The Michigan Metrics

Office of the President
The University of Michigan
July 1995
The Michigan Metrics Project

Introduction
Statement of Purpose
The Themes of the 1990s
Major Goals and Objectives
Summary of Goals

Goals and Metrics
Quality of Academic Programs
Broad Access
Spires of Excellence
UM Firsts
Leading Research University
Michigan Mandate
University of Choice for Women
New Paradigm for Undergraduate Education
Strong Leadership Teams
Acquire New Resources
Restructure to Better Utilize Existing Resources
Increase Private Support
Increase Endowment
Quality of UM Facilities
UM as a "World University"
Leader in Knowledge Transfer to Society
Leading Intercollegiate Athletics Program
The **Michigan Metrics Project** is part of a larger strategic planning project, called **Vision 2000: “The Leaders and the Best...”** In brief, this vision statement’s guiding principle is that leadership and quality are the most important characteristics in determining the impact of the University of Michigan on society, the state, the nation, and the world. Accordingly, the primary objective of this project is to position the University of Michigan to become the leading university of the 21st century.

**Vision 2000: “The Leaders and Best...”**

To position the University of Michigan to become the leading university of the 21st century.

In this vision statement, the goal of “leadership” is characterized as leading the way, setting the pace, and becoming the standard against which others compare themselves. Such a leadership vision requires a complex strategy, since all of the key characteristics of the University are involved:

- quality
- quantity (size)
- breadth (comprehensiveness)
- excellence
- innovation

The achievement of the **Vision 2000** will require finding the ideal combination of all of these factors.

The evolution of this vision of the University of Michigan’s future, its role and mission, began in the mid-1980’s in anticipation of the fundamental and profound changes that would transform our society and its institutions. Such changes include the increasing ethnic and cultural diversity of our people; the growing interdependence of nations; and the degree to which knowledge itself has become the key driving force in determining economic prosperity, national security, and social well-being.

The broad themes and guidelines that characterized the early stages of the strategic planning process have been refined into more specific goals (e.g. to become the leading research university in the nation).
These goals are the focus of the Michigan Metrics Project, which has two primary objectives. The first objective is to measure our progress toward Vision 2000 and the particular goals developed as part of Vision 2000.

The second, related purpose of the Metrics Project is to provide, in one place, a set of the most important indicators that highlight areas where significant headway has been made and areas that may need special attention. The Metrics project covers a ten-year period and serves as a comprehensive source of information about the University's recent past and its current status. This resource will be a valuable tool in helping guide decisions about the direction of the University's future.

Since the University's strategic planning is a long-term process, the Metrics project will be updated on a regular basis. As part of our effort to revise and improve this resource, we want to encourage your comments and suggestions on its form and content. Please take the opportunity to review these benchmarks and, in particular, look at areas where you might have a special interest. If you have any thoughts about the Metrics project, please share them with Lucy Drotning in the Office of Academic Planning and Analysis.
A number of different themes and challenges emerged from the strategic planning process. Each theme or challenge was recognized as playing an important role in the University of Michigan's future. They serve as the rationale for major initiatives, such as the Michigan Mandate. These themes include:

**Themes of Change**
- The increasing pluralism and diversity of our people
- Globalization of America and the shrinking global village
- The Age of Knowledge

**Challenges**
- A Finite World (Global Change)
- The Post-Cold-War World
- Rebuilding America

**Frontiers**
- Progress (vs. optimization)
- Creation (of knowledge, objects, intelligence, life...)
- Exploration (of knowledge, planet, universe...)

**Particular Challenges to Higher Education**
- The Challenge of Change
- The Commitment to Excellence
- The Importance of Fundamental Values
- Building a Community of Scholars
- Restoring Public Understanding, Trust, and Support
- Acquiring and Managing the Resources Necessary for Excellence

**Strategic Themes at the University of Michigan**
- Inventing the University of the 21st Century
- Redefining the Nature of the Public University
- Financing the University
- The Michigan Mandate
- A World University
- The Electronic University
- Global Change
- Strategic Marketing Plan
- "Keeping our eye on the ball"...
The broad themes and challenges of the 1990s have recently been refined into specific goals that are more amenable to measurement. Measuring progress towards these goals is the purpose of the Michigan Metrics project.

**Leadership Goals**
1. To enhance the quality of all academic programs
2. To sustain UM blend of broad access and high quality
3. To build more spires of excellence...attract, nurture, and achieve the extraordinary
4. To achieve more firsts” for the University
5. To become the leading research university in nation
6. To achieve the objectives of the Michigan Mandate
7. To make UM the leader among American universities in promoting and achieving success of women students, faculty, and staff
8. To develop a new paradigm for undergraduate education
9. To enhance the quality of the student living/learning environment

**Resource Goals**
10. To build strong leadership teams for University
11. To acquire resources necessary to compensate for loss of state support
12. To restructure the University to better utilize existing resources
13. To strengthen external relationships (state, feds, public)
14. To enhance quality of institutional advancement events/facilities
15. To increase private support to exceed state appropriation by year 2000
16. To increase endowment to $2 billion by year 2000
17. To dramatically improve quality of UM facilities

**Trail-Blazing Goals**
18. To restructure UM to better respond to intellectual change
19. To explore new models for University of the 21st century
20. To position UM as a “world university”
21. To position UM as model of the “electronic university” of 21st century
22. To make UM a leader in knowledge transfer to society
23. To work with community leaders to position Ann Arbor for the future
24. To assist state in making transition to "post-industrial" economy
25. To have the leading intercollegiate athletics program in the nation in terms of integrity, impact on student-athletes, success
26. To build more of a sense of pride in...respect for...excitement about...and loyalty to the University of Michigan!
**Summary of Goals**

*Vision 2000: The Leaders and Best...*

To position the University of Michigan to become the leading university of the 21st century

<table>
<thead>
<tr>
<th>Goal</th>
<th>Strategic Plan/Actions</th>
<th>Progress Since 1987-88</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Improving the quality of all academic programs</td>
<td>Comparison with highest standards Continuous improvement Investments in Engineering, Medicine, Sciences</td>
<td>National Surveys Most programs and schools in top 10; many in top 5</td>
<td>Some progress...</td>
</tr>
<tr>
<td>2. To sustain tradition of high student quality and broad access (&quot;an uncommon education for the common man&quot;)</td>
<td>Restructure tuition/fin. aid Private gifts for financial aid UM role in direct loan program</td>
<td>In-state access sustained Out-state access jeopardized</td>
<td>Holding on despite decline in state support</td>
</tr>
<tr>
<td>3. To build spires of excellence ...attract, nurture, and achieve the extraordinary</td>
<td>Focus resources Attract and sustain faculty and students of true genius Encourage programs to strive to be the very best...#1</td>
<td>Many programs ranked top in nation Faculty awards continue to accelerate Retention challenges</td>
<td>Some progress ...more cultural change needed</td>
</tr>
<tr>
<td>4. To achieve more &quot;firsts&quot; for the University</td>
<td>Create risk-taking culture Focus resources Leadership strategy</td>
<td>Human gene therapy Most powerful laser NSFnet, MREN, IFS The Michigan Mandate University Hospitals Intercollegiate Athletics...</td>
<td>Significant progress ...(very close to the top)</td>
</tr>
<tr>
<td>5. To become the leading research university in America</td>
<td>Research incentives and support Washington office JJD leadership (NSB)</td>
<td>UM moved from 7th to 1st in nation in sponsored research activity</td>
<td>Goal achieved!</td>
</tr>
<tr>
<td>6. To build a multicultural university community</td>
<td>The Michigan Mandate</td>
<td>Student Representation Tot. Minority 12% -&gt; 24% African American 4.1% -&gt; 8.3% Grad Rates 64% African American, 74% Hispanic American Faculty Representation Total Minority 9% -&gt; 13.5% Black 2.6% -&gt; 4.7%</td>
<td>Great progress ...but still far to go</td>
</tr>
<tr>
<td>7. To make UM the leader among American universities in promoting and achieving success of women students, faculty, and staff</td>
<td>Strategic plan (1993) Women faculty initiatives Improve campus environment</td>
<td>Target of opportunity program Sexual harassment policies Dependent leave policies</td>
<td>Michigan Agenda for Women</td>
</tr>
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<tr>
<td>8. To develop a new paradigm for undergraduate education in a major research university</td>
<td>UG Initiative Fund LS&amp;A, Eng UG Initiatives Gateway Campus</td>
<td>New Freshman Courses Chemistry, Math sequences UG Research Participation</td>
<td>Still at early stage</td>
</tr>
<tr>
<td>9. To restore the UM to a position of leadership in the quality of the living and learning environment provided for its students</td>
<td>Bring UM in line with best practices at other universities Attract outstanding people to student affairs activities Develop a greater sense of mutual trust and respect with students</td>
<td>Recruiting of Maureen Hartford Re-establishing Dean of Students Campus safety efforts Michigan Mandate actions Substance abuse policies Sexual harassment / assault policies Student Rights and Responsibilities Code</td>
<td>Now back in line with other colleges ...positioned for leadership</td>
</tr>
<tr>
<td>10. Build strong teams to lead the University</td>
<td>Strengthen Executive Officers Recruit outstanding Deans Stress teamwork and strategic approach</td>
<td>Exceptionally strong EO team Strong deans</td>
<td>Strong progress</td>
</tr>
<tr>
<td>11. Acquire resources necessary to sustain UM quality in face of loss of state support</td>
<td>Strategic business plan Restructure tuition / finan. aid Increase private support New investment strategies Resource management strategies</td>
<td>State support has declined more than 20% as a percentage of the General Fund Budget since FY84 General Fund State Appropriations are now less than 12% of total UM budget UM has managed to absorb these cuts while preserving quality (at least for the short-term)</td>
<td>Strong progress ...but most difficult phase lies ahead</td>
</tr>
<tr>
<td>12. To restructure the University to better utilize resources to achieve and sustain quality</td>
<td>Better resource allocation Total Quality Management efforts Reorganization of key units Global restructuring strategy Metrics Project</td>
<td>M-Quality in place PACE, ACUB</td>
<td>Good progress ...but still lots of opportunity</td>
</tr>
<tr>
<td>13. To build strong relationships with UM’s key external constituencies: State Relations ...Community Relations ...Alumni Relations</td>
<td>State Relations Strategy Federal Relations Strategy</td>
<td>Relationships with Governor, Legislature very positive White House, Congress relationships quite strong</td>
<td>Strong progress on political front ...longer term public relations effort</td>
</tr>
<tr>
<td>14. To set new standards of quality for facilities and events aimed at institutional advancement</td>
<td>Upgrade all key facilities Reorganize event teams Set high standards, encourage staff to exceed them</td>
<td>Renovation of Pres H, Inglis H Stadium pressbox areas Major events (e.g., Commencement) Campaign events strategy</td>
<td>Strong progress ...but sustained effort essential</td>
</tr>
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<td>Strategic Plan/Actions</td>
<td>Progress Since 1987-88</td>
<td>Status</td>
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<td>----------------------------------------------------------------------</td>
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<tr>
<td>15. To build private support of UM to a level comparable to state appropriation</td>
<td>Goals by year 2000&lt;br&gt;...annual gifts $200M/y&lt;br&gt;...endowment $2B&lt;br&gt;Restructure Development Campaign for Michigan President’s Advisory Council</td>
<td>Annual gifts and pledges:&lt;br&gt;...$89M -&gt; $152M&lt;br&gt;Endowment&lt;br&gt;...$301 M -&gt; $912M to date&lt;br&gt;Launch Campaign&lt;br&gt;...$747M to date</td>
<td>Strong progress&lt;br&gt;...essentially on track</td>
</tr>
<tr>
<td>16. To increase endowment to $2B by the year 2000</td>
<td>Restructure Investment Strategies &lt;br&gt;Investment Advisory Committee</td>
<td>Endowment growth&lt;br&gt;...$301M -&gt; $1B to date</td>
<td>Great progress!</td>
</tr>
<tr>
<td>17. To dramatically improve quality of UM facilities</td>
<td>Medical Campus Plan&lt;br&gt;Central Campus (LS&amp;A) Plan&lt;br&gt;North Campus Plan&lt;br&gt;South Campus (Athletic) Plan</td>
<td>Great progress on UMMC&lt;br&gt;North Campus almost complete&lt;br&gt;(FXB, ITTC, Eng Center)&lt;br&gt;South Campus almost complete&lt;br&gt;(Stadium, Canham, Schembecher)&lt;br&gt;LS&amp;A Plan moving rapidly ahead&lt;br&gt;(East Eng, UGII, Physics, CC Little, Angell, Haven, Frienze, LS&amp;A, Social Work, Gateway Campus)</td>
<td>Great progress&lt;br&gt;...key focus during 1990s will be LS&amp;A</td>
</tr>
<tr>
<td>18. To restructure University to better respond to intellectual change</td>
<td>Interdisciplinary activities&lt;br&gt;More risk-taking&lt;br&gt;Structures appropriate for change</td>
<td>Interdisciplinary Plan&lt;br&gt;Entrepreneurial culture</td>
<td>First stage of implementation</td>
</tr>
<tr>
<td>19. To explore new models for the University of the 21st century</td>
<td>Futures Group&lt;br&gt;Strategic Focus Groups</td>
<td>Early articulation of concepts&lt;br&gt;“New U” plan&lt;br&gt;National efforts</td>
<td>Some progress&lt;br&gt;...but still early</td>
</tr>
<tr>
<td>20. To reposition UM as a “world university”</td>
<td>Launch debate&lt;br&gt;New International Structure&lt;br&gt;Establish new linkages</td>
<td>International linkages greatly expanded&lt;br&gt;Davidson Institute&lt;br&gt;Midwest Universities Consortium for International Affairs&lt;br&gt;Institute for Foreign Area and International Studies</td>
<td>Some progress&lt;br&gt;...but still searching for right model</td>
</tr>
<tr>
<td>21. To position UM as a model of the “electronic university” of the 21st century</td>
<td>Info Tech Plan&lt;br&gt;National networking leadership&lt;br&gt;Key linkages&lt;br&gt;Decentralize management</td>
<td>ITD environment&lt;br&gt;NSFnet -&gt; NREN&lt;br&gt;IBM (IFS), Apple, Apollo&lt;br&gt;CAEN, CITI</td>
<td>Strong early progress&lt;br&gt;...needs some redirection</td>
</tr>
<tr>
<td>22. To make UM a leader in knowledge transfer</td>
<td>Restructure intellectual properties (IP) activities and policies&lt;br&gt;Decentralized management (e.g., Medicine, Engineering) Advisory Board</td>
<td>Realigned IP Office&lt;br&gt;Developed new IP policies&lt;br&gt;Medicine, Engineering&lt;br&gt;Activity increasing</td>
<td>Some progress&lt;br&gt;...but still not where we need to be</td>
</tr>
<tr>
<td>Goal</td>
<td>Strategic Plan/Actions</td>
<td>Progress Since 1987-88</td>
<td>Status</td>
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<tr>
<td>23. To work with community leaders to position Ann Arbor for the future</td>
<td>Develop plan AA leadership group University Enterprise Zone</td>
<td>Very early in strategy</td>
<td>Some progress</td>
</tr>
<tr>
<td>24. To assist state in making transition to &quot;post-industrial&quot; economy</td>
<td>Launch IPPS Group Leadership on K-12 education</td>
<td>Very early in strategy</td>
<td>Limited progress</td>
</tr>
<tr>
<td>25. To have leading intercollegiate athletics program in nation...in terms of integrity, impact on student-athletes, success, leadership</td>
<td>Build strong links between Athletics and the Administration Seek outstanding coaches Big Ten/NCAA negotiations Improve Women's Athletics Tiering</td>
<td>Success (5 Big Ten FB champ, 2 NCAA Final Fours, Heisman, Swimming, Hockey, CC,...) #1 in Men's Sports (#17 in Women's)</td>
<td>Great progress...but many challenges ahead</td>
</tr>
<tr>
<td>26. To build more of a sense of pride in...respect for...excitement about...and loyalty to the UM</td>
<td>C-word efforts community, cooperation, collaboration, concern, caring Internal Communications Plan</td>
<td>Early efforts to articulate community themes Efforts to work with SACUA, MSA, Deans...</td>
<td>Inadequate progress to date</td>
</tr>
<tr>
<td>Strategic Planning Efforts</td>
<td>Initial Strategy Groups Refinement of goals Metrics Project Strategic Assessment</td>
<td>UM generally regarded as national leader in planning efforts</td>
<td>Clear leadership role in higher education</td>
</tr>
</tbody>
</table>
Goal

To improve the quality of all academic programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Academic Reputation</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERGRADUATE PROGRAM</td>
<td></td>
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<tr>
<td>PROFESSIONAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business (only public in top 10)</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Business Law</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Executive Education</td>
<td>1</td>
<td></td>
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<tr>
<td>Management</td>
<td>5</td>
<td></td>
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<tr>
<td>Marketing</td>
<td>5</td>
<td></td>
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<tr>
<td>Law (only 2 publics in top 10)</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>International Law</td>
<td>5</td>
<td></td>
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<tr>
<td>Engineering</td>
<td>6</td>
<td>6</td>
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<tr>
<td>Aerospace</td>
<td>5</td>
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<tr>
<td>Electrical</td>
<td>5</td>
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<tr>
<td>Environmental</td>
<td>2</td>
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<tr>
<td>Industrial</td>
<td>3</td>
<td></td>
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<tr>
<td>Mechanical</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Medicine (only 1 public in top 10)</td>
<td>10</td>
<td>14</td>
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<tr>
<td>Drugs/Alcohol Medicine</td>
<td>4</td>
<td></td>
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<tr>
<td>Health Care</td>
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<tr>
<td>Dentistry</td>
<td>3</td>
<td></td>
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<tr>
<td>Pharmacy</td>
<td>6</td>
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<tr>
<td>Nursing</td>
<td>4</td>
<td></td>
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<tr>
<td>Health Services Administration</td>
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<tr>
<td>GRADUATE PROGRAMS</td>
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<td>Sciences</td>
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<tr>
<td>Geology</td>
<td>6</td>
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<td>Mathematics</td>
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<tr>
<td>Social Sciences/Humanities</td>
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<tr>
<td>Anthropology</td>
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<tr>
<td>Economics</td>
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<td>English</td>
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<td>History</td>
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<td>Political Science</td>
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<tr>
<td>Psychology</td>
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<tr>
<td>Sociology</td>
<td>3</td>
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</tbody>
</table>
Figure 1-1

Rankings of Undergraduate Program by U.S. News and World Report
Goal

To sustain tradition of high student quality and broad access (the Michigan tradition of providing "an uncommon education for the common man")
Figure 2-1  Total Headcount Enrollment

Change Since Fall 1987:  +2.4%
Figure 2.2  Total Headcount Enrollment, Dearborn

Change Since Fall 1987:  +2.4%
Figure 2-3

Total Headcount Enrollment, Flint

Change Since Fall 1987:  +2.4%
Figure 2-4  Undergraduate and Graduate Headcount Enrollment
Figure 2-5  
Undergraduate Headcount Enrollment

Change Since Fall 1987: +1.6%
Figure 2-6  Graduate Headcount Enrollment

14,000
13,800
13,600
13,400
13,200
13,000
12,800
12,600
12,400
12,200
12,000

Fall Term

Change Since Fall 1987:  +3.8%
Figure 2-7  Resident and Non-resident Undergraduate Headcount Enrollment
Figure 2-8
Resident Undergraduate Headcount Enrollment

Change Since Fall 1987: -1.9%
Figure 2.9  A Comparison of Resident and Non-resident Academic Year Undergraduate Tuition Rates

Change in Tuition and Fees Since 87-88:
Resident UG Tuition          +90%
Non-resident UG Tuition      +79%
Figure 2-10  Resident Undergraduate Tuition (actual, discounted by CPL and further discounted by UM financial aid per UG student)

Change Since 87-88 in Resident Undergraduate:

- Tuition: +90%
- Tuition (CPI adjusted): +46%
- Net Tuition (CPI adjusted): +28%
Non-resident Undergraduate Tuition (actual and discounted by CPI)

Change Since 87-88 in Non-resident Undergraduate:

- Tuition: +79%
- Tuition (CPI adjusted): +37%
Figure 2-12  UM Tuition Cost for a Michigan 1st Year Undergraduate in Relation to Tuition at Other Top Universities 1994-95
Figure 2-13  Student Financial Aid

![Chart showing student financial aid from 1983-84 to 1993-94 academic years. The chart displays the growth in financial aid in millions of dollars, with categories labeled as scholarships and fellowships, student jobs, tuition waivers, loans, and staff benefits.](chart_image)
Figure 2-14: Components of Student Financial Aid

Change Since 87-88:
- Scholarships: +93%
- Student jobs: +43%
- Tuition waivers: +87%
- Loans: +36%
- Staff Benefits: +94%
- TOTAL: +74%
Figure 2-15  General Fund Undergraduate Financial Aid Support

Change Since 1987:
Undergrad GF Financial Aid +165%
Undergrad GF Financial Aid (CPI adjusted) +103%
Figure 2-18  Selectivity: The Percentage of Applicants Who Are Admitted by Residency Status
Figure 2.17  Yield: The Percentage of Admitted Freshmen Who Enroll by Residency Status
Figure 2-18  The Percentage of Admitted Freshmen Who Enroll by Family Income, Fall 1992
Figure 2-19  The Percentage of Admitted Freshmen Who Enroll by Family Income for Michigan Residents, Fall 1992
Figure 2-20: The Percentage of Admitted Freshmen Who Enroll by Family Income for Non-residents, Fall 1992
Figure 2-21  Median SAT Scores of Freshman Cohort
Figure 2-22: Retention of Freshman Cohorts Two Years after Initial Entry by Residency Status
Figure 2.23: Graduation of Freshman Cohorts Four Years after Initial Entry by Residency Status
Figure 2-24
Graduation of Freshman Cohorts Six Years after Initial Entry by Residency Status
To build spires of excellence...to attract, nurture, and achieve the extraordinary
Figure 3-1  Number of Major National Honors Received by Faculty

![Bar chart showing the number of major national honors received by faculty from 1984 to 1994.](image)

Note: Honors include election to national academies, MacArthur Fellowships, Pulitzer Prizes, National Medals of Science or Technology, Guggenheim Fellowships, and Presidential Young Investigators/Presidential Faculty Fellows.
Figure 3-2  Number of Faculty Elected to the American Academy of Arts and Sciences
Figure 3-3  Number of Faculty Selected as Presidential Young Investigators/Presidential Faculty Fellows

![Bar Graph](image-url)
Figure 3-4  
Number of Guggenheim Fellowships Won by Faculty

![Bar chart showing the number of Guggenheim Fellowships won by faculty from 1984 to 1994. The chart indicates a peak in the number of fellowships in 1986 and 1987, with a decline in subsequent years.](image)
Figure 3-5  Number of Major Awards Won by Undergraduates
Figure 3-6  Number of Major Awards Won by Graduate Students

Calendar Year

- Javits
- NSF
- Mellon
- Fulbright
Figure 3-7  Average Compensation of Assistant Professors at UM-AA and Peer Public Universities
Figure 3-8  Average Compensation of Assistant Professors at UM-AA and Peer Private Universities
Figure 3-9  Average Compensation of Associate Professors at UM-AA and Peer Public Universities
Figure 3-10  Average Compensation of Associate Professors at UM-AA and Peer Private Universities
Figure 3-11  
Average Compensation of Professors at UM-AA and Peer Public Universities

$ in thousands

FY90  FY91  FY92  FY93  FY94

Michigan  UC Berkeley  UCLA  Illinois  Indiana  Minnesota  North Carolina  Washington  Wisconsin
Figure 3-12  Average Compensation of Professors at UM-AA and Peer Private Universities

$ in thousands

FY90  FY91  FY92  FY93  FY94

Michigan  Chicago  Columbia  Cornell
Harvard  MIT  Northwestern  Penn
Princeton  Stanford  Yale
Graduate Programs
Ranked in the Top Five Nationally

1982-83
- Anthropology
- Classical Studies
- History
- Political Science
- Psychology
- Sociology

1985-86
- Information and Library Studies

1986-87
- Law

1987-88
- Aerospace Engineering
  - Anthropology
  - Classical Studies
  - Comparative Literature
  - Dentistry
  - Forestry
  - History
  - Industrial Engineering
  - Law
  - Information and Library Studies
  - Nuclear Engineering
  - Nursing
  - Political Science
  - Pharmacy
  - Psychology
  - Public Health
Slavic Languages
Social Work
Sociology

1989-90  Aerospace Engineering
         Electrical Engineering
         Industrial Engineering
         Law
         Nuclear Engineering

1990-91  Aerospace Engineering
         Electrical Engineering
         Industrial Engineering
         Law
         Nuclear Engineering

1991-92  Aerospace Engineering
         Business
         Electrical Engineering
         Industrial Engineering
         Law
         Nuclear Engineering
         Political Science
         Sociology

1992-93  Aerospace Engineering
         Anthropology
         Classical Studies
         Comparative Literature
         Dentistry
Forestry

History

Industrial Engineering

Law

Information and Library Studies

Mechanical Engineering

Nuclear Engineering

Nursing

Pharmacy

Political Science

Psychology

Public Health

Social Work

Sociology

1993-94  Chemical Engineering

Electrical Engineering

Environmental Engineering

Industrial Engineering

Nuclear Engineering

Law

Nursing

Public Health

Social Work
### Faculty Awards: MacArthur Fellows

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>Gregory Schoepen</td>
</tr>
<tr>
<td>1987</td>
<td>Richard Wrangham</td>
</tr>
<tr>
<td></td>
<td>Robert Axelrod</td>
</tr>
<tr>
<td>1988</td>
<td>Ruth Behar</td>
</tr>
<tr>
<td>1989</td>
<td>Sherry Ortner</td>
</tr>
<tr>
<td></td>
<td>Rebecca Scott</td>
</tr>
<tr>
<td></td>
<td>Thomas Holt</td>
</tr>
<tr>
<td>1991</td>
<td>Alice Fulton</td>
</tr>
<tr>
<td>1992</td>
<td>Ann Ellis Hanson</td>
</tr>
<tr>
<td></td>
<td>John Holland</td>
</tr>
<tr>
<td>1993</td>
<td>Henry Wright</td>
</tr>
<tr>
<td></td>
<td>Stephen Lee</td>
</tr>
</tbody>
</table>

### Faculty Awards: National Academy of Sciences

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>Minor Coon</td>
</tr>
<tr>
<td>1985</td>
<td>Kenneth Pike</td>
</tr>
<tr>
<td></td>
<td>Warren Wagner</td>
</tr>
<tr>
<td>1987</td>
<td>Robert Axelrod</td>
</tr>
<tr>
<td>1989</td>
<td>Fred Gehring</td>
</tr>
<tr>
<td></td>
<td>Harold Shapiro</td>
</tr>
<tr>
<td>1991</td>
<td>Mathew Alpern</td>
</tr>
<tr>
<td>1992</td>
<td>Melvin Hochster</td>
</tr>
<tr>
<td>1993</td>
<td>Francis Collins</td>
</tr>
<tr>
<td>1994</td>
<td>Henry Wright</td>
</tr>
</tbody>
</table>
Faculty Awards: National Academy of Engineering

1982  Emmett Leith
1984  Robert Hanson
1985  Walter Weber
1987  Chen-To Tai
       James Duderstadt
1989  Lynn Conway
1991  Gerald Faeth
1992  William Brown
1993  Peter Banks
       Albert Schultz
1994  Donald B. Griffin
       Elmer G. Gilbert
       George I. Haddad

Faculty Awards: National Institute of Medicine

1984  Rhetaugh Dumas
1985  Stefan Fajans
       William Kelley
1986  June Osborn
1987  Minor Coon
       Marshal Becker
1989  David Kuhl
1990  Peter Ward
1991  Francis Collins
      Bernard Agranoff
1993  Jack Dixon
1994  Huda Akil
      Stanley J. Watson, Jr.
      Tadataka Yamada

Faculty Awards:
National Medal of Science or National Medal of Technology

1974  James Neal (Science)
1979  Emmett Leith (Science)
1980  Elizabeth Crosby (Science)
1983  Donald Katz (Technology)
1984  H. Richard Crane (Science)
1991  James Duderstadt (Technology)

Faculty Awards:
Nobel Prize

1960  Donald Glaser
1980  Lawrence Klein
1985  Jerome Karle
1987  Joseph Brodsky
<table>
<thead>
<tr>
<th>Year</th>
<th>Award recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>Leslie Bassett</td>
</tr>
<tr>
<td>1988</td>
<td>William Bolcom</td>
</tr>
<tr>
<td>1933</td>
<td>Hans Kurath</td>
</tr>
<tr>
<td>1945</td>
<td>J. Lawrence Oncley</td>
</tr>
<tr>
<td>1952</td>
<td>Halvor N. Christensen</td>
</tr>
<tr>
<td>1969</td>
<td>Philip Converse</td>
</tr>
<tr>
<td></td>
<td>Ross L. Finney</td>
</tr>
<tr>
<td>1970</td>
<td>William K. Frankena</td>
</tr>
<tr>
<td>1971</td>
<td>H. Richard Crane</td>
</tr>
<tr>
<td></td>
<td>James V. Neel</td>
</tr>
<tr>
<td>1974</td>
<td>Richard D. Alexander</td>
</tr>
<tr>
<td></td>
<td>Horace W. Davenport</td>
</tr>
<tr>
<td></td>
<td>Ronald Freedman</td>
</tr>
<tr>
<td></td>
<td>Theodore M. Newcomb</td>
</tr>
<tr>
<td>1975</td>
<td>Francis A. Allen</td>
</tr>
<tr>
<td></td>
<td>John W. Atkinson</td>
</tr>
<tr>
<td></td>
<td>Richard B. Brandt</td>
</tr>
<tr>
<td></td>
<td>Charles Tilly</td>
</tr>
<tr>
<td>1976</td>
<td>R. Arnheim</td>
</tr>
<tr>
<td>1977</td>
<td>Dorwin P. Cartwright</td>
</tr>
<tr>
<td></td>
<td>Clyde H. Coombs</td>
</tr>
</tbody>
</table>
Samuel J. Eldersveld
Stanley M. Garn
Warren Miller
John R. Platt
Edward G. Seidensticker
1978 Robben W. Fleming
1979 D.R. Shackleton Bailey
Sylvia L. Thrupp
1980 Albert Feuerwerker
George Katona
Chester G. Starr
Robert B. Zajonc
1981 Elizabeth L. Eisenstein
1982 William Hamilton
Charles E. Trinkaus, Jr.
1984 Minor J. Coon
James N. Morgan
1985 Robert M. Axelrod
1987 Terrance Sandalow
1989 Frederick Gehring
Daniel Katz
1990 Allan F. Gibbard
Harold K. Jacobson
Warren H. Wagner
1991 Robert L. Kahn
John Kingdon
Roy Rappaport
Harold W. Stevenson

1992
Lee Bollinger
John H. D'Arms
Phoebe Ellsworth
W. Reynolds Farley
Melvin Hochster
Richard Nisbett
Sherry Ortner
James Boyd White
Leslie Kish

1993
James J. Duderstadt
Bruce Frier
Donald Kinder
Ludwig Koenen
Richard Lempert
Howard Schuman
Alfred Simpson
Barbara Smuts

1994
June Osborn
Hazel Markus
Edward E. Smith
Mayer Zald
Arlene Saxonhouse
Leonard Barkan
Goal

To achieve more “firsts” for the University
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>Computer Aided Engineering Network (CAEN-most sophisticated computer network in any university)</td>
</tr>
<tr>
<td>1986</td>
<td>Transplant Policy Center (J. Turcotte)</td>
</tr>
<tr>
<td></td>
<td>UM's School of Information and Library Science ranked first</td>
</tr>
<tr>
<td>1987</td>
<td>Information technology campus-wide networking</td>
</tr>
<tr>
<td>1988</td>
<td>Entrepreneurial Environment</td>
</tr>
<tr>
<td></td>
<td>Continued decentralization of control of discretionary resources (Rackham, Vice President for Research, Vice President for Student Services, Schools and Colleges)</td>
</tr>
<tr>
<td></td>
<td>Research Incentives Program (Returning 5% of Indirect Cost Recovery directly to Principal Investigators)</td>
</tr>
<tr>
<td></td>
<td>Modification of Intellectual Properties Policies (Allowing ownership by inventor)</td>
</tr>
<tr>
<td></td>
<td>Return of Indirect Cost Recovery on Graduate Student Research Assistant tuition to units</td>
</tr>
<tr>
<td></td>
<td>Indexing of Indirect Cost Recovery Department Research Administration</td>
</tr>
<tr>
<td>1989</td>
<td>Cystic fibrosis gene defect found (F. Collins)</td>
</tr>
<tr>
<td></td>
<td>Mammastatin discovered (M. Wicha)</td>
</tr>
<tr>
<td></td>
<td>Development of positron microscope (A. Rich)</td>
</tr>
<tr>
<td></td>
<td>UM becomes first university to win both a Rose Bowl and a NCAA Basketball Championship</td>
</tr>
<tr>
<td>1990</td>
<td>Discovery of hind limbs on 40 million year-old whales (P. Gingerich)</td>
</tr>
<tr>
<td></td>
<td>Neurofibromatosis gene defect found (F. Collins)</td>
</tr>
<tr>
<td></td>
<td>UM Sunrunner wins Sunrayce USA-1990</td>
</tr>
<tr>
<td></td>
<td>UM Medical Center ranks as largest in nation</td>
</tr>
<tr>
<td></td>
<td>NSF establishes National Science and Technology in Ultrafast Optics at Michigan</td>
</tr>
<tr>
<td>1991</td>
<td>UM library becomes one of first major research libraries in the nation to have its entire public card catalog on-line (6 million volumes listed)</td>
</tr>
<tr>
<td></td>
<td>The EPA selects UM for two national centers, one to lead the country's first environmental education consortium, and the other to manage the new National Pollution Prevention Center</td>
</tr>
<tr>
<td></td>
<td>UM Business School joins with European counterparts in Brussels to inaugurate the Global Business Partnership</td>
</tr>
</tbody>
</table>
Fran Blouin, director of the Bentley Library, initiates the first scholarly exchange program between an American university and the new Russian State University for the Humanities.

UM receives a $30 million gift to found the William Davidson Institute, to assist nations in making transitions from command- to free-market economies.

UM Engineering students win national championship in Student Robotics Competition.

UM becomes first university to exceed $1 million in United Way drive.

JJD elected as chair of the National Science Board.

1992

World's first clinical trials in using modified human genetic material to treat human disease (hypercholesterolemia and malignant melanoma).

Creation of the most powerful laser pulse to date (G. Mourou).

Francis Collins selected to head Human Genome Project.

First in externally funded research and development expenditures.

Department of Political Science ranked first.

Law School ranked first.

1993

Rated first overall in men's athletics by USA Today.

Department of Anthropology ranked number one.

Department of Health Services Administration ranked first.

First public university to undertake a $1 billion campaign.

First in externally funded research and development expenditures.

Researchers at the UM create a new target-specific cancer treatment using radioactive antibodies to attack lymphoma cancer cells.

Researchers in the Department of Human Genetics are the first to use gene therapy to cure Duchenne muscular dystrophy (DMD) in mice. DMD is the most common form of the disease.

UM researchers successfully performed the first gene therapy using direct transfer of modified human genetic material.

UM physicists are among the scientists who announced evidence for the possible discovery of the top quark, the last of six types of quarks to be discovered. Quarks are the subatomic particles that comprise the nuclei of atoms.

Philip Gingerich, UM paleontologist, along with researchers from Pakistan, discovered fossils of a 46-million-year-old whale that walked on four legs on land but swam with the undulating tail motion of a modern whale. The discovery provides important information about the structural and behavioral changes that occurred 40 to 50 million years ago as whales made the transition from land-dwelling to ocean-dwelling mammals.
Dr. Ruth Decker, a UM surgeon, developed a breakthrough in the treatment and cure of thyroid cancer. The simple blood test identifies the gene responsible for medullary thyroid cancer and allows doctors to remove the thyroid before the cancer appears.

UM, through its new Center for High-Definitions Display Technologies is one of the nation’s leading research institutions in computer screen technologies.

The UM is the leading source of academic research on the environmental justice movement.
Goal

To become the leading research university in America
### Table 5-1
National Rankings of Research Universities By Volume of Research Activity FY92

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Michigan</td>
<td>$393,059,000</td>
</tr>
<tr>
<td>2</td>
<td>Stanford University</td>
<td>$367,980,000</td>
</tr>
<tr>
<td>3</td>
<td>University of Wisconsin-Madison</td>
<td>$352,706,000</td>
</tr>
<tr>
<td>4</td>
<td>Massachusetts Institute of Technology</td>
<td>$324,453,000</td>
</tr>
<tr>
<td>5</td>
<td>University of Minnesota</td>
<td>$317,026,000</td>
</tr>
<tr>
<td>6</td>
<td>University of Washington</td>
<td>$313,514,000</td>
</tr>
<tr>
<td>7</td>
<td>Texas A &amp; M</td>
<td>$305,390,000</td>
</tr>
<tr>
<td>8</td>
<td>Cornell University</td>
<td>$299,342,000</td>
</tr>
<tr>
<td>9</td>
<td>University of California-San Francisco</td>
<td>$295,784,000</td>
</tr>
<tr>
<td>10</td>
<td>University of California-Berkeley</td>
<td>$284,545,000</td>
</tr>
<tr>
<td>11</td>
<td>University of California-San Diego</td>
<td>$282,114,000</td>
</tr>
<tr>
<td>12</td>
<td>Pennsylvania State University</td>
<td>$278,305,000</td>
</tr>
<tr>
<td>13</td>
<td>Johns Hopkins University</td>
<td>$272,542,000</td>
</tr>
<tr>
<td>14</td>
<td>University of California-Los Angeles</td>
<td>$270,954,000</td>
</tr>
<tr>
<td>15</td>
<td>Harvard University</td>
<td>$253,126,000</td>
</tr>
<tr>
<td>16</td>
<td>University of Illinois-Urbana</td>
<td>$251,970,000</td>
</tr>
<tr>
<td>17</td>
<td>University of Texas at Austin</td>
<td>$228,545,000</td>
</tr>
<tr>
<td>18</td>
<td>University of Pennsylvania</td>
<td>$222,424,000</td>
</tr>
<tr>
<td>19</td>
<td>University of Arizona</td>
<td>$221,999,000</td>
</tr>
<tr>
<td>20</td>
<td>University of Maryland-College Park</td>
<td>$219,041,000</td>
</tr>
</tbody>
</table>
Growth in Research Expenditures

Change Since FY88: +65%
Figure 5-2  Growth in Indirect Cost Recovery

Change Since FY88: +55%
Figure 5-3
Changes in Indirect Cost Effective Rate
Figure 5-4  National Ranking in Research Activity
Figure 5-5  Trends in Research Expenditures: Medical School, Engineering, LS&A, and ISR
Figure 5-6

Trends in Research Expenditures: Public Health, Social Work, and Business Administration
Figure 5-7

Trends in Research Expenditures: Dentistry, Natural Resources & Environment, and Education
Figure 5-8

Trends in Research Expenditures: Pharmacy, Nursing, Law, and Kinesiology
Figure 5-9

1983-84  UM's Laurentian sails for Africa to serve as a floating laboratory for a U.S. Agency for International Development's $4.6 million project

An $8.2 million grant from NASA will fund the construction of High Resolution Doppler Imager, a satellite designed to monitor changes in weather and climate

Research done by UM neuroscientists indicates that a single exposure to amphetamines may cause permanent changes in some nerve cells of the brain

Research conducted by UM gerontologists suggest that a gradual personality change in aging persons may signal the onset of Alzheimer's disease

Howard Hughes Medical Research Institute, established at UM, to conduct research on clinical applications of molecular genetics

UM selected by the Semiconductor Research Corporation as a National Center of Excellence for Advanced Manufacturing Sciences

1984-85  UM researchers conduct experiments on NASA's space shuttle to test the efficacy of image producing radar to create two-dimensional pictures of earth's terrain

UM researcher develops a mechanical heart that helps keep a 6-month old heart transplant patient alive

UM researchers and space shuttle astronauts collaborate to determine how the body attempts to adapt to weightlessness

UM scientists are part of international group of researchers that define the goals and strategies of the Earth Observatory System, one of NASA's top priorities

1985-86  UM Medical Center is designated a model spinal injury center by the National Institute for Handicapped Research, becoming only one of nine in the nation

Jonas Salk visits UM to celebrate the 30th anniversary of his announcement that a vaccine for polio had been discovered after a year of field trials at the UM

UM's School of Education receives a $5 million grant from the National Institute of Education to establish a Center for Improving Postsecondary Learning and Teaching
UM collaborates with several industrial firms to develop an "integrated" information technology environment on UM campus — the first such environment anywhere

UM physicians launch a program to test high risk newborns for hearing impairments

UM Medical Center establishes its Neurofibromatosis Center

1986-87

UM researchers conclude that clay barriers are not enough to prevent pollutants from entering ground water

National Science Foundation awards $3 million grant to UM to help develop a nationwide electronic information exchange network for scientists and engineers called "EXPRES"

National Science Foundation awards a team of UM scientists a grant to study the use of light instead of electricity for ultra high speed computing and signal processing

A new satellite data center and facilities in the Space Research Building are among the nation's largest

Three members of the Howard Hughes Medical Institute at the UM are part of a team that identifies the one gene that may be responsible for both Alzheimer's disease and Downs syndrome

UM astronomers discover a new galaxy that is one of the largest but least visible on record

UM astronomers report massive black holes lie at the center of two nearby galaxies and may be found at the centers of other galaxies

1987-88

UM is one of four institutions to share $7.4 million National Science Foundation grant for basic materials research

UM Medical Center opens its center for the study of kidney disease through a National Institutes of Health grant of $4 million

UM and Michigan State University share a hazardous waste study project funded by Dow Chemical Company

UM (via MERIT) wins contract for managing NSFnet, the computer network linking together the nation's universities and national laboratories

A Center for Excellence in Geriatrics is established at UM's Medical Center

UM's Medical Center establishes a Substance Abuse Center of Excellence

UM physicists build and test the first positron transmission microscope

The National Institutes of Health gives UM $11.2 million for the Michigan Diabetes Research and Training Center
The Lucille P. Markey Charitable Trust awards UM $7.25 million to study message exchange between nerve cells in the brain

The National Institute of Health awards $6 million to UM for a Multipurpose Arthritis Center, one of only 13 centers nationwide

UM's College of Engineering selected as one of nine NASA Space Engineering Research Centers

UM shares a $6.7 million grant with the Urban Institute of Washington to develop and maintain a national kidney registry

UM researchers, in a joint study with IBM, begin to develop software to enhance the university's computer networking system

1988-89  
UM's Biological Station receives a 3-year grant from the Kellogg Foundation to establish SEE-North, a program designed to improve science literacy in Michigan's northern Lower Peninsula and eastern Upper Peninsula

UM establishes the Alcohol Research Center through a $7.5 million grant from National Institute of Alcohol Abuse and Alcoholism

UM's Bentley Historical Library receives prestigious Distinguished Service Award of the Society of American Archives. Later in 1989, the library is awarded funding to modernize the Vatican's archives system

UM scientists among handful of American researchers sponsored by NASA as co-investigators for Soviet mission to Mars

UM researchers collaborate with Russian scientist to conduct the first experiment on the world's highest energy proton accelerator

UM researchers isolate pure protein, called mammmastatin, that inhibits breast cancer growth

1989-90  
Scientists at the Howard Hughes Medical Institute at UM and at the Hospital for Sick Children in Toronto identified the gene responsible for cystic fibrosis

UM hosts EDUCOM '89, the 25th national conference on computer technology in higher education. 3500 delegates are on site for conference at the movement's birthplace, making it the largest conference ever held at UM and city of Ann Arbor

$6.17 million grant from National Institute on Aging funds Michigan Alzheimer's Disease Research Center at UM Medical Center

UM researchers involved in discovery of drug that delays onset of disabling symptoms of Parkinson's Disease

Physicians at UM Cancer Center are first in country to use three-dimensional radiation therapy planning, a technique that allows doctors to direct radiation to a tumor more precisely
UM researchers collaborate with scientists from the French National Atomic Energy Committee to create the world’s most powerful beam of laser light to date

UM researcher discovers whales once had feet

1990-91

Researchers at UM’s Howard Hughes Medical Institute identify the gene believed to be responsible for neurofibromatosis

National Institute of Health grants UM Medical Center $5 million to establish the nation’s only program project for gene therapy. Later in 1990, UM researchers develop gene therapy that may correct an inherited genetic defect responsible for a high cholesterol disorder in humans

Howard Hughes Medical Institute researchers at UM and the University of Iowa have used gene replacement techniques in a lab culture to correct the defect in human cystic fibrosis cells

UM researchers Elizabeth G. Nabel, Gregory E. Plantz and Gary J. Nabel successfully direct modified genes

UM awarded $14.3 million to establish a National Science Foundation Science and Technology Center to study high speed optics and laser technology

Andrew W. Mellon Foundation gives $3 million to establish yearly fellowships for doctoral candidates; gift is one of the largest single grants ever given to an institution to support doctoral education in humanities and social sciences

1991-92

UM scientist Richard M. Laine develops a procedure that transforms beach sand into silicon based chemicals, polymers, glasses, and ceramics

UM experiments are carried on four NASA space shuttle missions, one of them involving a High Resolution Doppler Imager designed by UM engineers

EPA selects UM over 28 other institutions to manage the National Pollution Prevention Center

UM’s School of Business Administration inaugurates the Global Business Partnership, designed to conduct research into human resource practices around the world

UM initiates the first scholarly exchange program between an American University and the new Russian State University for the Humanities

UM’s School of Social Work uses a $674,000 grant from the Ford Foundation to conduct the first comprehensive study of the economic and social effects of the 1991 state welfare cutbacks
UM performs world’s first gene therapy trial using direct transfer of modified human genetic material into the body to treat disease

EPA awards UM $4.8 million to establish a national center at the UM that will serve as a clearinghouse for information on K-12 environmental education

UM scientist Hunein F. Maassab developed a new strain of influenza virus that can be used for vaccines, and it can be updated each year to match new influenza strains

UM astronomers and scientists, led by Douglas Richstone, working with researchers at the University of Hawaii’s Institute for Astronomy, may have discovered a black hole 100 times more massive than any previously documented

UM Medical Center establishes a Center for Molecular Medicine to enhance gene discovery and therapy through an $8.9 million grant from the National Institutes of Health (NIH); it is the only such center in the nation focusing on human disease genes. UM research teams are the only researchers outside of the NIH to conduct therapy experiments in humans

UM paleontologist Daniel C. Fisher discovers over 20 footprints of an adult male mastodon

1992-93

UM researchers at the Center for Great Lakes and Aquatic Sciences discover the remains of the Newell A. Eddy, a 19th century three-masted schooner, on the bottom of Lake Huron

The Warner-Lambert/Parke-Davis Company’s $5.5 million gift to the Medical School, College of Pharmacy and Department of Chemistry is one of the largest single contributions in UM’s history

ISR receives an $18 million grant from the National Institute on Drug Abuse (NIDA) to continue and to expand its annual national survey of America’s secondary students. The grant is one of the largest in UM’s history, as well as one of the largest for the NIDA

Researchers at the UM and at Duke University develop a way to prevent the human immunodeficiency virus (HIV) from infecting human T leukemia cells

UM researchers are part of the six team international research group that has identified the gene responsible for Huntington’s disease

Researchers at UM’s Comprehensive Cancer Center are part of a group that has identified a particular gene that reverses the cancer-like growth characteristics of human melanoma cells

1993-94

Researchers at the University of Michigan created a new target-specific cancer treatment using radioactive antibodies to attack lymphoma cancer cells
Researchers in the Department of Human Genetics were the first to use gene therapy to cure Duchenne muscular dystrophy (DMD) in mice. DMD accounts for half of all muscular dystrophy cases and causes muscle weakness, joint stiffening, and spinal curvature.

Researchers at the University of Michigan Biological Station found that rising carbon dioxide in the atmosphere produced fundamental changes in growth rates of plants and microorganisms living in soil and levels of carbon and nitrogen in soil.

NASA has chosen a team of UM atmospheric scientists to develop plans for an unmanned mission to Mars in 1998.

UM researchers successfully performed the first gene therapy using direct transfer of modified human genetic material.

UM researchers unveiled the M-ROVER, a remote-operated vehicle used for under water exploration and recovery.

Using technology they developed, UM scientists helped NASA’s space shuttle count trees in a 2,500 square-mile section of the Upper Peninsula. The experiment will help scientists learn more about the impact trees and other plant life may have on global warming and climate change.

UM physicists were among the group of physicists who announced evidence for the possible discovery of the top quark, the last of six types of quarks to be discovered. Quarks are the subatomic particles that comprise the nuclei of atoms.

UM paleontologist Philip Gingerich, along with researchers from the Geological Survey of Pakistan, discovered fossils of a 46-million-year-old whale that waled on four legs on land but swam with the undulating tail motion of a modern whale. The whale provides important information about structural and behavioral changes that occurred 40 to 50 million years ago as whales made the transition from land-dwelling to ocean-dwelling mammals.
Goal: To build a multicultural university community
### Table 6-1
Representation of Persons of Color in the Nation, the State, and UMAA, Fall 1994

<table>
<thead>
<tr>
<th></th>
<th>Persons of Color</th>
<th>Black</th>
<th>Hispanic/Latino</th>
<th>Native American</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>National*</td>
<td>24.80%</td>
<td>12.10%</td>
<td>9.00%</td>
<td>0.80%</td>
<td>2.90%</td>
</tr>
<tr>
<td>State*</td>
<td>17.80%</td>
<td>13.90%</td>
<td>2.20%</td>
<td>0.60%</td>
<td>1.10%</td>
</tr>
<tr>
<td><strong>UMAA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students #</td>
<td>24.16%</td>
<td>8.27%</td>
<td>4.67%</td>
<td>0.79%</td>
<td>10.43%</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>24.92%</td>
<td>8.34%</td>
<td>4.68%</td>
<td>0.83%</td>
<td>11.07%</td>
</tr>
<tr>
<td>Graduate</td>
<td>20.42%</td>
<td>7.10%</td>
<td>4.73%</td>
<td>0.60%</td>
<td>7.99%</td>
</tr>
<tr>
<td>Professional</td>
<td>24.45%</td>
<td>9.09%</td>
<td>4.58%</td>
<td>0.78%</td>
<td>10.00%</td>
</tr>
<tr>
<td>Faculty (Tenured &amp; Tenure Track)</td>
<td>13.50%</td>
<td>4.70%</td>
<td>1.90%</td>
<td>0.30%</td>
<td>6.60%</td>
</tr>
<tr>
<td>Academic Administration</td>
<td>15.80%</td>
<td>14.20%</td>
<td>1.70%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Professional Non-faculty</td>
<td>15.00%</td>
<td>6.10%</td>
<td>1.20%</td>
<td>0.30%</td>
<td>7.40%</td>
</tr>
</tbody>
</table>

*1990 Census Data

#Percentages for students refer to African Americans, Hispanic/Latino Americans, Native Americans, and Asian Americans.

Numbers for Academic Administration and Professional Non-faculty are from 1993.
Table 6-2

Representation of Persons of Color in the Nation, the State, and UM - Dearborn, Fall 1993

<table>
<thead>
<tr>
<th>Persons of Color</th>
<th>Black</th>
<th>Hispanic/Latino</th>
<th>Native American</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>National*</td>
<td>24.80%</td>
<td>12.10%</td>
<td>9.00%</td>
<td>0.80%</td>
</tr>
<tr>
<td>State*</td>
<td>17.80%</td>
<td>13.90%</td>
<td>2.20%</td>
<td>0.60%</td>
</tr>
<tr>
<td>UMAA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>13.70%</td>
<td>6.60%</td>
<td>2.10%</td>
<td>0.60%</td>
</tr>
<tr>
<td>Graduate</td>
<td>11.20%</td>
<td>3.60%</td>
<td>1.80%</td>
<td>0.20%</td>
</tr>
<tr>
<td>Faculty (Tenured &amp; Tenure Track)</td>
<td>23.90%</td>
<td>4.00%</td>
<td>1.00%</td>
<td>0.50%</td>
</tr>
<tr>
<td>Academic Administration</td>
<td>26.70%</td>
<td>6.70%</td>
<td>0.00%</td>
<td>6.70%</td>
</tr>
<tr>
<td>Professional Non-faculty</td>
<td>16.00%</td>
<td>11.80%</td>
<td>1.80%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

*1990 Census Data

#Percentages for students refer to African Americans, Hispanic/Latino Americans, Native Americans, and Asian Americans.
<table>
<thead>
<tr>
<th></th>
<th>Persons of Color</th>
<th>Black</th>
<th>Hispanic/Latino</th>
<th>Native American</th>
<th>Asian</th>
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</thead>
<tbody>
<tr>
<td>National*</td>
<td>24.80%</td>
<td>12.10%</td>
<td>9.00%</td>
<td>0.80%</td>
<td>2.90%</td>
</tr>
<tr>
<td>State*</td>
<td>17.80%</td>
<td>13.90%</td>
<td>2.20%</td>
<td>0.60%</td>
<td>1.10%</td>
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<tr>
<td>UMAAA</td>
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<td></td>
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<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>14.30%</td>
<td>10.00%</td>
<td>2.00%</td>
<td>0.90%</td>
<td>1.30%</td>
</tr>
<tr>
<td>Graduate</td>
<td>9.80%</td>
<td>5.80%</td>
<td>1.50%</td>
<td>0.80%</td>
<td>1.80%</td>
</tr>
<tr>
<td>Faculty (Tenured &amp;</td>
<td>16.50%</td>
<td>7.30%</td>
<td>3.00%</td>
<td>0.00%</td>
<td>6.10%</td>
</tr>
<tr>
<td>Tenure Track)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>22.20%</td>
<td>11.10%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>11.10%</td>
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<tr>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>15.70%</td>
<td>11.60%</td>
<td>3.30%</td>
<td>0.00%</td>
<td>0.80%</td>
</tr>
<tr>
<td>Non-faculty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1990 Census Data

# Percentages for students refer to African Americans, Hispanic/Latino Americans, Native Americans, and Asian Americans.
### Table 6-4

Enrollment of Students of Color, Fall 1994

<table>
<thead>
<tr>
<th></th>
<th>Students of Color</th>
<th>African American</th>
<th>Hispanic/Latino American</th>
<th>Native American</th>
<th>Asian American</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>5,590</td>
<td>1,871</td>
<td>1,050</td>
<td>186</td>
<td>2,483</td>
</tr>
<tr>
<td>Graduate</td>
<td>1,024</td>
<td>356</td>
<td>237</td>
<td>30</td>
<td>401</td>
</tr>
<tr>
<td>Professional</td>
<td>1,313</td>
<td>488</td>
<td>246</td>
<td>42</td>
<td>537</td>
</tr>
<tr>
<td>Total</td>
<td>7,927</td>
<td>2,715</td>
<td>1,533</td>
<td>258</td>
<td>3,421</td>
</tr>
</tbody>
</table>
Figure 6-1
Minority Student Enrollments

Change Since Fall 1987:
- Asian Americans: +90%
- African Americans: +57%
- Hispanic/Latino American: +126%
- Native Americans: +100%
- TOTAL: +83%
Change Since Fall 1987:

Asian Americans                          +86%
African Americans                        +53%
Hispanic/Latino American                 +122%
Native Americans                         +96%
TOTAL                                    +79%
Figure 6-3  Minority Student Enrollment Percentage

*Change in the Percent of Minority Students Since Fall 1987: +79%*
Figure 6-4  Minority Undergraduate Student Enrollments

Change Since Fall 1987:

- Asian Americans: +85%
- African Americans: +56%
- Hispanic/Latino American: +157%
- Native Americans: +109%
- TOTAL: +84%
Change Since Fall 1987:

- Asian Americans: +93%
- African Americans: +89%
- Hispanic/Latino American: +110%
- Native Americans: +58%
- TOTAL: +94%
**Figure 6-6** Minority Professional Student Enrollments

Change Since Fall 1987:

- Asian Americans: +114%
- African Americans: +41%
- Hispanic/Latino American: +59%
- Native Americans: +100%
- TOTAL: +70%
Figure 6-7  Enrollment Percentage of African American Students

Change Since Fall 1987:
Undergraduate  +53%
Graduate  +85%
Professional  +38%
TOTAL  +53%
Figure 6-8  Enrollment Percentage of Asian American Students

Change Since Fall 1987:
Undergraduate               +81%
Graduate                     +89%
Professional                 +109%
TOTAL                        +86%
Figure 6-9  Enrollment Percentage of Native American Students

Change Since Fall 1987:
Undergraduate  +104%
Graduate       +54%
Professional   +96%
TOTAL          +96%
Figure 6-10  Enrollment Percentage of Hispanic/Latino American Students

Change Since Fall 1987:

- Undergraduate: +151%
- Graduate: +105%
- Professional: +55%
- TOTAL: +122%
Figure 6-11  Graduation Rates of Freshman Minority Cohorts Six Years After Initial Entry

Change Since 87-88:
- Asian Americans: +6%
- African Americans: +10%
- Hispanic/Latino American: +18%
- Native Americans: -14%
- TOTAL: +12%
Figure 6-12
Graduation Rates of Freshman Asian American Cohorts Six Years After Initial Entry

Change Since 87-88: +6%
Figure 6-13  Graduation Rates of Freshman African American Cohorts After Six Years Initial Entry

![Bar chart showing graduation rates over academic years from 1983-84 to 1992-93.]

*Change Since 87-88:* +10%
Figure 6.14  Graduation Rates of Freshman Hispanic/Latino American Cohorts Six Years After Initial Entry

Change Since 87-88: +18%
Figure 6-15. Graduation Rates of Freshman Native American Cohorts Six Years After Initial Entry

Change Since 87-88: -14%
Figure 6-16
Minority Undergraduate Degrees Conferred

Change Since 87-88:

- Asian Americans: +90%
- African Americans: +67%
- Hispanic/Latino American: +207%
- Native Americans: +94%
Figure 6-17 Minority Undergraduate Degrees Conferred

Change Since 87-88:
Total Minorities +96%
Figure 6-18: Minority Masters and Intermediate Degrees Conferred

Change Since 87-88:
- Asian Americans: +100%
- African Americans: +146%
- Hispanic/Latino American: +156%
- Native Americans: +67%
Figure 6-19  Minority Masters and Intermediate Degrees Conferred

Change Since 87-88:
Total Minorities  +129%
Figure 6-20  Minority Professional Degrees Conferred

Change Since 87-88:
- Asian Americans: +148%
- African Americans: +63%
- Hispanic/Latino American: +54%
- Native Americans: +40%
Figure 6-21  Minority Professional Degrees Conferred

Change Since 87-88:
Total Minorities  +86%
Figure 6-22  Minority Ph.D. Degrees Conferred

Change Since 87-88:

- Asian Americans: +94%
- African Americans: -32%
- Hispanic/Latino American: +100%
- Native Americans: +300%
Figure 6-23  Minority Ph.D. Degrees Conferred

Change Since 87-88:
Total Minorities +71%
Figure 6-24  Rackham Minority Graduate Fellows

Change Since 87-88:  +118%
Figure 6-25  Number of Minority Faculty

Change Since 87-88:

- Asian: +39%
- Black: +62%
- Hispanic/Latino: +117%
- Native American: +75%
- TOTAL: +55%
Figure 6-26  Number of Blacks/African Americans on Faculty

Change Since 87-88: +62%
Senior Hires of Minorities (EOs, deans, directors)

Change Since FY88: +400%
By the end of the decade, the UM will become the leader among American universities in promoting and achieving the success of women as students, faculty, and staff.
Figure 7-1 Total Enrollment by Gender
Figure 7-2  Enrollment by Gender as a Percentage of Total Enrollment
Figure 7-3  The Percentage of Women Students
Figure 7-4
Percentage of Women Enrolled by Student Level

*Change Since Fall Term 1987:*
Graduates +10.3%
Undergraduates +0.7%
Figure 7-5  Degrees Conferred by Gender

Change Since 87-88:
Women                     +9%
Men                       +6%
Figure 7-6

Percentage of Degrees Conferred by Gender

Change Since 87-88:

Women  +1.5%
Men     -1.2%
Figure 7-7: Percentage of Degrees Conferred to Women by Degree Level

Change Since 87-88:
Graduates: +8.8%
Undergraduates: -4.9%
Figure 7-8  Percentage of Faculty by Gender

Change Since 87-88:
Women  +18.6%
Men     -4.0%
Figure 7-9  Number of Women Faculty

Change Since 87-88: +14.6%
Figure 7-10  Percentage of Women Staff in Academic Units (excluding hospitals)

Change Since 87-88:

All Staff +1.6%
P & A Staff 5.4%
Goal

To develop a new paradigm for undergraduate education in a major research university
Milestones

1957  Honors Program
1963  Pilot Program
1967  Residential College Program
1969  Minority Engineering Program
1983  Comprehensive Studies Program
1985  Summer Research Opportunity Program (SIROP)
1986  Training of International Graduate Student Teaching Assistants
       LS&A Blue Ribbon Panel on Undergraduate Education
1987  New standards for Teaching Assistant language proficiency
       Thurnau Professorships for undergraduate teaching
       Institute for Humanities involvement in undergraduate education (Hewlett
       Foundation grant)
       Provost's White Paper on Undergraduate Education (JJD) Presentation to
       Senate Assembly
       Undergraduate Initiatives Fund
       Central Campus Classroom Renovation Projects (ongoing)
1988  Angell-Haven Computer Courtyard Project
       UGLI Renovation (Phase I)
       Focusing of Undergraduate Initiatives Fund
       Intergroup Relations and Conflict Program
       Teaching Assistant Training Program
       Residence Hall Study
       LS&A Advisors assigned to Residence Halls
       Engineering Commission on Undergraduate Education
       The Collegiate Fellows Program
       Undergraduate Research Opportunity Program
1989
LS&A Task Forces
Collegiate Seminars
Curricular Reform of Introductory Chemistry Courses
Global Rivers Environmental Education Network
Language Resource Center Media Projects
Engineering Efforts

1990
Report of Planning Committee on Undergraduate Education (PCUE)
Appointment of Assistant Dean for Undergraduate Curriculum in LS&A
Appointment of Associate Dean for Undergraduate Affairs in Engineering
“Sunrunner”: 1st in US, 3rd in World Solar Car Challenge

1991
21st Century Program
Advisory Office for Women in Engineering
College of Engineering Faculty Fellows Program
LS&A Race or Ethnicity Requirement (UC 299)
English: Senior faculty required to teach an Undergraduate course
LS&A Teaching Awards
Mentoring Program for Undergraduates
Report of the Central Committee on Undergraduate Education (CCUE)
College of Engineering Teaching Awards

1992
Introduction of new “non-calculus” sequence in mathematics
Gateway Campus Plan
College of Engineering surveys on the undergraduate educational experience
Revision of introductory calculus courses
New B.A. Degree Program in Physics
1993  
New B.A. Degree offered in Biology  
College of Engineering curricular revisions  
Task Force on the First-Year Experience  
WISE (Women in Science and Engineering) Residence Hall  

1994  
Revitalization of Center for Research on Learning and Teaching  
Classical Studies concentration in Classical Civilization  
Expansion of Freshman Seminars into “Gateway” Seminars  
New B.S. Degree offered in Biochemistry  
Quantitative Reasoning Requirement passed
Goal

To build strong teams to lead the University
Figure 9-1  A Comparison of the Number of Presidents Produced During the Past 25 Years
The Teams:
Leadership Groups

Executive Officer Team
Management Committee

The Teams:
Strategic Groups

Strategic Assessment Team
Futures Group (10-30 year planning horizon)
Committee on Institutional Advancement
Campaign Steering Group
Council on a Multicultural University (COMU)
Advisory Committee on University Budgets (ACUB)
Dean's Development Committee
Change Group II (1991)
Strategic Planning Team (1989)
State Strategy Team (1989)
Change Group (1989)
State Outreach Group (1989)
Communications Advisory Team (1989)

The Teams:
Other Standing Groups

Academic Policy Group
Medical Center EO Group
Federal Relations Strategy Group
State Relations Strategy Group
EO/SACUA/Deans/Regents/Student retreats
Committee on Budget Administration (1988)
Additional involvement of Deans in University Planning (1988)

Academic Policy Group
Strategic Planning Team
Development Policy Group
Science Development Council
AAAC/BO Retreats

Science Development Council (1988)

The Teams: Special Task Forces

Task Force on Town-Gown Interface (Bob Beckley, Chair)
Task Force on First-Year Experience
University Events (ongoing, John D'Arms, Chair)
University History and Traditions (ongoing, Bob Warner, Chair)
Campus Safety Committee (ongoing, Jim Snyder, Chair)
Substance Abuse Task Force (ongoing, George Zuidema, Chair)
Study Committee on Status of Lesbians and Gay Men (1991)
Minority Retention (1990)
Task Force on Campus Safety (1989)
Task Force on University Events (1989)
Task Force on Faculty Recruitment, Retention, and Retirement (1989)
Task Force on Quality of Student Life (1989)
Task Force on Student and Faculty Housing (1989)
EO/SACUA/Student Leadership Retreats (1989)
"Campus Urbanization" Study (1989)

The Teams: External Groups

President's Advisory Council (1989)
Capital Campaign Steering Committee (1991)
Investment Advisory Council (1990)
Michigan CEO-Presidents Roundtable (1990)
Technology Transfer Advisory Committee (1993)
### UM Administrators Going on to University Presidencies

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>University/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>Roger Heyns</td>
<td>(UC-Berkeley)</td>
</tr>
<tr>
<td>1969</td>
<td>Frederick Thieme</td>
<td>(Colorado)</td>
</tr>
<tr>
<td>1971</td>
<td>Stephen Spurr</td>
<td>(Texas)</td>
</tr>
<tr>
<td>1975</td>
<td>James Zumberge</td>
<td>(Nebraska, USC)</td>
</tr>
<tr>
<td>1977</td>
<td>Frank Rhodes</td>
<td>(Cornell)</td>
</tr>
<tr>
<td>1978</td>
<td>Arthur Hanson</td>
<td>(Purdue, Texas A&amp;M)</td>
</tr>
<tr>
<td>1980</td>
<td>David Ragone</td>
<td>(Case-Western Reserve)</td>
</tr>
<tr>
<td>1980</td>
<td>Harold Shapiro</td>
<td>(Michigan)</td>
</tr>
<tr>
<td>1985</td>
<td>John CreCine</td>
<td>(Georgia Tech)</td>
</tr>
<tr>
<td>1987</td>
<td>Harold Shapiro</td>
<td>(Princeton)</td>
</tr>
<tr>
<td>1988</td>
<td>George Lewis</td>
<td>(Vermont)</td>
</tr>
<tr>
<td>1988</td>
<td>J. Duderstadt</td>
<td>(Michigan)</td>
</tr>
<tr>
<td>1989</td>
<td>Niara Sudarkasa</td>
<td>(Lincoln)</td>
</tr>
<tr>
<td>1990</td>
<td>Linda Wilson</td>
<td>(Radcliffe)</td>
</tr>
<tr>
<td>1991</td>
<td>Charles Vest</td>
<td>(MIT)</td>
</tr>
</tbody>
</table>
To acquire the resources necessary to sustain UM's excellence in face of decline in state support
Figure 10-1  State Appropriations (both in actual and HEPI adjusted to FY84$, showing decline since FY88 relative to inflation)

Change Since FY88:

State Appropriations  +18%
State Appropriations (HEPI)  -9.2%
Figure 10-2  State Appropriations (both actual and HEPI adjusted to FY69$)
Figure 10-3  State Appropriations per Fiscal Year Equated Student (in actual dollars and HEPI adjusted to FY69$)
Figure 10-4 State Appropriations per Fiscal Year Equated Student (in Actual Dollars and HEPI adjusted to FY84$)
Figure 10-5

A Comparison of FY92 State Appropriations per Fiscal Year
Equated Student
Figure 10-6

A Comparison of 1993-94 Undergraduate Tuition Rates at Peer Public and Private Universities

Note: Numbers for public universities are non-resident undergraduate tuition rates.
Figure 10-7  A Comparison of 1993-94 Undergraduate Tuition Rates at Peer Public and Private Universities

Note: Numbers for public universities are resident undergraduate tuition rates.
A Comparison of Effective Support per Student (as measured by the sum of FY92 State Appropriations per FYES and Resident Undergraduate Tuition Rates)
Figure 10-9  Comparison of General Fund State Appropriations and All Funds Budget

Change Since FY88:
GF State Appropriations  +20%
All Funds Budget        +70%
**Figure 10-10** General Fund State Appropriations as a Percentage of All Funds Budget

Change Since FY87: 17.2 to 11.6%
(a decline of 33%)
Figure 10-11
The Changing Mix of General Fund Revenue

Change in % of Total Since FY88:
State Appropriations  -25%
Tuition and Fees       +26%
Other                   +15%
Figure 10-12  The Changing Mix of General Fund Revenue
Figure 10-13
Annual Percent Change in Total General Fund Revenue Compared with Annual Percentage Changes in CPI and HEPI Inflation Indexes
Figure 10-14  The Changing Mix of All Funds Revenue in Dollars

Change Since FY88:
All Funds Budget  +78%
Figure 10-15

Components of All Funds Revenue

Change Since FY88:
- Hospitals: +102%
- Tuitions and Fees: +101%
- Federal Support: +94%
- State Support: +19%
- Other External: +50%
- Other Auxiliary: +76%
- Other Internal: +64%
Figure 10-16  The Changing Percentage Mix of All Funds Revenue

Change in % of Total Since FY88:

- Hospitals: +13%
- Tuition and Fees: +12%
- Federal Support: +9%
- State Support: -33%
- Other External: -16%
- Other Auxiliary: -2%
- Other Internal: -8%
Figure 10-17  State Appropriations as a Percentage of Operating Budgets
Goal

To restructure the University to better utilize resources to achieve and sustain quality and mission
Figure 11-1
Comparison of Institutional Support as a Percentage of Current Funds Expenditures and Transfers (FY92) at Various Peer Universities

Notes: 1) Current Funds Expenditures include auxiliary and hospital expenditures. 2) An asterisk indicates institutions with hospitals whose revenue and expenditures are included in the university's IPEDS Reports. 3) Minnesota data are FY93.
Figure 11-2  Full-time Equivalent Administrative Staff Supported on the General Fund

Change Since Fall Term 1987:
- Schools & Colleges: +7%
- Non-Schools & Colleges: +9%
- Medical Center: +16%
**Figure 11-3** Full-time Equivalent Administrative Staff Supported on the General Fund

![Bar Chart]

**Change Since Fall Term 1987:**

- Total General Fund FTEs: +8%
Figure 11-4  
Full-time Equivalent Administrative Staff Supported on All Funds

Change Since Fall Term 1987:

Schools & Colleges  +23%
Non-Schools & Colleges  +20%
Medical Center  +19%
Figure 11-5  Full-time Equivalent Administrative Staff Supported on All Funds

Change Since Fall Term 1987:
Total All Fund FTEs  +20%
Figure 11-6: Growth in Administrative Staff by Area (Fall 1985-Fall 1994)
To build private support of UM (private giving and endowment income) to a level comparable to state appropriation by 2000
### Table 12-1

**Largest Single Gifts to UM**

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Amount (in actual dollars)</th>
<th>Amount (in 1990 dollars)</th>
</tr>
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<tbody>
<tr>
<td>1931</td>
<td>Cook</td>
<td>$21 million</td>
<td>$200 million</td>
</tr>
<tr>
<td>1934</td>
<td>Rackham</td>
<td>$10 million</td>
<td>$90 million</td>
</tr>
<tr>
<td>1969</td>
<td>Mott Foundation</td>
<td>$7 million</td>
<td>$27 million</td>
</tr>
<tr>
<td>1976</td>
<td>Mott Foundation</td>
<td>$6 million</td>
<td>$15 million</td>
</tr>
<tr>
<td>1983</td>
<td>Benton Estate</td>
<td>$7.3 million</td>
<td>$10 million</td>
</tr>
<tr>
<td>1984</td>
<td>General Motors</td>
<td>$7.5 million</td>
<td>$10 million</td>
</tr>
<tr>
<td>1986</td>
<td>Kellogg Foundation</td>
<td>$10 million</td>
<td>$12 million</td>
</tr>
<tr>
<td>1988</td>
<td>Markey Trust</td>
<td>$8.2 million</td>
<td>$8 million</td>
</tr>
<tr>
<td>1989</td>
<td>Francois-Xavier Bagnoud Association</td>
<td>$6 million</td>
<td>$6 million</td>
</tr>
<tr>
<td>1992</td>
<td>Guardian Industries (William Davidson)</td>
<td>$30 million</td>
<td>$28 million</td>
</tr>
<tr>
<td>1994</td>
<td>Lurie Family</td>
<td>$12 million</td>
<td>$10 million</td>
</tr>
<tr>
<td>1994</td>
<td>Ford Motor Co.</td>
<td>$5.5 million</td>
<td>$5 million</td>
</tr>
<tr>
<td>1995</td>
<td>Markey Trust</td>
<td>$4 million</td>
<td>$3 million</td>
</tr>
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Figure 12.1  Private Giving (Gifts and Pledges)

Change Since FY88:

Gifts  +78%
Pledges  +46%
Figure 12-2  
Total Private Giving (Gifts and Pledges)

Change Since FY88:
Total  +71%
Figure 12-3  
Cumulative Growth in Number of Endowed Professorial Chairs
Figure 12-4  Campaign Goals and Progress for Selected Major Universities as of 1993-94
Goal: To increase endowment to $2 billion by year 2000
Figure 13-1 Growth in University Endowment

![Bar chart showing the growth in University Endowment from FY84 to FY94. The Y-axis represents Market Value in millions, ranging from $0 to $1,200. The X-axis represents fiscal years from FY84 to FY94. The chart shows an overall increase in market value over the years.](image-url)
Figure 13-2  Growth in Dollars Under Investment Management
Figure 13-3  Real Value Added to Endowment
Figure 13-4
Performance of Endowment Investments
Figure 13-5  Distribution of Endowment Investments
Figure 13-6  A Comparison of the Market Value of the Endowments for Various UM Units (March, 1993)
Goal

To complete the renovation or rebuilding of the physical infrastructure of the University
Figure 14-1  State Appropriations to UMAA for Academic Facilities
Figure 14-2  Progress on Meeting Major Capital Facilities Needs

Note: 1998 estimates are based on projects currently underway.
Figure 14-3  Total Dollar Value of Projects in Progress
Milestones

1983  Alumni Center
      Industrial and Operations Engineering Building
      Advanced Technology Lab

1984  Business Administration Computer Center and Executive Education Building

1985  Medical Science Research Building I
      Industrial Technology Institute
      Vocal Arts Center and Organ Studio
      Kellogg Eye Center
      Lorch Hall
      North Ingalls Building (Nursing)
      G. G. Brown Laboratory

1986  Electrical Engineering and Computer Science Building
      University Hospital
      Taubman Center
      Business Administration Executive Dorm

1987  Space Research Building addition
      Medical Inn

1988  Canham Natatorium
      Manufacturing Systems Engineering Lab (UM-Dearborn)
      Riverfront Campus Parking Deck (UM-Flint)
      Murchie Science Building (UM-Flint)
      Institute for Social Research (ISR) addition
      Physics renovation projects
      Information and Technology Division (ITD) move to Argus Building
Nursing School relocation to North Ingalls Building (NIB)
North Campus Commons expansion
Angell-Haven Courtyard Project
Chemical Sciences progress
Dow Building-G.G. Brown Laboratory Connector
Central Campus classroom renovation project
  UGLI
  Angell Auditoriums
  Angell-Haven Courtyard project
  All Central Campus classrooms
Cooley Lab renovation
  1989
  Medical Sciences Research Building II
  Dow Laboratory for Chemical Sciences
  Angell Auditorium project
  Old Main demolition
  UGLI Renovation
  E. H. Kraus renovation
  Nursing renovation in North Ingalls Building (NIB)
  West Engineering renovation
  Ingalls Mall Phase II
  1990
  Schembeckler Hall
  School of Information and Library Studies renovation
  Ingalls Mall Phase III
  Shepard Wing—Revelli Hall
  Pharmacy Addition
1991  North Campus Family Housing Center
       General Campus Renovation Project (UM-Dearborn)
       University Pavilion (UM-Flint)
       Randall Laboratory
       1908 and 1948 Chemistry Buildings
       UM Stadium Project
       Child and Maternal Health Care Center
       UMH Hospital Child Care Center
       North Campus Community Center

1992  Administrative Services (acquiring Wolverine Towers)
       Pharmacy Wing
       Medical Science Research Building III (schematic drawings)
       UM Stadium Renovations (second phase completed)

1993  Francois-Xavier Bagnoud Building (FXB Aerospace Laboratory)
       Athletics Administration Building

Projects Underway:
       East Engineering Renovation  (construction started-8/93)
       Randall Laboratory Addition  (construction started-7/93)
       ULGI Renovation  (construction started-6/93)
       ITIC  (state funding approved, construction started-11/93)
       Engineering Center  (state funding approved, construction started)
       C. C. Little renovation  (state funding approved)
       Angell Hall renovation  (state funding approved)
       Administrative Services (moves into Wolverine Towers)
       Medical Sciences Research Building III (under construction)
       Cancer and Geriatrics Center (construction started, 8/93)
UMH Parking Structure (preparing for bid)
Mott II (under construction)
Taubman Expansion (working drawings)
UM Stadium renovations (third phase underway)
UM Golf Course Clubhouse (under construction)
UM-Flint Library (under construction)
UM-Flint takeover of State Office Building (state funding approved)
UM-Dearborn Classroom Project (state funding approved)
Social Work Building (working drawings)
Angell-Haven Connector (schematic drawings)
Hill Auditorium (schematic drawings)
PROJECTS IN PLANNING

ANGELL/HAVEN HALL CONNECTOR
ART MUSEUM
HILL AUDITORIUM RENOVATION AND ADDITION
INTERCOLLEGIATE ATHLETICS TENNIS CENTER
MEDICAL CENTER NORTH ENTRANCE PARKING STRUCTURE
NORTH CAMPUS BELL TOWER
SCHOOL OF SOCIAL WORK BUILDING
VISITOR'S CENTER
DEARBORN GENERAL CAMPUS RENOVATION - PHASE II
DEARBORN CAMPUS SUPPORT SERVICES BUILDING

PROJECTS COMPLETED DURING 1993-94

CHEMICAL SCIENCES BUILDING - PHASE II
Completed November, 1993
Financed by gifts and University funds

FRANÇOIS-XAVIER BAGNOUD BUILDING
Completed September, 1993
Financed by gifts and University funds

INTERCOLLEGIATE ATHLETICS - ADMINISTRATION BUILDING RENOVATION
Completed December, 1993
Financed by Athletic funds

KELLOGG EYE CENTER AND TURNER CLINIC
MECHANICAL ROOM AND RENOVATION
Completed March, 1994
Financed by gifts and Hospital Funds

MEDICAL SCIENCE RESEARCH BUILDING III
Completed June, 1994
Financed by University funds
Central Campus Renovations - Angell Hall
Work started in March, 1994 with an estimated completion date of July, 1996
Financing is from a State appropriation and University funds

Central Campus Renovations - C. C. Little
Work started in April, 1994 with an estimated completion date of August, 1996
Financing is from a State appropriation and University funds

Central Power Plant and North Campus Electrical Expansions
Work started in October, 1993 with an estimated completion date of June, 1995
Financing is from Utility system revenues and a bond issue

East Engineering Building Remodeling
Work started September, 1993 with an estimated completion date of March, 1996
Financing is from University funds and a bond issue

Integrated Technology Engineering Center
Work started in April 1994 with an estimated completion date of December, 1995
Financing is from a State appropriation and University funds

Integrated Technology Instruction Center
Work started in December 1993 with an estimated completion date of June, 1996
Financing is from a State appropriation and University funds

Mary Markley and South Quad Renovation
Work started in May, 1993 with an estimated completion date of May, 1995
Financing is from Housing revenues and a bond issue

Michigan League Improvements - Phased
Work started in March, 1990 with an estimated completion date of March, 1995
Financing is from University funds

Randall Laboratory - Addition
Work started in June, 1993 with an estimated completion date of August, 1995
Financing is from University funds and a bond issue

Randall Laboratory Renovation - Phased
Work started in March, 1990 with an estimated completion date of December, 1994
Financing is from University funds

Undergraduate Library Addition, Renovation and Connector Bridge
Work started in May, 1993 with an estimated completion date of January, 1995
Financing is from University funds and a bond issue

University Hospitals Cancer and Geriatric Centers
Work started September, 1993 with an estimated completion date of August, 1996
Financing is from Hospital funds, Medical School grants, and a bond issue

University Hospitals - Mott Renewal Project
Work started in August, 1992 with an estimated completion date of February, 1995
Financing is from Hospital funds

Flint Central Energy Plant and Utility Distribution
Work started in April, 1993 with an estimated completion date of July, 1995
Financing is from University funds and a bond issue

Flint Library and Learning Resource Center - The Francis Willson Thompson Library
Work started in December, 1992 with an estimated completion date of September, 1994
Financing is from gifts and a bond issue
At special groundbreaking ceremonies last fall, under the theme of "Building on Tradition," the University recognized the many campus-wide projects designed to enhance and renew University facilities. The following section highlights these projects, which include: renovated classrooms, additional office space, modernized laboratories, advanced medical facilities, and combined reference collections.

**Hill Auditorium Renovation and Addition**

Plans: New seats, lighting, and air conditioning are included in plans for the auditorium renovation. An addition will be constructed at the rear of the building.

Price tag: $20 million, to be financed by gifts as part of the Campaign for Michigan.

Projected completion: To be determined.

**School of Business Administration's Kresge Business Administration Library, Computer and Executive Education Building, and Executive Residence**

Features: One of the nation’s largest business libraries, Kresge features open stack collections on three levels, areas for study carrels, individual work areas for research, and group study rooms. The Computer Executive Education Building houses the School’s computing and research facilities, including 170 advanced microcomputers, and large- and medium-sized case discussion rooms, seminar rooms, and offices. The Executive Residence has eight classrooms, offices, and offers complete hotel services.

Price tag: $15 million, financed by gifts and the School of Business Administration.


**School of Nursing Building (Formerly 400 North Ingalls Building)**

Features: Part of what was once the old St. Joseph Mercy Hospital, the building was renovated and converted into administrative offices and classrooms for the School of Nursing.

Price tag: $3.5 million, financed by the Medical School and the University.

Completed: 1990.
E. H. Kraus Natural Science Building

Features: Renovations include modern heating, ventilating, and lighting systems for the entire building. Older laboratories on the third and fourth floors were renovated for heavy-duty biological research.

Price tag: $12.5 million, financed by the state and the University.


School of Social Work

Plans: A 5-level building is proposed at the southwest corner of East University and South University, to be joined to the School of Education by a connector bridge.

Price tag: $22 million, to be financed by gifts.

Projected completion: To be determined.

Randall Laboratory Renovation and Addition

Plans: A 4-story addition and an oversized basement to be added to the west side of the building will provide state-of-the-art physics research laboratories.

Price tag: $22.4 million, financed by the issuance of tax-exempt bonds secured by a pledge of student fees and the University.

Projected completion: Mid-1995.

Angell Hall Courtyard Computer Terminal and Laboratory Facility

Features: The 300-computer terminal facility was constructed by enclosing the courtyard of the Angell-Mason complex.

Price tag: $2.7 million, financed by the University; Literature, Science, and the Arts; and the Information Technology Division.


Undergraduate Library Renovation and Addition

Plans: Renovations and approximately 26,000-square-foot addition to the UGLi, which will also get a new facade of brick and limestone. Connector bridges will link the library to Harlan Hatcher Graduate Library and West Engineering.

Price tag: $11 million, financed by gifts, issuance of tax-exempt bonds secured by a pledge of student fees, and the University.

Alumni Center
Features: Built on the mall that runs between the Harlan Hatcher Graduate Library and Horace H. Rackham Building, the Alumni Center meshes in color and style with its neighbor, the Michigan League. The center houses a library, meeting rooms, and offices. A 2-story atrium welcomes visitors to the 32,000-square-foot center. Price tag: $3.5 million, financed by gifts. Completed: 1983.

East Engineering Renovation
Plans: Renovations to the building, which will become home to the departments of mathematics and psychology. Price tag: $28.6 million, financed by the issuance of tax-exempt bonds secured by student fees and the University. Projected completion: March 1996.

Willard Henry Dow Laboratory, Chemistry Building Renovation
Features: The three-phase project included a new building of 270,000 gross square feet and renovation of the 1908 and 1948 buildings. One of the most striking features of the Willard Henry Dow Laboratory is its large atrium. The new facility plus renovations to the old made it possible to accommodate several related programs—biophysics, macromolecular and protein structures—in one Central Campus location. Price tag: $45 million for Willard Henry Dow Laboratory and $19.9 million for renovations, financed by the state, gifts, and the University. Completed: 1989.

Tappan Hall Addition
Features: This 10,000-square-foot addition houses the U-M’s Fine Arts Library in a fire-safe and climate-controlled environment. Price tag: $2.3 million, financed by gifts, the University, and Literature, Science, and the Arts. Completed: 1983.
C. C. Little Building and Angell Hall Renovations

Plans: Heating and cooling systems, elevators, restrooms, and other basic components are included in these two renovations, as well as upgraded teaching and research space. Price tag: $32.5 million, financed by the state and the University. Projected completion: Mid-1996.

Kellogg Eye Center

Features: The Kellogg Eye Center consolidates one location the inpatient, outpatient, research, educational, and administrative activities of the Department of Ophthalmology, providing a comprehensive referral center offering highly specialized care to more than 34,000 patients annually. Price tag: $8.5 million, financed by gifts and the University. Completed: 1985.

Medical Science Research Building III

Features: The 207,000-square-foot building provides modern research space for the Medical School. MSRB III houses both basic research and clinical departments, encouraging interdisciplinary, complementary work. Price tag: $50.1 million, financed by the University. Completed: 1994.

Hospitals Complex: University Hospital, A. Alfred Taubman Health Care Center, and the Maternal and Child Health Center (MCHC)

Features: University Hospital with 558 beds, is the largest of the Medical Center’s seven hospitals. Its 11 floors are spread across more than 1 million square feet. Taubman Center houses state-of-the-art specialty clinics and outpatient services. This 4-story building connects to the new University Hospital and the 2,000-car patient/visitor parking structure. The MCHC, an addition to Taubman Center and Mott Hospital, allowed for the relocation of a number of units. The pediatric intensive care unit was expanded, and a new neonatal intensive care unit was built. Price tag: approximately $400 million, financed by the state, gifts, and the University. Completed: University Hospital and the Taubman Center 1986; the MCHC 1992.
**Cancer and Geriatrics Centers**

Plans: The two centers, housed in a 10-story building west of University Hospital, will provide research and clinical space. Also planned adjacent to the centers is a 1,000-car parking structure, possibly topped by a 5-story office building.

Price tag: $88.6 million for the Cancer and Geriatrics Centers, financed by the Hospital, Medical School, and a bond issue.

Projected completion: August 1996.

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**Mott Children's Hospital Renovation and Addition**

Plans: A 6-floor addition is being built to the west of the building. Patient rooms are being renovated in the first major project of this nature since Mott was built 23 years ago. The addition and renovations are needed to meet the demand for more acute pediatric care.

Price tag: $49 million, financed by the Hospital.


---

**North Campus Commons Addition**

Features: The 44,700-square-foot addition includes retail space, a mall, office space, and two guest suites. Renovation of the existing Commons Building expanded the lounge and informal snack bar space, provided an elevator for handicapped access to all levels and a computing center branch site.

Price tag: $4.36 million, financed by the issuance of tax-exempt bonds secured by a pledge of student fees.


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**Engineering Center Building**

Plans: The 65,000-square-foot academic and student services center to be built south of the Walter E. Lay Automotive Laboratory will provide space for undergraduate student records, counseling and financial aid offices, engineering placement, College of Engineering administrative offices, and engineering student organizations plus academic space for the Department of Industrial and Operations Engineering.

Price tag: $15 million, financed by the state and the University.

**Integrated Technology and Instruction Center**

Plans: A high-technology facility on North Campus, the center will have instructional areas, including a library and study space, design laboratories, and areas for musical performances. The center will stress links between engineering, architecture, music, and art. The 3-story building will be connected to the Chrysler Center and the North Campus Commons addition.

Price tag: $42 million, financed by the state and the University.

Projected completion: June 1996.

**Electrical Engineering and Computer Science Building**

Features: The 232,000-square foot, 4-story building is connected to the G. G. Brown Building to the north and the Walter E. Lay Automotive Laboratory to the south. It houses the Department of Electrical Engineering and Computer Science, parts of mechanical engineering and applied mechanics, administrative offices, other engineering programs and student services.

Price tag: $30 million, financed by the state.

Building completed: 1986.

**Herbert H. Dow Laboratory**

Features: This 3-story red brick, steel, and glass structure houses the departments of Chemical Engineering and Materials Science and Engineering.

Price tag: $10.8 million, financed by gifts.


**François-Xavier Bagnoud Building**

Features: The 93,400-square foot aerospace engineering facility includes a large atrium, 30 teaching and research labs, 156-seat lecture hall, 3 classrooms, 30 faculty/staff offices, 30 graduate student offices, and a student lounge. The building is named forFrançois-Xavier Bagnoud, a U-M aerospace graduate who was killed in a helicopter crash.

Price tag: $14.7 million, financed by gifts and the University.

Goal

To reposition the UM as a "world university"
Figure 15-1  Number of International Students

![Bar Chart]

- 2,800
- 2,700
- 2,600
- 2,500
- 2,400
- 2,300
- 2,200
- 2,100
- 2,000

Fall Term

- 1983
- 1984
- 1985
- 1986
- 1987
- 1988
- 1989
- 1990
- 1991
- 1992
- 1993
- 1994
Goal

To make UM a leader in knowledge transfer and economic impact
Figure 16-1  Royalty Revenue

Change Since FY88: +154%
Figure 16-2  Intellectual Property Activity

Changes Since FY88:
- Disclosures: +8%
- Patent Applications: 34%
- Patents Issued: -84%
Goal

To develop the nation’s leading programs in men’s and women’s intercollegiate athletics
Figure 17-1  Rankings of Men's Sports Programs

Note: The article ranks universities in each of ten NCAA Division I sports. Teams are ranked from 1-20, with 20 points going to the national champion.
Figure 17-2  Rankings of Women's Sports Programs

Note: The article ranks universities in each of ten NCAA Division I sports. Teams are ranked from 1-20, with 20 points going to the national champion.
<table>
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<tr>
<th>Table 17-1</th>
<th>Conference and National Rankings of Men's Athletics</th>
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Table 17-2

Conference and National Rankings of Women's Athletics

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Figure 17-3  Number of Freshman Men's Football Participants Enrolling and Number Graduating Six Years After Initial Entry
Figure 17-4  Number of Freshman Men's Basketball Participants Enrolling and Number Graduating Six Years After Initial Entry
Figure 17-5  Number of Freshman Men's Baseball Participants Enrolling and Number Graduating Six Years After Initial Entry