

Michigan Today

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The University of Michigan

U-M Medical School Opening "Window on the Brain"

A \$7.87 million, five year grant will enable the U-M Medical School to build and operate a highly advanced nuclear medicine research facility which, in effect, produces "a window to the living brain."

The medical grant from the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS) is one of the largest ever received by U-M.

Thought Process Seen

The U-M PET (Positron Emission Tomography) Regional Research Center will allow scientists to observe the brain actually process thoughts and actions without going inside the body of the volunteer subjects. It also will provide images of the brain's gray and white matter.

Computerized axial tomography (CAT) x-ray scanners, which have recently become the major diagnostic tools in large medical centers only provide images of the brain's gray matter.

Research in the PET Center will help solve serious nervous system disorders such as multiple sclerosis (MS), epilepsy, stroke, phenylketonuria (PKU), and Huntington's Disease. It may later be used in psychiatric research, as well.

Inside-out Imaging

The new facility will include a cyclotron (atom smasher) and a PET brain scanner. Instead of conventional brain x-rays in which the rays are beamed through the head to a film plate on the other side, the PET scanner uses an inside-out imaging method. PET technology uses special medications which are made weakly radioactive by the cyclotron and give off positrons for brief periods of time from inside the brain after being injected into or inhaled by the patient.

Photon particles from these positron emissions, as they are detected by the PET scanner encircling the head, create a television image of living tissues for scientists. These show the brain absorbing blood sugar, oxygen, and other chemicals necessary for its metabolism as it processes thoughts and directs body movement.

For example, if the subject thinks about moving his arm, the area of the brain controlling the arm will "burn" more glucose (blood sugar) and this will show up on the PET scanner.

Radioactive "Tags"

The cyclotron is a large magnet operated by electricity that energizes atomic particles called protons which strike chemical targets. These targets become short-lived radioac-

tive isotopes used to "tag" metabolically active compounds such as glucose or ammonia injected into the patient.

Doctors say the radioactive doses received by patients are "short-lived" and no greater than that from an ordinary x-ray.

A New Beginning

The research project has been hailed as "the beginning of a new era in the study of the neurosciences and psychiatry," by its directors: Dr. William H. Beirwaltes, head of U-M's Nuclear Medicine Division; Dr. John W. Keyes, professor of internal medicine and radiology, and director of U-M Mental Health Research Institute; and Dr. Sid Gilman, chairman of neurology.

The highly respected British medical journal *The Lancet* reviewed

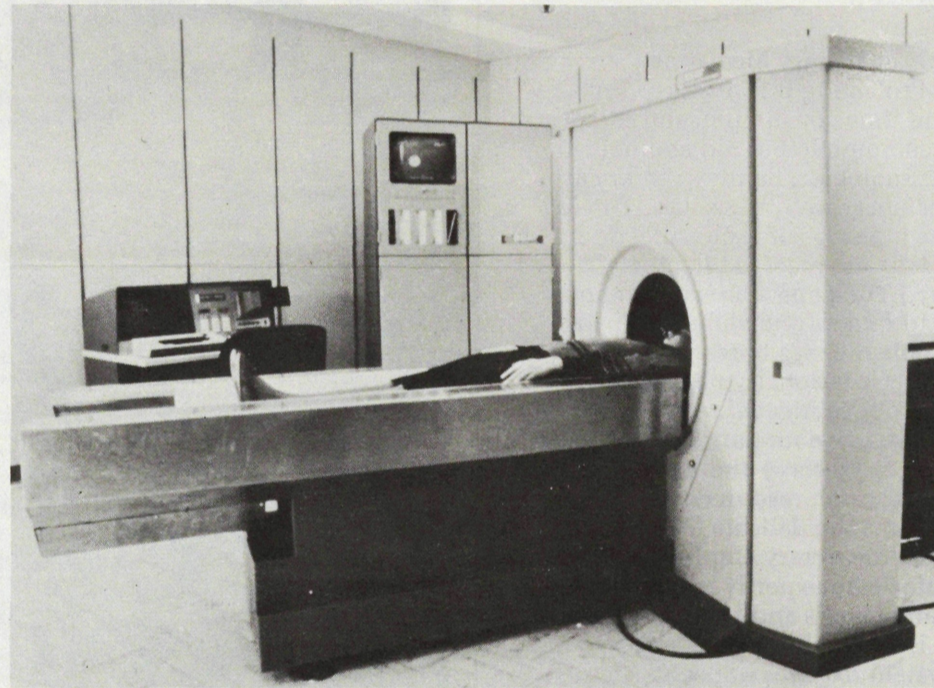
the history of brain research methods and concluded that the new positron emission tomography method is the most promising tool yet devised for neurologic disease research. "This development signals the advent of a new era in the neurosciences and probably in psychiatry, too," the journal editors said.

Construction Needed

U-M will spend about \$2.5 million in construction of the PET Regional Center. It will include an underground cyclotron facility behind the U-M Medical Library (connected to the Kresge Medical Research Center I building) and renovation of an adjacent lower level of the library. Plans call for a radiochemistry laboratory, nuclear pharmacy laboratory, computer room, head-imaging room, patient preparation room, and offices. The facility is scheduled to begin operation in December 1981. Studies will be conducted on 50 volunteers in 1982; 100 to 150 the following year.

One of Two

John Hopkins University in Baltimore, Md., is the only other institution to receive a large multi-million dollar grant for positron emission tomography projects. Seven other institutions across the country have received smaller grants.



Here is the PET Scanner in action with the patient's head in the detector array. To the left rear is the operating console with a teletype; the console to the center rear is a computer used to assemble the pictures.

Outlook for the 80's

U-M will see a number of changes in the eighties.

Among the events that will take place during the early part of the decade:

- Inauguration of Harold T. Shapiro, U-M's 10th president, April 14, 1980.
- Appointment of a new vice president for academic affairs.
- Appointment of Chancellors for U-M Flint and U-M Dearborn.
- Continuing progress of the Hospital Replacement Project. Construction anticipated to begin in 1981-82.
- New construction:
 - Athletics fieldhouse, February 1980. Completion by September 1980.
 - Dow Engineering Building (Chemical and Metallurgical Materials) on North Campus, April 1980. Completion about October 1982.
 - Power Center addition, May 1980. Completion about May 1982.
 - Alumni Center, June 1980. Completion about June 1982.
- Completion of current construction:
 - Taubman Medical Library, Sept. 1980.
 - Ford Presidential Library, Jan. 1981.
 - Law School Library, June 1981.

President Shapiro in Office, Inauguration Date Set

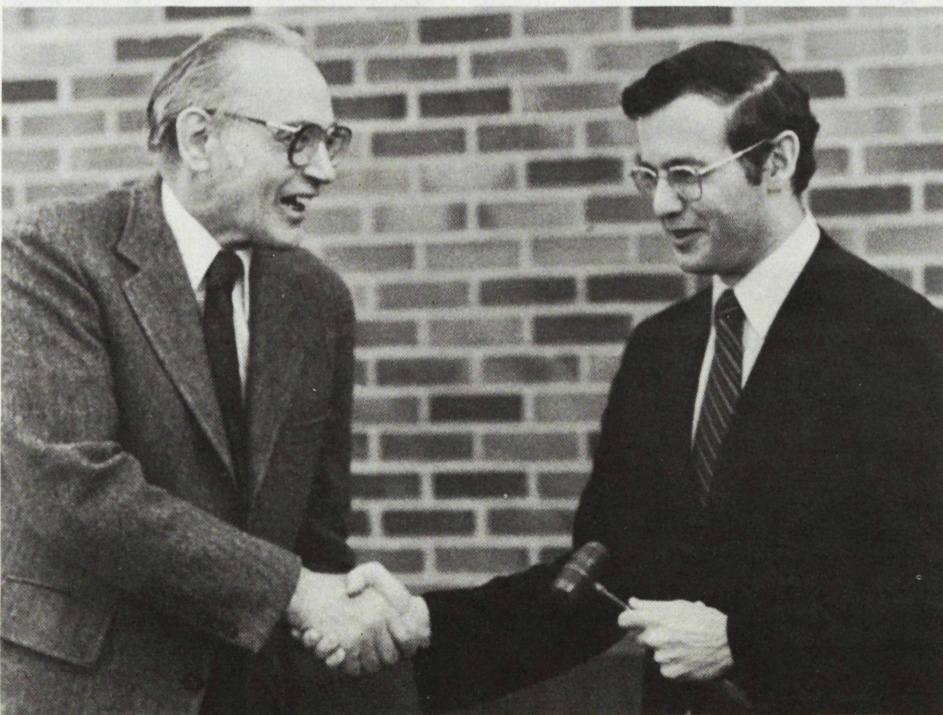


Photo by Bob Kalmbach

At the December Board of Regents meeting, Interim President Allan Smith ceremonially passed the gavel to Harold T. Shapiro, U-M's 10th President. The small wooden hammer was fashioned from a campus fence in 1882 for University President James B. Angell.

The gavel has been passed, and Harold T. Shapiro is in office as the University's 10th President. He assumed that role on January 1.

Shapiro will be inaugurated April 14, 1980. The ceremony will take place at 10:30 a.m. in Hill Auditorium. Arrangements for the inauguration are being made by a U-M faculty-staff-student committee.

Representatives from many colleges and universities are expected to attend. They will march in the academic procession and take part in the inaugural activities.

Shapiro, professor of economics and public policy at U-M and vice president for academic affairs since 1977, was elected President by the U-M Regents last July 27.

He succeeds Robben W. Fleming, who left U-M to become president of the Corporation for Public Broadcasting last Jan. 2, and Allan F. Smith, professor of law and former vice president for academic affairs who has been interim president since Fleming's departure.

Michigan's Unique Look at History—The Bentley Library

What do the papers of Michigan Governors, 18th and 19th century poems written for newsboys, the diary of an early settler, and photos of train wrecks have in common?

All are part of the holdings of the Michigan Historical Collections housed in the Bentley Historical Library on U-M's North Campus. Each provides a valuable bit of history about the State of Michigan.

The Bentley Library keeps not only the records and manuscripts of the famous, but also the memorabilia of the "little" man or woman for a broader perspective of the state's past.

A Cross-section

Among the famous are many Michigan governors including G. Mennen Williams and George Romney, all U-M Presidents, and U-M alumni such as Alfred P. Noble who was a consulting engineer for the Panama Canal, and the Upjohn family of pharmaceutical fame.

Equally important to an historical perspective are bits and pieces from ordinary people. For example, the news carriers' verse, often penned anonymously by people such as Benjamin Franklin and Nathaniel Hawthorne, summarized the preceding year in its appeal for money for newsboys.

The diary of an Ann Arbor pioneer woman provides detailed descriptions of her home, the moral character of the town, visits by Indians, even the rent she paid.

Papers of U-M alumni and faculty who visited China during the 19th and 20th centuries provide a first-hand account of events in Chinese history.

The numerous photo collections immortalize the architecture, costume, and customs of the time.

Old radio and TV tapes provide a look at our immediate past and the growth of these technologies.

"Things like this give insight into the everyday experiences of people and the way they felt about their lives and the society they lived in, to help weave the fabric of the whole historical society," says Robert M. Warner, library director.

Primary Source

The Bentley Historical Library has been a primary source of information for much research, and its staff continually searches for new historical sources. One recent project sought documents for the migration of various ethnic groups in the settlement of Michigan. The research involved surveying the records of historical and genealogical societies and churches throughout the state and in four foreign countries.

The holdings of the Michigan Historical Collections have come as gifts to U-M. Even the library building was a gift, primarily from Mrs. Arvella Bentley in honor of the late Alvin M. Bentley, congressman and U-M regent. These gifts provide a valuable historical resource for the University and the state.

Precautionary Measures

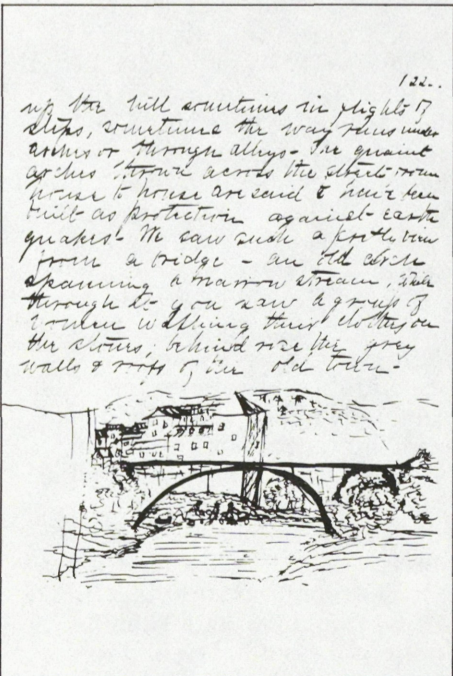
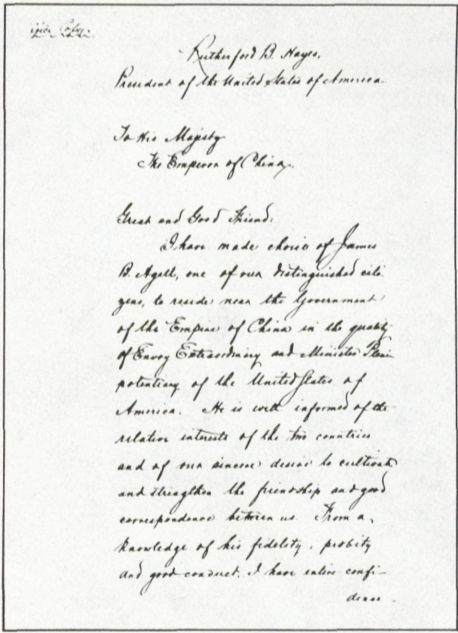
Protecting this resource is costly and time consuming, and it requires a combination of old and new technologies. Bentley Library associates carefully sort and catalog the holdings of each collection. (Many are received in great disarray.) The papers are kept in non-acid folders and stored in special archival boxes to retard deterioration. Occasionally new collections must be fumigated.

Extensive microfilming is necessary to preserve and make available for research resources which have become too delicate for use. In addition, the library employs a conservator who expertly restores and repairs papers and bound volumes.

Even the library's fire prevention system requires a special, sophisticated technology. The system uses very expensive Halon gas instead of water which would be disastrous for the delicate, valuable papers in the collection.



From the Michigan Historical Collections, (far left) presidential letter of introduction for James B. Angell, 1880, (lower left) map of the Michigan Territory, 1822; (near left) page from the diary of Lois Angell, Peking, China, 1881; (above, from top) U-M Banjo Club, 1892; a logging operation, circa 1789; University Hall, circa 1887; Bentley Library conservator James W. Craven using a press to flatten a water-damaged book.



English Composition Board Efforts Paying Off

Results of efforts to improve students' writing skills in the School of Literature, Science, and the Arts have surpassed expectations for the trial year.

According to Daniel Fader, professor of English and chairman of the English Composition Board (ECB), expectations were exceeded in (1) the number of students voluntarily attending writing workshops sponsored by the program, (2) the number of high school teachers consulting with faculty about writing instruction, (3) the number of LSA departments offering upper-level courses with a writing requirement, (4) the number of incoming students exempted from introductory composition courses.

More than 100 students a week

take advantage of ECB's voluntary program of writing workshops designed to help students learn how to organize and write papers, Fader reports. That figure is about 50 percent more than expected.

Teachers Seminars

During the year, ECB members conducted 120 seminars at high schools and community colleges to consult with teachers about the English composition program. The morning session of the seminars was directed to all teachers, while the afternoon focused on teachers in the communication fields.

In orientation sessions over the summer, the incoming students wrote 4,360 papers. Two readers

read each paper to determine whether the student would take a tutorial in writing, introductory composition, or would be exempted from the introductory composition requirement. As a result, 350 students (about 7 percent) received extra help during the fall in tutorials designed to develop their writing skills.

Upper Level Requirement

The ECB program mandates that students complete a writing requirement in upper level courses in their concentration. The number of academic units offering such courses increased from 9 to 19 over the past year, Fader said.

High School Seniors Sample U-M Academia

More than 200 talented high school seniors from Michigan and ten other states had a preview of academic fare at U-M in two special Saturday seminars held during the fall 1979 term.

The program, titled "What You Know Won't Hurt You," was the idea of U-M English Professor Bert Hornback. Hornback directed the program and recruited faculty to conduct the seminars.

Honors Students Attend

Students, who were invited on the basis of their scholastic performance, participated in two 90-minute seminars followed by lunch in a residence hall, a tour of the campus, and an opportunity to speak with admissions officers for participants considering attending U-M.

The primary motivation for the program was not recruiting, however. Hornback points out, "We agreed to undertake it as an academic service." The university selected students to attend the seminars who potentially could derive the most from the program.

Seminar Topics

According to Millard Storey, assistant director of admissions, "seminar topics [were] . . . designed to appeal to a broad range of student interests and to be attractive to students who have established some expertise in specific areas through their advanced courses, independent study, and reading."

As a result of the success of the program, another is anticipated for next fall.

Seminar topics included: "The Uses of Philosophy," "Freedom," "Why the Living Study the Dead," "Vietnam and the Misuse of History," "Scientific Observation: Seeing What You're not Expecting," "Prenatal Diagnosis of Inherited Diseases," "Beyond Counting: The Uses of Higher Mathematics," "What Relativity Did to the Universe," "The Uses of Literature," "Oedipus: Criminal, Fool, or Hero?" "Social Science and the Lesson of Socrates," "Ethics and Public Policy: The Preferential Treatment of Minorities," "The Computer and Society," "Frogs: A Look at Our Beginnings," "The Social Role of the Mass Media," and "Meaning in the Movies."

(Vital Margin, continued)

provided opportunity for people at all levels and resulted in a class of individuals capable of functioning in our technological society.

But, he noted, declining support for education and the rising costs are making it increasingly difficult for upwardly mobile groups to gain access to higher education. Left to its current course, higher education may soon become a privilege of the elite—to the great detriment of our civilization.

U-M is fortunate to be one of the first tax-assisted public institutions to develop a base of private financial support among its alumni and friends. Our donors recognize the importance of such discretionary funds in maintaining U-M's educational leadership. With their help, Michigan will continue to maintain that position in the 80s.

The Vital Margin

Gifts to U-M Set Records in 1978-79

by Michael Radock
Vice President for University Relations and Development

Fiscal 1978-79 was the best year ever for fund raising at The University of Michigan. The University received a record \$37.6 million in private voluntary support.

Gifts during the prior year, 1977-78, amounted to \$28.5 million. The number of donors, 57,133, also was a record total at U-M, surpassing last year's 55,594.

Top Ranking

Such participation and generosity has helped to rank Michigan continuously among the top dozen colleges and universities in the nation in private support.

These important gift dollars are positive evidence that Michigan's alumni and friends are committed to maintaining the University's academic excellence. Michigan alumni have a great tradition of providing the "vital margin" which makes the difference between an ordinary institution and a distinguished university.

Donors recognize that private support is necessary to underwrite programs, activities, and facilities that are not provided by state appropriations and student tuition.

Contributor Categories

A breakdown of contribution sources indicates that foundations contributed \$13.3 million (35 percent of the total), an increase of more than \$5 million over the prior year. Corporations gave \$12.6 million (34 percent), compared to \$10 million in 1977-78. Individuals contributed \$5.8 million (15 percent). Deferred gifts, bequests, and trusts accounted for \$3.4 million (9 percent).

Associations, organizations, and miscellaneous other sources contributed \$2.4 million (7 percent). (See accompanying figure.)

The totals for foundation, corporation, and individual giving in 1978-79 were the highest ever at the University.

The success of U-M's fund raising program can be attributed in large part to the broad-based institutional commitment upon which our program is built. A university-wide

commitment is essential to a flourishing program of private financial support. Other institutions of higher education envy the teamwork of our dedicated Regents, alumni, faculty, staff, administrators, students, and friends.

Major Donors

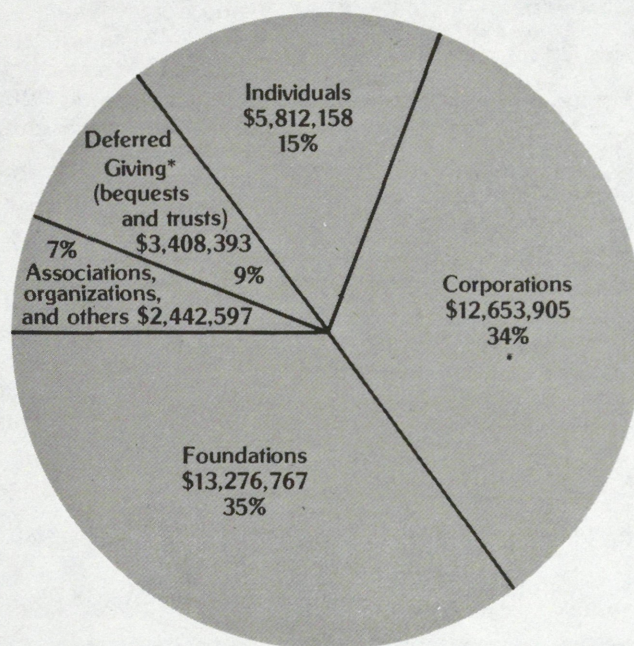
The increase in major donor support is apparent in the success of our newest donor recognition groups. The James B. Angell Society for donors of \$1 million or more and the \$50,000-level Henry P. Tappan Society, both established in 1978, have recognized 45 and 88 new members, respectively.

In its first year, the University Deans Club recognized 1,092 individuals making annual gifts of \$500 or more. U-M's widely acclaimed Presidents Club has also flourished, setting an all-time record for new members at 360. Presidents Club members commit a minimum of

revenues going to higher education has been in decline for almost two decades. The decline is more pronounced in Michigan than in the nation as a whole.

Michigan, ranked 10th nationally in per capita income, spends more than most states on social services (41 percent of the budget) and less on higher education (16 percent.) Ten years ago, it ranked 17th among states in the share of taxable income allocated to higher education. This year it was 35th, and falling.

The impact of this decline in support often goes unnoticed because U-M has retained considerable prestige. We have recently been ranked among the top five in the nation for quality of faculty, number of outstanding professional schools, public and private research grants, and graduate programs in education. But observers note that the slippage is there, too. For example, some Michigan programs in physical and life sciences were not



\$10,000 to the University.

It is a widely accepted fact that private support is rapidly becoming a necessity for public universities. In the 1980s, higher education faces challenges unforeseen 20 years ago: competition for students and financial support among public and private institutions of higher education, increasingly difficult relationships with government at all levels, and severe financial limits with tough priority decisions and detailed accountability.

The Hard Facts about the Future . . .

Nationally, the share of the country's gross national product and tax

ranked because of "continuing deterioration of facilities."

Over the years, Michigan universities have been compelled to raise tuition until they are now among the highest in the nation.

Situation Summarized

Wayne State University President Thomas N. Bonner summarized this situation at the U-M winter commencement. He pointed out that higher education is the central building block of our civilization, the basis of the quality and strength of our post-industrial society. It has

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Biological Station to Be Part of Worldwide Program

The U-M Biological Station has been selected by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as one of the first three non-federal U.S. conservation areas to participate in a worldwide program of ecological research.

UNESCO has officially designated the station an International Biosphere Reserve. It joins a network of 162 Reserves in 42 countries under UNESCO's Man and the Biosphere Program (MAB).

According to Prof. David Gates, director of the station, the MAB Program seeks "to develop the basis within the natural and social sciences for the rational use and conservation of the biosphere—the portion of the earth's crust and lower atmosphere which contains life—and for the improvement of the relationship between men and the environment."

U-M Attracts Increased Research Funds

Sponsored research expenditures at U-M totaled \$98,571,956 in 1978-79, an 18.4 percent increase over the previous year.

Inflation continues to erode the purchasing power of research funds, however. U-M Vice President for Research Charles G. Overberger points out that "Although research expenditures increased 79.6 percent over the last 10 years, in constant dollars the increase is only 1.3 percent."

Federally sponsored research projects accounted for \$70,313,459 of the total, an increase of 16 percent. Other sources of research income included industry, professional societies, and associations, \$9,310,865; foundations and health agencies, \$5,670,780; endowment income, \$1,476,876; state and local governments, \$1,453,975; and other schools and universities, \$1,271,320.

U-M Flint Scholarship Benefits Community

U-M Flint was recently awarded a \$98,000 scholarship grant from the Mallery Charitable Trust. The funds are designated for music and theater scholarships and will be paid over the next four years.

The scholarships stipulate that recipients share their talents with the Flint and Genesee County

communities without monetary credit or compensation. Music scholars have performed with the U-M Flint Woodwind Quintet and Jazz Ensemble, and have provided recorder instruction to elementary students. In 1978, theater scholarship recipients presented a show at 10 high schools and developed a series of sketches on the history of Flint for area service clubs.

New Library Equipment Helps Blind Students

Blind students at U-M will be aided by more than \$35,000 worth of special library equipment including a Kurzweil Reading Machine that converts ordinary printed material into spoken english.

U-M is the first public institution in the state—and one of the first in the nation—to acquire the \$22,000 Kurzweil machine.

The new equipment will help both blind students, and handicapped students with reading or writing disabilities to study independently and compete more equitably with other students.

Among the other new equipment is a machine that magnifies print up to any size on a closed circuit TV screen and can be used with special electric typewriters, and one that converts printed images into tactual representations to decipher charts and maps.

A grant from the Michigan Commission for the Blind will pay for 80 percent of the cost of the equipment. U-M will cover the balance.

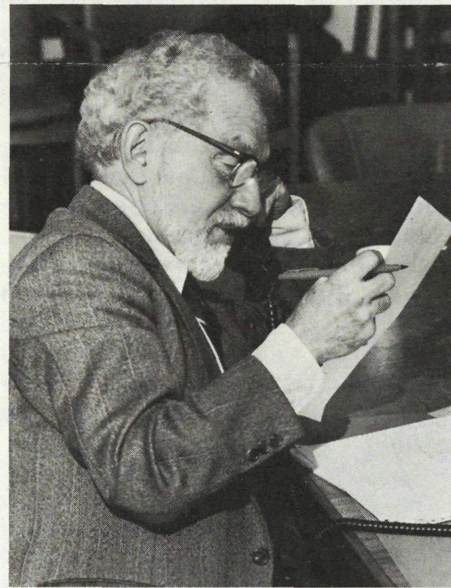


Photo by Paul Jaronski
Ben Yablonky, professor of journalism, participated in the LSA Deans Club Telethon, along with other faculty and staff members. Their efforts netted the school \$4,250 in pledges from the Deans Club members.

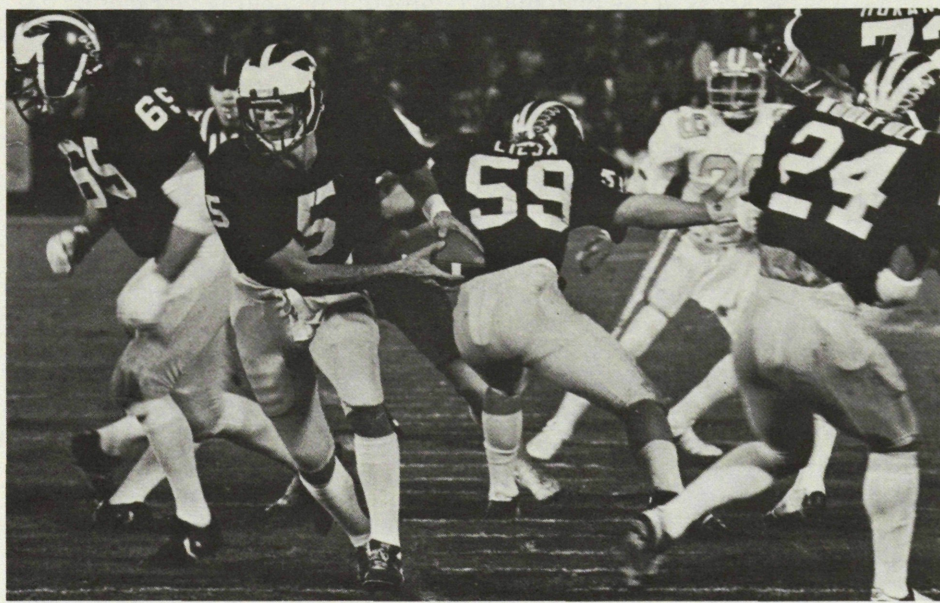


Photo © 1979 Loren Portnow

Michigan concluded a bittersweet season on the gridiron, losing a close-fought, 17-15 Gator Bowl contest to the North Carolina Tar Heels.

The 1979 season produced some exciting wins, including freshman Anthony Carter's heroic punt return for a TD against Northwestern, and his amazing catch of John Wangler's pass with seconds left on the clock for a win over the Hoosiers. It also had some hard losses such as the fourth quarter blocked punt that the Purdue Boilermakers ran in for the game-clinching, conference-clinching (for Ohio State) TD.

Enrollments Increase Slightly

A total of 46,680 students enrolled in U-M during the fall, 225 more than a year ago. The increases were seen on the Flint and Dearborn campuses.

Enrollment at U-M Dearborn was 6,400, an increase of 443; at U-M Flint it was 4,122, an increase of 201. In Ann Arbor enrollment dipped 401 students to 35,423, while enrollment in credit extension courses across the state was down 18 students at 735.

Of the 35,423 total on the Ann Arbor campus, 22,057 (62.3 percent) were undergraduates and 13,366 (37.7 percent) were graduate students.

Three U-M Alumni Honored

Three U-M alumni have received the University's Outstanding Achievement Award.

They include: Margaret Ann Brewer ('52), brigadier general, U.S. Marine Corps; James S. Duesenberry ('39, '41, '48), economics professor at Harvard University; and John Donaldson Voelker ('28), writer and former Michigan Supreme Court Justice.

Brewer became the first female general officer in the U.S. Marine Corps in 1978. Duesenberry has served on the Presidents Council of Economic Advisers and the Board of Directors of the Federal Reserve Bank, Boston. Voelker retired from the Michigan Supreme Court in 1960 to devote time to writing.

Alumni Offered Opportunity to "Increase Your Vision"

A variety of continuing education and cultural opportunities are available to U-M alumni through the Alumni Association Enrichment Programs. Some 30 programs are offered throughout the year covering a diversity of topics and following various formats such as Coffee with Faculty, Saturday Seminars, Weekend Colleges, and Cultural Field Trips.

For information about the Alumni Enrichment Programs, contact the Alumni Association in the Michigan Union.

Old St. Joe Put to Use

The old St. Joseph Mercy Hospital Building will be put to good use during construction of new University Hospital. Plans call for housing nonpatient care, administrative offices, and offices dealing with the replacement project and research in 145,000 square feet of the building.

Patient care activities will be prohibited in the area. The former Main University Hospital will house clinical facilities during the renovation.

The interim use of the building for medical center purposes is expected to last from seven to 10 years.

Other parts of the building will house various departments, such as units of the School of Nursing, and a child development center.

Michigan Today

The staff of *Michigan Today* continues to invite you to submit suggestions for articles and information that you feel would be useful in helping to increase *Michigan Today's* responsiveness to the interests of the more than 200,000 members of the Michigan family.

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Editor
Michigan Today
3540C Student Activities
Building
The University of Michigan
Ann Arbor, Michigan 48109

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