structures of knowledge, the social composition of students and faculty, and society's expectations for undergraduate education. This Report extends that historic debate by describing a liberal education agenda for students at the University of Minnesota during the 1990s and beyond.

Many of our recommendations build on past experience, for there is a rich and vital heritage of liberal education on which to draw. Thus we have frequently turned to the proven and familiar, seeking to give it new meaning and in the process achieve its renewal.

Though definitions of the fields of knowledge deemed essential to liberally educated citizens have changed over time, for example, the concept of intellectual breadth has been constant in the ongoing debate. We affirm the continuing importance of intellectual breadth by asserting that there are broad fields of knowledge, associated with distinctive ways of knowing, with which every liberally educated person must be acquainted. We describe those fields of knowledge and explain their importance in Section II. C. of this Report.
Though traditionally organized distribution systems have at
times served students well, they have too often lost educational focus
and failed to serve effectively the goals of liberal learning. Such is
the case with our own system. In its place we propose a Diversified
Core Curriculum of limited size and clearly defined educational
purposes. This new curriculum, much more sharply focused and
purposeful than our present distribution requirements, will be
constituted by courses specifically designed to serve those purposes.
Section II. C. also describes that curriculum.

If intellectual breadth continues as a familiar organizing
principle of liberal education, so too does study in depth, that is to
say the mastery of some particular body of knowledge and mode of
inquiry. Only through study in depth, as prescribed typically in the
undergraduate major, can students begin to grasp how knowledge is
created and come to understand with certainty the ways in which
knowledge furthers individual and social understanding. Too often,
evertheless, the major has been viewed as standing apart from liberal
education, as engaging students' energies once their liberal learning
has taken place. We reject that assumption, affirm that liberal
learning extends throughout the undergraduate years, and argue that
the undergraduate major has important liberal education
responsibilities. We discuss the full range of those responsibilities in
Section II. D.

We build as well on familiar concerns in our call for
strengthening students' fundamental skills and competencies. To be
liberally educated in times such as our own is to write and speak
with clarity, in other words, to be capable of communicating
effectively in English. We think it should mean as well having at
least an introductory acquaintance with a second language. Section
II.H. explores the importance of these capabilities and explains how
they might be strengthened.

As our reading and discussion have made clear, liberal
education in its largest sense has to do with essential attitudes and
qualities of mind -- among them the capacity for critical thinking;
openness to new ideas combined with independence of mind;
continuing curiosity about the social, cultural, and natural worlds in
which we live; appreciation of the complexities of knowledge and
tolerance for ambiguity; and a capacity for gaining perspective on
one's own life through self-examination and the study of others. We
explain these familiar dimensions of liberal learning and how they
can be strengthened in Section II. A.

Finally, a liberally educated person should also appreciate and
understand something of the philosophical, artistic, scientific, and
political roots of the Western Civilization in which most of our
undergraduate students have grown up. In Section II. G. we discuss
the importance of that tradition, its development, and its relation to
other traditions and perspectives.

These are among the familiar elements of liberal education
which we seek to strengthen. Taken alone, however, they only
partially encompass the full agenda of liberal education essential for
students today. Thus we also describe new goals for liberal learning
and offer new strategies for achieving them by identifying four
interdisciplinary themes with which graduates of this University
must be familiar. Each theme encompasses a range of educational
and social issues that are of major and continuing importance for our
nation and the world more generally. Each is solidly grounded in the
scholarly work of faculty from a wide range of disciplines. Each
represents a research and instructional agenda that invites
examination from a variety of perspectives and will thus contribute
to the broad dialogue that is so essential to liberal education. Each
provides opportunity for students seeking connections between their
study in formal systems of knowledge and the world in which they
live. And each, finally, has been identified as of special concern in
recent documents describing the University's educational mission.
All are discussed in Section II. E.

Three dimensions of contemporary life that command special
emphasis in a program of liberal education suited for our times, are
an international perspective on the world in which we live, an
understanding of the social and cultural diversity that underlies our
nation's democratic order, and knowledge of the fateful interactions
between human society and the physical environment.
A further dimension of the liberally educated citizen, also given special urgency by the conditions of our time, is the capacity for citizenship and the thoughtful consideration of public ethics.

If students are to benefit from the rich opportunities for liberal education available at this University, they must be helped to take advantage of those opportunities when they first matriculate. Section II. B. proposes two important strategies -- enhanced advising and new-student colloquia -- for helping students take more informed responsibility for their own liberal education. The first calls for strengthening existing commitments, while the second describes a promising new approach to liberal education. In our call for new-student colloquia, we again seek to strengthen and expand the reach of liberal education at the University of Minnesota.

A Liberal Education Agenda appropriate for the entire Twin Cities Campus calls for a campus-wide body to promote its development and oversee its implementation. In Section II. I. we recommend a Council on Liberal Education charged to fulfill these important responsibilities.

These are the propositions that together constitute a renewed and redefined "Liberal Education Agenda for the 1990s and Beyond." While meeting the diverse needs of our students, it offers common grounding for all students intent upon liberal learning, for faculty concerned about undergraduate education, for Regents and administrators responsible for guiding the University's course, and for citizens of the state concerned about what their children learn.

I. C. The University of Minnesota Context

If the "Liberal Education Agenda for the 1990s and Beyond" is to be realized in practice, it must be fitted to the circumstances of the University in which we teach and learn. We have not explored liberal education in the abstract, as a set of philosophical propositions applicable to any gathering of students, at any time, in any place -- though philosophical debates we have had aplenty. Rather, we have been given the task, at once more limited and more demanding, of developing a set of proposals designed to strengthen liberal education on the Twin Cities Campus of this University. Thus our
deliberations have been informed and our recommendations guided by the defining characteristics of this institution.

We have kept foremost in mind that this is a research university in which instruction is tied to the faculty's research and creative activities. That guiding principle suffuses all our recommendations, most obviously through our proposals for a breadth curriculum structured around discipline-based fields of knowledge, our belief in the importance of a capstone senior project in the major, and the emphasis we place on critical thinking and communication skills.

Our mission as a public land-grant university explains our attention to the connections between academic study and understanding the national and global issues of our day. In a larger sense, it explains our attention to the goal of educating an informed, responsible citizenry. Our call for study in citizen ethics across the curriculum illustrates that concern.

Our work has been guided as well by recent University planning commitments to improve academic quality, strengthen the extended arts and sciences core, reduce the number of students, enhance the undergraduate experience, and establish clearer mission differentiation vis-a-vis the other state systems of higher education. The careful reader of this Report will have no difficulty discerning the points of contact between these priorities and what we propose.

Of special importance to liberal learning is the academic preparation that students bring to their university work. We are aware that students' levels of high school preparation differ significantly, but we are encouraged by evidence that the University's new Preparation Requirements are having an effect. Those standards require students entering the Twin Cities Campus to have four years of high school English, with an emphasis on writing; three years of math, including one year of geometry and one of intermediate algebra; three years of science, including one biological and one physical science; two years of a second language; and two years of social studies, including American history.

Recent figures indicate that the percentage of students entering the University with the required courses has increased significantly
since 1985. The number of entering freshmen, for example, who successfully completed the required high school courses in mathematics increased from 83 to 88 percent, in science from 72 to 77 percent, in social studies from 97 to 100 percent, in English from 76 to 83 percent, and in a second language from 48 to 76 percent. More important, 88 percent of recent high school applicants to CLA met all the preparation requirements, while for IT the figure was 92 percent and for the College of Agriculture 84 percent.

Though these figures measure classroom "seat time" rather than learning outcomes, they indicate that more students are arriving at the University better prepared. In our recommendations, we have sought to build on this increased academic preparation, extend it directly into students' university work, and offer our students more challenging intellectual fare. Such a program is essential if we are to maintain and improve our academic standards and provide for our students an education of genuinely high quality.

We have been guided as well by the distinctive characteristics of our students. They number in the tens of thousands; are increasingly diverse both socially and culturally; have widely different educational goals; enroll in scores of undergraduate degree programs; often begin their work elsewhere and transfer to this institution; live off-campus and commute in large numbers; work many hours while attending to their studies; and frequently stop in and out on their way to the (often extended) goal of graduation. At times we have wondered whether any single set of proposals can overcome such conditions and encompass such diversity. Those very conditions and that very diversity, however, have strengthened our resolve to define a common educational ground and fashion a process of liberal learning that will join students together in a common enterprise and strengthen them against the pressures that distract them from their study.

The University community as a whole will also benefit from a shared vision of undergraduate education. Immense in size, bewilderingly complex, decentralized in organization and decision making -- the University often seems unable to act, or even at times scarcely to exist as a coherent academic community. On what
fundamental educational issues do faculty from across this sprawling enterprise make common commitment and render common judgment? Certainly undergraduate liberal education should be one of them. This Report offers a test of our commitment and resolve.

Finally, if institutional parameters have given focus to our work, so too have several important operational principles. We intend that our recommendations fit within existing credit requirements for baccalaureate degrees and not significantly extend students' time to graduation, provide guidelines and requirements appropriate for all baccalaureate programs on the Twin Cities Campus, be consistent with other University planning initiatives, and prove readily administrable at University, collegiate, and departmental levels.

I. D. An Academic Climate Essential to Liberal Learning

The Task Force has spent most of its time describing the educational objectives and curricular components of liberal education, but we have been concerned as well with the institutional climate in which liberal learning occurs. Only if that climate is appropriate, only if it nurtures the values that guide liberal learning, will we serve our students well.

Above all, study and learning must go forward in an environment that promotes freedom of inquiry and speech, together with the vigorous exchange of ideas. Respect for different beliefs and points of view, set against a background of academic civility, is essential to all academic discourse, especially to the fruitful discussion of controversial issues.

That ideas may be generated, examined, and freely exchanged without fear of intimidation or harassment is one of the defining premises of the University. The academic campus is in this sense a unique enclave of freedom. At the same time, there are limits on the right to act on ideas and beliefs, however righteous one believes them to be, when those acts infringe on the freedom of others to express their own views. The University has sometimes failed to uphold these rights, but it has never denied them in principle. To be
the guardian and stronghold of intellectual freedom has historically been one of the University's noblest missions. This freedom must be extended to all members of the University community. Faculty tenure is one guarantee of these rights. But the freedom to express unpopular or iconoclastic views extends equally to students and to speakers who visit the campus. Failure to protect these rights undermines the principle that ideas should stand or fall on their own merit, and calls into question the ability of an informed audience to evaluate opposing ideas.

The rights of students to disagree with the views of their teachers or with the established canons of a discipline, asserted intelligently and in a spirit of civility and mutual respect, must not only be protected but encouraged. If it is truly our goal to educate citizens to think clearly and critically analyze received belief, then we must extend to them in the classroom the same intellectual security and freedom from intimidation that we demand for ourselves as faculty.

We must recognize, however, that freedom of expression can cause discomfort in others. Though this may at times be unavoidable, civility and mutual respect for others set limits, however uncertain, to totally unfettered speech. Ideas may be intensely debated, but individuals or groups should not be demeaned in the process. When speech violates other basic values of the university, such as academic integrity, belief in social equality, or respect for cultural diversity, it must be vigorously challenged by others in the university community. It is the special responsibility of members of the university community to reject speech or action that attack groups or individuals on the basis of their race, gender, religion, ethnicity, sexual orientation, or nationality. The freedom to speak, after all, assumes the equal freedom of others to challenge what one says. In a university community suffused by the principles of academic freedom and First Amendment rights, this is the proper means of confronting misinformed or malicious speech, not through restrictive codes that seek to control either academic or social discourse.
If we are truly committed to the ideal of liberal education, we must as faculty take care to distinguish between instruction and indoctrination, between challenging our students to think for themselves and telling them what thoughts they should have. Above all, we must insure that an atmosphere of free inquiry exists in our classrooms.

Recently some have made the doctrinaire assertion, reflected in controversies in the educational, scientific and artistic worlds, that intellectual activity is fundamentally political in purpose. Our students must certainly be helped to understand that art, science, and scholarship do not occur in a political or social vacuum, that knowledge is in important respects socially and historically constructed, and that it often serves social and political agendas. Because of this, there may often be vigorous intellectual disagreements over ideas and their interpretation. These disagreements, however, should provide opportunity for healthy debates, not intimidation or the denigration of others' views.

At the same time, students must be helped to understand just as well that intellectual and political discourse are not synonymous, that our social as well as intellectual commitments require continuing re-examination; and that learning presumes the steady expansion of inquiry, not closing it down.

This Report argues that ethical reflection and civic commitment are important attributes of liberally educated citizens. If that is so, a concern for the values of citizen ethics, as well as evidence of a willingness to act on those values, must also be evident in University life.

The academic climate of the University is not sealed off from the surrounding society. After all, we participate in that society as well as in the academy. While we are profoundly influenced by society, however, we may be confident that we can also affect it by developing clear-thinking, well-educated, and humanely-committed citizens.
Conclusion

Ongoing concerns over liberal education, redefined in rapidly changing times, fitted to institutional circumstances, guided by broad mission responsibilities, and nurtured by a supportive intellectual and social environment--this is the formula for liberal education appropriate for all undergraduates on the Twin Cities Campus of the University of Minnesota. In Part Two of this Report, we present our recommendations and the rationales supporting them.
A LIBERAL EDUCATION AGENDA FOR THE
1990s AND BEYOND

Introduction

Students on the Twin Cities Campus pursue a wide variety of educational goals. Some are highly focused and technical, while others are more general in context. All, however, must share a basic commitment to liberal education. The agenda for liberal education described in this Report is suited to all baccalaureate degrees on the Twin Cities Campus.

Pursuit of a liberal education is not only appropriate for all students, it should extend throughout their undergraduate years and guide students, whatever their individual programs of study, from the moment they enter the University to the moment they graduate -- and hopefully far beyond. We take issue with the familiar proposition that liberal education is the exclusive preserve of the "lower division." Our recommendations reflect that basic conviction by distributing liberal learning throughout the undergraduate years. Part Two of this Report describes the Liberal Education Agenda that should guide students while at the University and position them for a lifetime of learning.

II. A. Fostering Essential Attitudes and Qualities of Mind

There is consensus within the university community, as demonstrated by the Task Forces' faculty survey and informal meetings with a wide variety of campus groups, that the goals of a liberal education cannot be fully realized in the categories of knowledge and skills. Since the beginning of the nineteenth century, the American tradition of liberal education has emphasized the need to develop personal qualities and attitudes of mind that promote reflection and encourage life-long engagement with ideas, social issues, and new experiences. This goal is, without question, the most elusive of those sought for undergraduates. It is relatively easy to determine whether students have mastered a body of knowledge. Assessing skills is more difficult, but still possible. It is quite difficult, however, to determine whether the University has effectively nurtured the qualities of the human spirit and intellect that will enrich
students' lives and enhance their contributions to society. Even agreeing on the language with which these qualities should be described is difficult. These difficulties notwithstanding, it is imperative that we identify and seek ways of promoting certain attitudes and habits of mind that we identify as essential components of liberal learning.

It is clear from our discussions that graduates of the University of Minnesota must be prepared to live in a rapidly changing world characterized by proliferating knowledge, an exploding capacity to create and transmit information, increasing global interdependence, and growing diversity in the nation's social and cultural life. It is thus essential that our students be open to new ideas and values; manifest a continuing curiosity about the social, cultural, and physical worlds that surround them; and develop a desire for life-long learning. Liberally educated individuals are not only willing to listen to ideas that are new and different from their own, but are prepared to assess the worth of those ideas and, in the process, reassess their own ideas as well.

The University of Minnesota, because of its role in the creation and transmission of knowledge, its social diversity, and its commitment to international learning, is ideally situated to foster intellectual curiosity and venturesomeness. In this Report, we encourage such venturesomeness by calling on students to examine various fields of knowledge in the Diversified Core Curriculum, understand the ramifying dimensions of internationalism and explore the meanings of cultural diversity. In addition, we ask students to examine a variety of ethical systems in the requirement for "Citizen Ethics Across the Curriculum."

If openness to new ideas is one hallmark of the liberally educated citizen, so too is the capacity to evaluate those ideas and frame conclusions of one's own -- in short, to manifest independence of mind and a capacity for critical thought. Study in the major, especially work in the senior project, has central responsibility for fostering the capacity for critical thinking, that is to say an ability to evaluate knowledge, synthesize it, and frame logical arguments. Students must begin to develop that capacity, however, as they enter the University. A fundamental objective of the Diversified Core Curriculum is to engage students in the tasks of critical thinking early in their university work. The New Student Colloquia are intended to serve that purpose as well.
While critical thought is an essential trait of liberal learning, equally essential is an appreciation of artistic creativity and the cultivation of aesthetic judgment. Some understanding of the special powers that inhere in creative activity ought to be part of every student's university education. By its very nature, aesthetic judgment transcends the commonplace distinction between thought and feeling. Not only does aesthetic perception, whether of the literary, performing, or plastic arts, or of the elegant structures of physical nature, invoke complex definitions of beauty, it can also guide the powers of reason—as is evident in physicists' search for the elegant simplicity of a unifying principle.

Manifesting independence of mind implies that students develop their own principled convictions. In a world awash with competing knowledge and conflicting values, individuals need the guidance of firm intellectual principles and ethical values. The best undergraduate experiences present opportunities for students to develop and test these principles and values. Students who are not permitted to have a "voice" in the classroom are unlikely to credit ideas that are presented as authoritative, or test their own values against new ones they encounter. The opportunity to exhibit independence of thought and firmness of conviction cannot wait for the smaller classes and personal attention that have traditionally been more available in "upper division" programs. Thus we have recommended that there be active learning opportunities in the New-Student Colloquia, as well as in courses of the Diversified Core Curriculum. The requirement that students take courses dealing with citizen ethics addresses the developmental need to examine personal convictions and values.

Among the hallmarks of liberal education are the ability to see intellectual and social issues from multiple perspectives, weigh competing moral claims, and accept the fact that many problems answerable in theory are often difficult to resolve in practice. This appreciation for complexity and ambiguity is as critical for liberally educated persons in business or government as for professors and educators. Students' intellectual curiosity, moreover, is likely to be stimulated by exposure to paradox and complexity. The need for students to encounter the shifting and often uncertain nature of knowledge will be addressed by the Diversified Core Curriculum whose courses are designed to move beyond
"facts" to an examination of underlying questions, modes of inquiry, and disputed knowledge. Since a true appreciation of complexity requires substantial understanding, however, much of the responsibility for fostering this quality of mind will fall to the undergraduate major.

Graduates of the University of Minnesota should be able not only to examine the ideas and life experiences of others, but to gain critical perspective on themselves as well. This capacity for self-perspective, for stepping outside the familiar assumptions of one's own life in order to gain perspective on those assumptions, is essential to self-understanding, and thus to purposeful change in one's own life. In our recommendations, we have provided numerous opportunities for developing this distinctive quality of mind -- in the requirements for historical study and the examination of cultural diversity; in exploration of the Arts and Humanities with their special insights into the human condition; and in the study and practice of citizen ethics.

In the preceding paragraphs, we have identified curricular strategies for enhancing essential attitudes and qualities of mind. In the end, however, such habits of mind are acquired as much through indirection as through formal study. It is largely through experience in a university community where these qualities of mind are valued that students learn of their importance and make them their own. This comes through discussions with fellow students and interaction with the faculty. Teachers serve an especially important role as exemplars of the human qualities that the University seeks to instill. That's true of respect for academic values, commitment to cultural diversity, and concern for ethical issues. It's true as well of more abstract attitudes and habits of mind. If they are evident in what faculty say and do, day by day, their importance will become clear to the students who have come here to learn.
II. B. Strengthened Advising and New-Student Colloquia

Plans for strengthening liberal education must begin with the students who come to the University to learn and prepare themselves for productive lives in society. The University's recently implemented Preparation Requirements are intended to assure that more students enter the University better prepared for the work they will do. We know, however, that students bring significantly different levels of academic preparation to the University and that, whatever their level of academic preparation, many students come with little understanding of the purposes and values of liberal education. Lacking such understanding, too many of them regard liberal learning as tangential to the "serious" work of study in their major. As a consequence, they often choose their liberal education courses haphazardly, are puzzled by the requirements they are expected to fulfill, and fail to gain full value from this crucially important dimension of their undergraduate education.

The University has an obligation to help students understand the importance of liberal education to their university work, and indeed to their entire lives, as well as prepare them to take more informed responsibility for their own liberal learning. The better prepared students are to grasp the meanings and embrace the values of liberal learning when they enter the University, the more rewarding their studies will surely be.

Involving students more deeply in thinking about and planning for their liberal education will also help in the important task of student retention, especially during the difficult first year of adjustment to university life when attrition rates are highest.

Enhanced Student Advising

Strengthened academic advising is one essential means of enhancing liberal learning. Therefore the Task Force:

Recommends that the University develop a comprehensive, campus-wide strategy for improving academic advising, especially in relation to liberal education outcomes.

Despite recent increases in resources allocated for advising on the Twin Cities Campus, academic units differ widely in the priority they give
to advising services, while the University lacks a comprehensive strategy and standard for academic advising. Student opinion about the advising help they receive, especially at the lower division level, moreover, is distressingly low. Results of the 1989 Bachelor's Degree Candidates' Survey indicated that 41% of the students responding rated their lower division advising as "poor" or "very poor." Although upper division advising was judged to be somewhat better, 19% rated their major department or college advising similarly. This situation must be improved.

Academic advising at the University of Minnesota should continue to be administered through individual colleges. We believe, however, that administrative responsibility for assuring that sufficient resources and proper advising strategies are provided across the Twin Cities Campus should rest with some clearly designated University authority. Given the Provost's responsibility to oversee the University's "Undergraduate Initiative," that office would seem the logical locus for this authority. We believe that the Council of Undergraduate Deans should share responsibility for seeing that liberal education advising is strengthened. Some form of centralized advocacy for enhanced advising is needed if the full effectiveness of the new liberal education initiatives outlined in this Report are to be realized.

The Task Force offers no clear judgment on the nettlesome question of faculty versus professional advising. The circumstances of colleges and departments are so varied, the effectiveness of different advising systems has been so amply demonstrated, and the kinds of advising required by our students are so different that singular judgments seem unwise. At the same time, advising policy, the programmatic means of its delivery, and the quality assurance of the service are the responsibility of the faculty. Since degree requirements and academic standards are faculty responsibilities and advising is an important activity for assisting students to fulfill those requirements and meet these standards, the faculty's obligations to oversee advising services are direct and clear. Whatever the strategy and whoever the people, however, the ratio of advisors to students must be increased, especially at the lower division level, and advisors must be better prepared so that advising encounters can go beyond the mundane work of checking off requirements and engage serious questions of liberal education and students' academic goals. This
implies continuing programs of training and development to equip advisors with the understanding and skills that they need. It suggests as well the desirability of developing an advising instrument designed to facilitate students' liberal education planning. Implementation of an "Advising Portfolio" similar to the one recently developed in the College of Agriculture would provide such an instrument. Strengthening advising networks within and across academic units on the Twin Cities Campus would also be helpful and should be vigorously pursued.

**New-Student Colloquia**

As important as advising assuredly is, the Task Force believes there is another, complementary strategy for enhancing students' understanding of and planning for their liberal education. Individual advising provides only occasional opportunity for the discussion of students' long-term educational plans. By contrast, a course or colloquium setting offers the possibility of more extended exploration of liberal education values and goals through dialogue with faculty and peers. Thus the Task Force:

Recommends that the University develop "New-Student Colloquia," with the goal of implementing them for all newly entering students.

First year seminars or colloquia have been established on a number of university campuses, including large-enrollment institutions such as the Universities of California, Michigan, Tennessee, and South Carolina. The purposes of these colloquia often differ, but the best among them are designed to introduce students to the academic culture of the university, challenge them to think about their own educational goals, and provide opportunity for close intellectual exchange with faculty and fellow students early in their university experience. A number of months ago the Enrollment Management Advisory Committee (EMAC) recommended the creation of new-student colloquia on this campus. This Task Force proposal builds on those earlier recommendations but argues additionally that the colloquia should give special emphasis to the substantive dimensions of liberal education at the University.

Few, if any first year students will have been introduced to the conceptual framework that defines liberal education. Probably only a
small proportion of transfer students will have had an opportunity to
discuss substantive issues involved in the history, philosophy or values of
liberal education. The Colloquia can provide a mechanism for each college
to introduce students to these important issues. They can also provide
each college’s students with a shared intellectual experience.

We envision New-Student Colloquia that will accomplish two
essential things:

--- introduce students to the values and purposes of liberal
education, either through an examination of its history and
philosophy or through exploration of the liberally educating
dimensions of some intellectual problem or topic;

--- assist students in formulating clear, if sometimes tentative
educational goals. A major product of the Colloquia for each student
should be a written statement of educational goals and a preliminary
plan for meeting those goals. Each statement should be the subject of
close conversation between students and instructor and should also
involve presentation and dialogue among peers. Although such
statements are likely to become obsolete as students gain experience
and change intellectual directions, they should be viewed as a serious
first attempt at developing a personal educational strategy. As
Section II.D. of this Report recommends, students should review and
revise this statement at the time of entrance into the major.

The New-Student Colloquia are not intended to teach "survival skills,"
study habits, or personal development. Nor is their primary purpose to
personalize the University through small group experiences, though that
would be an important subsidiary benefit. The Colloquia are instead
intended to begin a process through which each student explores the
meaning of liberal education for him or her self, takes responsibility for
defining her or his educational goals, and develops a plan for meeting
those goals within the guidelines provided by the University.

Colloquia might approach issues of liberal education in various ways.
One might be to introduce students to the history and philosophy of liberal
education and engage them in aspects of the current debate about its
classification and goals. Another might involve the exploration of some
intellectual problem in the Humanities or sciences (for example,
contrasting visions of the "self" or theories of the universe's origins) with attention to the ways in which such an exploration opens the process of liberal learning by broadening students' intellectual horizons, revealing the developmental character of knowledge, and stimulating intellectual curiosity. Alternatively, Colloquia might be constructed around issues such as medical ethics, food and world hunger or global warming that combine intellectual inquiry and contemporary affairs.

Individual colleges may wish to develop different Colloquia for first year or transfer students, or for students with broadly shared interests. To insure that the New-Student Colloquia receive full attention by students and faculty, they should carry from one to three academic credits and be included in regular faculty teaching loads. They should be taught by regular faculty, or by carefully selected Teaching Assistants or professional staff in sections of about 20 students. Faculty development seminars or equivalent support should be available for Colloquium instructors. Because a successful program of new Student Colloquia will have to be built gradually as experience with them is gained, it may be desirable to begin with several pilot programs in different undergraduate colleges, gradually expanding toward a comprehensive colloquium program.

II. C. The Diversified Core Curriculum

Though processes of liberal learning extend throughout the undergraduate years, the time before entrance into the major represents a crucial period in students' educational development. These are the years when they first enter the University, learn about its academic culture, develop their own academic values, begin to think seriously about their educational goals, and start the process of intellectual exploration. Recognizing this, colleges and universities have fashioned a variety of arrangements to frame this critical experience.

Some have developed a compact core curriculum, a small set of courses required of all students and representing agreed upon definitions of what each student should know. We are persuaded that a core curriculum in this limited sense of the term is both unworkable and undesirable in a university as large and complex as
ours, where students' educational goals differ so widely and faculty judgment about what a common core should contain is so deeply contested.

Other colleges and universities have abolished liberal education requirements altogether. As many of us remember, that was the tendency several decades ago when students protested against traditional constraints and faculty, in the name of students' free choice, pulled back from setting educational standards. Though students must take significant responsibility for their own education and exercise a fair measure of educational choice, we are persuaded that it is the responsibility of the faculty to define the parameters of liberal education and provide a structure within which informed choices can be made.

Still other institutions, including most comprehensive, research universities such as our own, have devised distribution systems to guide students in their liberal learning. These systems typically call on students to "distribute" fixed numbers of credits across required fields of knowledge. The distribution system adopted at the University of Minnesota over twenty years ago is still in effect today.

Although distribution systems have often served students well and continue to offer the most serviceable structure for important aspects of liberal learning in large universities, they have come under increasing fire in recent years from students, faculty and educational critics alike. Such systems, our own among them, often lack educational coherence, since the courses they contain have little relationship to each other and address a wide and often conflicting set of educational goals. As a consequence, students often pursue liberal learning without a clear understanding of its purposes or an appreciation of its importance. In addition, traditional distribution schemes have focused almost exclusively on issues of educational breadth while ignoring other, equally important dimensions of liberal learning. Finally, distribution requirements are typically packed into students' first two years and come to be regarded by students and faculty alike as way stations, or even as obstacles to the "serious" work of the major.
At the University of Minnesota these difficulties are compounded by the fact that each undergraduate college decides how many distribution credits it will require beyond the all-University floors as well as which specific courses will satisfy the various distribution requirements. The result is a crazy quilt of collegiate systems that defies explanation, confuses students, and inhibits cross-college transfers. Virtually every analysis of undergraduate education and every report on educational reform produced in recent years agrees that traditional distribution systems such as we presently have are ineffectual and must be changed.

Our own students concur. A spring 1989 exit poll of graduating seniors from all Twin Cities undergraduate colleges indicated that while 69 percent said they were either "moderately" or "very" satisfied with their overall educational experience, over a third of the respondents rated their 1xxx level instruction as no better than "fair." Nearly 60 percent rated the amount of discussion in their introductory classes as "poor" or "very poor," while almost half found their classes too large. Surveys of student satisfaction are not perfect measures of educational quality, nor do these surveys speak to many of the central issues involved in liberal learning. They show clearly, however, that things are seriously amiss for many of our students in their early university years when attitudes are set and liberal learning begins.

Returns from a faculty poll conducted by the Task Force during the fall of 1990 offer additional evidence that all is not well with our present arrangements. Of 805 faculty respondents, 48 percent had insufficient knowledge of our present distribution scheme to pass judgment on it. Presumably many among the faculty who failed to reply were equally uninformed. Of those who were sufficiently knowledgeable to reply, 32 percent believed the present system was only "slightly" or "not at all" effective, while only 18 percent thought it "very" or "extremely" effective. The Task Force concurs with the preponderance of judgment that our present distribution system, whatever its original intentions and however satisfactory it may initially have been, must be changed.
At the same time, we continue to believe that distributive learning, carefully arranged and properly overseen, offers many benefits, especially in a large research university such as our own. Those benefits need to be preserved. Distributive study insures that students will continue to explore fields of knowledge and ways of knowing that provide the essential foundation of a liberal education. Just as important, distributive education, grounded in discipline-based and interdisciplinary fields of knowledge, is consistent with the interests and scholarly orientation of the faculty at a research university. Third, such a system, properly defined, offers a stable intellectual structure within which liberal education can go forward and that can at the same time serve the differing educational needs of our students. Fourth, it provides rich opportunity for teaching participation by faculty from across the full range of undergraduate and professional colleges. Fifth, it is administratively manageable.

In order to preserve the educational benefits of distributive learning while avoiding its flaws, the Task Force:

Recommends the creation of a Diversified Core Curriculum structured around discipline-based and interdisciplinary fields of knowledge, guided in its development by clearly stated educational objectives, and consisting of a limited number of courses developed specifically to serve those objectives. The broad purpose of this curriculum should be to help students engage the full agenda of liberal education.

Three characteristics of the Diversified Core Curriculum call for special commentary. The first and most familiar is its mission to provide students with appropriate educational breadth. Our present distribution system seeks to do that. The second and third characteristics carry the Diversified Core far beyond our present arrangements, for they identify a much wider agenda that the Diversified Core is intended to serve and require that it be limited to courses specifically developed to serve that full agenda.
Educational Breadth

A central purpose of the Diversified Core is to promote educational breadth, that is to say an understanding of the long heritage of human thought and the major fields of knowledge that have such compelling importance for our world today. This implies familiarity with the basic factual information that discipline-based and interdisciplinary fields of knowledge rely on. It also requires acquaintance with different ways of knowing, that is to say with the kinds of questions that are asked, theories that are employed, and data that are used in different intellectual domains. In areas of the creative and performing arts, educational breadth calls for acquaintance with different modes of creative activity, as well as the aesthetic and critical principles that guide them. In sum, programs of educational breadth should introduce students to the diverse ways of knowing that have characterized human societies and civilizations, and that characterize our world today; explain the factual content, methods and theories of specific disciplines and arts across the spectrum of the University; reveal the ways in which knowledge is culturally and intellectually constructed and changes over time; and demonstrate that "knowing" is an active, ongoing process.

Toward those ends, the Task Force:

Recommends that the Diversified Core Curriculum be structured around the following fields of knowledge and associated ways of knowing, and carry the following course requirements:

--The Physical and Biological Sciences 3 Courses
At least 1 course having a laboratory or field experience designed to introduce students to the intellectual basis of experimental science should be taken in each of these two broad fields of science.

--History and the Social Sciences 3 Courses
These courses should be distributed across several of the Social Sciences. At
least 1 course should emphasize "the historical perspective." It is expected that courses in the historical perspective will be offered by a number of departments.

---The Humanities and the Arts 3 Courses
These courses should be distributed across at least two of the following categories: 1) literature, 2) philosophy, and 3) the visual or performing arts.

---Mathematical Thinking 1 Course
This requirement should be met through one of the following options: 1) a newly designed course dealing with "Critical Concepts in Mathematics," 2) calculus or other traditional math courses, 3) formal logic or other courses that emphasize mathematical modes of thinking rather than computational skills.

TOTAL 10 Courses

Why should all baccalaureate students be asked to explore these fields of knowledge? Because together they structure intellectual and artistic inquiry and provide the basic categories through which we understand ourselves and the world in which we live. Any person claiming to be liberally educated in our day must know something about each of these intellectual domains. (A more extended rationale for the importance of each of these fields of knowledge is provided in the Appendix.)

While students should explore each of the broad fields structuring the Diversified Core Curriculum, they may be exempt from courses developed by the department in which their major is located, since they will gain extensive exposure to that area through study in the major. For example, physics majors should not be
required to take a physics course in the Diversified Core. Students may, of course, choose to take a course from the Diversified Core in their departmental area, since those courses will be designed to offer broad perspective on the particular discipline and its intellectual context. Such choice, however, should be optional. A benefit of this exemption is that it will facilitate fuller exploration of other fields in the Diversified Core without raising the total number of required credits.

The Broader Agenda of the Diversified Core Curriculum

Though promoting educational breadth and coherence is perhaps the central mission of the Diversified Core Curriculum, its purposes are considerably broader and its mission in liberal education more comprehensive than that. Study in the Diversified Core Curriculum should promote the full agenda of liberal learning. With that objective in view, the Task Force:

- Recommends that the Diversified Core should help students to:
  - understand their own personal experiences more deeply and develop their capacity to empathize with the experiences of others, especially of those who are different by virtue of race, gender, or culture;
  - encourage ethical reflection and a sense of civic responsibility;
  - prepare for responsible citizenship by providing an understanding of and strategies for dealing with social issues such as technology and society, the environment, multiculturalism, and the international dimensions of contemporary life;
  - become aware of some of the manifold ways in which contemporary life has been shaped and influenced by the intellectual and aesthetic traditions, the moral and religious values, and the economic and political structures of Western Civilization -- and by those of other cultures;
  - acquire habits of disciplined learning, intellectual curiosity, and independence of mind;
think critically, follow trains of reasoning, detect fallacies in arguments, discern unstated assumptions, and know how to construct, in speech or in writing, a sequence of logically connected and complex ideas;

- increase their aesthetic sensitivity: improve their power of distinguishing what is well done from what is poorly done; and enhance their capacity to recognize a well-turned sentence, a handsome building, an elegant proof, or a graceful move by a dancer or athlete; and

- develop essential skills and competencies such as writing, speaking, and calculating.

These objectives should guide the entire liberal educational experience. The Diversified Core, however, represents an essential component of undergraduate study and must play a major role in serving the full liberal education agenda.

A Specially Developed Curriculum

If the Diversified Core Curriculum is to serve the liberal education agenda effectively, it must consist of courses specifically developed to serve that agenda and specially admitted to the curriculum. Courses admitted to the Diversified Core Curriculum should have solid academic content and be firmly grounded in discipline-based or interdisciplinary inquiry. Interdisciplinary courses should be encouraged. At the same time, courses in the Diversified Core are to have a range of educational purposes that distinguishes them from traditional introductory courses designed primarily as gatekeepers for advanced course sequences.

Specifically, they will not just introduce students to a given subject matter (e.g., Shakespeare, the history of ancient Greece, mathematical theorems), but will address fundamental questions about disciplinary inquiry or artistic activity, such as: "What does literary or historical study or mathematics do? How do the arts or the sciences approach the world we live in and inquire into or comment on its nature?" In the University's current system, scores of different course may satisfy distribution requirements, but the
same courses may be taken by other students for other reasons—to meet the requirements of a major, for example. It is, therefore, not customary for instructors to address such large issues because some students would hear the same material over and over again. In the system we propose, all courses in the Diversified Core would address these matters, and students would normally take only one or two such courses in any discipline. Introductory courses that do not at present address such questions specifically will require significant revisions before they can be included in the Diversified Core.

The number of courses that should be listed at any given time in the Diversified Core Curriculum must be a subject of future discussion. It will certainly be smaller than at present. At the same time, the number should be large enough to attract teaching commitments from a wide range of faculty from across the Twin Cities Campus, offer students meaningful choice, and meet overall student demand.

To insure that courses serve the purposes of the Diversified Core Curriculum as well as to guarantee that a sufficient number and variety of courses is provided to meet the curriculum's goals, the Task Force:

Recommends that a Council on Liberal Education be formed, consisting of faculty, academic staff, administrators and students from across the Twin Cities Campus. The Council should have responsibility for admitting courses to the Diversified Core Curriculum and overseeing its development. (For a discussion of the Council's full responsibilities, see section II. I. of this Report.)

Because faculty may wish to teach courses in the Diversified Core Curriculum for a fixed number of years, because courses may significantly change their focus over time, and because the mix of causes in the Diversified Core should be regularly renewed, the Task Force:
Recommends that courses in the Diversified Core Curriculum be approved for a fixed period (perhaps five years) and be subject to systematic review and re-approval by the Council on Liberal Education.

Recognizing that it is essential to the quality and integrity of this special curriculum that it be taught by regular faculty, the Task Force:

Recommends that courses in the Diversified Core Curriculum be taught by regular faculty from across the Twin Cities Campus as an integral part of their teaching load; that proper incentives be provided for teaching in the curriculum; that workshops and other appropriate forms of faculty development be offered; and that the faculty reward system give full value to this teaching.

While it is assumed that faculty from all the undergraduate colleges on the Twin Cities Campus will have important responsibilities for instruction in the Diversified Core Curriculum, it is important that courses be offered by faculty from the professional schools as well. Not only must the teaching responsibilities be shared if they are to be manageable, but faculties from all the undergraduate colleges and professional schools have essential contributions to make, particularly when it comes to fostering the integration of disciplines and their application to contemporary issues.

Too often, students and faculty have regarded general education requirements as incidental to their main concerns. This attitude reflects what has been an excessively rigid separation between the lower and upper division years, between what has traditionally been regarded as "liberal education" and study in the major. This separation has at times resulted in overly specialized major programs that lack a sufficient liberal education dimension. (We explore these issues in section II.D. of this Report). It has also meant that students often exhaust their breadth explorations before
they are prepared to make the most informed decisions. Recognizing that study in the Diversified Core will necessarily occupy a good part of most students' early years at the University, we nonetheless think it important that students extend this experience across their entire undergraduate career. With those considerations in mind, the Task Force:

Recommends that students be encouraged to register for one third of their Diversified Core courses after they have accumulated 90 credits.

To facilitate this, the Diversified Core Curriculum should include courses at the upper division as well as lower division levels.

II. D. The Undergraduate Major

The undergraduate major occupies a central position in a student's education at the University of Minnesota. The amount of time devoted to major requirements across the Twin Cities Campus varies from one to two thirds of a student's credit hours. Given the time that students devote to the major, it is essential that those programs of study be set in the broad context of liberal education. Liberal learning, as defined in this Report, does not end with the "lower division" years, but extends throughout the undergraduate experience.

If intellectual breadth, served by the Diversified Core Curriculum, constitutes one essential dimension of liberal education, study in depth of a particular discipline or interdisciplinary area constitutes another. It is essential at a research university that students develop some understanding of how knowledge is created in a particular field of inquiry and thus come to appreciate how demanding as well as how satisfying that process of discovery can be. Such an understanding can strengthen students against the easy acceptance of glib generalizations and facile explanations. The undergraduate major has primary responsibility for these dimensions of a student's work.

Responsibility for determining the requirements and academic content of undergraduate majors lies with departmental or program faculties. At the same time, the Task Force is concerned that majors meet
their responsibilities to contribute in important ways to the broad objectives of liberal education. This section of our Report offers guidelines and recommendations appropriate for all undergraduate majors on the Twin Cities Campus.

The major should provide students with an understanding of the factual content, modes of inquiry, and theoretical foundations of its area of study. In addition, the major should identify and explore important issues of debate and points that are contested within the area of study. In examining these foundations, students should be made aware of the questions that organize inquiry in the major. They should learn something of how the disciplinary or interdisciplinary area of study has developed over time and in this way become sensitive to the ways in which knowledge evolves and expands. As appropriate, faculty should introduce students to recent research and innovations in the field. In sum, students should achieve a solid understanding of the factual content, methods, terminology, and theoretical structures of their major field.

While study in the major stresses depth of knowledge, students should not lose sight of liberal education's additional concern for breadth and synthesis. As students pursue a deeper understanding of their own discipline, they should make comparisons between it and other modes of inquiry. In addition, students should be encouraged to explore the ways in which disciplined inquiry in the major sheds light on broader issues in society, as well as in their own lives. Finally, students should be helped to understand the implications of study in the major for issues of social and personal ethics.

The choice of a major is one of the most important decisions that a student makes. So that this decision will be more thoughtfully made, the Task Force:

Recommends that upon admission to the major and in preparation for the initial meeting with an advisor, students should prepare a brief statement describing the ways in which study in the major will advance their educational goals.

This statement should be more than a preliminary listing of courses to be taken. It should explore the student's reasons for selecting the
major, the emphasis to be developed within the major, how the major will serve the student's intellectual agenda, and how it will further the student's future plans.

So that students have sufficient information on which to base their choice of a major, departments and programs should develop descriptive material and make it readily available. Therefore the Task Force:

Recommends that the faculty responsible for each major program provide a concise statement of the major's requirements and educational rationale in the appropriate college bulletin and develop a more extended description for distribution to present and prospective majors.

So that the broad objectives of the undergraduate major, as spelled out in this section of the Report, are fulfilled, the Task Force:

Recommends that the relationship of the major to liberal education should be discussed throughout the major course of study, and that students should be encouraged to explore the relationship of their particular speciality to broader issues of society and human life.

As part of their role in furthering liberal education, all majors should ensure that students continue to perfect the skills and attitudes of mind fostered by the Diversified Core Curriculum. Therefore the Task Force:

Recommends that study in the major should strengthen students' ability to write and talk, formally and informally, about issues related to the major field of inquiry; express ideas in a logical and coherent fashion; and think critically about the subject matter of their discipline.

The Task Force recognizes that effective teaching can occur in large classes as well as small, and that classes of all sizes will continue to be taught at the University. We are aware as well that dedicated, conscientious teachers are the most important ingredient of successful learning. At the same time, we are persuaded that small classes offer
greater opportunities for the free exchange of ideas and the fuller expression of diverse views than is possible in most larger classes. While small class opportunities should be provided wherever possible, the Task Force believes that an especially appropriate point for such an experience occurs during the later stages of the undergraduate major when students will have acquired the knowledge and confidence necessary to engage in meaningful discussions of complex issues in their special fields of knowledge. Though such opportunities may take different forms across the University, as in senior seminar, laboratory or other settings, they should all be arranged to promote active learning through both written and verbal presentations. For these reasons, the Task Force:

Recommends that each major provide its students with a small group or seminar experience in which the foundations, ongoing development, and broader implications of the discipline are examined.

Because study in depth is a central concern of the major, because problem solving and active learning are essential characteristics of liberal education, and because the University's research faculty is particularly well suited to guide students in research or creative activity, it is important that students have opportunity to engage in their own disciplined inquiry. Therefore, the Task Force:

Recommends that all majors require their students to engage in a creative or research activity or project that demonstrates clear understanding of the discipline's subject matter, modes of inquiry, and particular insight into the human experience. Such projects should be evaluated by the faculty and carry appropriate academic credit.

Students should normally undertake this project during the final year of study in the major. In some fields, group projects may be an appropriate way of meeting this requirement. Faculty will need to insure that students are properly prepared to fulfill the requirements of the project.
II.E. The Designated Themes of Liberal Education

If a liberal education appropriate for the 1990s and beyond must be solidly grounded in fields of knowledge and modes of inquiry that provide students with essential intellectual tools and understandings, it must also incorporate new areas of scholarly inquiry and offer students new perspectives on the world in which they live. This Report identifies four Designated Themes that bring together new modes of academic inquiry and issues of compelling social importance.

Each of these Designated Themes is solidly grounded in the scholarly work of the faculty, draws on the perspectives of numerous disciplines, focuses on issues of lasting importance for our nation and the world, offers students opportunities to explore the connections between formal study and the obligations of responsible citizenship, and has been previously identified as of special importance in the educational mission of the University. Together they offer a new and complementary dimension of liberal learning for our time.

With these considerations in mind, the Task Force:

Recommends that students be required to take a total of six courses distributed across the following four Designated Themes: Cultural Diversity, International Perspectives, Citizenship and Public Ethics, and Environmental Education. Students should take at least one course in each of these four Themes. The remaining two courses should be selected according to the student's interests.

Students should be encouraged to explore these Themes in a variety of course settings and at different times in their undergraduate careers. So that students can readily fulfill these requirements, the Task Force:

Recommends that courses dealing centrally with each of the four Designated Themes be developed, as appropriate, in the Diversified Core, in undergraduate majors, and elsewhere in the
curriculum. All Designated Theme courses should be approved by the proposed Council on Liberal Education, be reviewed by the Council periodically, and carry appropriate Special Designators in college bulletins, quarterly class schedules, and other information sources.

While it is recognized that numerous courses in the Diversified Core will carry theme designations, thus offering students the opportunity to meet both field of knowledge and Theme requirements with a single course registration, it is important that no course in the Diversified Core carry too heavy an educational load. It is equally important that students be encouraged to take a full range of Diversified Core courses. With these considerations in mind, the Task Force:

Recommends that no course in the Diversified Core carry more than one special Designator in addition to its field of knowledge category.

It should be emphasized that Designated Theme requirements may also be met by coursework in majors and through course electives. To encourage the development of Designated Theme courses throughout the curriculum, the Task Force:

Recommends that courses outside the Diversified Core carry no more than two Special Designators. A course that carries two Designators may be used by any student to meet only one Theme requirement.

The following subsections of Section II.E. describe the four Designated Themes incorporated in the liberal education agenda.

1. Cultural Diversity
Multicultural awareness has become a central theme in discussions about the nature and significance of liberal education at the close of the twentieth century. As debates on campuses and in
the public media reveal, the realities of cultural diversity and division require our thoughtful attention. Given the times in which we live, an understanding of cultural diversity is one critical aspect of what it means to be liberally educated.

President Hasselmo called special attention to this Theme in his "Initiative for Excellence in Undergraduate Education." Within our country, President Hasselmo observed, "the aspirations of women and people of color are radically altering social, political and economic reality." All of our students must "appreciate the merits of a diverse society" and be able to "implement social justice." These concerns should also be "integral to undergraduate education at the University of Minnesota."

The Task Force readily concurs. We recognize that there is no single approach to these concerns, but affirm that all of our students must understand the ways in which racial, ethnic, and gender differences structure much of the human experience. While honoring their own traditions and values, students must learn to understand and respect the traditions and values of people unlike themselves. They need as well an education that enables them to see how different groups have contributed to the rich mosaic of our nation's social and cultural life. These understandings are essential to a more inclusive and democratic society.

Diversity of experience and understanding, of course, exists within cultural groups. In particular, the experiences of women and men often differ substantially, and students need to learn about the ways in which gender influences individual lives and the broader society. Perspective on the multicultural bases of community and national life can be gained by study of the historic or contemporary complexities of American culture.

In the last few decades, the theoretical questions, conceptual frameworks, and analytical tools used by scholars have begun to address questions of cultural diversity in new ways. Students should be helped to understand the impact of such concerns on scholarship and to sharpen their ability to think critically about differences among individuals and cultures. To insure that students examine important issues of social and cultural diversity, especially as they
relate to our nation's democratic society, all students should be required to take at least one course in the Diversified Core, in their major, or elsewhere that focuses on issues of social or cultural diversity in the United States.

2. International Perspectives

In his "Initiative for Excellence," President Hasselmo observed that "We live in a world that is more and more interdependent—economically, politically, and culturally. Our undergraduate students must perform as international citizens; they cannot be handcuffed linguistically and culturally by geographic boundaries or held prisoner by parochial interests and values." Undergraduate education at the University of Minnesota, he concluded, "must provide students with an inclusive understanding of the peoples of the world."

All students need some understanding of the ways in which they are part of a rapidly changing global environment dominated by the internationalization of science and scholarship, information, culture, business and finance, labor markets, and political events. Lacking such understanding, they can neither make sense of the world in which they live—a world no longer divided by oceans or distance—nor act purposefully on their own or others' behalf. We need only look at the composition of our student body (the University of Minnesota ranks eleventh nationally in the number of international students on campus), survey the diversity of our academic programs, or examine the wide-ranging interests of our faculty to realize that our university is strongly positioned to help students learn about the interdependent world in which they live.

To insure that students learn about the increasingly dense network of relationships and interdependencies that link people and nations together, all students should be required to take at least one course in the Diversified Core, in their major, or elsewhere that deals centrally with International Perspectives. To qualify for such designation, courses should either: 1) deal explicitly with important cultural, political, economic, diplomatic, or other interdependencies in today's world, while giving some attention to the implications of
those interdependencies and their historical patterns of
development, OR 2) examine significant differences across national or
broad cultural boundaries, either historically or contemporaneously,
with specific attention to cross-national or cross-cultural comparisons
and interactions. Among courses carrying the International
Perspective designator, many should include material dealing with
the non-Western world.

There are important additional ways of furthering international
perspectives and cross-cultural understanding. Students should be
encouraged to learn a second language (we discuss second language
study more fully in Section II. H.) and take fuller advantage of
opportunities for foreign travel as well as for study and international
service-learning abroad. Far too few of our students do so. Data
from the Spring 1989 Bachelor's Degree Candidate Survey provide
troubling perspective on our students' limited exposure to the world
beyond our national borders. Forty percent of those degree
candidate had not taken a course in either a foreign language or
foreign culture; over 90 percent had not studies aboard; and 75
percent had not travelled in a foreign country. We must do better to
prepare our students for effective citizenship in a diverse and
increasingly interdependent world.

3. Citizenship and Public Ethics

Liberal education in the land grant tradition has from its
inception gone beyond academic inquiry and professional training to
prepare students for responsible citizenship. Responsible citizenship
includes, among other things, the capacity to discuss, deliberate, and
participate in public affairs, as well as to reflect upon the ethical
dimensions of public life and one's involvement in it. Given the
changing problems and prospects of public life that students and
citizens face, our curriculum should consciously pursue the land
grant tradition by including in it the study of citizenship and public
ethics. Such activities, as a part of undergraduate liberal education
at the University, would be fully consistent with the broader
traditions of civic responsibility and business philanthropy that
exemplify the State of Minnesota.
The study of citizenship and public ethics must be broadly defined in a way that encourages students to understand and reflect upon their own lives, careers, and interests in relation to the political process and the general welfare of the society as a whole. It must, that is, provide the educational opportunities for students to reflect upon and determine for themselves a clearer sense of their present and future relationships to and obligations toward the civic community. Avoiding orthodoxies or fixed truths, it would teach students about the range of past and present meanings of "citizenship," the various understanding of rights and obligations that citizens may be said to have in their communities, and the variety of current debates about the civic and ethical responsibilities of students, teachers, scientists, professionals, businesspersons, and civic leaders.

The idea for the study of citizenship and public ethics appears prominently in President Hasselmo's "Initiative for Excellence in Undergraduate Education." As President Hasselmo states, "Our students must learn to function as productive members of society, to serve as stewards of our environment and natural resources, and to perform the roles of public-minded citizens in a democratic society." He also includes "service to the public" as a defining "mission of the University and of every educated citizen." Similar concerns appear to have motivated the Minnesota State Universities' Commission on Undergraduate Education when it called for the promotion of "responsible citizenship in a democracy" both through courses to help students "articulate the standards of ethical behavior . . . in professional and personal life" and through a "community service, citizen participation, or social action project." Beyond the borders of our state, several universities and colleges have developed or are developing programs in citizenship education, public ethics, and/or service-learning, including Stanford, Rutgers, California, Maryland, Ohio State, Notre Dame, and Brown.

The urgency of teaching our students to think deeply about their civic roles is heightened by our increasingly pluralistic society where the meaning and requirements of citizenship are themselves open to important debates between students and citizens of different
nationalities, races, colors, creeds, and sexual orientations. The urgency is also amply demonstrated by an irony of American politics today. For a century and more, Americans' voluntary efforts and political involvements were mutually reinforcing. Today such linkage has been largely severed. Participation in community service is increasing; yet democracy is simultaneously in danger of becoming a spectator sport. A variety of issues have merged that require for their resolution significant changes in behavior, values, and cultural assumptions—from problems of discrimination, drugs, crime, and homelessness to challenges involved in the education of a literate, sophisticated workforce and the protection of the environment. Such changes can only occur with effective, widespread and responsible citizen involvement in public affairs. Yet growing numbers of citizens are disengaged from the political process and from public life. Voting levels have noticeably declined. Perceptions of politics have soured, alongside growing cynicism about many institutions.

For all these reasons, students should be required to take one course in the Diversified Core, in their major, or elsewhere that deals with Citizenship and Public Ethics. Such a course may, like other Designated Courses, involve a practicum or experiential-learning component.

Spotted throughout the curriculum, courses should be drawn from the widest possible spectrum of disciplines and fields of knowledge—from the professional schools, natural sciences, social sciences, and humanities—inasmuch as citizenship and public ethics are shared concerns. Moreover, the courses should not emphasize personal value clarification, or present lists of facts or dogmas as in certain texts of high school civics. Since such courses may deal with controversial topics of public life, they must be structured to present a wide spectrum of views and to encourage students to develop their own positions. Studying citizenship and public ethics is, after all, not a matter of indoctrination, but of education and of creating a space for open debate and the free exchange of ideas.

The proposed courses should: [i] discuss issues and themes of citizenship, public affairs, and public ethics in the abstract, as these relate to the discipline or field of knowledge in question; [ii] apply
these abstract issues and themes to concrete instances; [iii] help students develop their own civic judgment, skills, and capacities for ethical deliberation; and iv] include class discussion and a significant writing component, say in a journal.

Courses in the study of citizenship and public ethics might address such topics as: [1] the relationship of the citizen to her or his community, the political process, and the public world; [2] the debates in a democracy over rights, duties, obligations, welfare, or international aid to other countries; [3] professional ethics and debates about the public responsibilities of professionals, scientists, and businesspersons; [4] the current or historical patterns of power, political interaction, and conflict among racial, ethnic, religious, and other groups; and/or [5] the complexities and possibilities of public collaboration and problem-solving in a society of immensely diverse interests, perspectives, and values.

Some courses in Citizenship and Public Ethics should include a practicum or experiential-learning component that is fully integrated into course readings and discussions, for there is a natural affinity between community service learning and the study of citizenship and public ethics. Citizenship and public ethics—no less than the laboratory sciences, archaeology, engineering, music, or studio arts—entail a practical dimension involving discussion, participation, and problem-solving in public life.

The practicum or experiential learning component might assume any of the general types, discussed in the section of this Report titled "Practical Learning: Designated Courses with a Practicum." For example, a group of business students might engage in applied research in a field setting by studying the impact of corporate relocation on property values and local interests; or a group of chemistry students might study waste disposal siting decisions by companies or city councils. Or students might take part in internships with appropriate governmental agencies or civic organizations. Or students might engage in community service to assist established, nonpartisan community organizations and agencies in their effort to address social problems such as youth work, literacy, hunger, homelessness, or environmental cleanup. Group
projects should be especially encouraged, for group projects facilitate discussion, promote shared reflection on the meaning of citizenship and community involvements, and themselves teach certain public skills such as debate, negotiation, and cooperative work.

The various activities already under way at the University that involve the study of citizenship, public ethics, and service-learning often overlap. These efforts would benefit from closer coordination and a sustained connection with interdisciplinary scholarship and research in related fields. Thus the Task Force:

Recommend that the Administration seek ways to assist and coordinate these activities, perhaps by creating an interdisciplinary academic Center for the Study of Citizenship and Public Ethics, that would bring together into a single unit the work already being done on campus regarding courses and activities in citizen participation, ethical reflection, and community service.

Such a Center for the Study of Citizenship and Public Ethics might be placed under the Provost and Senior Vice President for Academic Affairs in order to tie it directly to the academic mission of the University. It might be located physically and organizationally at the Hubert H. Humphrey Institute for Public Affairs, a tentative suggestion that the Dean of the Humphrey Institute has already offered. It would assist research in the area of education policy, and also help course and faculty development in the area of citizenship and public ethics. Many of the research, teaching, service, and student-placement activities already in evidence on the Twin Cities Campus might thereby be coordinated and brought under one roof.

With such a Center at our University--especially given the state of Minnesota's civic-minded political culture and the urban setting of the Twin Cities Campus--we have the opportunity to fashion an integrated and successful program in citizenship and public ethics, one that would provide national leadership in an important and timely educational effort.
4. Environmental Education

As the 20th century draws to a close, there is probably no set of issues on which academic research, educational instruction, the demands of public policy, and the requirements of informed citizenship are more powerfully joined than those relating to human interaction with the environment. Across the colleges of this University, faculty from many disciplines presently teach and conduct research on a wide range of environmental topics. Within the last year, a listing of courses on environmental issues on the Twin Cities Campus identified 43 academic units offering over 360 courses that in some way deal with the environment. Professional journals across fields as diverse as the physical and biological sciences, law, ethics, architecture, applied economics, public health, the humanities, political science, natural resources, and business management offer additional evidence of the extent to which issues relating to the interactions between human society and the natural environment have penetrated scholarly awareness. The most cursory examination of the public press makes evident the degree to which environmental concerns occupy the public consciousness and fill the agendas of public agencies at every level of government.

Given the scholarly, educational, and civic interest in environmental concerns, as well as the widely held belief that environmental degradation and management are of compelling and lasting importance, an introduction to human/environmental interactions should have an important place in our liberal education agenda. For all these reasons, students should be required to take one course in the Diversified Core, in their major, or elsewhere that deals with Environmental Education.

Recognizing the manifold dimensions of environmental issues, the Task Force urges that faculty from across a wide range of disciplinary and interdisciplinary fields develop environmental education courses appropriate for liberal education purposes. The economic analysis of sustainable development, environmental implications of human demography, physical and biological dimensions of pollution or ecological disturbances, ethical issues and cultural values regarding human interaction with the environment,
the environmental consequences of technological change, the intersections of law, politics and public policy -- all illustrate the reach of environmental issues and the range of faculty resources available to support a requirement in environmental education.

Not every course that carries the words environment, ecology, natural resources, or pollution in its description, however, will serve the purposes of liberal education, for many of them have more particular purposes and fit into specialized curricula. To qualify for special designation within the context of liberal education, courses should be accessible to a wide range of students, raise environmental issues of general importance, and give significant attention to interrelationships between human society and the natural environment. Such courses should, at some level, introduce the underlying physical or biological science of the issues being examined, consider relevant public policy issues in their technical, legal, or political dimensions, and be concerned about long-standing historical and philosophical concerns regarding nature and the environment. Finally, such courses should help students learn how to identify and evaluate credible information concerning the environment, distinguish between fact and opinion, and make distinctions between real and perceived environmental issues.

II. F. Practical Learning: Designated Courses with a Practicum

Liberal education goes beyond reading, writing, computing, and the other crucial skills associated with the classroom. Not only does it seek to prepare students to put their learning into practice after graduation, it frequently requires a practical dimension during their university education in order that students master the skills and acquire the theoretical knowledge associated with a particular discipline or field of knowledge. Consider the practical learning associated with the laboratory sciences, engineering, field biology, social work, education, clinical psychology, journalism, archaeology, music, and the studio arts. Furthermore, numerous educational studies have demonstrated that students learn more from (and remember more about) a particular experience that was directly
integrated into readings and discussions, and was the object of systematic reflection.

Practical education, in short, is an essential element of much of liberal education as a whole. The benefits of a practical education can and should be further developed. One way to do this is to encourage the development of courses that include a practicum for students. A practicum is an educational project or experience designed to further the pedagogical goals of a particular course by taking students out of the classroom and involving them in research, service, or some other practical project.

A practicum can assume any number of particular forms, depending on course design, instructor expertise, student interests, and the field of knowledge in question. Four general types might be enumerated: [1] applied research in a field setting [2] clinical work; [3] internships; and [4] community service. (Study abroad programs might be considered a fifth.)

Practicums typically involve additional work, earn more credits, and require a greater expenditure of time by both students and instructors. Often a practicum is conducted by work teams in the form of a group project.

The Task Force recognizes the general importance of practical learning in liberal education, as well as the considerable efforts already under way at the University to advance it. Moreover, in the case of the Physical and Biological Sciences in the Diversified Core, we have recommended that students take two such courses that include a practicum in the form of a laboratory or field experience.

In the case of the Designated Themes--International Perspective, Cultural Diversity, Environmental Education, and Citizenship and Public Ethics --we find an opportunity to further develop the educational potential of practical or experiential learning. In order to encourage faculty members to think creatively about incorporating practical learning into such courses, as well as to expand student choice about the number of designated courses they must take, the Task Force:
Recommends that students be allowed to take five (instead of six) Designated Courses, if one of those courses involves an approved practicum.

The proposed Council on Liberal Education will certify such courses, thus ensuring that the practicum component is fully integrated into course readings and discussions, and that the course requirements are not thereby diminished. It might seek to encourage group projects as well. Designated Courses having a practicum component should be so indicated in college bulletins, quarterly class schedules and other appropriate materials.

In three of the practicum formats mentioned above--applied research in a field setting, clinical work, and internships--we envision widespread agreement about their educational purposes. Since there may be some concerns about the fourth sort of practicum--namely, community service--a few additional remarks are in order.

"Service-learning" is a notion emphasized these days by educators and community leaders who are concerned to integrate community service into university and college education. The University and the Twin Cities already have ample institutional resources upon which to draw in order to integrate service-learning with the academic concerns involved in liberal education. Among these resources are the National Youth Leadership Council, Community Outreach Opportunity League (whose headquarters are on the St. Paul Campus), Project Public Life at the Humphrey Institute, the University-YMCA, the Office of Special Learning Opportunities in CLA, and the University Community Action Network. Through these various agencies, hundreds of University students are presently involved in various service-learning and public affairs activities.

The recommendation of this section regarding Designated Courses with a practicum is intended to build on efforts already under way on our campus to integrate practical learning with liberal education.
II. G. The Western Tradition

A substantial majority of our undergraduate students have spent most of their lives within Western culture, but that culture is so complex and pervasive that people who live within it (perhaps especially those who live within it) often have little explicit understanding of its history, its values, and its philosophical foundations. We are convinced that every Minnesota undergraduate needs to know more about some of the historical, theoretical, and aesthetic roots of the Western cultural tradition: among other elements, its law, its modes of philosophic inquiry, its tradition of criticism and dialogue, its literary and artistic conventions, its political structures, and the nature of its religious beliefs and practices. Only through judicious appraisal of the West's achievements and unblinking acknowledgement of its continuing problems can students place themselves in the strongest position to benefit from a knowledge of other cultures.

No liberal education would be true to its name if it did not include courses in which students gained some understanding of Western values and traditions. We nevertheless do not recommend that undergraduates be required to take specific courses in "The Western Tradition" or "Western Civilization," mainly because it seems certain that, in a university like ours, they will all inevitably encounter Western ideas and values when they take courses in science, history, the arts, and almost everything else. At the same time, we understand that what is not explicitly stated often goes unrecognized -- for example, that the values of free inquiry which underlie almost all learning at the University of Minnesota are not regularly seen as owing much to principles of knowledge and understanding that have been developed within Western culture. Without proposing, then, that any specific courses be designated as fulfilling a "Western Civilization" requirement, the Task Force:

Recommends that faculty throughout the University find opportunities to point out to students how extensively their modes of inquiry, or the disciplines they are pursuing, have their origins in, or are bound up with, Western (or, when
appropriate, with non-Western) traditions, values, and achievements.

II. H. Fundamental Skills and Competencies

The ability to communicate effectively through the written and spoken word is a hallmark of the liberally educated person. These days we hear frequent complaints, from faculty and employers alike, that too many of our graduates have difficulty expressing their thoughts clearly and persuasively. Many of our students communicate effectively, but many do not, while still others struggle with basic grammar and syntax. Whatever students' competencies when they enter the University, we have a responsibility to help them develop the writing and speaking skills necessary for successful learning, effective communication, productive effort in the world of work, and useful participation in civic affairs.

Writing Skills

How much do our students currently write? Comprehensive data are not available, but information from the Spring 1989 survey of Twin Cities Campus graduates reveals that only 20 percent had been called on to write as many as eight papers of ten pages in length during their undergraduate years, while 28 percent had written no more than two. Eight percent of degree candidates had been required to write none at all! More is involved in strengthening students' writing skills than specifying some obligatory number of pages, for much depends on the criticism those pages receive and the seriousness with which the writing is undertaken. Nonetheless, we are persuaded that our students should be asked to write more often, in contexts that give greater purpose to their effort, and should receive prompt evaluation of the writing they produce. That judgment is strongly supported by the results of the faculty survey, for the faculty noted improved writing skills as among the most important goals of a liberal education.

If students are to strengthen their writing skills, they must be helped to do so in a variety of ways, beginning with their first approach to the University. So that students' writing skills can be
properly assessed and correct placement in writing courses determined, especially concerning students for whom English is not their primary language or who otherwise require developmental help, several procedures will be needed. None should be used for admissions screening. Therefore, the Task Force:

**Recommends that one of the following alternative assessment and placement procedures be employed:**

1. writing Portfolios, containing a variety of written texts, presented by freshmen and transfer students at the time of admissions to the University, or
2. a writing test administered at the time of admission to the University, or
3. other appropriate means of placement.

The Task Force believes that the ultimate goal should be primary reliance on a full and varied Portfolio of student writing, but recognizes that at the moment many high schools do not require sufficient writing to enable students to develop a significant Portfolio. The Task Force is sensitive as well that English is a second language for appreciable numbers of students and that alternative modes of assessment and placement may be required for them. So that primary reliance on student writing Portfolios can eventually be achieved, the University should work with the State Board of Education to promote writing in the schools and develop the Portfolio process. Where Portfolios are used, a signed statement of personal authorship should assure that writings in the Portfolio represent the student's own work.

Existing Composition and Rhetoric Programs have historically played important roles in helping students develop their writing skills. Thus the Task Force:

**Recommends that all entering students enroll in a Composition or Rhetoric course devoted to instruction in writing. Based on a writing assessment, students should be assigned either to "intensive" or "standard" writing courses. Because of the**
importance of effective writing to academic success. Students should enroll in these courses as early in their university career as possible. As at present, students may test out of this requirement.

"Intensive" composition courses are intended for students who need training in basic language skills such as sentence construction and punctuation. Successful completion of such courses should mean that students have reached the point where they can write acceptably at the university level. In some cases, such courses may need to be repeated. "Standard" courses should be designed to assist students already possessing basic writing skills to further strengthen their competencies. Satisfaction of the "Standard" Composition or Rhetoric requirement should carry degree credit.

For most of us there is no magical shortcut to effective writing. It requires continuing practice and supportive feedback. Writing theory, moreover, indicates that students write more willingly and effectively when they do so in the context of substantive, academic study. Writing is also an essential path to learning; only as we try to communicate our thoughts can we be certain that they are clear. It is thus important that students be asked to write frequently in their academic courses. "Writing across the curriculum" is a catch phrase we all know. Familiar as it is, it encapsulates a fundamental truth. With that in mind, the Task Force:

Recommends that all courses in the Diversified Core Curriculum should have a writing component and that selected courses in that curriculum, as well as in regular departmental and program curricula, should be designated as "Writing Intensive." Courses designated as "Writing Intensive" should have an appropriate designator affixed to their course number in catalogues and class schedules. Students should be required to complete at least four such courses and should distribute them across their "lower division" and "upper division" work. These courses shall be in addition to the Composition and Rhetoric courses described above. It is expected that Upper Division Composition and Rhetoric
courses as well as "Senior Project" courses should carry the Writing Intensive Designator. The Writing Intensive Designator may be added to any course already carrying a Special Designator.

Definitions of what constitutes a "Writing Intensive" course will have to be worked out for different disciplines and teaching strategies. Whatever the amount and kinds of writing required, however, course instructors should be responsible for evaluating students' written work on the basis of presentation as well as content. In every instance, the writing done in specially designated courses should be substantial in amount, integrally tied to course learning, and result from an interactive process between student and instructor. To make that possible, "Writing Intensive" courses should be limited in size. Appropriate forms of training and support should be made available to instructors teaching such courses. When graduate TAs are used in such courses, they should be carefully selected, fully trained, and closely supervised by regular faculty.

Though under our recommendations existing Upper Division Composition courses would not be required, individual colleges may decide to continue that requirement for their students. Trained Composition staff, perhaps freed from Upper Division Composition courses, should be employed to strengthen programs of writing across the curriculum by working with faculty and students in the teaching departments. Such support will be essential if the Writing Intensive Course strategy is to succeed.

In Section II. D. of this Report, we recommend that a senior project be included in all undergraduate majors. Though such projects will take a variety of forms and be presented in a variety of ways, all should have a significant writing dimension, while many will have a written paper as their primary product. Therefore, the Task Force:

Recommend that every senior project include a writing component and that faculty be responsible for the evaluation of such written work.
In a research university committed to clear and effective communication, emphasis on the written component of the senior project is not only appropriate, but necessary.

**Speaking Skills**

Too many of our students write poorly, and most get too little practice or guidance that could help them improve. The same is true of their ability to speak effectively. There are two dimensions of the problem: first, the need to improve speaking skills so that students can communicate more effectively; second, to become more fluent in a version of "standard English."

The first is essential for a liberally educated person, and we believe that all students, in addition to fulfilling the writing requirements, should be given opportunities in courses to make oral presentations of some length and complexity, as well as to engage in debate and dialogue with professors and peers. Unlike writing, however, there is little consensus about how best to teach fluency in speaking in the context of a large, public university. The value of a freshman speaking seminar, similar to the composition requirement, moreover, was questioned by some with whom we consulted, and would, in any case, be very expensive. A "speaking across the curriculum" requirement would demand many courses of much smaller size than seems feasible, and many faculty expressed concern about their ability to provide appropriate feedback and guidance on speaking. As a consequence, we are led to the conclusion that it is premature to make a recommendation that would require speaking-intensive courses for all undergraduates. Nevertheless, we are convinced that students need practice in communicating their ideas coherently and forcefully in spoken form to various audiences. Therefore the Task Force:

**Recommends that the University, and the Council on Liberal Education, should investigate possible models for introducing a speaking requirement into the curriculum for undergraduates.**
More generally, the Task Force urges faculty to provide opportunities both for formal presentations and for more informal discussion of class material. Such opportunities are likely to increase learning as well as enhance speaking skills.

On the second point (instruction in "standard English"), the Task Force remains divided, as were other faculty with whom we consulted. The students who are perceived to be most in need of such instruction include students for whom English is not their primary language or whose English diverges from a "standard English" norm. The difficulties of describing and justifying any monolithic norm, testing proficiency against the norm, and correcting departures from it, are intellectually daunting and socially sensitive. We therefore recommend that:

The University should allocate resources to ensure that students who need help with their speaking are provided with special course work or workshops.

Second Language
The Task Force believes that competence in a second language should be an integral part of the liberal education of all students at the University of Minnesota. The globalization of economic, cultural and political life in the late twentieth century requires increased communication with people of other nations, and this need cannot be met by relying on others to speak English. Knowledge of another language, moreover, provides understanding of the ways in which people from different cultural traditions organize their thoughts and express themselves. It thus contributes to cross-cultural understanding. More specifically, competence in foreign languages provides invaluable access to the scientific, intellectual and cultural achievements of other peoples, both those of the past who have helped shape our traditions and those of the present who may challenge us to rethink those traditions.

Furthermore, knowledge of a second language enhances understanding of one's primary language and culture. It can serve as well to stimulate appreciation of both what is common to all people and what
has created diversity, outcomes that are of special importance to Americans living in a multicultural, multilingual nation.

In recent years, the University has taken a leadership role nationally in strengthening second language instruction, and this has had a powerful effect on foreign language teaching in the high schools. This initiative has given language education in Minnesota a comparative advantage that should be further developed. Thanks to our new Preparation Requirements, students are now coming to the University with substantially more language study. The percentage of entering freshmen who have successfully completed the requisite two years of second language study in high school has increased from 48 percent in 1985 to 76 percent three years later. The percentage for students admitted to the class of 1991 is still higher. Elsewhere in this Report we have sought to build on students' enhanced academic preparation in ways that will strengthen their University education. We think that should be the case with regard to second language study as well.

As important as we believe second language study to be, however, we are at this time unable to recommend a second language requirement for all baccalaureate students on the Twin Cities Campus. There are several reasons why. We applaud ongoing efforts to strengthen second language study in the College of Liberal Arts. Implementation of a second language requirement in a number of other colleges, however, would call for considerable planning if it was to be incorporated within existing degree credit requirements, as we think it should be. The faculty survey we conducted last fall, moreover, revealed limited support for a campus-wide second language requirement. We are concerned by that finding and call on our faculty colleagues to think carefully about the benefits of second language competence for their students.

A third impediment to a positive recommendation at this time is the instructional burden that campus-wide language study would place on the language departments in CLA. Though many entering students now meet the two year Preparation Requirement, about 20 percent still take little or no language in high school. Even with two years of high school language study, students typically require a full year of University work in the same language in order to achieve a reasonably permanent foundation of language skill. CLA's language departments simply do not have the
resources to meet this expanded, campus-wide teaching load. We consulted with several colleagues from the language departments about the possibility of developing special, one-quarter language courses, similar to those to be developed in mathematics and other areas, that would introduce students to the study of language as a symbolic system used to describe and define human experience. In the time available, however, those conversations proved inconclusive.

At the moment, there seems little prospect of meeting the second language needs of all our students without a broadened commitment to language instruction by the state's middle and high schools as well as by the undergraduate colleges of the University. With these considerations in mind, the Task Force:

**Recommends that the University establish a goal of second language proficiency at the level usually attained after two years of University study for all Twin Cities Campus graduates. Each undergraduate college should begin planning toward that goal, while the University should work toward identifying the resources necessary to implement a campus-wide requirement.**

Recognizing that achieving such a goal will also require continuing cooperation between the University and school systems across the state, the Task Force:

**Recommends that the University work actively with the State Department of Education and school systems to further strengthen language instruction so that the majority of students entering the University place well into the second year of University language study.**

**II. I. Overseeing the Liberal Education Agenda: The Council on Liberal Education**

In a university as large, complex, and decentralized as the University of Minnesota, the faculty seldom come together across college boundaries to decide issues of major educational importance.
We are called on to do so, however, in the effort to define liberal education for all undergraduates on the Twin Cities Campus. Shared goals of liberal education and common requirements for achieving them call for a campus-wide agency with responsibility for promoting the liberal education agenda and overseeing its implementation. *Such initiative and coordination is essential if the Liberal Education Agenda is to be realized in practice.* The Task Force therefore:

Recommends the creation of a Council on Liberal Education consisting of faculty, academic staff, students, and administrators from across the Twin Cities Campus. The Council should have responsibility for:

1. developing and overseeing the Diversified Core Curriculum, including admitting courses to it;
2. certifying the appropriateness of all courses carrying such special designators as Writing Intensive, Cultural Diversity, International Perspective, Environmental Education, and Citizen Ethics;
3. working with appropriate administrative officers to oversee implementation of other initiatives for strengthening liberal education described in this Report;
4. working with appropriate university agencies to develop plans for evaluating the success of these initiatives;
5. developing additional recommendations concerning policies and requirements for strengthening liberal education on the Twin Cities Campus; and
6. generating a continuing dialogue about liberal education through a campus-wide program of speakers, colloquia, and workshops.

The Task Force envisions a Council of about 24 members. The majority should be faculty and the Council should be chaired by a faculty member. College representation should have some relationship to faculty involvement in liberal education, but there should also be representatives from non-undergraduate colleges and
professional schools. Members of the Council should be appointed by the Provost, in consultation with the Twin Cities Assembly Steering Committee. Administrative liaison should be with the Provost's office and necessary staff, budgetary, and other support should be provided by that office. The Council should report annually to the Provost and the Steering Committee.

In taking responsibility for developing and overseeing the Diversified Core Curriculum, the Council will need to establish specific criteria, based on the educational objectives described in Section II. C. of this Report, to be used in admitting courses to the Curriculum; promote the development of appropriate courses; assure that a sufficiently large and appropriately balanced curriculum is maintained; and devise a procedure for the periodic review of courses in the Diversified Core Curriculum. To help with the course review workload, it may be desirable for college curriculum committees to provide a first screening of course submissions. The Council may also need to establish small, affiliated committees to help with particular tasks of review and approval.

The Council should work with appropriate administrative officers to see that other recommendations contained in this Report are implemented in timely fashion, such as those calling for New-Student Colloquia, enhanced liberal education advising, writing and other specially designated courses, senior projects, and offerings on citizen ethics.

While recognizing that all-campus liberal education requirements should not proscribe additional requirements on the part of individual colleges, and while noting specifically that CLA should be encouraged to retain its second language requirement (even as other colleges are encouraged to develop similar requirements), the Task Force urges that all baccalaureate degree granting colleges accept and hold closely to the all-campus requirements that are approved. The arguments for uniformity across college boundaries are strong: it is in keeping with the University's move toward a single point of entry, uniform tuition schedule, and other efforts to simplify access for new students and ease student transfer across college lines; it will ease advising and
students' planning of their educational programs; and it will help fashion a stronger sense of intellectual community on the Twin Cities Campus and provide the public with a clearer description of the University's shared educational values. With these concerns in mind, the Task Force:

Recommends that the all-campus liberal education requirements be accepted as policy by each undergraduate college on the Twin Cities Campus, and that collegiate proposals for augmenting those requirements be discussed with the Council on Liberal Education before going into effect.
ISSUES OF IMPLEMENTATION

The recommendations contained in this Report raise a number of important implementation issues. We have not had the time, or in some cases the necessary information, to examine them fully. We do, however wish to identify and briefly discuss several of them.

III. A. Resources and Priorities

Throughout our discussions, we have been mindful that our recommendations place significant demands on the University's resources. We are aware of the University's financial difficulties, and that awareness has tempered our proposals. At the same time, we have been asked to carry through a comprehensive review of undergraduate liberal education and make recommendations for its betterment. We have taken seriously Provost Kuhi and Professor Ibele's assertion that "there are few issues as important" to the University as liberal education, and have followed their instruction that if "the...structure and delivery of liberal education on the Twin Cities Campus must be revamped, you should say so. Your charge, in short, is an unlimited examination of the manner in which the University provides a liberal education." President Hasselmo, members of the Board of Regents, and colleagues on the faculty have also stressed the importance of our liberal education agenda and have urged us to think beyond the financial constraints of the moment.

Taken together, the recommendations contained in this Report call for significantly increased commitments of human and dollar resources to undergraduate liberal education. The resource costs will vary in nature and amount. Some will be transitional in character; for example, support costs for the critical, initial development of the Diversified Core Curriculum. There will, however, be substantial ongoing costs as well. Many of these will be covered by redirected effort, but others will require net increases in faculty, staff, and TA lines, especially if workloads are not to be significantly increased, an assumption we believe essential to the success of the entire enterprise. We have examined first estimates of these costs with staff from the Provost's office, but those estimates will need to be further refined.
In this time of financial constraint, it is essential that the President's Initiative for Excellence in Undergraduate Education guide the difficult decisions by which resources are reallocated within the University. As part of that process, we urge strong commitment by faculty and administration to the budgetary support necessary for successful implementation of the liberal education agenda.

III. B. Faculty and Academic Staff Responsibilities and Development

Support of the liberal education agenda should be incorporated into regular faculty, TA, and staff workloads. As we have indicated, that will require targeted increases in academic personnel through reallocation and/or new resources. It will require as well a significant redirection of teaching and advising effort, in some cases into new and challenging assignments. The proposals for new-student colloquia and writing-intensive courses are examples of that. Other recommendations call for extensive curricular development in the Diversified Core Curriculum, in courses with strong citizen ethics, multicultural, international, environmental or writing dimensions, and in the preparation of senior projects within the major. Faculty, especially in the undergraduate colleges but in other colleges as well, should recognize their responsibility for contributing to the Liberal Education Agenda by organizing new courses or modifying existing courses to serve some part of that Agenda.

All of this will require support for faculty and staff development, especially during the initial and critical "tooling up" phase, but later as well as the ongoing process of curriculum development continues. At issue is not only the development of specific courses, but increased understanding of and commitment to the purposes of liberal education on the part of many faculty. That, in turn, involves consideration of the relative value placed on liberal education. President Hasselmo has observed that: "Incentives provided to faculty to undertake research and public service have outpaced incentives to participate in undergraduate education. We need to create conditions and incentives that will challenge our faculty to participate even more actively in undergraduate education."

We agree with President Hasselmo's assessment and urge that a variety of support incentives for curriculum development be provided, including individual summer support, workshop and seminars for faculty
embarked on similar teaching initiatives, or released time from existing teaching or other obligations. Faculty receiving such support should be expected to offer newly developed courses within the following academic year and teach them for a period of years as part of their regular instructional load. Recognizing that curriculum development is likely to interrupt faculty research activity, faculty that undertake extensive course development should be eligible to apply for research assistance grants that would enable them to resume their normal research activities. Academic staff will require support for advising and other development work, too.

Though individual incentive grants should be available, the Task Force suggests that most support funds be channeled through the teaching and advising units of the University, thus encouraging joint responsibility and more careful planning.

III. C. Articulation with Secondary Schools and Other State Systems of Higher Education

The Task Force applauds recent efforts to facilitate the movement of students from the high schools to the University via the new Preparation Requirements, and to ease student transfers from the community colleges and other "feeder" institutions. We also recognize that the recommendations contained in this Report have important implications for the University's ongoing relations with both high schools and other institutions of higher education.

Our recommendations seek to build on the enhanced academic preparation that high school graduates bring to the University. At the same time, we hope that the more rigorous program of liberal learning outlined in this Report will encourage the schools to prepare their students even more effectively for academic success at the University. It would be especially valuable if students were to carry out of their high school years a stronger commitment to academic values and at least a preliminary grasp of the meaning and importance of liberal education. Conversations need to go forward on these matters.

Transfer issues dominate the discussion agenda between the University and other higher education institutions. We have identified some of those issues in Section III. D.
III. D. The Special Needs of Transfer and Academically Underprepared Students

While successful implementation of the Liberal Education Agenda will require careful planning, it calls for special attention to the needs of transfer and academically underprepared students.

Transfer Students

Nearly half of the University's graduates begin their study elsewhere. That proportion is likely to grow as articulation between the University and the community college system improves. At the same time, transfer students, like other graduates, should be expected to fulfill the University's liberal education requirements. It is imperative, therefore, that implementation of those requirements take account of the special needs of transfer students.

Our transfer students are as diverse as they are numerous. Some bring only a few transfer credits to the University, while others come with nearly enough to graduate. We accept students from a broad range of institutions; as a consequence, the quality of their academic training, as well as their performance at the University, varies widely. Many transfer students enter the University having already taken a large number of general education courses and expect to focus here on their major programs. For all these reasons, policies governing the application of liberal education requirements to transfer students will have to be clear, consistent, and yet appropriately flexible.

We offer the following additional comments, while recognizing that the full range of transfer issues will have to be examined more carefully:

--The University will need to provide other state institutions of higher education, particularly the community colleges, with clear information about our new liberal education requirements. We must explain the standards that our own liberal education courses will be expected to meet and that will be used in deciding whether transfer courses will be accepted as meeting our requirements.
--The University should conduct a review of the relevant course offerings in institutions that provide most of our transfer students, especially articulated institutions, to determine which of their courses meet our liberal education course standards and can be transferred automatically to meet our requirements.

--Faculty from institutions with which we have articulation agreements might be encouraged to work with University of Minnesota faculty in developing courses designed to meet our standards for liberal education courses.

--The University should work to insure that students attending other institutions but intending to transfer to the University have full information about University requirements when they begin their college coursework.

--An appropriate faculty/academic staff group should establish policies governing the conditions under which transfer students might be exempt from certain liberal education requirements. Exemptions might be appropriate in the case of students with large numbers of transfer credits or with one baccalaureate degree who have transferred to the University to earn a second degree. Exemptions should be limited and carefully justified.

--Departmental or Program faculty should determine how transfer students are to fulfill the requirements of their major, including the liberal education requirements that are infused in the major's program of study.

**Academically Underprepared Students**

The needs of academically underprepared students present different, but no less compelling issues of implementation. The University has a clearly stated and long-standing commitment to serve such students, many of whom enter through the General College and progress into baccalaureate programs in other units. The University is thus obligated to provide those students with sufficient advising, instructional, and financial support to
assure them a reasonable prospect of meeting enhanced liberal education expectations.

This obligation involves working with high schools that feed into General College to see that their graduates are better able to meet the University's Preparation Standards. It also means making admission decisions with special care and seeing to it that, once admitted, students receive the necessary developmental work so they can successfully engage the liberal education agenda. If the enhanced liberal education requirements become additional barriers to academic persistence and graduation for underprepared students, the University will have failed to meet one of its major responsibilities.

III. E. Pedagogy, the Instructional Environment, and Liberal Learning

Effective learning goes beyond graduation requirements and curricular structures, for it depends on effective teaching as well. Without informed and committed teachers, working in a supportive instructional environment, the most inspired curriculum in the world will not succeed.

At numerous points in this Report we have touched on issues of pedagogy and instruction. We address the issue of class size, for example, in our recommendations for new-student colloquia and a small class experience in undergraduate majors. We emphasize the importance of direct faculty/student contact in our proposal for a Diversified Core Curriculum. And we call in several places for teaching practices that promote active learning, critical thinking, ethical reflection, and an appreciation for the vigorous give and take of ideas. In Section III.C. we emphasize the importance of providing faculty and academic staff with the development support they will need as they work up new courses, redesign systems of advising, and sharpen their thinking about liberal education. Issues of pedagogy will be important in that process as well.

The size and importance of the Task Force's agenda, combined with our pressing deadline, have kept us from a full exploration of the special relationships between pedagogy and liberal learning. Those relationships, however, remain important and we suggest that they be examined by another, appropriately constituted committee.
III. F. Administrative Responsibilities

The Task Force is reluctant to specify which administrative agencies should have responsibility for assuring that changes are implemented in timely fashion. We were not asked to develop such recommendations, nor are we privy to ongoing discussions about the allocation of administrative tasks within central administration or the division of responsibilities between central administration and the colleges. We have, however, spelled out in Section II. H. certain operational and oversight responsibilities of the Council on Liberal Education. We also believe that the Council of Undergraduate Deans should play an important role in implementation. Responsibility for liberal education, as for all academic issues on the Twin Cities Campus, of course, rests in the Provost's office. It is our understanding that the Vice Provost for Arts, Sciences, and Engineering has operational responsibility for the Undergraduate Initiative, and thus for seeing to the enactment of the liberal education agenda as well.

III. G. Evaluating the Outcomes of Liberal Education Reform

If we are to be certain that the changes we make in liberal education accomplish their stated goals, we must devise ways of evaluating their outcomes. In his "Initiative for Excellence," President Hasselmo asked how we can know that we are improving undergraduate education. He answered his own question by declaring that we must "establish performance benchmarks and a timetable for reaching our goals," "devise measures that demonstrate our progress toward our goals," and "use the results of these efforts for further improvement." If these guidelines are valid for the entire Undergraduate Initiative, they are doubly valid for the changes we make in liberal education.

Although the topic of evaluation surfaced frequently in our deliberations, the Task Force has had neither the time nor the technical expertise to determine what evaluation procedures should be developed. We affirm the importance of evaluation, however, and offer several observations.

First, whatever procedures are devised should be consistent with the "considerations" and "principles" of evaluation described in the "Initiative for Excellence."
Second, the focus should be on the consequences for students of specific liberal education requirements and policies, not on the assessment of individual student accomplishment (though evaluation may include the anonymous sampling of student performance). We do not think it necessary or feasible that all students demonstrate specific levels of competency in most areas of liberal education.

Third, evaluation should examine the consequences of enhanced liberal education requirements for the academic progress of transfer and academically underprepared students as well as other student populations.

Fourth, once changes in liberal education policies and requirements are agreed upon, working groups of faculty and staff should be charged by the Provost with drafting evaluation plans for each of those changes. These working groups will need to be coordinated and should be given relatively short timetables for preparing evaluation plans. Faculty must be involved in designing these plans so that their continuing responsibility for liberal education is assured. A first task of the working groups will be to identify a small number of indicators to be used in defining educational improvement, and establish current baselines against which progress can be measured. Measurement indicators should derive from the recommendations and rationale of this Report and should take into account other changes that may affect student performance, for example, improved Preparation Requirements.

Fifth, evaluation should deal with the implementation of proposed changes (often referred to as formative evaluation) as well as with the outcomes of those changes (referred to as summative evaluation). It makes little sense, for example, to look at the effect of changes in students' writing if the curriculum does not include more courses that require extensive writing. In the first year or so, the emphasis should be on formative evaluation, as new requirements and policies are put into effect.

Sixth, evaluation plans must be financially realistic and must identify clear administrative responsibility for carrying them through.

Seventh, the Council on Liberal Education should have "watchdog" responsibility for seeing that proper evaluation is carried out and that the results guide future planning.
APPENDIX

DESCRIPTION OF AND RATIONALE FOR THE FIELDS OF KNOWLEDGE IN THE DIVERSIFIED CORE CURRICULUM

To be liberally educated in our time is to have at least some understanding of basic fields of knowledge and their related ways of knowing. In this Appendix we explain why that understanding is so important.

THE PHYSICAL AND BIOLOGICAL SCIENCES

In the world of the twenty-first century, science will play an even greater role than it does today. Many of the important issues facing society will involve one or more natural sciences as a major component -- for example, ozone depletion, which has to do with the chemistry of particular compounds, the atmospheric distribution of those compounds and their products, and the effects of increased irradiation on biological systems. University graduates will not be liberally educated unless they understand how scientists go about their work, what kinds of questions they ask, and how they evaluate scientific answers. Laboratory or field experiences should be designed to foster this understanding. Case studies designed to engage students directly in questions and decisions confronting contemporary scientists may also be an effective means of gaining this understanding. Although the range of subject matter across the natural sciences is broad, there are common themes in the intellectual approaches used. Furthermore, the rate at which scientific information is being generated guarantees that citizens will be exposed to new scientific findings and ideas throughout their lives. For these reasons, it is important that a liberally educated person understand how new ideas are generated and validated in both the physical and biological sciences.

Physical science explains how the physical world works and provides the underpinning for the technology that continues to transform society. To be liberally educated is to have some
comprehension of what constitutes a physical principle, to realize that technological "fixes" are neither predictable nor eternal, and to understand the empirical way in which physical scientists approach questions in their disciplines.

The biological as well as the physical sciences have a necessary place in students' liberal education. Within the biological sciences, modes of inquiry extend from those of the chemist to those of the behavioral psychologist. Understanding the science of biology gives insight into who we are and how we fit into the earth on which we live. Without this insight, we cannot make informed decisions about health issues, the environment or other vital social and political questions. Biologists for the most part share the empiricism of physical scientists, but they deal with systems whose complexity makes prediction more difficult.

THE HUMANITIES AND THE ARTS

The humanities help orient us to an extremely complex and elusive world by showing us the most compelling, expressive, and innovative forms and arguments through which people have tried to examine, symbolize, and discuss the human condition. For students today, the excitement of encountering these efforts to understand ourselves is not just instrumental to a better job or a richer nation. It is an indispensable prerequisite to a more satisfying, more luminous life, a life lived with intelligence and awareness rather than stumbled through in the dark.

The basic reason for studying the humanities, then, is that the education of no human being is complete without an initiation into the approaches that writers, artists, and thinkers -- across both time and diverse cultures -- have used to understand the common experience of human beings as well as the full range and diversity of that experience. The humanities offer essential education in logical thinking, the effective use of language, the investigation of cultural theory, and understanding the relation of the present to the past. Philosophy provides students the opportunity to consider in rigorous fashion the best answers to some of life's most important questions: What can we know? How should we live our lives? In addition, the
arts -- literature and oral expression, music, dance, the visual arts, theater -- are valuable because they all, in their different ways, seize upon various aspects of human experience -- visual, auditory, linguistic, personal -- and express the diverse intensities, subtleties, and structures of such experience. Study in this section of the Diversified Core should thus touch on literature, philosophy, and the arts.

An education in the humanities not only provides students with some knowledge of these arts and disciplines but acquaints us, too, with their long human history. The art and thought of the late twentieth century have analogues and precedents in the past. An awareness of how past as well as contemporary cultures have been similar to ours -- and different, too -- is essential to an educated person of our time. A liberal education requires an introduction to the history of literature, art, and philosophy as exhibiting not only the universality of human concern with these matters but also the outstanding achievements of earlier thinkers and creators. Such achievements may be appraised along with contemporary endeavors both for what is valid and valuable in them and for what they fail to consider or resolve. An understanding of past experience and earlier forms of human expression offers perspective and a deepened insight into present concerns. Courses that qualify for distributive study in the arts and humanities should help to develop students' aesthetic judgment, and provide students with practice in reading and interpreting texts, artifacts, or performances, as well as in understanding the critical principles that guide such readings and interpretations.

HISTORY AND THE SOCIAL SCIENCES

History and the social sciences strive to understand the dynamic interplay between individuals and institutions, structures and processes, ideas and events, that characterize human behavior and complex societies, now and in the past. The subject matter of these fields of knowledge ranges from the rise of capitalism to contemporary global conflict to the nature of social stereotypes to the neurochemical bases of emotion and motivation. As the National
Research Council makes clear in their 1988 assessment of The Behavioral and Social Sciences, psychological, social, and cultural studies pertain to virtually everything that people treat as a problem -- violence, racism, pollution, illness -- and nearly everything hailed as a triumph -- justice, plenitude, and freedom.

Curiosity and imagination, the desire to understand and interpret events in their historical and socio-political context, the capacity to generate new ideas -- all motivate research on behavior and society. In a broad sense, history and the social sciences seek to discover, describe, and explain the wide range of human behavior in diverse methodological ways. The pressing demands for applications of social science that can influence and improve behavior in different spheres of social life also motivate inquiry in the social sciences.

In addition to history, the original core of disciplines in the social sciences emerged in the late nineteenth century. They included anthropology, economics, political science, psychology, and sociology. Their number has since grown to include linguistics, communication, and geography. More specialized, interdisciplinary fields, such as artificial intelligence, cognitive science, child development, management and decision science involve one or more of the core social scientific disciplines. In addition, much research in business, education, law, psychiatry, criminology, ethnic studies, and women's studies relies upon social science theories and methods. In sum, history and the social sciences represent wide-ranging, interrelated, and important fields of knowledge that are essential to a liberal education.

MATHEMATICAL THINKING

"Mathematics," Theoni Pappas has written, "is a science, a language, an art, a way of thinking." Whether viewed as the "cold and austere beauty" of Bertrand Russell's pure mathematics or as access to counterintuitive insights into the nature of the universe, mathematics provides unique approaches to describing and understanding reality. It thus constitutes an essential component of liberal education and should be listed as one of the fields of knowledge in the Diversified Core Curriculum.
Whereas the University's present distribution system contains no specific mathematics requirement (mathematics constituting but one element within a distribution field titled "Language, Logic, Mathematics, and The Study of Argument"), we think it essential that all students undertake the study of mathematics at the University through one of the rigorous courses described in the Report.

For the more practically inclined, its unique and elegant solutions to applied problems are often necessary to an understanding of the forces that continuously transform modern life or that shape the physical, biological, and much of the social world. Through mathematics a student can learn to deal with the systematic manipulation of symbols and be exposed to concepts of probability and statistics, the theory of numbers, and the geometric analyses of two- and three-dimensional space.

For students enrolled in engineering, scientific, or other technical programs, a traditional sequence of mathematics courses is appropriate and necessary. A different approach is needed, however, to combat the deep and extensive problems of math anxiety and innumeracy that characterize a large portion even of our educated population. Accordingly, we urge the development of a new and different approach to mathematics for those students for whom the traditional algebra, trigonometry, calculus route is inappropriate. Conversations with colleagues from Mathematics and Philosophy have helped us understand that a new course dealing with "Critical Concepts in Mathematics" could be substantially more effective in providing many students with an understanding of diverse mathematical concepts and ways of thinking. While recognizing that students will approach the study of mathematics with different degrees of academic preparation and different educational purposes in mind and while acknowledging that several alternative ways of meeting the math requirement are needed, the Task Force places special emphasis on the development of this new course. We believe it will be especially well suited for students who are registered in programs that do not require mathematics as a prerequisite for subsequent course work.

So that entering students can be effectively advised and directed into the proper mathematics course, the Task Force urges that entering students be given a proficiency and placement exam. Students insufficiently prepared for mathematical study at the University, that is at
the level of college algebra, should be directed into appropriate developmental courses, such as those offered in General College, before fulfilling the mathematics requirement.

Since an understanding of mathematical concepts and ways of thinking is valuable to much undergraduate study at the University, it is important that students fulfill their math requirement early in their University work. Early enrollment is important as well because studies have demonstrated that success rates are much higher when university students begin mathematical study right after high school. Because there will need to be a variety of courses on mathematical thinking if the diverse needs of our students are to be met, the Task Force urges that faculty from a variety of departments and disciplines develop appropriate courses. So that all such courses serve the stated purposes of the mathematics requirement, the Council on Liberal Education should control the admission of mathematics courses to the Diversified Core Curriculum, just as it admits courses to other areas of the Curriculum. While some courses may have applied dimensions, all should focus primarily on the manipulation of mathematical symbols and introduce students to such topics as the concepts of probability and statistics, the theory of numbers or the geometric analysis of two and three dimensional space.

Though responsibility for introducing students to mathematical thinking will rest with the courses in this part of the Diversified Core, courses in the physical, biological, and some of the social sciences will also properly address issues of mathematical measurement and analysis. Faculty offering courses in these fields should be encouraged to use the language of mathematics in appropriate ways.

Discussions with faculty in mathematics and the sciences have revealed broad dissatisfaction with the levels of mathematics preparation students bring to the University. The new preparation requirements promise improvement, but there has apparently been little evidence of that to date. In mathematics, perhaps more than in other academic fields, high school "seat time" seems not to translate directly into achieved competence. As evidence of that, instructors in college algebra find it necessary to devote large amounts of course time to the review of material ostensibly taught in the schools, while the failure rate in some introductory math courses remains disturbingly high.
As in the cases of writing skills and competence in a second language, it is essential that high school preparation in mathematics be strengthened and that conversations between the University (together with other systems of higher education), the State Department of Education, and school officials be developed toward this end.