Since their inception, higher education institutions have played a vital role in helping America develop new technologies and foster economic growth.

But it's the forward-thinking institutions like Western Michigan University which are the key players. These universities continually prepare for the future, ever ready to lead their region, state, and country through periodic periods of technological change. Armed with an innovative outlook and an abundance of cutting-edge resources, WMU and other national universities confront the future head on.

"When business, industry, government, and communities search for solutions to the challenges of a rapidly changing world, they look to Western Michigan University," Dr. Donald E. Thompson, vice president for research, says. "The University's research and development efforts are at the forefront of work on new technologies and continue to promote economic growth in the region and increased opportunities for collaborations." That collaboration is increasingly important, says Dr. Richard T. Burke, vice president for regional education and economic development, because America is part of a global economy that is in desperate need of revitalization. It also must compete with a multitude of nations struggling to keep pace with technological change and adjust to its far-reaching impact.

"In this information age," Burke says, "strategic alliances between companies, industry, government, and higher education are necessary to become more competitive in our economic environment. As an institution with a public service mission and a wide range of available technologies, WMU has become an enormous resource to the local community and the West Michigan region, reaching out to assist in economic development in a variety of ways."

Along with the University and society, students reap big rewards because of WMU's worldwide research linkages, economic development projects, and service commitments. The activities mean that the University keeps abreast of evolving educational needs and keeps its teaching and research current. At the same time, they expand the amount and depth of learning opportunities available to graduate and undergraduate students alike.

As an example, the College of Engineering and Applied Sciences' long-standing relationship with the paper and printing industries has led to WMU's unique position as the only university in the nation with both paper and printing pilot plants on one campus. Funding for such state-of-the-art facilities came primarily from the paper and printing industries.

Because of that support, WMU students have unparalleled opportunities to gain hands-on experience using the latest equipment and to explore their interests and career possibilities. Additionally, they're able to work side-by-side with industry professionals, making valuable contacts and performing some of the same work they'll be doing after graduation. In return, companies can use the University's facilities to conduct important research that they might not otherwise have the equipment or personnel to conduct. And as an added bonus, WMU supplies the paper and printing industries with some of the nation's best trained professionals.

But the benefits of outside linkages don't end there. Thompson notes. The University operates more than fifty research centers, institutes, and programs that develop new knowledge in areas ranging from new crop development to enabling technologies to assist people with physical challenges.

WMU isn't content with simply transferring new knowledge from research laboratories to the commercial marketplace. They foster economic growth. It's also establishing creative initiatives to make the University more competitive, nationally and internationally. Among the recent initiatives he cites is the WMU Centers for Excellence Competition, which offers awards of up to $175,000 for developing centers focusing on interdisciplinary research projects.

"Under the leadership of President (Diether H.) Haenicke," Thompson continues, "the number of research proposals awarded to faculty has doubled. Increasing the number of faculty involved in research has generated new ideas and created new technologies, providing WMU with more knowledge and technical advances to share."

Such foresight is a University tradition according to Burke, who stresses that WMU has long been a front-runner in technological and human resource development, providing educational programs and establishing partnerships that meet the needs of Michigan's regional economy.

When corporations in the Benton Harbor area had trouble recruiting and retaining engineers for its industries, Burke points out, WMU provided the necessary graduate programs at its regional center in that city. Similarly, he says, Grand Rapids' need for graduate educational and research opportunities led to WMU joining with four other educational institutions and local businesses and industry to create the Research & Technology Institute of West Michigan, one of several consortia WMU belongs to that increases regional cooperation and economic development.

The University shares its technological resources and research services with a much wider audience as well, serving a variety of clients through WESTOPS, Western's Office of Public Service. "WESTOPS basically serves as a broker that puts callers in touch with the appropriate place at the University that will meet their needs," Burke explains. "For example, an entrepreneur interested in developing a business in the Kalamazoo community might call WESTOPS for technical assistance and be referred to the Business Research and Service Institute in the Haworth College of Business."

With its heritage of innovation and enduring commitment to public service, WMU isn't waiting around to encounter tomorrow. Instead, it continues to prepare itself for a new century while embracing the future that's here.

"The economic welfare of the state of Michigan in the future depends on a more sophisticated workplace, one that needs to draw on the availability of educational programs and the research and technology found in our colleges and universities"

—President Diether H. Haenicke, 1987
Western Michigan University marked two milestones April 24 when it dedicated the remodeled and expanded Dwight B. Waldo Library and the new University Computing Center. Set off by a distinctive heather and off-white glazed tile, the buildings rest majestically in the heart of West Campus. Both facilities were opened to the public late last year. The ribbon-cutting ceremonies took place in the W. H. Upjohn Rotunda, a new feature of Waldo Library.

Center consolidates computing and telecommunication technology

B: The $7.6 million University Computing Center is the focal point for WMU's computing and telecommunications operations. The second floor's main classroom allows members of the campus community to get hands-on training in various computer platforms and software. A Faculty Resource Center elsewhere on the floor provides support staff, advanced computer equipment, and a wide selection of software for the specialized needs of faculty.

C: A special feature of the third floor is the domed Clock Tower Conference Room. Equipped with special lighting and projection equipment, the room sports a wide expanse of windows. The third floor also contains offices for academic and administrative computing support personnel and the Department of Telecommunications.

D: The second floor's main feature is a large open-access student laboratory and study area with a Help Desk staffed to handle phone calls and walk-in traffic. The laboratory houses the University's most sophisticated collection of computer systems.

E: Closed to the public, the first floor's operations center has been specially designed to protect the communication, network monitoring, and computer processing and printing machinery that runs much of WMU. Here, locked and guarded rooms house the crucial equipment needed by the University's computer laboratories and other academic computing facilities. The only portion open to the public is the first floor lobby area, where students order telephone service and pay their telephone bills through the Department of Telecommunications.

Waldo Library has new look, new services

F: The $19.3 million Waldo Library project has transformed the facility into one of the most attractive, convenient, and automated university libraries in the nation. An impressive clock tower overlooks the spacious patio leading to the new main entrance and links the library to the University Computing Center.

G: One of the less visible enhancements has been automation. Computer networks like WESTNET have eliminated yesterday's familiar card catalog files, allowing a computer to do the tedious work of locating University books and journals. Other networks and new databases give patrons access to a wealth of regional, state, national, and international information retrieval systems.

H: Aesthetic enhancements are secondary benefits of the library project. The primary benefit has been much-needed space to expand student seating and house the library's growing collection of more than 2.8 million items.

I: With its latest expansion, Waldo Library has added a Rare Books Room, which provides a secure environment for the University's many rare books, manuscripts, and incunabula.

J: The entrance opens into a rotunda featuring a three-story atrium with a skylight at its pinnacle. The rotunda, made possible through a gift from Mary U. Meader, is named in memory of her father, William Harold Upjohn (inset photo).
Charitable gift annuities can provide secure retirement income

One of the newer gift options available through the WMU Foundation is "charitable gift annuities," which can provide significant financial benefits to some donors, according to Kenneth J. DeVries, director of planned giving services.

Among the advantages of a charitable gift annuity are guaranteed annual payments, a tax-free, limited contribution (unlike some qualified pension plans), and an immediate income tax deduction.

"The concept is simple," DeVries says. "The donor makes an irrevocable contribution to the University now, and we agree to pay the donor a guaranteed life income starting at any date the donor wishes. Donors can also arrange for a survivor to receive payments. Married couples find this especially advantageous."

"The rate of return is somewhat lower for a two-life annuity because the period of payments is actuarially longer. For example, on a two-life annuity created at age sixty-five (both people age sixty-five) and with payments beginning immediately, the annual income rate is 6.8 per cent. That is one-half of one percent less than the 7.3 percent rate of return if the same age were involved."

"Even at the slightly lower two-life rate," DeVries says, "many people will find that they can receive greater guaranteed annuity income during this plan than through some other options, such as passbook savings accounts or certificates of deposit—especially in today's market. When you factor in the savings through current and future tax deductions, this is a very attractive way to make a significant charitable contribution to our University."

DeVries notes that recently there have been several articles in the public media, including a prominent feature in USA Today, which point to charitable gift annuities as a sound retirement alternative because of the declining interest rates on investments such as certificates of deposit.

Any amount of $5,000 or more may be used to create a charitable gift annuity and, as is true of all gifts to the University, the donor may designate his or her gift for unrestricted use or for a specific department, program, or scholarship. Gift annuities meeting the minimum requirements (in most cases $10,000 or more) may be used to create a named endowment for scholarships, for visiting scholars or artists, for a book acquisition fund, or for another program or project of interest to the donor.

Income payments may begin immediately or may be deferred to a later date of the donor's choice. The longer the payments are deferred, the higher the annual income rate will be. For example, if a donor age fifty establishes a charitable gift annuity and begins receiving payments immediately, the annual income rate would be 6.5 percent. If payments are deferred until age sixty-five, the annual income rate would be 14.2 percent. And if payments are deferred until age seventy, the annual income rate would be 18.9 percent. In addition to higher annual income rates, deferring payments may be especially advantageous if the donor is in a higher tax bracket now than he or she will be in when payments begin.

"One of the real benefits to those planning their retirement," DeVries says, "is that this provides a guaranteed, steady source of income. It's worry-free. The tax benefits and the income are generous, and the donor knows before the agreement is signed exactly what he or she will receive every year."

"The calculations are not complicated," DeVries adds. "If we know the donor's date of birth and a few other specifics, we can prepare estimates that show what the annual income and tax deductions would be based on payments starting at several different ages, without any obligation."

For more information on charitable gift annuities, write to: Kenneth J. DeVries, Director of Planned Giving Services, WMU Foundation, Kalamazoo, MI 49008-3855.

The Campaign for Excellence

Ulmer scholarships to be endowed from $130,000 insurance policy

James L. Ulmer, associate professor of printing and paper science and engineering, has concluded a major life insurance and estate agreement with the WMU Foundation when he transferred his permanent endowment for the Jane L. Ulmer Memorial Scholarships, named in memory of his late wife, who died in October 1989. The $130,000 in insurance proceeds are currently funded with annual gifts from Ulmer. James Ulmer has designated the WMU Foundation as the beneficiary of a $10,000 life insurance policy.

Employee aids President's Fund by making WMU beneficiary of policy

Charles T. Overberger, '81, a head engineer and desktop project manager for the University Computing Services, has named the WMU Foundation as beneficiary of a life insurance policy valued at more than $60,000. The proceeds will be applied to the President's Fund, an unrestricted fund used at the discretion of the University president to support scholarships, research, and a wide variety of other needs. A resident of Kalamazoo, Overberger has been employed at WMU since 1989.

Thorne gift of $50,000 supports building wing for theatre department

A gift of $50,000 from James and Mary Thorne of Portage, Michigan, will help complete funding for the new educational wing for the Department of Theatre. The 25,200-square-foot wing will be annexed to the Theatre and will include a 250-seat multi-form theater/classroom, studio classrooms, dressing rooms, lobby areas with rest rooms and concessions, a street-level arts management and ticketing center, and much-needed faculty offices. More than $2.2 million of the $4 million project total has been raised, including a $5,000 contribution gift from the Irving S. Gilmore Foundation of Kalamazoo.

Jean (Beaukema) McFarland, B.S. `40, was among the first to participate in the gift annuity program. She used $20,000 in lower-interest-bearing certificates of deposit to establish her annuity, and received an immediate tax deduction plus an improved income through the annuity's higher rates. Her gift will endow a book acquisition fund named in her honor.

The move is part of a $5 million renovation project of the Robinson building, which is located across West Jackson Street from McCamly Place and behind Stouffer's Battle Creek Hotel. When renovation of more than 24,000 square feet of the three-story building is completed, this portion will be sold to WMU for an amount not to exceed $190,000.

Officials say the gift enables WMU to offer more educational options to the people of Battle Creek, Calhoun County, and all of West Michigan; introduce a new satellite down-link system to the area; and strengthen its long-standing partnership with Kellogg Community College, which has hosted WMU's regional center since 1974. In the process, WMU will become an integral part of the continued revitalization of downtown Battle Creek.

"This is a giant step forward for WMU in this part of Michigan," said Anthony L. DeRose, director of the South Central Regional Center. "We have offered courses in Battle Creek since 1917 and we established the University's full-time center here in 1974. We now serve more than 1,500 students each year from Barry, Branch, Calhoun, Hillsdale, Jackson, and St. Joseph counties."

KCC president Paul Ohm added that the college welcomes WMU's new initiative. "It will complement the excellent pre-university program we have here and make it very convenient for our students to get advanced education," he said.

Under the current proposal, the United Arts Council's 100-seat Discovery Theatre will move to another side of the Robinson building, while other building space will be available for special use.

Dr. Richard T. Burke, WMU vice president for regional education and economic development, said the University's plans call for 12 classrooms, a computer laboratory, offices, an advising area, and indoor and outdoor common areas. In addition, Burke said, WMU will offer its televised master of business administration degree through installation of the satellite down-link.

Jack Howell, executive director of the Cereal City Development Corporation, said $4.6 million for the project has already been committed by the Battle Creek Downtown Development Authority, W. K. Kellogg Foundation, Miller Foundation, Battle Creek Community Foundation, Kellogg Company, and other private sources.

Construction began early this year and should be completed by early 1993.

Moving center will strengthen education in Battle Creek area

Western Michigan University is adding a new dimension and new support to Battle Creek by moving its South Central Regional Center to offices in the former Robinson's department store at 51 West Michigan Mall. The rate is $2 million of the $4 million project total has been raised, including a $5,000 contribution gift from the Irving S. Gilmore Foundation of Kalamazoo.
Franklin, Brady leading Board of Trustees

George A. Franklin, president of the WMU Board of Trustees, has been named chairman of the Board of Trustees, replacing Dr. William D. Wilson. Former WMU President John F. Fraser, Franklin joined the WMU board in 1989 and served this past year as its vice chairman. He has been vice president for public affairs at the Kellogg Company in Battle Creek since 1988.

James S. Brady, B.S. '66, of Grand Rapids was elected vice president of the board. Brady became a member of the Board of Trustees in 1987. He previously served as vice chairman in 1990 and this past year was chairperson of the board's Budget and Finance Committee. He is a partner in the law firm of Miller, Johnson, Snell, and Cummiskey, which has offices in Grand Rapids, Kalamazoo, and Lansing.

Four faculty selected to lead major projects

The World Bank has awarded a $51,240 contract to Dr. Robert O. Brinkerhoff, professor of educational leadership, to evaluate two of its flagship seminars and its training programs for developing countries.

According to Brinkerhoff, World Bank interest in WMU was piqued by that department’s graduate program in training and development, which focuses on evaluating training effectiveness.

Dr. Joseph P. Stoltzman, professor of geography and an internationally recognized authority on geographic literacy, is part of a national team of experts who are designing innovative collection of geographic materials for secondary education. The project, initiated by the Association of American Geographers and funded by a $519,000 National Science Foundation grant, is part of a larger effort to develop curricular exchanges with several countries.

Dr. Robert H. Poe, director of WMU’s Center for Science Education, has been named program manager to implement a nationwide initiative to provide teacher training and professional development opportunities with an instructional model that future teachers both understand and the tools to instruct elementary students in basic physical science concepts. The U.S. Department of Education has awarded Poe a $160,240 contract to head the initiative, which was developed by the American Institute of Physics and the American Association of Physics Teachers.

The Speech Communication Association has named Dr. Steven C. Rhodes, professor of communication and a 1984 recipient of WMU’s Alumni Teaching Excellence Award, one of Michigan’s three regional directors of the K-12 Oral Communication Teacher Training Workshops. The workshops are part of a new national training program integrating speaking and listening into the school curriculum.

Powell, Hodge named to administrative posts

Dr. Theresa A. Powell has been named vice president for student affairs. Powell has served as acting vice president for student affairs since January 1991. She replaces Thomas E. Coyne, B.A. ’55, who retired. Powell came to WMU in 1988 as dean of students. She also has held positions with the Ohio Board of Regents, Ohio State University, and Wilberforce University.

Dr. Charles M. Hodge has been named dean of the College of Education, replacing interim education dean Dr. L. L. McClure. Hodge, a professor and dean of the College of Education and Human Development at Lamar University in Beaumont, Texas, since 1989. He also has held positions with the University of Central Arkansas at Conway and the Arkansas Department of Higher Education.

Teflon promising oil cleanup tool

Teflon, the same material used to keep food from sticking to cookware, may improve the rate at which petroleum spills are cleaned up from leaking underground tanks or pipelines, according to research being conducted by Dr. Duane R. Hampton, assistant professor of geology. Hampton, who has a patent on his own on a petroleum-sensitive “dipstick” he developed to map oil spills and target cleanup operations, is testing materials like Teflon as potential oil cleanup tools from the Environmental Protection Agency.

Hampton is testing various materials to increase the speed at which gravel packs attract and remove petroleum. The packs surround recovery wells that are installed at contaminated sites to recover leaked oil. Dr. Michael E. McCivare, chairperson of the Department of Chemistry, is the principal investigator in the second aspect of the research. McCivare’s work is focused on developing a chemical “tracer” that can be added to contaminated soil to help investigators determine where and how fast a spill is spreading. As with Hampton’s work, the main requirement is that the tracer cannot introduce a contaminant to the spill site.

Study aims to understand entrepreneurs

A $362,825 grant from the Edward Lowe Foundation of Big Rock Valley in Casper improved a unique pilot project to intensively study entrepreneurs in a four-state area. Dr. Trudy G. Verster, associate professor of management, worked with two groups of entrepreneur couples and two groups of entrepreneur spouses to discuss family stress triggers, the demands of starting and running a business, and to construct solutions that could help address the high divorce rate experienced by entrepreneur couples. Dr. William McCivare, associate professor of psychology, studied the professional challenges encountered by entrepreneurs and recording the solutions proposed by entrepreneurs.

Institute seeks to prevent job injuries

A new research institute and new laboratory facilities are helping area industry and future engineers design jobs to stop the continued increase of such work-related injuries as ergonomic and repetitive strain injuries. In addition, the institute is one of two schools in Michigan chosen to participate in Sunrayce, a nationwide competition in solar-powered cars.

Engineer evaluates computer languages

The IBM Corporation has given a $161,945 grant to Dr. Thomas P. Platkoowski, chairperson of the Department of Electrical Engineering, to evaluate two software specification language systems called SmallTalk and State Architecture Notation (SAN). The systems are used to express the requirements of a computer software package before the software is actually written. The SAN system is being developed at IBM while the SmallTalk system is being developed at the University of California at Berkeley.

Computer expert turns words into pictures

A picture may be worth a thousand words, but Dr. Ben Pintkowski, associate professor of computer science, would rather have a picture of each of those words. He is using a $94,749 research award from an arm of the National Institutes of Health to apply microcomputer image processing techniques to the sounds produced by humans and animals.

The three-year project may lead to such products as computer equipment that will "hear" the spoken word for deaf persons or portable translation equipment for travelers that can convert spoken foreign language into the travelers’ native tongue.

Project could speed up searching for "trees"

A $515,222 grant from the U.S. Department of Navy’s Office of Naval Research to Dr. Allen J. Schwick, professor of mathematics and statistics, is being used to conduct research that may lead to a dramatic increase in the speed with which computer-run searches of mathematical "trees" are conducted. Many problems in mathematics, manage-

ment, and computer science require computers to search through billions of trees, as large as 32,000 tree integers. Searching the entire list can be time consuming if each number must be read and altered. By cleverly arranging the trees, only a few will be examined and changed for each new tree, and the search can run a hundred times faster.

Lasers unit enhances specialized laboratory

A $125,000 high-growth project at the Department of Chemistry, funded by Hawsworth, Incorporated, of Holland, has been added to the College of Engineering and Applied Sciences’ mobile, disassembling laboratory. The equipment is being used by faculty and students to investigate high temperature responses of a variety of synthetic materials, including polymer composites and wood products.
Commencement brings honors and optimism

Top: A group of fall graduates showed their team spirit during December commencement.

Left: During April commencement, WMU granted an honorary doctor of public service degree to William E. LaLonde, who retired in December as chairman of the board and chief executive officer of the Kellogg Company. LaLonde served Kellogg, the world's largest manufacturer of ready-to-eat cereals, for more than forty years. In addition to healthy Kellogg, he has held numerous other leadership positions, including serving on the WMU Foundation Board of Directors from 1967 to 1985.

Right: For the first time in seven years and for only the seventh time ever, the WMU Board of Trustees unanimously voted to present a board Distinguished Service Award. The award, bestowed during December graduation exercises, went to Thomas E. Coyne, B.A. '55, who recently retired as the University's longest serving vice president. A board resolution cited Coyne as "a great advocate for our students" and recognized him for "his long and distinguished service for almost thirty years to the University," first as director of alumni relations (1962-69), then as administrative assistant to President James W. Miller (1966-70), and thereafter as vice president for student services.

WMU practiced in greeting presidential contenders

If history repeats itself, especially recent history, Western Michigan University can expect to entertain many or most of the candidates in this year's race for the presidency. During the 1988 election, the Rev. Jesse Jackson brought his Rainbow Coalition to WMU, and candidates Michael Dukakis and Paul Simon also stumped on campus.

While President George Bush didn't campaign at WMU in 1988, he did make important stops here in the two previous elections when he was Ronald Reagan's vice-presidential running mate. His 1984 campus visit came on October 23, as part of an effort to shore up support in Michigan less than two weeks before the election.

Another future Republican candidate, then-Congressman Gerald R. Ford, was on campus in April 1973 to receive an honorary doctorate. Less than six months later, he was appointed vice president of the United States, and the following year, he became president.

Visits by current, past, and future presidents are not new to the University nor to Kalamazoo. In 1856 then-Congressman Abraham Lincoln made an historically significant address on behalf of Republican presidential candidate John C. Fremont. Lincoln spoke in the small village of Kalamazoo, in what is now Bronson Park. Other important presidential visits to Kalamazoo were made by Theodore Roosevelt and John F. Kennedy.

The most famous political visit to campus—and the only one by an incumbent U.S. president—occurred September 21, 1911, when William Howard Taft spoke to the faculty and students on the "important role of normal schools."

Taft's visit to Bush, Ford, and Taft. Richard M. Nixon is the only other president to visit WMU. He was on campus in 1966, two years prior to his first election as president. Increasingly, the campaign trail has led through WMU's campus for both Democratic party hopefuls, like Hubert Humphrey in 1964, and Republican party hopefuls, like Nelson Rockefeller in 1976. Campaign '92 is no exception. So far former Gov. Jerry Brown has made a stop on campus, and this year's presidential election is far from over.

—by Thom Myers from research conducted by Julia Dumont '94

Recycled versus recyclable

It was reported in the January 1992 Westerner that the EPA awards (WMU) $3.3 million for recycling research. Although the Westerner is printed on recycled paper, the paper itself is not recyclable. Why do you report about recycling, yet only go half the way in your own paper? I hope you consider this soon. What kind of "ethical" example is the Westerner setting?

—Miriam Baehr, B.S. '41

Basketball, hockey teams have banner year

Coach Bob Donewald's men's basketball team ended the 1991-92 season with its first National Invitational Tournament appearance, first winning record since 1982, and highest MAC Conference finish since a shared third place in 1978-79. The team squared off against Notre Dame 63-56 in the NIT opening round, finishing with a 21-9 overall record and an 11-5 MAC record. The twenty-one victories were the second most in school season history and earned Donewald MAC "coach of the year" honors.

WMU's hockey team, which earned a top fifteen national ranking for most of the 1991-92 season, won a ninth consecutive Central Collegiate Hockey Association playoff bid, and had a setting season as this seventh time in the last nine years. The CCHA lost to Miami University 3-1 and 4-3 in first round action, winning the other game. A 9-15-6 overall record and a 14-12-6 CCHA record. Since Coach Bill Wilkening joined the program in 1980-81, WMU has finished among the top four teams in the CCHA race five times.

MAIL BAG

Ethics emphasis is encouraging

It is most encouraging to learn from the January Westerner that a new emphasis on the teaching of ethics is happening at WMU. It is sorely needed. How true the insert: "Morality is part of any reflective personal life, and ethical perspectives and deliberation shape cultural and civic life. To leave ethics out of a curriculum makes little sense."

However, after reading and rereading the article, I felt something very vital was missed. It did not go far enough. No mention was made of the very basic foundation upon which all our rules and laws are based—the Ten Commandments. The scale of justice is useless without a standard for measurement.

Our educational system is under attack. We hear, "Let's return to basics." As an institution for preparing teachers of our youth, WMU is in a very strategic position in providing a standard by which our children will be enabled to evaluate rightly. Nothing is reality as formerly taught.

—Editor's note: Paper recycling is often contingent on the interests and capabilities of recycling companies. For instance, many companies across the county, including at least one in Kalamazoo, will recycle the Westerner. However, some vendors in some communities will not or cannot accept the recycled coated paper that the Westerner uses.
Sophisticated technologies transform science fiction into reality

Terms like "user friendly," "download," and "electronic transfer" were once a sign of technological literacy on college campuses. At Western Michigan University, however, such phrases have given way to "antenna farms," "fiber-optics," "parallel processing," and "supercomputers." WMU early on recognized the importance of technology in the fields of global communication and computing. Now, less than ten years after it became the first U.S. university to make computer competency an undergraduate degree requirement, WMU is poised to take advantage of high-technology concepts once more common to science fiction stories than to mainstream University life.

That technology is dramatically affecting not only students, but all of the West Michigan region as the University and region race toward the year 2000 with a head start on much of the rest of the nation. On any given day, a corporate business leader, medical practitioner, high school history student, or fledgling entrepreneur can reap the benefits of WMU's expanding technological capabilities.

"In overall distribution of facilities and innovation in areas such as electronic classrooms, supercomputing, multi-media instruction, and conferencing technology, we are among the best and we're working to use that technology to address the needs of industry and the general public," says Dr. Harley Belin, a veteran campus expert on technology who in 1991 was named director of computing and communication services.

The new satellite teleport, supercomputer, and automated library system top the list of WMU's most sophisticated technologies.

The teleport, which makes West Michigan an equal partner with the world's great information centers, enables the University to deliver classes and information from Kalamazoo to any location in North America. This satellite uplink and downlink technology makes the city one of only six of comparable size in the nation with such communication ability. Already, the University is offering the state's first master of business administration degree via satellite through the Michigan Information Technology Network.

WMU also enhances education and fosters economic development by leasing its uplink facility to the public sector and private enterprise. Additionally, corporations such as The Upjohn Company are using WMU's facility to develop their own worldwide communication networks. In conjunction with this year's enrolling of Kalameet, in which fiber-optic cable, the uplink is one of the high-tech tools regional planners hope will attract information-dependent firms to West Michigan.

The University's new $900,000 supercomputer is equally impressive. Able to make a billion calculations per second, the nCUBE 2 is the most powerful computer in Michigan and links WMU with the world's leading research centers.

With its purchase in 1991, less than thirty years after the first computer arrived on campus, WMU entered the supercomputer age. The nCUBE 2 does the work of 128 transistors and makes calculations 100 times faster than any other computing technology available on campus. The new machine, a distributed memory parallel supercomputer, is part of a class of computers considered the most powerful in existence and once applied only to national security matters.

Now the fastest growing segment of the computer sales market, they're being harnessed for science and industry. WMU's supercomputer is the foundation of the Concurrent Computation Research Center in the College of Arts and Sciences. It gives students access to some of the most advanced computing technology in the world and is already a significant resource for campus researchers and area industry.

WMU partially offset the cost of its supercomputer by winning a highly competitive grant from the National Science Foundation, which has established a network of supercomputer centers and gives researchers access to computer simulation as a basic tool of scientific research. An additional grant from nCUBE and $125,000 in University funds made the purchase possible.

Both the region and campus community benefit from other major computer developments on campus. In 1990 a $1 million grant from the W. K. Kellogg Foundation of Battle Creek to WMU's libraries brought about one of the most noticeable changes for West Michigan. The grant enabled the University to purchase computer hardware and software and to make licensing arrangements putting WMU's vast library collections at the fingertips of students, citizens, and businesses throughout the region. Card catalogs have been replaced by an on-line system itemizing the University's holdings as well as those of librarians in Southwest Michigan. Anyone with a microcomputer and a modem can access WMU's two million plus holdings or peruse those of nearly fifty member libraries in the West Michigan Information Network.

Furthermore, patrons both on and off campus can access a series of on-line databases indexing journals, articles, and reports in various disciplines. Other technological advances in recent years link the University with eight other public universities in the state through the MicNet computer network and with more than 1,000 campuses and industrial and government research centers through a National Science Foundation computer network. In fact, WMU now employs state-of-the-art technology in a variety of everyday instructional and administrative activities.

Three such examples are a University-owned and operated cable television, radio, and audio distribution system dubbed EduCABLE; a $10 million telecommunications system, which includes class registration by telephone; and an experimental grant program between the University and computer manufacturers to help faculty members adapt technology for student instruction in several disciplines.
When I was your age, college meant lines, lectures, and science labs

Remember the eight-hour days of standing in line in "the Pit" at Rowd Fieldhouse to register for classes? Remember flipping through the card catalog and using a typewriter to complete term papers?

Well, Western Michigan University alumni, those icons of education past are now dinosaurs. Effects of the technological revolution permeate nearly every aspect of campus life, making today's graduates experienced high-tech consumers as well as products of high-tech instruction.

Communication is the most visible technological change from days gone by. Students who don't arrive on campus with their own microcomputer in tow can join faculty and staff in purchasing one from the University-run store, Micros and More, which has discount arrangements with major computer manufacturers. Those who still like proximity to their fellow humans can use one of the 400 computers available for general use in six supervised laboratories around campus.

While you Work Remains a Tradition

However, some past traditions, such as all-nighters and the academic dual of studies and munchies, refuse to die. Despite creation of a newer, twenty-four-hour computer laboratory in the University Computing Center, for instance, students still prefer the Key Pad, the laboratory in the Bernhard Center's Bronco Mall.

Why? Because the neon-lit mall, completed in 1989, is a fast food haven of pizza, burgers, and ice cream. In fact, the Key Pad is so popular that administrators reduced the computing center's hours in favor of keeping the Key Pad open all night.

General computer laboratories like those, along with specialized ones devoted to disciplines such as music composition, education, and graphic design, put a wide range of hardware and software in the hands of students. They can even execute numerous tasks without leaving their residence hall, just by using a modem or plugging into a campuswide data line adjacent to their telephone jack.

If students want to conduct a bibliographical search, for instance, they punch a few keys and access Waldo Library's on-line catalog or other library collections in southwest Michigan. They don't even need a printer in their room to print out the information they find. They can send their documents to the nearest campus computer laboratory and pick them up later. Then, if students want to "talk" about how their research is going, many take part in discussions via the campus' electronic bulletin board. Professors often find learning rates improve remarkably in discussion groups that operate to participate in classroom discussions but routinely pass comments back and forth through the bulletin board.

Late nights "hitting the books" are anathema to many students' energy. They do not appreciate the Bronco's like seniors Cecilia A. Williams, who, with a computer information systems major from Detroit, and Jacqueline Morris, a public administration major from Jackson, find their view from the glass walls of the Key Pad is not a welcome sight. Although food isn't available near this computer laboratory in the Bernhard Center's Bronco Mall, weary students can regain some energy by walking next door to one of three eateries. After a sun-down snack, Williams gets a cheeseburger from Baskin Robbins, or a slice of pizza from Little Caesar's, late-night hackers often find the attempt to finish their work before the sun comes up.

Thes excel Computer Literacy is a Must

Innovative, even ingenious, use of the computer in instruction can be found everywhere on campus.

Archeology students draw three-dimensional contour maps on computers, for example, while engineering students use three-dimensional design software as a principal component of their work in the Computer-Aided Engineering Center. Meanwhile, faculty members across campus use a WMU-originated course development program to create computer-assisted, interactive lessons. And at the Western Michigan University School of Business, faculty use computers to create daily newspapers using advanced computer word processing, graphics, and page design and layout.

The University has embraced the computer age not just at the academic level, but also at the administrative level as well. In 1987 it switched to a new telephone system, making long-distance calling more convenient for students through personal identification numbers and putting the advantages of Touch-Tone® registration at their fingertips. A voice-mail system enhances the system by bringing electronic mail and fax to the campus. A campuswide data line adjacent to their telephone makes it so popular that students can regain some energy by walking next door to one of three eateries. After a sun-down snack, Williams gets a cheeseburger from Baskin Robbins, or a slice of pizza from Little Caesar's, late-night hackers often find the attempt to finish their work before the sun comes up.

In the area of communication, WMU just last year debuted its WMUCable system, EduCABLE. The system, which serves 3,800 residential units on campus and selected buildings, offers students international programming, foreign language news broadcasts, local cable access, and the option of watching tapped WMU classes, student forums, and student produced programs on a student channel. Because EduCable programs are provided to area community cable access channels, WMU programming also reaches 240,000 homes in southwest Michigan.

Additionally, students will soon be able to obtain in-depth news world news on EduCABLE's Monitor Channel and observe the United States Congress on C-SPAN, although some information-weary students would rather receive HBO, a pay-TV entertainment channel.

Through its satellite down-link system, WMU receives scores of other programs on a wide range of topics. This year's broadcasts have included two live national teleconferences, "Rising Campus Racism" and "Understanding and Meeting the Needs of Gay, Lesbian, and Bisexual Students.

Through its newly acquired satellite up-link system, the University can broadcast its own programs to any North American location and much of Europe.

WMU's advanced up-link and down-link technology allows the University to annually participate in about 200 specialized teleconferences, all without leaving campus. Additionally, this technology can provide a "live" media component when students or conference participants in Kalamazoo find themselves interacting with diverse groups across the country.

That has been the case for WMU students as they complete their master of business administration degree via television. The unique program uses one-way video and audio to link campus classroom locations with

Dr. Robert Reck, associate professor of marketing, makes last-minute preparations before starting his Principles of Marketing class part of WMU's unique televised master of business administration degree program.

The Future is Here

Page 6 stories: "Sophisticated technologies" and "High-tech," Cheryl Roland, Satellite illustration and photo: SuperStock. Courtesy photo: Mario,tile University, Center for Education/Technology, map, Department of Geography, portrait, Department of Art, Other photos: goll graphic, Don Cheres, "701 Kent Mark Williams,"/Photo courtesy of the valentine, classroom, Michael Lemke, 91/06/10 Photography.
Page 7 story: "When I was your age," Janet Jones, B.A. '90, Photos: Key Pad, Pita, Avocada Photographers, Pita and Key Pad Interior, Neil Rankin, food, courtesy of the valentine, illustrator, Jeanne Lanka, 91/06/10Photography.
Amony adds color to volunteers one Saturday each month to paint school tenants of low-income housing to sign a waiver that they will do some repair and clean, painting and doing some moderate riding for the alter and alter- 

route for the energeticiker. You set your own pace.

As you arrive Friday night, you’ll be served dinner and participate in an orientation meet- 

ing that will prepare you for the next two days of volunteering.

Saturday, August 15, you’ll enjoy breakfast at the inn before riding twenty-three miles. Long quiet back roads that follow the river to the village of Hanover, home of picturesque Dartmouth College. You’ll have an opportunity to visit the Hood Museum of Art, the League of New Hampshire craft gallery, or small shops typical of an Ivy League town.

More experienced bikers will have an opportunity to extend their ride on Saturday to thirty-seven miles. On Sunday, you will ride north along the river, crossing into Vermont to explore more of this fertile valley. On this leg of the trip you’ll have the option of cir- 

cute the beautiful Connecticut River Valley beginning Friday, August 14.

The tour leaves August 14 from Dowd’s Country Inn, breakfast, dinners,"
Alumni Insurance Program Expanded

In its ongoing effort to respond to the needs of Western Michigan University alumni, the University Alumni Association has expanded its Alumni Group Health Insurance Program to include major medical (MajorMed+), excess medical insurance, critical illness insurance, and Medicare supplement (SupilMed+). The expanded health insurance program will allow alumni to select the type of health coverage they need, when they need it.

Graded, the short term major medical plan, has been available to alumni since 1988 and provides up to $1 million of coverage for up to 180 days, and has been used by new graduates who are job hunting, alumni who are self-employed, and alumni enrolled in college.

MajorMed+, the comprehensive health insurance plan, is geared toward alumni who need complete medical insurance but have no access to a group plan, for instance, self-employed alumni. It provides up to $1 million of coverage with a choice of deductibles.

SupilMed+ has been developed for alumni age sixty-five and older who desire to supplement their Medicare coverage. Because most people beyond this age are covered by Medicare, it is often difficult to obtain. If bought on an individual basis, it can be prohibitively expensive. This group coverage through the Alumni Association is designed to address these challenges.

Information about expanded insurance program is available to alumni. Alumni desiring more information about these options can call the plan administrator, American Insurance Protectors, at 788-1245.

The Alumni Insurance Program, and the Alumni Group Health Insurance Plan, is designed to address these challenges.

For more information, contact the Alumni Association at 788-1245.

Richard B. Bauer, Jr., BBA '79, 52 E. University Avenue, Ann Arbor, MI 48109, is the Alumni Insurance Program administrator.
Barry C. Kline, BSE ’77, in September 1991 was promoted to director of the position of city manager of Kalamazoo, MI.

John W. Lucy, BSE ’53, in September 1991 was named assistant vice president of Bank of America, Grand Rapids.

Margaret Anne McKenna, BS ’56, in September 1991 was promoted to director of Haywood Hall School, Charcoal, MI.


Ellen M. Mcfarland, BSE ’88, in September 1991 was honored for excellence in correctional services. Liles is a management consultant.

Jerome L. Maus, BSE ’77, in September 1991 was appointed chief of the Air Force General Accounting office at Old Fort South, Grand Rapid.

Shari L. Wallesen, BSE ’96, in August 1991 was promoted to vice president and commercial loan officer, First of America Bank, Kalamazoo.

Norita D. Dishel, BSE ’88, in August 1991 was named assistant vice president and systems department at Comerica, Michigan, Dearborn.

Josephine W. Raynor, M.D. ’80, in August 1991 was appointed director of the Admissions Office, Grand Valley State University, Allendale.

John M. Adams, BS ’73, in August 1991 was named chief science officer at Moore's Group, Inc.

Karen H. Snow, BSE ’70, in August 1991 was named chief of the nursing service at Alcona Community Hospital, Marshall.

Margaret Anne McKenna, BS ’59, in September 1991 was selected to the twenty-third Edition of Who's Who in the Midwest.
December 1991 joined the Traffic
Department, Benton Harbor, MI.

September 1991 was named director of
the Sales Department of the
Plainfield Township office,
Plainfield, MI.

October 1991 was inducted into the
Retailer Hall of Fame in Grand
Rapids, MI.

September 1991 was named a reporter
for the Morning News in South
Lyon, MI.

June 1991 was hired as an associate
teacher for the Baxter Public
Schools, Delton, MI.

Linda Smith was named a
special education teacher at
Lakeview Elementary School, Delton,
MI.

September 1991 was named a
senior accountant, Ernst &
Young, Kalamazoo, MI.

Robert Brooks, BS '88, in
August 1991 was named a
marketing manager for the
Housing Authority of the
City of Flint, FL.

Robert Burley, BBA '91, in
August 1991 was named a
second grade teacher at
Centennial Elementary
School, Delton, MI.

Linda Basham, BBA '89, in
August 1991 was appointed
assistant director of student
affairs at Michigan State University,
East Lansing, MI.

• Michael Brenner, BS '91, in
August 1991 was appointed
as an intern with the
Law Firm of Tackman, HAker,
Shipley, BS '90, in
August 1991 was named to the
director of Career
Services for Western Michigan
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Donna Green, BA '89, in
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Look ma, hands-on learning

For a preview of tomorrow's technological innovators, you don't have to look any further than Western Michigan University's College of Engineering and Applied Sciences. Here you'll find scores of seniors busily designing technological wonders that may one day find their way into the marketplace.

Their work is part of capstone learning experiences involving design courses that require projects. These Senior Engineering Design Projects provide students the opportunity to integrate and put into practice all the diverse elements of the engineering and applied sciences curriculum. Faculty members provide guidance as students make design decisions and probe alternative design approaches.

One exciting feature of the project is the chance to explore just about any idea, from an auditory feedback system to help prevent stuttering to a motorized fishing reel for disabled or arthritic anglers. Projects like these evolve from a variety of sources, notes Dr. Dennis J. VandenBrink, associate professor of mechanical engineering.

Occasionally an idea will land in a student's lap. VandenBrink says, such as when a farmer contacted one student needing the tool to spray a larger field area than his commercially available sprayer could cover. But more often companies call the college seeking a solution to a problem or help with a project they don't have time to do. Often students take an idea to a company to generate interest and procure a project sponsor or gain their inspiration from faculty members.

VandenBrink provided that service when he asked two students to solve a problem with his above-ground swimming pool cover.

"I didn't like the way it sagged under snow and ice," the professor says, "so I asked two mechanical engineering students if they could find a solution."

Paul B. Hoke of Evart and Robert L. Kempf of Byron designed a dome-shaped structure of beams that attaches to the pool and is easy to assemble, inexpensive to manufacture, and takes up a block of storage in a small area. The spider-like support should increase the cover's life and simplify springtime removal and cleanup.

"We took what we had learned in the classroom and used the information to solve his real-life problem," Hoke explains. "We wanted the pool cover support to be light enough so two people or three people to manage, yet strong enough to withstand the winds and snow loads during the winter.

Invention is also born of necessity, and some project ideas originate from a student's own unique problem. Gary Wonski of Grand Rapids has a two-year-old child, a two-door car, and a strained lower back from haulmg his child in and out of the infant car seat. For his project, Wonski teamed with Mark A. Sutton of Parchment and Ryan S. Havel of Lake Odessa, Ohio, to design a less strenuous car seat under the guidance of faculty advisor Charles Woodward, assistant professor of engineering technology. After contacting five car seat manufacturers for donations of necessary parts, the team built a prototype infant seat that sits on a swivel base and has a sliding mechanism attached to the car seat, giving an adult easy access to the child.

Several car seat companies, including Cosco in Columbus, Indiana, have expressed interest in seeing our design once it's completed, Wonski says. "This has been a great way to cap off our college engineering career. It's just an everyday product, but it's been a great way to show off what we've learned."

Senior Mark Major of Flint is another student with a personal stake in his project.

For a high school and WMU track team member, Major yearned for a more convenient way of setting up hurdles. His project team, which included Jeffrey D. Mann of Jackson and James J. Corunna, came up with the concept of a hurdle that can be stored in a pit area under the track. They also replaced the counterbalance weights with hinge joints so that the hurdle swings open and shut like a gate when hit by the hurdler.

"Each week we meet with our faculty advisor Dr. Pnina Ari-Gur, assistant professor of engineering technology," Major says. "We run our design changes past her, and she tells us if they're achievable. As our mentor, she makes sure we're not designing ourselves into a corner or overdesigning our project. It's really been a great experience."

Above: Developing a convenient and safe track hurdle was the goal of this team, comprised of, from left, James Porter, an engineering graphics major from Oceano; Jeff Mann, a metallurgical engineering major from Jackson; and Mark Major, an engineering graphics major from Flint.

Right: Gary Wonski of East Detroit, right, joined with his other engineering graphics majors, Mark Sutton of Hamilton, left, and Ryan Hazel of Lake Odessa, center, to design an infant car seat that will reduce back strain when hauling children in and out of the seat.

"The Westerner, May 1992

The Future is Here

Businessman, student add new meaning to 'read my lips'

A joint project between a Western Michigan University student and a Kalamazoo businessman lends new meaning to President George Bush's no new taxes phrase "Read my lips."

The two collaborated to develop plans for a "Liperator," a computerized device that allows hearing impaired persons to actually lip-read their telephone conversations.

The device translates voice communication into a sequence of lip movements that appear on a video display attached to the hearing impaired person's telephone. Robert R. Slager, a hearing aid specialist at the Hearing Aid Center of Kalamazoo, and Tair Mendelowitsch, BSE '90, an electrical engineering student, spent the past year developing the device. Slager came up with the idea for the product several years ago.

"Persons with hearing loss have great difficulty on the telephone, especially when there is noise in our background," he says.

So in 1991, Slager contacted WMU's College of Engineering and Applied Sciences with his idea. The college put him in contact with Mendelowitsch, who helped develop the Liperator technology and conduct the necessary research.

Although he specialized in digital signal processing while pursuing his master's degree, Mendelowitsch had to spend hours studying the art of lip-reading in order to develop the Liperator's technical components. The device he came up with is a computer that analyzes a voice signal received from the telephone. The instrument breaks down the stream of words into phonemes, the smallest units of speech that distinguish one utterance from another.

Once the phonemes are identified and factors such as frequency and inflections are accumulated, the computer matches each phoneme to a corresponding lip shape. These shapes are then shown in the form of human lips on a video display.

"Watching the movement of the lips with the Liperator will augment anyone's--especially the hearing impaired person's--ability to hear," MSED '91, an electrical engineering major says. "Although it has yet to be manufactured, the Liperator last December received an honorable mention award in a national competition sponsored by the National Science Foundation to spotlight the potential of computing devices to improve the quality of life for persons with disabilities. Additionally, other universities and private industry showed interest in taking the project beyond the prototype stage. The device is garnering widespread attention partly because it has several advantages over today's telephone devices for the deaf (TDDs), which take voice messages and translate them to electronic readouts.

"The problem with the TDD is that you have to have one on the telephone at each end," Slager says. "Only the hearing impaired person would have to have a Liperator, so it would be less expensive. The Liperator also would enable two people to have a continuous telephone conversation, rather than having to wait to receive each other's messages."

Slager says other advantages of the device include its portability and its flexibility for modification. For instance, it could be modified to accommodate sign language, translate words into hand gestures for sign language dependent persons, or connect to radios or any other electronic audio equipment.

Slager, who has a patent pending on the Liperator, is currently searching for a facility or a firm to develop the Liperator. Mendelowitsch, his bachelor's and master's degrees from WMU in hand along with a unique project under his belt, is looking for a job in the Detroit area as an electrical engineer.