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Michigan Today

The University of Michigan

October 1992 Vol. 24, No. 3

A Light Show on Burton Tower

*A blend of color and music
wound up the launching
of the biggest campaign ever
for a public university.*

Stories on pages 7-11.



Photo by Peter Yates

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Engineering with the mind of a sculptor

SHAPING THE THINGS TO COME

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By Maggie Hostetler

hen Noboru Kikuchi was a boy in Japan, he was fascinated by science and science fiction. He remembers inventing in his imagination a submarine that could be trained to shrink as it dropped to the ocean bottom and then enlarge again as it rose to the surface, allowing the submarine to adjust to the varying pressures of the ocean depths.

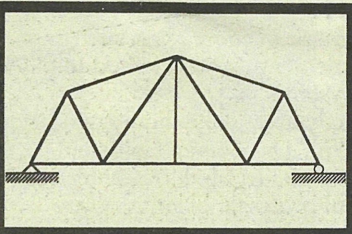
Although he has long since entered the more practical world of academic research as a professor of mechanical engineering at U-M, Kikuchi's imagination still conjures up futuristic design projects, such as buildings that can repair themselves or cars that are heated by human-like circulatory systems.

These ideas, however, are not just science fiction fantasies. They may be realized someday, thanks to a breakthrough theory in engineering design that Kikuchi and a colleague came up with in 1986.

The concept came to Kikuchi on a beach in Portugal. He was there attending a NATO science conference and also vacationing from his sabbatical at a Danish university, and although he and Danish colleague Martin Bendsøe had left behind their books, computers and labs, they couldn't quite put their minds on holiday.

"We had been playing for two weeks," says Kikuchi. "We felt tired of that and decided that we had better do some work. We began to think about shape optimization."

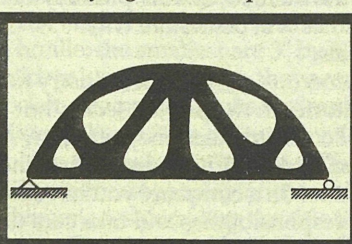
Engineers have always had to rely upon experience, intuition and trial and error to come up with an initial shape when designing structures such as a bridge, an engine valve or an aircraft wing. For example, when designing a bridge, the engineer's task is to create a structure that can meet a number of requirements such as carry the necessary loads, stand up to weather conditions, remain within certain cost limits, use certain materials and so on. These conditions are called the design constraints; they are different for every project and can be expressed mathematically in equations.



Bridge sketch based upon old-fashioned mathematical description of design constraints; implementation leans heavily on trial-and-error.

Relying upon experience and intuition, the engineer comes up with an initial shape for the bridge that he guesses will meet the constraints. To see if the guess is correct, he checks it against the constraint equations. If the design fails to meet the constraints, the engineer alters and refines the design until it does meet them. A different designer might come up with a different initial shape, make the refinements and end up doing the job even more efficiently. When relying on human guesswork, however, the question always remains: Is there a shape out there no one has yet thought of that could be refined to meet the constraints best of all—the maximally optimal shape?

The only way to answer that question would be to find a way to convert the constraint equations directly into an initial shape; this would be turning the act of creation over to the precision of mathematics rather than relying on the imprecision of human guesswork.



Bridge sketch employing recent computerized design technique based on the unwieldy mathematics of boundary variation.

Shape optimization research aims to do just that.

With the advent of the tremendous power of computers, researchers had hoped that at long last a way could be found to generate initial shapes mathematically. But progress has been slow going.

Researchers have been working on theories for a couple of decades without much success. Most have tried to program computers to build a shape by varying the boundary of a structure after representing it by appropriate curves and surfaces. But the mathematical demands of these solutions are still too complex even for computers to make headway. Only the simplest shapes can be modeled.

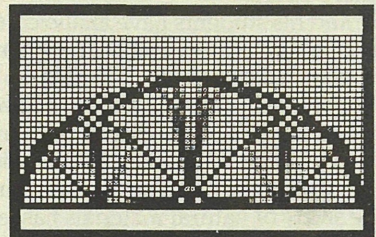
Kikuchi and Bendsøe discussed these limitations that day on the beach in Portugal and decided, Kikuchi recalls, "that these approaches were too restricted; if we stayed with them, designers wouldn't be able to realistically use them for decades."

A new approach occurred to Kikuchi. Instead of putting together elements to build a shape, why not start with a block and mathematically take away substances until the optimal shape is formed. "It's the same idea as an artist uses when making sculpture," Kikuchi says. "Start with a block of rock and take out gradually portions you don't need. It's a very simple idea, and if a method is to be useful for more than just the specialist, it must be sufficiently simple for general use, or nothing will come of it. Scholarly work means to simplify what is complicated."

When he and Bendsøe returned to Denmark they did some preliminary work with the concept, and it seemed to work. Back in Ann Arbor, and with the collaboration of his graduate students, Kikuchi spent the next year developing the theory in the form of a sophisticated mathematical representation. The math was then encoded in a computer program.

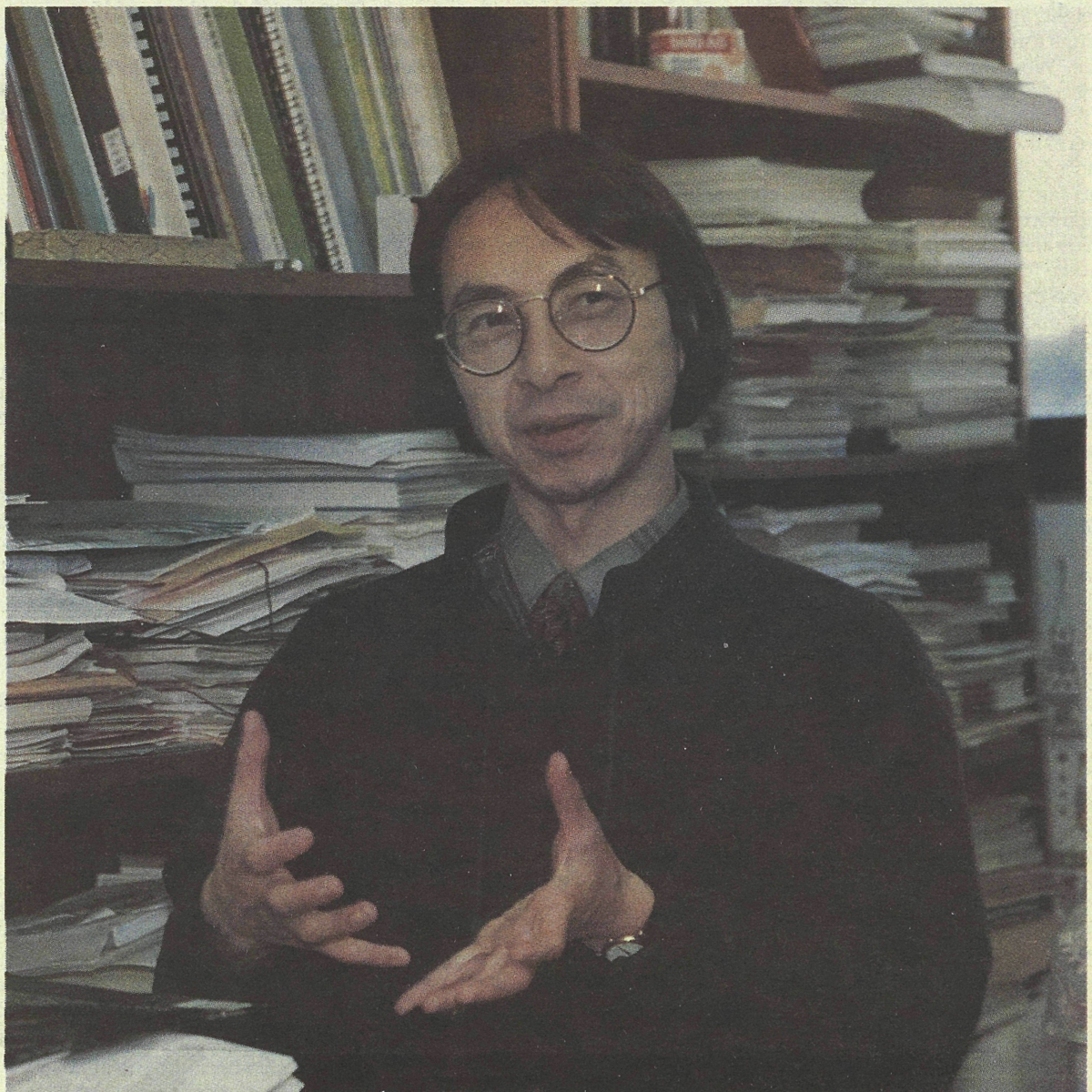
Using the program, a designer punches in the design constraints for a structure; say a bracket for an automobile body. Going through a series of stages, Kikuchi's program takes the numbers representing the constraints and turns them into an initial shape. First, the bracket is represented as a solid block of substance. Then, small spaces, which Kikuchi calls "microscale voids," are inserted to represent the removal of unnecessary portions of the substance. As the program goes through its paces, more and more material falls away until all that is left is the structure necessary to meet the constraints of the problem—an optimal bracket.

Kikuchi refers to his approach as the *homogenization method*. It is an elegant



Sketch by Homogenization Method sculpts a bridge design in computer to produce the strongest and simplest form without trial-and-error.

Continued on page 2



Kikuchi

Photo by Rodney Hill

SHAPING

continued

approach because it is so well-adapted to computers. Computers are digital—they understand off and on—and the voids and substances of the homogenization theory fit well with off and on.

Once commercial software based on the homogenization method becomes widely available, an engineer should be able to punch in digitized design constraints, then sit back and wait for the optimal shape/layout to pop up on the computer screen. An engineer who has never designed bridges before could come up with an optimal initial layout. An experienced engineer might come up with an idea he wouldn't otherwise have thought of.

The theory can also be used to analyze solutions that engineers have already devised to see if they are optimal and to improve upon them if they are not.

The Handiwork of Mother Nature

Kikuchi has been especially intrigued with checking out the handiwork of one particular engineer—Mother Nature.

He and his students have analyzed many natural structures, including bamboo, rocks and crystals, and have found that nature's materials are nearly perfectly optimal. Although thinkers have long surmised that natural materials and structures are optimal, the homogenization method is the first scientific approach that holds promise of confirming this.

The study of natural materials has left Kikuchi awestruck with nature's perfection and has sparked his imagination. He believes, for instance, that the place to look for ideas for new manmade materials is in nature and that the secret of nature's perfect materials is summed up in the word microstructure.

Nature's materials are not simple, solid sheets like such manmade materials as metals and plastics. Natural materials are composed of minute structures. Porous bone tissue, for example, is made of voids and struts. Bamboo has knots, strands and voids. These internal structures give the materials many advantages such as increased strength-to-weight ratio, better ability to withstand impact and the ability to grow and change from the inside out.

"Humans are so dumb compared with nature," Kikuchi says. "Nature has brilliant intelligence. The fibers, knots and voids in the structure of bamboo are exactly right for absorbing energy at a very light weight. It's a wonderful design. Nature changes things through manipulation of internal microstructure. We change things through external force on the object."

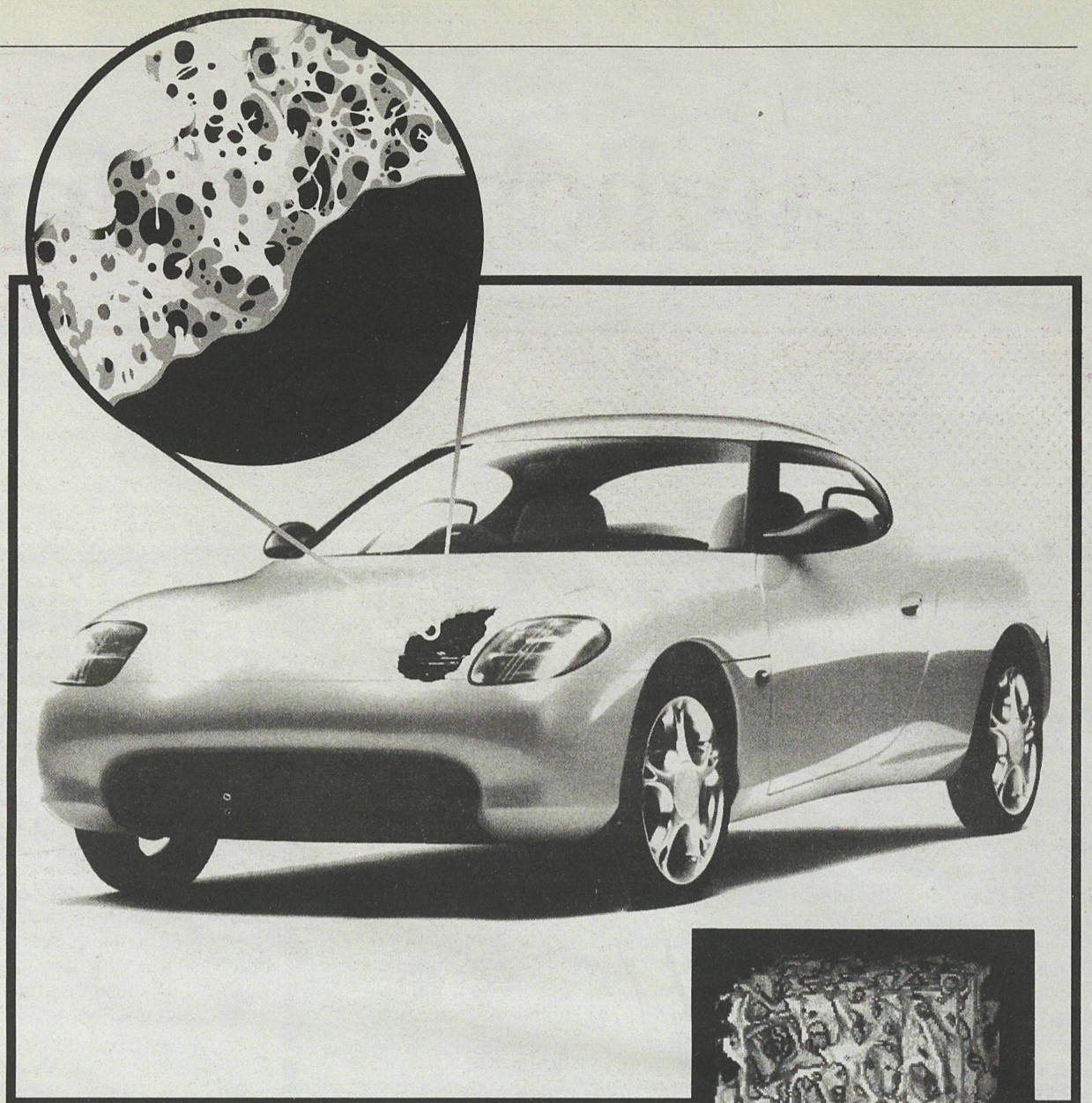
It is this ability of nature's materials to change internally that Kikuchi finds most impressive. And this is where his ideas about self-repairing buildings and cars with circulatory systems come in: The microstructure of natural materials resembles the voids and substances of the homogenization theory, and he foresees a day when, through the homogenization method, manmade materials can be designed with microstructures. Instead of being solid sheets, plastics, metals or ceramics will be honeycombed with voids, tunnels or struts, laying the groundwork for what Kikuchi calls organic function—the ability to be controlled internally—mimicking plant and animal tissue.

A building made of materials fashioned by the homogenization method could be combined with sensors and computers that would manipulate the microstructures to make internal repairs when injury was detected or to adapt to climate. A developer might construct a building in the desert that reacts to that climate just as a living plant reacts to the movements of the sun. Self-healing would be especially valuable in buildings with hazardous environments such as nuclear reactors or toxic waste facilities. They could be repaired without exposing humans to the hazards.

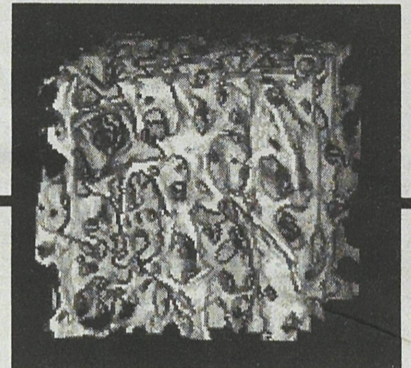
The microstructures of a car's skin could be designed to carry fluids just as veins circulate blood—providing a more uniform heat to the interior and providing a means for self-repair of rust spots or damage due to accidents.

All of these are visions for the future that are far from realization.

What is the practical significance of the homogenization method for present-day applications? Kikuchi responds, "It can be used to improve the quality of many different products. The same method can be used to design automotive parts, buildings, protective



Kikuchi's concept of a car enclosed by self-healing 'skin' containing microstructural voids, and struts resembling nature's design work.



The trabecular structure (having a framework of small struts) of bone is porous but has high strength-to-weight ratio and the ability to grow and change from the inside out. Kikuchi is attempting to transfer these design features to manmade materials.

clothing, human bone implants, textiles, machine components and composite materials."

Toyota Motor Company has already used homogenization theory to design an innovative engine hood. The underside of hoods all have structural patterns that are supposed to maximize strength while minimizing weight. Engineers have come up with many concepts that solve the problem, but when the criteria were subjected to the homogenization method, the software produced a very complex shape that no one had thought of before. Toyota engineers evaluated the shape with sophisticated mathematics and found that it was indeed the optimal solution. Now they plan to use homogenization to design a new floor shape for their cars and perhaps many other parts.

Optimal automotive parts will become more and more important in the coming years in the United States as standards for fuel economy get stricter.

Sumitomo Heavy Industries is another Japanese firm that has embraced the homogenization method. The company used it to realize a 40 percent weight reduction on a large hangar door. Akihiko Yoshii, a senior researcher at Sumitomo, says, "Further sophistication and related research and development are needed for utilizing it [the optimization method] in practical design, and we intend to contribute to that sophistication. Then the method will become a popular shape-optimization tool and will also become an efficient educational tool for developing a design sense in structural engineers."

He Puts Theories in Public Domain

Although Kikuchi has created his own computer program using homogenization theory, he does not sell or give the software to the companies that are using his concept. He has put his theories into the public domain through published papers and conference presentations, and companies are free to use the information to create their own software. If they need help with the complicated mathematics, they can send students to study with Kikuchi.

One company that has taken advantage of the public knowledge is Quint, a Japanese software firm, which has created two commercial software programs called Optishape and Premat/Postmat. Twelve Japanese firms in addition to Toyota and Sumitomo are using the software for design challenges in the electronics, textile, ceramics, rubber, general contracting and air conditioning industries. A number of European companies also have shown an interest.

Kikuchi is troubled that American businesses have

been slow to take a look at his theory. "At first I had difficulty persuading American industry to look at the theory and its potential for enhancement of their design capability. On the other hand, many industries in Japan and Europe were extremely receptive. Very recently some American companies, such as Ford, have started implementing our method into their design analysis system."

Industry is not the only area where homogenization theory has proved useful. Drs. Steven Goldstein, professor of surgery at the U-M Medical Center, and Scott Hollister, assistant professor of surgery, are working with Kikuchi, using homogenization theory to study the microstructural architecture of bone.

Goldstein and Hollister used the theory to predict how bone would respond to an implant. Their prediction was confirmed by animal studies. Goldstein says the results "may enable us to rely less on in vivo animal studies in the future. Our goal is to take it to the next step. One strut of trabecular [having a framework of small struts] bone is 200 microns in size, about half the width of a human hair. That is the level we are at now. We hope to magnify the study to the cellular level, where bone orchestrates its adaptation so that we can find out what kind of organizational strategy the cells use and how they are influenced by environmental and genetic cues."

Goldstein believes that these studies will be important for investigating fracture and fracture repair, osteoporosis, arthritis and bone implants. He thinks it will take a couple of more years of back-and-forth testing between animal studies and computer modeling to validate the method, and he predicts that in future years his studies will deal more with computers than animals.

Kikuchi has had numerous offers from industry to set up research laboratories in the private sector, but he always declines. "I could make money off of my research programs and be a wealthy industrialist," he says, "but I don't want to. In a company you have to wear a tie, have large responsibilities and take care of co-workers. I like the University—it's fun meeting so many brilliant, ambitious people. And besides, the University will let me work on any strange concept I come up with."

Maggie Hostetler is the science writer for the Department of Mechanical Engineering and Applied Mechanics in the College of Engineering.

Imaginary Voyages

Robinson Crusoe spawned a literary genre of tales of abandoned, resourceful travelers. Or did it? Former Regent Lucius Hubbard thought Defoe copied a Dutch work.

By Christine Leedy de Wit

Looking across a large expanse of water, many dream of setting sail. Some, like the character Robinson Crusoe, take off. Most of us are content to read about it.

Among the Special Collections of the University Library is a body of books that can satisfy our wanderlust without getting anyone ruffled or wet. These are books about real and imaginary voyages of which Daniel Defoe's *The Life and Strange Surprising Adventures of Robinson Crusoe, of York, Mariner* (London, 1719) plays the most significant role. A former University regent, Lucius L. Hubbard (see accompanying story), donated the books during the 1920s. Seventy years later, a Dutch lecturer in the Department of Germanic Languages, Ton Broos, has helped bring the Hubbard Collection to surface.

Crusoe was an "overnight success," says Broos of the story of a man who sought adventure, became stranded on a desert island, demonstrated self-reliance and wrestled with religious belief. "Very soon after it was published you started finding translations and books we call 'robinsonades,' which imitate the story."

Broos learned of the Hubbard Collection in the Netherlands when writing an article about a scholar who studied Dutch robinsonades. When he arrived in Ann Arbor and saw the collection, Broos was amazed by its size and vowed to "do something with this."

What's really significant about the 50-foot-long Hubbard collection, says Peggy Daub, head of the Special Collections Library, are the first editions. These include not only the first *Crusoe*, but also Defoe's sequels, *The Farther Adventures of Crusoe*, also



Broos and Daub with some versions of *Robinson Crusoe*, one of the most imitated works in literary history.

published in 1719, and just a year later the *Serious Reflections During the Life and Surprising Adventures of Crusoe*.

Other early editions stand out as well, including pirate editions of the original *Robinson Crusoe* and one 1747 edition from the library of an American writer who was himself no mean spinner of adventure yarns, Mark Twain.

"The collection is a gold mine in that it traces the evolution of a story," Daub says. A cultural historian, she says, might see whether publishers of editions produced in the Victorian era emphasized the moral teachings of *Crusoe* in their introductions. Art historians could compare illustrations from one century to next. Broos and Daub organized an October exhibit in the Harlan Hatcher Graduate Library of 1,500-plus *Robinson Crusoe* editions, translations and robinsonades collected by Hubbard.

The largest books on the shelves are translations of *Crusoe* in braille; the smallest are 3" by 3" chapbooks that look like children's toys although they were published for adults as pocket-size penny books for less literate folk. Children's editions, like a 20th-century version cut out in the shape of Robinson Crusoe and his dog, line the shelves as well.

There are stage adaptations of *Robinson Crusoe*, and robinsonades parroting the title in every way: *The Female Crusoe*, *Boy Crusoes*, *The Catholic Crusoe*, *Swiss Family Robinson*, *American Family Robinson*, and even, the *Dog Crusoe*. The contents page of the latter gives the following synopsis of the first chapter: "Crusoe's early history, the agonizing pains and sorrow of his puppyhood, and other interesting matters."

All of this flattering imitation of *Crusoe* shows that Defoe really knew that insincerity can help sell a story. "*Robinson*



Frontispiece of the first edition of *Robinson Crusoe* (1719) designed by Clark and Pine.

Crusoe is one of the great counterfeits of all time. A hoax — that's where I begin, when I teach *Crusoe*," says Prof. James Winn, a specialist in 17th and 18th century English literature and director of the U-M Institute for the Humanities.

Winn stresses that though we today see the work as a great novel, Defoe did not write the story as fiction. Rather, he wrote it knowing that the reader in the 1700s would consider it true. During the 17th century, those who read, read travel literature, and Winn points out, Defoe was an avid reader and political journalist who knew the genre well.

The Hubbard collection contains sources that Defoe would have read: *A Cruising Voyage Round the World* (1712) by Captain Woodes Rogers describes the story of Alexander Selkirk, a seaman Rogers rescued on Juan Fernandez Island, where Selkirk was marooned between 1704-1709. Edward Cooke also told the Selkirk story in his *A Voyage to the South Sea* (1712).

While Defoe may have capitalized on the genre of his day, he rose above his contemporaries in his writing and psychological insights. As Winn describes it, Defoe, a spy and impersonator, had an ability to get under people's skins, to make characters real. He was so convincing, says

Winn, that the essayist Richard Steele went to the docks looking to interview Crusoe for the *Spectator*. Later, scholars pointed to Defoe's literary prowess and cited *Robinson Crusoe* as one of the first examples of the novel.

As Hubbard built his collection of the ever-popular *Robinson Crusoe*, he himself became intrigued by a possible source for the story. He was urged by a publisher and bookseller in The Hague to buy a 1732 second edition (and the only known extant copy) of a 1708 Dutch work, *The Description of the Mighty Kingdom of Krinke Kesmes*, by Hendrik Smeeks.

During the 1700s the Dutch were highly successful sea voyagers, drawing many of the maps of Defoe's day and returning from their trading exploits with real and imaginary stories of unknown southlands. *Krinke Kesmes* tells of mariner Sjouke Gabbes's travels to a fictitious island in the South Seas and contains a short desert island episode. Upon acquiring the book and receiving encouragement from a Dutch historian, Hubbard set out to prove that Defoe plagiarized Smeeks' book.

According to Ton Broos, Hubbard meticulously prepared his 1921 treatise, *A Dutch Source for Robinson Crusoe*. "He translated the 68-page island episode and compared the two texts line by line," Broos says, "but there's simply no proof that Defoe knew the Dutch language or had access to a translation of the Smeeks book" despite the fact that Defoe knew several languages, had a Dutch grammar in his library and had spied in the Netherlands.

"In both stories the hero survives on a desert island for years, finds footprints in the sand, builds a hut, finds water, meets with cannibals, shoots fowl and has the company of a dog. However, other adventurers like Dampier, Selkirk and Knox describe similar events.

Hubbard's scholarly contemporaries dismissed his theory that Defoe lifted the text. W.H. Staverman, a Dutch authority on Robinson Crusoe and robinsonades, said of Hubbard's work, "The letter is alive, but the spirit is dead."

Broos says it's no coincidence that when he finally got down to doing something with Hubbard's collection of imaginary voyages it was in 1992. "After all," he points out, "this is the anniversary of a great voyage: 350 years ago Abel Janszoon Tasman discovered New Zealand ['sea land' in Dutch] and the island Tasmania.

"Oh, yes," he adds, "and there was Columbus too."



An important Dutch work that preceded *Crusoe* was *The Description of the Mighty Kingdom of Krinke Kesmes* by H. Smeeks. It told of the adventures of Sjouke Gabbes.

Lucius L. Hubbard



Born in Cincinnati in 1849, Hubbard was a graduate of

the Phillips Exeter Academy (1868), Harvard College (1872) and Boston Law School (1875).

His 20th-year class notes for Exeter's Reunion Report indicate he was an avid outdoorsman, saying he had "spent much time camping and shooting in Maine [where he'd married Frances J. Lambard of Augusta in 1875]. Author of an excellent guide and manual, illustrated with photographs, *Summer Vacations at Moosehead Lake and Vicinity*, which received the honor of three editions. . . . Went to Europe in the spring of 1883, with his family, to remain several years."

Hubbard quit the law in 1883, possibly to escape a legal dispute with an investment company he represented. He took his family to Bonn, Germany, and studied mineralogy and geology. He returned to America in 1887, moving to Houghton, Michigan, in 1891 to work with the State Geological Survey and teach geology at the Michigan Mining School (now Michigan Technological University). In 1893 he was appointed general manager of four copper mines, and three days into his job he uncovered two rich beds of the ore. He left mining for health reasons in 1913, two years after his appointment to the U-M Board of Regents. Meantime, he had become director of two banks.

Book collecting had long been Hubbard's passion. His collection consisted principally of Americana, to which he added his interest in robinsonades and in Swift's *Gulliver's Travels*.

Poor health forced him in 1914 not only to resign from the mining companies but also to auction most of his books, but he saved his *Crusoe* and *Gulliver* collections. (His shrewdness is illustrated by his purchase of a first-edition *Crusoe* for \$750 in 1912 from a Chicago bookseller who was about to list it at \$850 despite having estimated that it would be "cheap at \$1,000.")

In the early '20s, however, Hubbard's book collecting rebounded when he received first choice from Hermann Ullrich's collection of robinsonades (books with the *Crusoe* theme or with "Robinson" on the titlepage). His purchases culminated in an impressive collection of more than 1,500 works catalogued under the umbrella title of *Imaginary Voyages*. He donated the entire collection to the University, stipulating that there be no public mention of his gift.

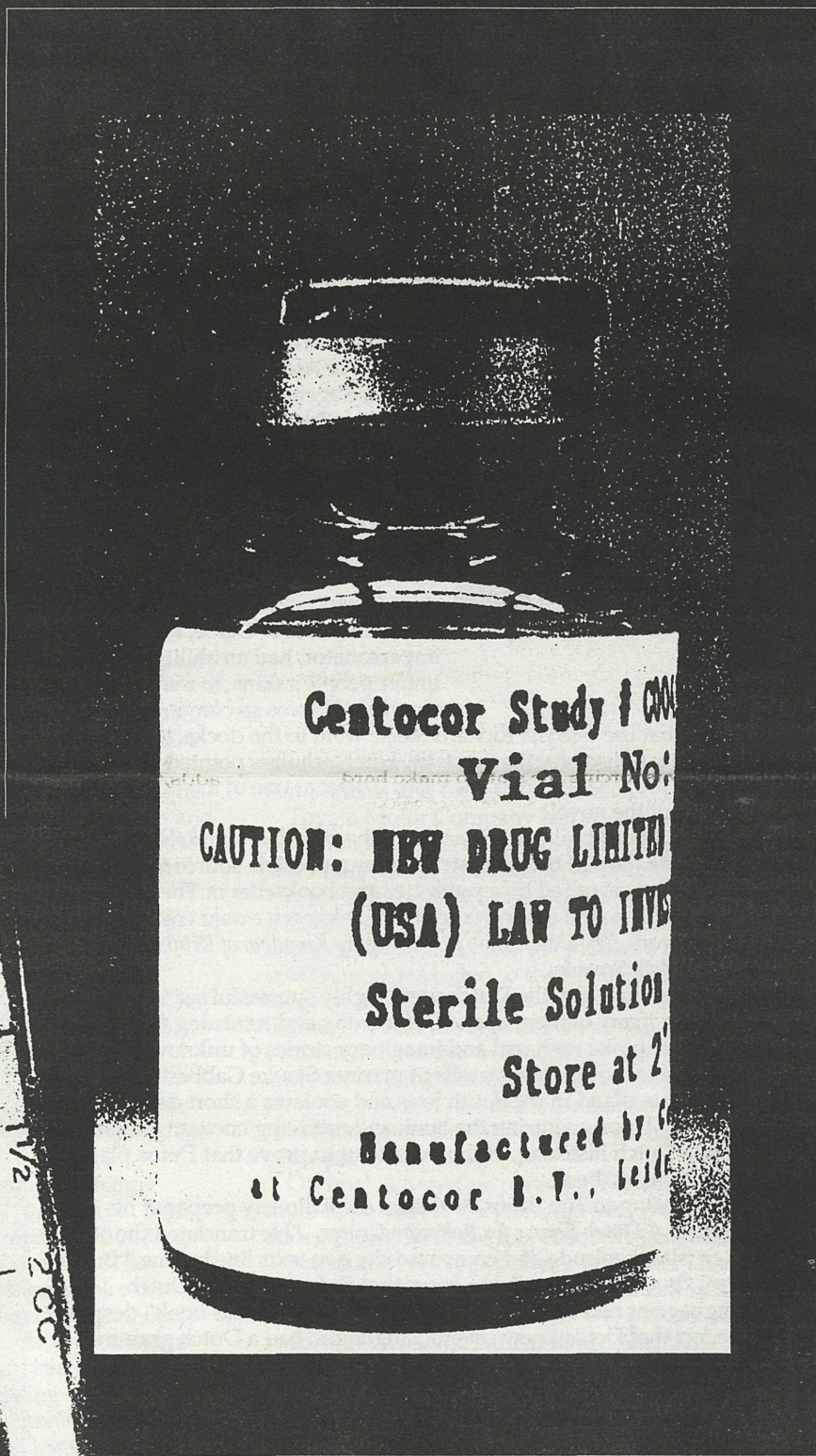
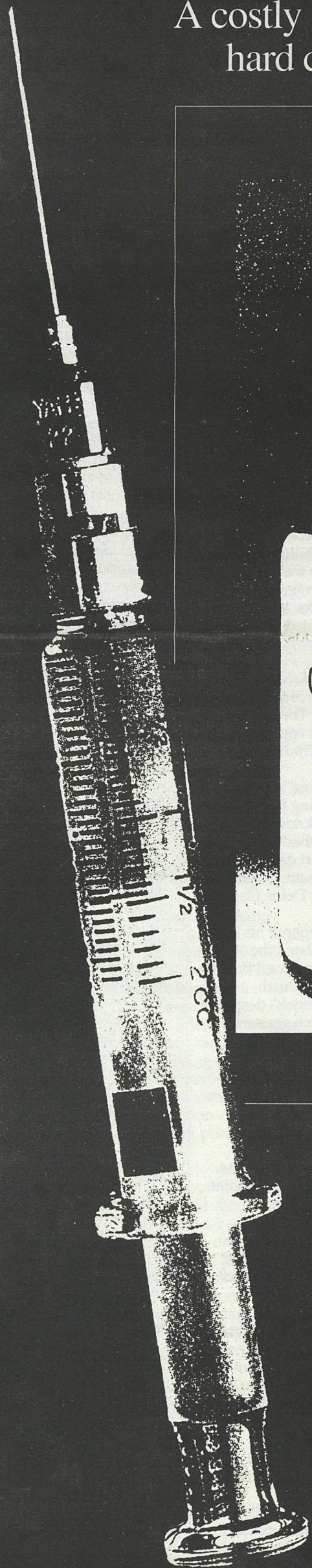
William Clements, fellow Regent, book collector and namesake of the University's William Clements Library, wrote to Hubbard in March 1925, "You know all people look at you and me as unshackled maniacs, but I think it is much more sensible to spend money in books than in automobiles"—Ton J. Broos.

Christine Leedy de Wit is moving to the Netherlands after writing for the U-M Office of Development.

Photo courtesy of the Bentley Historical Library

Life isn't cheap

A costly and controversial drug poses hard choices for health care givers



By Katherine Blair

A 2-year-old boy who had been bitten more than 100 times by a pack of dogs was helicoptered to a Pittsburgh hospital. Despite heroic efforts to treat his wounds and enormous doses of antibiotics, the toddler was dying from septic shock, a massive infection that is a leading cause of death in hospital intensive care units (ICUs).

As a last-ditch effort, the boy's doctors contacted Centocor Incorporated, a pharmaceutical company in Malvern, Pennsylvania, and requested a small amount of HA-1A, a new drug not yet approved by the Food and Drug Administration (FDA) and therefore not commercially available. One of the first of an entirely new type of drug—human monoclonal antibodies—HA-1A was developed to treat the kind of infection that the boy was dying of. It had never been used on children, but in view of the circumstances, the FDA approved the request on a one-time compassionate use basis. A 20 cc. vial was flown to Pittsburgh. Twelve hours after the boy received HA-1A, the crisis had passed.

The boy was lucky. Sepsis is an infection of the organs and/or bloodstream that almost always strikes people who already are very sick, either because of trauma—like the boy's—or because of illness such as cancer, AIDS, chronic liver disease, diabetes or alcoholism. When sepsis is suspected, medical personnel must intervene quickly because patients with this condition deteriorate rapidly. Of the 400,000 Americans who become septic each year, 140,000 die. HA-1A saves sepsis patients who would have otherwise died, but it only works for the 35 percent who have gram negative bacteremia. The boy was one of the 35 percent.

That the boy even got the drug at all was luck—since HA-1A is not yet commercially available, it is not regularly stocked in a hospital pharmacy. Getting it on a compassionate use basis—as the boy did—depends on how soon after the onset of sepsis the physician requests it and how quickly Centocor can get it there.

The boy also got the drug for free. After Centocor receives final FDA approval and can market HA-1A, the single dose required is expected to cost \$3,750, the price in the seven European countries where it has already been approved.

The little boy's story had a happy ending, and his family doctors say no question that he survived because of HA-1A. But despite this and similar spectacular successes, HA-1A has provoked a tremendous controversy that highlights the hard questions facing medicine today.

For example, should cost be a factor in weighing treatment options? To save the patient, HA-1A must be administered before physicians can know with certainty that a patient has the particular type of sepsis for which it is effective; two thirds of the time it will be wasted. And who picks up the tab? Already Medicare and major health insurers like Blue Cross/Blue Shield have said that they will not pay for HA-1A once it is marketed. If the insurance companies won't pay and the patient can't, does the hospital? Should drug companies be allowed to charge anything they choose or should drug prices be regulated?

Another seemingly insoluble issue that HA-1A raises is the treatment of patients

with no hope of recovery. Most sepsis patients already are very sick from their underlying diseases and many will not live very long anyway. Are hospitals and physicians still obliged to do everything to save them? Who should decide? Physicians, lawyers, legislators, citizens, insurance companies? Or should the invisible hand of the market place prevail—those patients with financial resources will get all treatments possible and those patients without will not?

These are the kinds of questions that the University of Michigan Medical Center (UMMC), the School of Public Health, the Law School and the Departments of Economics and Philosophy are weighing as HA-1A and other equally expensive and controversial high-tech drugs and treatments become available.



'HA-1A is the first of a series of drugs that will save lives using molecular biology'—Dr. Robert Fekety, chief of Infectious Diseases.

UMMC was one of 24 American medical centers that participated in the HA-1A drug trial during 1990. None of the UMMC sepsis patients who were in the drug trial made as dramatic a recovery as the Pennsylvania boy. In fact all of the ones who recovered exhibited such gradual improvement that it was impossible to know at the time who had got HA-1A and who got the placebo. Nonetheless, Dr. Robert Fekety, chief of the Division of Infectious Diseases and UMMC's principal HA-1A investigator during the drug trial, calls it a "breakthrough drug." The overall results of the drug trial clearly indicate that, thanks to HA-1A, a lot of people are alive now who would otherwise be dead, Fekety says.

"HA-1A is a medical triumph; it is the first of a series of drugs that will save lives using molecular biology," Fekety says. "In my 35 years of treating infectious diseases, HA-1A is one of the most exciting things I've been a part of. In my career I have witnessed two great breakthroughs—penicillin/antibiotics and HA-1A/monoclonal antibodies."

Monoclonal antibodies are a new type of drug created through biotechnology and genetic engineering; they can produce a specific effect at an extremely small targeted site. In the case of HA-1A, the antibodies seek out, lock onto and inactivate a component of the cell wall of gram-negative bacteria, stopping the component from becoming poisonous and shedding into the patient's bloodstream, where it can cause shock, organ failure and death, often within a few hours.

The advantages of human monoclonal antibodies are that by treating only the dangerous toxins produced by bacteria, harmful side effects of a medication, which can be as life-threatening as the disease itself, are minimized. And since HA-1A is an antibody primarily derived from human cells and not, as many drugs currently are, from animal cells, the possibility of an allergic reaction is greatly reduced.

With biotechnology and genetic engineering techniques there is tremendous potential for developing medications that can cure diseases like sepsis. But these "breakthrough drugs" are still very much in the initial stages of development. HA-1A can produce "miracle cures," but more often than not this silver bullet hits wide of the mark because it only treats one type of sepsis that is very difficult to diagnose.

General sepsis itself is not hard to diagnose, Fekety says, because patients with it "have an ashen facial expression and hurt all over." But determining by clinical examination what has caused the patient to become septic is very hard even for very experienced

physicians. Although the physical symptoms are nearly identical, this type of infection can be caused by fungi, viruses, gram-positive bacteria, or gram-negative bacteria. HA-1A only works for the subset of gram-negative bacteria patients who have it in their bloodstream—a condition called gram-negative bacteremia.

Giving HA-1A routinely to all 400,000 sepsis patients a year in the United States would add another \$1.5 billion to the national health bill, and yet would still not save all the 125,000 who had gram negative bacteremia, according to a study published in the December 25, 1991, *Journal of the American Medical Association (JAMA)*. That is because some of these 125,000 patients would have survived anyway and some would have died anyway because of the severity of their underlying disease.

The total number who would be saved on an annual basis is not clear. Fekety says that it would have to be given to about six patients to save one (on a national basis 17 percent, or 64,000, sepsis patients a year). But the medical researchers who published the *JAMA* study were less optimistic. In their analysis of the drug trial data, they concluded that only one patient in 20 (5 percent) would be saved each year. By their reckoning, the \$1.5 billion additional health dollars would save only 21,600 lives.

The third-party payers—Medicare, Medicaid and insurance companies—that reimburse hospitals for most of their expenses have said that they will not pay for HA-1A even if it receives FDA approval because of its high cost and uncertain benefit. This means that when HA-1A is administered to a patient, individual institutions like UMMC will have to pay for it themselves. So the number of patients who will receive HA-1A will largely depend on a hospital's ability to absorb the cost.

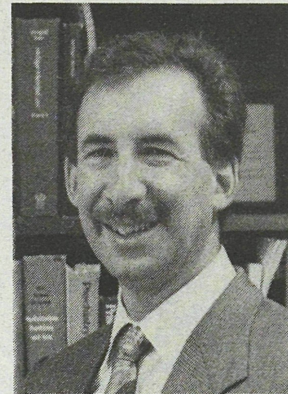
UMMC has decided for the present that it can absorb the cost of HA-1A and stay financially solvent. But this policy is forcing the staff to make hard choices. "For the \$1.4 million we have allocated annually for HA-1A," says Richard de Leon, director of the UMMC pharmacy and a professor in the College of Pharmacy, "we are buying a drug for which we won't get reimbursed. A lot of people are going to get it who won't be helped. With the same money we could buy diagnostic equipment that could help many more people and we would get reimbursed for its use."



'We're buying a drug for which we won't get reimbursed. A lot of people are going to get it who won't be helped'—Richard de Leon, UMMC pharmacy director.

To insure that of the hundreds of UMMC sepsis patients a year only those most likely to benefit will get the drug, a hospital committee of four pharmacists, five physicians and the hospital attorney spent many hours drawing up UMMC's most complicated drug protocol ever. For the first time a patient must meet specific criteria determined by a committee to get a medication.

Since the price of HA-1A is so high, why don't hospitals just refuse to buy it until the cost drops? Edward B. Goldman, the Medical Center attorney who helped draw up the HA-1A protocol, explains that while UMMC is a "big player" in the field of health care, it's not big enough to force the price down. It would take a similar stance by other big players, like Blue Cross/Blue Shield of Michigan or Medicare, to lower the drug's cost. Goldman also added that failure to stock and administer HA-1A could expose the hospital to legal liability if a patient died who could have been saved with HA-1A.



'We can provide HA-1A and stay solvent. But what do we do when 10 others like it are approved by the FDA but not covered by health insurers?'—UMMC attorney Edward Goldman.

Why is HA-1A so expensive—12 times more than the most costly antibiotics, which "cost maybe \$300 for two days' treatment," according to U-M's Dr. Galen Toews (pronounced "Tays"). The fact that a breakthrough technology created HA-1A doesn't mean the price is merited, says Toews, who is chief of the Division of Pulmonary and Critical Care Medicine. "HA-1A is not a chemical as most drugs are," he explains. "It's a therapeutic agent that reacts against a portion of a microbe. The fact that the mechanism here is a little different [from that of an antibiotic] allows a company to say it plowed new ground, so it should be able to collect a profit. But how much profit is legitimate?"

Toews says that while it's reasonable for a company to recoup its costs and some profit, he finds it improbable that the \$3,750 price tag for HA-1A reflects this. Centocor counters that their price is merited because research and development costs of HA-1A were \$450 million. Nevertheless, in the current era of health cost containment, Toews thinks it's time to seriously consider regulating drug prices. "Congress," he adds, "has never addressed how much profit in the drug industry is legitimate."

Profits in the pharmaceutical industry are enormous. "It is the crown jewel of American industry by any measure," says de Leon, "but regulating drug prices too heavily could have negative consequences, because if you take away a market incentive, you could end up with what happened in Eastern Europe and the former Soviet Union—zero drugs."

Fekety counters that market incentives can bring down the cost of expensive drugs like HA-1A in other ways. "Since HA-1A is so expensive," he says, "you can be sure that companies are working to develop a quick and inexpensive diagnostic blood test for sepsis patients to identify those with gram-negative bacteremia. Once such a test comes along, it will be 'fast-tracked' through the FDA approval process." Fekety thinks such a test could be available within two years.

A very likely reason for the expected \$3,750 per dose price is that Centocor is struggling to stay in business. Last April the *Wall Street Journal* reported that Centocor, which has yet to show a profit, lost \$132 million in 1990 and \$195 million in 1991.

At least seven competing drugs are now being developed by other companies. Centocor itself is working on a drug that can treat sepsis caused by both gram-negative and gram-positive bacteria—about 80 percent of all sepsis cases. If it is effective, HA-1A will become obsolete. Fekety predicts, "In three to five years, we will have new drugs that can do what HA-1A does better and cheaper."

Centocor spokesperson Richard Koenig contends that the cost of HA-1A is not so high when compared with that of other drugs like AZT, used to treat AIDS (about \$2,200 a year when taken in the usual dosage of five times a day), and Colestipol, used to treat high cholesterol (\$1,400 a year for a maximum dosage of four times a day). The bill for HA-1A draws criticism, he says, because the entire cost comes in one dose whereas these other medications are administered in many doses over a long time, sometimes for years. Fekety agrees, noting, "When you figure the lifetime cost of medications designed to save years of life when taken on a daily basis—such as those for hypertension—HA-1A is probably not more expensive."

Economists and health care administrators say that the more telling figure in trying to assess the true cost of HA-1A compared with other treatments is not the

cost of HA-1A itself, but the cost-per-life-saved when the drug is used. Such calculations are arrived at by dividing the total cost of treating everyone in a group by the number of people in the group whose lives were saved by using the drug.

The authors of the *JAMA* article calculated the cost-per-life-saved in HA-1A's first drug trial at \$99,000 if the drug were given to all sepsis patients. Measured against the costs of treating other medical conditions, this cost is "not stratospheric—for example, it costs about \$10,000 to get a gall bladder removed," Toews says.

But public health specialists say another factor that must be weighed here is years-of-life-saved. How many years of life will be saved by giving HA-1A to an already seriously ill patient? On average, five, according to the doctors who analyzed HA-1A costs in the *JAMA* article. But if five years is the average, the life expectancy of many sepsis survivors who also have cancer, AIDS, organ failure, acute alcoholism or end-stage diabetes will be much less. Is it wise or just to spend \$99,000 to prolong their lives for only a few months?

The answer at UMMC is yes. If the patient, family and physician agree to aggressive treatment of the underlying disease, and if the patient presents symptoms consistent with those specified in the HA-1A protocol, the drug will be given. Patients will not receive HA-1A if they do not exhibit these symptoms, regardless of their ability and desire to pay.



'It costs lots of money to postpone death by marginal amounts'—Catherine G. McLaughlin of the School of Public Health.

HA-1A is making people think about health care dollars in very specific terms. Until now such discussions have never gotten far beyond acknowledging that "it costs lots of money to postpone death by marginal amounts," as Catherine G. McLaughlin, associate professor of economics in the U-M School of Public Health, puts it.

While the idea of rationing medical treatment may sound new, health care in the United States has always been rationed, McLaughlin says. But until now the mechanism for rationing has been the patients' (or their insurers') ability to pay. It was possible to avoid discussion about the cost of keeping a comatose patient alive for a few more weeks or the fact that the money, labor and time spent on medical and nursing care, equipment and drugs were not available to someone else whose chances of survival were greater, because from the patient's side of the equation, medical insurance coverage was available.

This is no longer true. With expensive drugs like HA-1A, an aging population that demands more intensive health care, the AIDS epidemic and generally escalating health costs, even a well-insured patient won't be covered for certain courses of treatment anymore.

At the same time, the general public is pressing for national health insurance. Many health care experts predict enactment of such a program in the next few years. This would extend health insurance to the 36 million people who aren't covered now, adding so many more potential patients to the system that providing all of them with all possible treatments would be financially impossible. "As a society we are going to have to allocate medical resources in a new way," McLaughlin says. The question is how to allocate those resources and who will decide.

Although UMMC physicians and pharmacists established the criteria for rationing HA-1A, they are emphatic in saying that society should not make doctors decide how health care dollars should be spent.

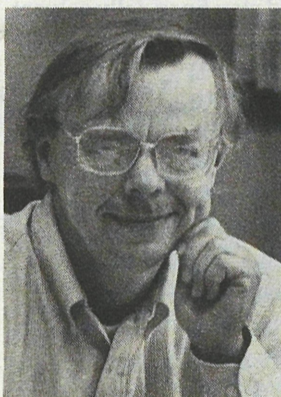
Bioethicists and economists are joining with health care professionals in grappling with the issue of fairness and justice in a medical context. Should American society let the "invisible hand" of the market determine how health resources are allocated, or should concepts of fairness and justice shape the decision of how to use drugs like HA-1A or other very expensive treatment regimens?

Economists, whose entire discipline is based on allocation of scarce resources among competing ends, have created an enormous literature on the subject of allocating health care dollars. Prof. Theodore C. Bergstrom of the Department of Economics says that concepts like cost-per-life-saved and years-of-life-saved can help with the accounting of health care expenditures and in making some public policy decisions, such as whether to spend more public funds on well-baby care. For a relatively low cost of more extensive preventive care, Bergstrom points out, babies will benefit throughout their expected lifetimes.

Another economic concept that can help shape decisions about costly treatments for severely ill patients—for example patients with sepsis in the final stages of their underlying disease—is quality-adjusted years-per-life saved. This recognizes the fact that a life saved is not the same if the patient is in excruciating pain or comatose.

When some of the consequences of these economic concepts are worked out, however, it's very hard for people to face them, Bergstrom says. "No one wants to admit that there are situations where it's not worth it to save a life. No one wants to say, 'We have to let this person die because it costs too much to save him.'"

If health care decisions based on cost as well as efficacy are hard to make at the policy level, they are even more so in "real life." Katherine Swartz, a health care economist at the Harvard School of Public Health



'No one wants to admit that there are situations where it's not worth it to save a life'—Theodore Bergstrom of the Department of Economics.

who collaborated with McLaughlin on a health-insurance study, accompanied physicians on patient rounds in hospitals. She observed that when quality of life issues were couched in terms of cost, the families who had to make the decisions could not act. If the physician said "The patient is comatose and will die—should we pull the plug or keep him alive for two weeks? But the two weeks will be very expensive and who will pay for this treatment?" the families were paralyzed. No one could say that keeping a relative alive was not worth the money even if the patient was in a persistently vegetative state.

But when the decision was couched in terms of pain the families could act, Swartz said. "When a physician said, 'Further care is futile, and the patient is in a lot of pain, so let's turn off the machine,' families could decide to have life-sustaining equipment turned off.

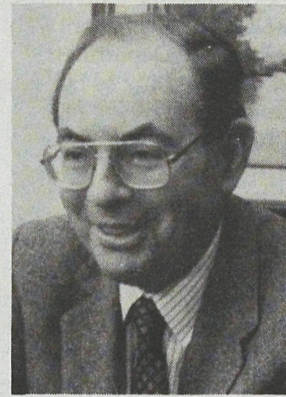
For now, McLaughlin suggests, it's possible to forestall such agonizing decisions by adding more dollars to health care—for example using the "peace dividend" and diverting dollars from national defense to health. But the day of reckoning is coming and economists were as emphatic as doctors in saying that decisions about how health care dollars should be allocated and decisions about quality of life issues should be made by legislative bodies and reflect the thinking of citizens themselves.

The recent experience of the state of Oregon, however, shows that even when citizens and legislative bodies do join together to debate these issues, designing and implementing any plan that addresses quality of life issues or attempts to reallocate health care dollars will be very difficult.

For five years state executives, legislators, physicians and citizens labored together to revise Oregon's Medicaid program so that more people would be

covered, and to couple this with a program that would guarantee health care for all state residents. The centerpiece of the plan was a list of 709 medical procedures that were ranked according to their cost, effectiveness and quality of life benefit. Those procedures that fell below number 587 would not be covered, no matter how compelling the individual case.

Federal approval for Oregon's plan was necessary because Medicaid is a federal program, but in August the Bush administration rejected Oregon's plan, citing discrimination against people with certain disabilities. For now, the Oregon plan is in limbo.



'Indirect-payment decision mechanisms are like pain killers: They make us feel better and allow us to make emotionally wrenching decisions'—Yale Kamisar of the Law School.

Direct action—public policy debates, mobilizing citizenry and changing laws—may not be the only way to resolve the costly quality of life dilemma, however. Prof. Yale Kamisar of the U-M Law School, who has been writing about right-to-die issues for more than 30 years, predicts that resolution will be achieved indirectly through payment mechanisms.

Already insurance companies are refusing to pay for many experimental treatments, and Kamisar believes that eventually they will also refuse to pay for treatment of patients in a persistently vegetative state.

In Kamisar's future bedside scenario, the doctor says something to the effect, "We can keep this patient alive in this vegetative condition for two years, but after 10 days the insurance won't pay and you must assume the \$1,000-a-day cost." Since most families can't afford this, the equipment will be switched off. Kamisar adds, "No one can be blunt here. These indirect-payment decision mechanisms are like pain killers: They make us feel better and allow us to make emotionally wrenching decisions."

Even before it is commercially available, HA-1A has forced health-care providers to acquire hands-on experience with making difficult choices. Meanwhile, the decision to give final marketing approval for HA-1A was denied in a last-minute decision last April. The FDA held that Centocor had not proved that HA-1A was effective in treating sepsis and asked the company to conduct another drug trial which began in July. UMMC is again participating. The request came despite the fact that in September 1991 an FDA advisory panel recommended approval of HA-1A, a move that usually leads to a green light for marketing a drug.

All the specific issues that HA-1A raises are on hold pending the outcome of the second drug trial. "But the HA-1A case is only the tip of the iceberg," says UMMC attorney Goldman. "There are other drugs in development that are just as specific, just as costly and just as controversial. We could afford to provide HA-1A and stay solvent. But what do we do when 10 others like it are approved by the FDA but not covered by health insurers? The ethical issue of the '70s and '80s was termination of life support. In the '90s it is resource allocation."

Katherine Blair is a free lance writer in Falls Church, Virginia.

M CAMPAIGN

U-M launches biggest campaign for a public university

By Jane R. Elgass

When the University announced the Campaign for Michigan in a series of mainly invitation-only events on Sept. 18, it launched the largest fund-raising project ever by a public university. The fund-raising program and its \$1 billion goal have been described by many as the University's most important undertaking of this decade.

Equally important as the dollar goal will be the work by University officials and volunteers nationwide to establish a firm base of ongoing voluntary support of the University that will endure after the Campaign's completion and carry the University into the 21st century with a more stable financial base.

"The Campaign is terribly important to the future of the University," says President James J. Duderstadt. "It's vital to sustaining the quality of the institution. While a number of programs and activities will benefit from the project, a major goal is a permanent increase in our level of private support."

With state appropriations down in real terms, tuition rates pushing the limits of what students and families can handle, and no increase and possibly a decrease in federal support, the University is working to raise the level of private support over the long term to approach that provided by each of the other three revenue sources.

Duderstadt notes that while \$1 billion seems like a great deal of money, "it costs \$2 billion per year just to run the University. The \$1 billion goal represents about 5 percent of our total budget over the next decade. Funds raised during the Campaign will compensate for losses in state assistance and, if we are successful, give us a base for future growth."

The \$1 billion goal includes \$850 million in gifts and pledges for facilities, endowment and immediately spendable funds, and \$150 million in bequests. Of the \$850 million, \$110 million is targeted for facilities, \$340 million for endowment, and \$400 million for unrestricted use.

While the Campaign will not solve any of the University's short-term financial problems—and is not

intended to—"it is vital to sustaining the quality of its people and programs into the future," says Provost Gilbert R. Whitaker Jr.

"The Campaign is clearly the way to go for the long-term, allowing us to build support by alumni and friends. It also is a way to keep people informed of our aspirations and needs."

For the short-term, Whitaker says, the University is relying on cost-containment and internal reallocation programs, as well as an almost across-the-board salary freeze this year, which he says will put the University on a stronger fiscal base next year.

Whitaker notes that the University units participating in the Campaign—all 17 schools and colleges and a number of other units on the Ann Arbor campus, as well as U-M-Flint and U-M-Dearborn—are "excited, very engaged" in the project. "The number of volunteers is way up."

Sharing in that excitement is School of Music Dean Paul C. Boylan, who for



With their 'Let's Go Blue!' fists pumping, Campaign Team members were led in a rousing rendition of *The Victors* by (l-r) President and Mrs. Duderstadt, Alumni Assn. Director Robert G. Forman and band director Gary Lewis.

the past two years has headed a six-member committee that helped units set realistic goals for themselves and thrashed out many of the details of Campaign logistics. (Other members of the Academic Programs Group Subcommittee on Development are deans Giles G. Bole, Medical School; John H. D'Arms, Horace H. Rackham

School of Graduate Studies and vice provost for academic affairs; Rhetaugh G. Dumas, School of Nursing; and Edie N. Goldenberg, LS&A.)

Boylan also notes that decisions on unit goals did not come from the top down.

"The University didn't come up with a goal and then tell units what their portion would be. The units themselves identified their needs and then we and the central development operation counseled them on what they might realistically expect to raise, gave them a realistic perspective on what could be achieved," he explains.

Boylan notes that more than 50 percent of the Campaign income is targeted for faculty support, in terms of endowed chairs, funds for visiting and guest scholars, research funding, and research and teaching facilities.

"If the Campaign is successful, and I believe it will be, the University's learning environment will be substantially enriched. The Campaign also will make it possible for us to attract the most intelligent and artistically gifted students and provide access for students whose financial needs are great.

Boylan feels the University "is ready to embark on the Campaign. The level of commitment, cooperation among units, strong leadership of Joe Roberson [executive director of the Campaign] and the extraordinary interest and support of the national volunteer leadership will make us successful despite the daunting level we're seeking."

Campaign Goals Overall: \$1 billion

Endowment	\$340 million
One of the cornerstones of the University's financial structure is its endowment fund, gifts whose principle is preserved and the earnings are used to support a wide variety of activities.	
Professorships	\$190 million
Student fellowships and scholarships Programs	\$125 million \$ 25 million
Expendable Funds	\$400 million
One of the primary sources of operating money for the University, expendable funds help maintain the diversity of programs in place, launch major programs, develop new courses, purchase equipment and fund faculty development.	
Building Funds	\$110 million
These projects reflect the University's determination to preserve the past where possible through renovation and renewal, and to embrace the future through construction of state-of-the-art facilities. Funding for these projects will be a combination of gifts, University funds and public sources. Listed below are the fund-raising goals.	
Center for Undergraduate Education	\$45 million
School of Social Work	\$15 million
Cancer/Geriatrics Centers	\$25 million
Tennis Facility	\$ 5 million
Engineering Facility for Industrial and Operations Engineering and Student Services	\$10 million
Hill Auditorium Renovaton	\$10 million
Bequests	\$150 million
Bequests enable the University to endow professorships, provide research funds and student aid, give faculty incentive awards, and build new facilities or refurbish old ones. They also provide general unrestricted support for critical ventures.	

BACK TO CLASS

US economy is resilient but government could do more to make it stronger, top forecaster says

The Campaign for Michigan kickoff included a Back to Class lecture series for Team Michigan members. Faculty members at several campus sites addressed subjects ranging from the end of the Cold War to the role of African-American women in art. The two featured lectures were presented in the morning in the Michigan League by Profs. Sidney Fine and Saul H. Hymans. Hymans's lecture is reported on below, and Fine's on p. 10.

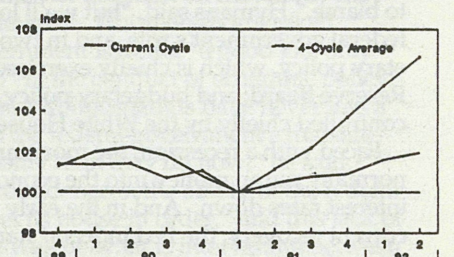
Saul H. Hymans, professor of economics and special assistant to the dean of LSA, is an expert on business cycles and one of the nation's leading forecasters of state and national economies.

Hymans said the US economy was in recession for the last two quarters of 1990 and first quarter of '91, but that the gross domestic product (GDP—total production in the United States) had risen for the past five quarters through mid-1992.

Hymans compared this performance with the recoveries after the previous four recessions—those ending in 1960,

1970, 1975 and 1982. He overlaid the average pattern of economic recovery from those recessions over the current one (see chart) and found the '91-92 recovery "is dramatically behind its predecessors; history would tell us that real GDP ought by now to be almost 5 percent higher than it is."

The unemployment rate goes up in a recession, and when recovery comes, the rate tends to continue up for one more quarter, at which point the effect of the recovery usually begins to produce more jobs. But the unemployment rate has continued to move up through each of the past five quarters



of the current recovery rather than to drop after the first quarter. "There were a million and a half more people out of work in the summer of '91 compared with the summer of '90, and another 1.2 million out of work in the summer of '92 compared with summer '91," Hymans said. "So there are almost as many more jobless after a year or more of recovery as showed up during the recession itself."

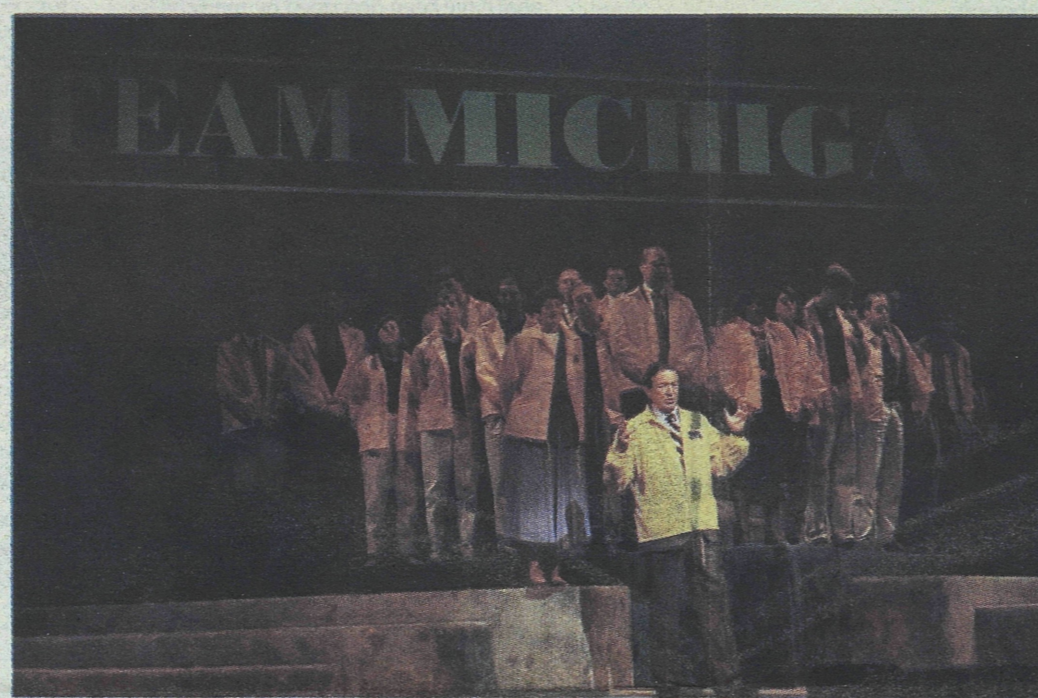
M CAMPAIGN

Girding for the Campaign



Many members of Team Michigan dropped by Schembechler Hall to chat with former football coach and athletic director Glenn (Bo) Schembechler (at right) and to enjoy the photos and memorabilia in the exhibition area (below).

Mike Wallace—backed by LSA Dean Goldenberg, President Duderstadt and Anne Duderstadt (immediately over Wallace's shoulder from left to right), and volunteer fundraisers, students and faculty members—launched the Campaign for Michigan Sept. 18 at the Power Center. All are wearing yellow windbreakers with 'You Make the Difference' emblazoned on the back.



After donning his Team Michigan jacket, Wallace announced nearly \$300 million in gifts and pledges from 40 donors. Wallace, who is a Campaign co-chair, said the early donations 'provide the stimulus and help create the critical mass' for the Campaign.

Mike Wallace contributed \$500,000 to purchase a home for the Journalism Fellows Program, announced the programs director, Assoc. Prof. Charles R. Eisendrath.

The Mike and Mary Wallace House on Oxford Street will be home to the administrative offices of the fellows program and the Livingston Award. Two rooms are available for seminars. Workrooms, access to the University's computer system and a library will be provided for the fellows.

Eisendrath and his staff had been looking for a more suitable facility than its rooms in the Frieze Building. With fellowship applications up 80 percent over the past five years, and the opportunity to add programs focusing on policy seminars and guest editors, "we were bursting

at the seams," Eisendrath says. The Tudor house at 620 Oxford Street, built in 1911 and across from the University-owned Oxford Housing, was home to the late dean and professor emeritus Wilbur J. Cohen and his wife, Eloise, and really had not been on the market.

"Mrs. Cohen had been spending part of the year in the south and returning to Ann Arbor in the summer to be around her garden," Eisendrath explains. "I realized that the fellows are here September through May. She is here in June. Why can't she live here then? The resolution: We purchased the house and the Livingston Award's office will be returned to a bedroom during the summer."

In a meeting with the Wallaces earlier this year, Eisendrath mentioned the program's need for a new home and that he was seeking a donor. "Quite by chance, Mike said, 'People like to have their name on a house. I think I want to do this.' He talked with his wife and he did it."

Eisendrath was somewhat surprised, noting that Wallace already had been "very generous, contributing \$500,000 to the program" to establish a fellowship in investigative reporting that carries Wallace's name.

The U-M program is one of three nationwide—the others are at Harvard and Stanford universities.



LS&A making 'stretch' for \$110 million

One of the largest beneficiaries of the Campaign for Michigan will be the College of Literature, Science, and the Arts, which has a \$110 million goal.

But even with such an impressive goal, LS&A Dean Edie N. Goldenberg says "it's a small part of our needs. We cut back on our target to what we can achieve, to focus more and more on priorities in the face of a decent sense of reality. This is a major stretch for us, given what we have been raising in the past few years."

Goldenberg says LS&A decided on the "stretch" because the unit "really is a superb liberal arts school progressively squeezed by budget problems. To maintain our excellence we need private, corporate and foundation funds to replace public funds the state cannot provide."

The dean says the results of underfunding can be seen in a number of areas:

- Student-faculty ratios higher than those of peer institutions.
- Insufficient financial aid for graduate and undergraduate students, particularly in the face of rising tuition.
- The sorry state of the College's buildings, which average 60 years of age, displayed in crumbling ceilings and walls and burst pipes.
- Inadequate quarters for many units, including the academic advising area, Comprehensive Studies Program and Women's Studies Program.
- Limited facilities for students, such as breakout rooms, etc.

"Our priorities are student support, faculty support, renovations and program support, and we are gearing up to be a success," Goldenberg states.

"There is a large unrealized potential in our alumni, many of whom have a real affection for Michigan. They have an interest in maintaining the College's and the University's excellence because they reflect that excellence in their diploma."

The centerpiece of those priorities is a "major push to reinvigorate undergraduate education. The kind of education that can be received at a strong research institution is unparalleled," she says, "and we must deliver that to all our students."

Goldenberg is pleased with the overall emphasis on the undergraduate experience that is being reflected in Campaign goals in a number of ways, noting that "some of the pieces may be small, but all contribute to make the whole a reality."

Among those pieces is an innovative undergraduate research program that this year will involve approximately 400 students. She hopes to see that grow to 1,000 students.

Also included are funds targeted for outstanding graduate student teaching assistants to help them make good progress toward their degrees.

Goldenberg feels the interdisciplinary nature of LS&A is one of its strongest points, and several Campaign goals are designed to enhance that strength.

These include a neuroscience program in conjunction with the Medical School; the Global Change project, which involves faculty, researchers and students in eight schools and colleges; and humanities programs.

BACK TO CLASS, continued

Who is at fault? "There are innumerable suspects to blame," Hymans said, "but we'll look just at the federal government's role, and in two areas: monetary policy, which is chiefly exercised by the Federal Reserve Board; and budgetary policy, which is controlled chiefly by the White House and Congress."

Faced with a recession, the monetary authorities normally pump money into the economy and push interest rates down. And in the early period of the current recovery, the Fed indeed "started pushing interest rates down at an extraordinarily rapid rate, to play the same role it has consistently played in the past."

But the Fed's ability to strengthen the economy is indirect. "It can make credit more available in the financial markets, but it cannot make banks or savings and loan associations lend that money to borrowers, nor can it make households or businesses increase borrowing simply by making credit more available and reducing interest rates." As a result of the Federal Reserve policy, "banks have made profits

and improved their financial condition, but the economy as a whole is not responding to the monetary stimulus."

Next Hymans examined fiscal, or budgetary, policy. "Here the measures taken by the authorities are more direct. They have two tools—taxation and spending. The budgetary authorities can cut taxes, leaving more spendable earnings for businesses and households. And on the spending side, the government can spend more on goods and services, which will pump the economy up quite directly."

But what have the fiscal authorities been doing? Effective federal tax rates—both income and payroll taxes—have been moving down slowly, leaving more income in the hands of business and households.

"But the tax rate has not come down nearly as much as it did in prior recovery periods," Hymans said. "Taxes were reduced more in earlier periods. So the federal government has been much less supportive of recovery through its tax policy this time around than it has historically."

How about the spending side? Corrected for inflation, Hymans found federal spending in the 1991 year of recovery was "flat as a pancake." In the first quarter of 1992, however, there was a jump in spending, due mostly to increased unemployment compensation benefits, which got more money to the unemployed. "But spending policy overall has been much less supportive of expansion than in the past. The use of the budgetary tools to boost the economy has been less than what's needed."

Why has there been no economic help on the budgetary side? "Because basically the budget is out of control and fiscal policy is in shambles. The White House is paralyzed in its efforts to use the fiscal tool for fear that whatever it does will only worsen the budget mess."

The pattern of the federal deficit shows why this fear exists, Hymans continued. The federal debt as a percent of the gross domestic product was 114 percent after World War II, dropped to about 40 percent in 1959, and down further to less than 18

percent in 1974. But it shot up to 35 percent after the "Reagan Revolution," which lowered taxes and raised federal spending. "We got a lid on it in the 1987-90 period," Hymans said, "but the recession of 1990-91, accompanied by a hike in federal health care costs, has sent it by now to about 46 percent of GDP."

This level of indebtedness raises interest rates and in the long term results in lower capital investment and a lower standard of living for succeeding generations. It also presents a short-term problem, because "it prevents us from using the spending and taxing tools of the budget, fiscal policy, as a means to pull out of a recession. That limits us just to the monetary tool."

To turn these trends around, Hymans said, "we must cut the annual deficit in the federal budget from its current level in excess of \$300 billion a year to under \$150 billion a year. If we get a real recovery, we could speed reduction of the deficit, but in the longer run it's going to require us to control health care costs, raise taxes and cut spending."

The slowness of the recovery can be traced in good part to the public's lack of economic optimism as shown by a disinclination to spend or invest. "The Survey Research Center at the University of Michigan has been measuring various aspects of consumer attitudes for many years," he said. "One of the things it looks at is buying conditions for cars, which is determined by asking households throughout the country questions about their perception of the car market."

Researchers say households are calling these "very good times" for buying cars. Researchers also report that households say this is a very good period for buying houses, almost the best time in the past 35 years.

"It's a wonderful time to make these purchases," Hymans said, "but to make them, you must make a long-term commitment. People see the good deals, but they aren't making that commitment. What is intervening between perceptions of the market and the notion of how wise it is to act on those perceptions?"

Hymans said another question on the survey may help provide an answer: Households are asked whether the government is doing "a good job, only fair, or a poor job" in the conduct of economic policy. "The replies show that households have never had a worse opinion of the federal government's management of the economy than they do now," he said. "They show no confidence in the ability of the federal government to get its house in order," and this lack of confidence "may well be what is intervening between the public's perception of market conditions and their actions on this perception."

The current expansion may continue, but slowly, Hymans concluded. "We live in a resilient economy, regardless of our current problems. If given a chance, our economy would make a dramatic improvement, because even these massive problems it faces have reduced it only to a slow build-up."

What do we need for a solid, long-term recovery? Hymans' prescription is as follows:

- We must figure out how to give banks an

Historian Sidney Fine reflects on the Vietnam conflict:
The Most Misunderstood War

Prof. Sidney Fine, the Andrew Dickson White professor of history, explained why the Vietnam War has been called the most misunderstood war in our history, and remains an episode that "keeps haunting" the American people and their leaders.

Fine said two metaphors dominate as descriptions of what the war meant to the United States—a quagmire in which "incremental steps by successive presidents" led the country deeper and deeper into a disastrous situation. "Had the particular presidents foreseen the ultimate outcome of their action, they would have stayed out, according to this view," Fine said.

"Then there is the stalemate metaphor," he continued, in which successive presidents got embroiled in "a contest that none of the presidents wanted to lose, but in which they couldn't do enough to win."

Although it is "hard to decide categorically between these two views," Fine said, "the stalemate view appears closer to the truth: The evidence suggests that no president expected to achieve real victory in Vietnam."

Fine said Presidents Roosevelt, Truman, Eisenhower, Kennedy, Johnson and Nixon followed one another in a series of errors, each failing to take advantage of opportunities that could have avoided the war or ended it earlier.

Roosevelt "took an anti-imperialist line in World War II," Fine said, "and, consistent with that position, he opposed letting the French resume their colonial rule in what was then called Indochina" from which the Japanese had driven them. FDR favored placing Indochina under international trusteeship but "backed off in the face of opposition to his position by the British and by the US State Department."

By Truman's administration, Ho Chi Minh was clearly the Vietnamese national leader; indeed, he had been helped into that position by the Office of Strategic Service (OSS—the forerunner of the Central Intelligence Agency), which supported Ho during the war when the Vietnamese were battling the Japanese, and even appointed him OSS agent No. 19. When Ho proclaimed Vietnam's independence in 1945, OSS agents were at his side and Ho quoted the Declaration of Independence. Nevertheless, the State Department still favored the French, who soon launched the first Indochina War in 1946. By the time the Korean War broke out in 1950, the US was paying a third of France's costs to fight Vietnam, seeing the French as a bulwark against communism on the march in China and Korea.

Eisenhower "is the most inaccurately praised president for his alleged restraint in dealing with Vietnam," Fine said, "but in fact, behind Congress's back, he gave South Vietnam its first military support," and by 1954 he was meeting 80 percent of the cost of the French war against the Vietnamese. When the French were trying to stave off their final defeat at Dien Bien Phu, Eisenhower would have backed the French with air and troop support if the French, British, Australians and New Zealanders had agreed to such conditions as united Anglo action and the granting of independence to the Indochinese states after their surrender.

Eisenhower made two big errors in 1954, Fine continued. First the Geneva Conference provided for a truce with the two sides regrouping, followed by national elections for 1956, in which Ho was conceded to be the favorite. "The US could probably have walked away from Vietnam at that point," but, despite Secy. of State Charles Wilson's support for the agreement, Eisenhower blocked the elections and backed US-puppet Ngo Dinh Diem (who was

doomed, Fine quipped, because he listened to Michigan State consultants). Eisenhower sent in Green Berets to prop up Diem, and secretly authorized paramilitary operations against the North and the CIA's overthrow of the Laotian government.

His second big error, however, was his 1957 rejection of a Soviet move to admit North and South Vietnam separately to the United Nations.

"John F. Kennedy also gets off too easily" in assessments of his Vietnam role, Fine said. The Democrats had been accused of "losing China," and although it was "a ridiculous charge," Kennedy didn't want to be saddled with the charge of losing Indochina. He further violated the Geneva Agreement by increasing US military involvement from 692 troops to 15,500 and sending US pilots to drop bombs, defoliants and napalm from planes bearing Vietnamese markings. And by conniving in the 1963 coup against Diem, the Kennedy administration became responsible for what followed—"chaos, coup after coup."

Fine cited an interview with Robert Kennedy after JFK's assassination as confirming that, despite the cinematic and literary legends that have asserted the contrary, JFK never intended to pull out of Vietnam.

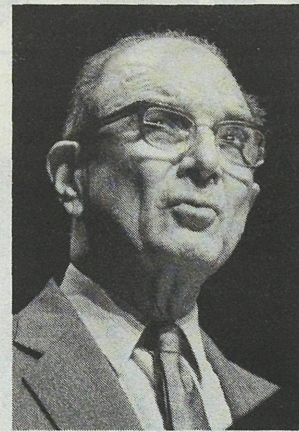
Even though full-scale Americanization began under Lyndon Johnson, it might be more correct to see LBJ as "the last dove rather than as the number one hawk," Fine said. Johnson was unmoved by anti-war protesters ("Don't pay attention to those little s***s on campus," he advised George Ball); his major concern was that "the reactionary

right would exploit a defeat in Vietnam," and his real love, the Great Society domestic programs, "would go down the tubes."

Because he lacked confidence in foreign affairs ("Foreigners are not like the folks I'm used to," Fine quoted him as saying), and was intimidated by the high-brow advisers he'd inherited from Kennedy, Johnson let himself be persuaded into deeper involvement in Vietnam. After he won the 1964 election, LBJ listened to those advisers who wanted to bomb North Vietnam even though he doubted the bombing would win the war. When the bombing failed to produce a surrender, he raised US troop levels to 569,000.

Johnson called for peace talks in March 1968 after US forces stopped the North's Tet offensive begun in January. He also announced that he wouldn't seek reelection and reduced bombing raids on the North. But the North refused to talk to the South's representatives so long as the bombing continued.

On October 4, 1968, said it would sit down with the Saigon negotiators if Johnson halted all bombing. Henry Kissinger, who was in touch with US representatives at the Paris peace talks, leaked word to the Nixon campaign about the possible pre-election peace breakthrough. And suddenly the South balked at



Fine

joining the talks.

"It was a Republican plot," Fine said. Top Nixon aide John Mitchell had told the South Vietnamese that they would fare better in a treaty if the GOP were in power. LBJ knew of the plot because he had wiretapped GOP and Saigon officials. He complained of the plot privately to Nixon, but Nixon denied knowing anything about it.

Perhaps fearing the consequences of exposing how they had acquired the information, neither LBJ nor Hubert Humphrey revealed Nixon's involvement in stalling the peace talks. Johnson halted the bombing on Oct. 31, but Saigon said it would not join the talks. It was "a serious blow to the peace efforts and, it is assumed, to the Humphrey campaign" and "another black mark on the Nixon record."

After winning the 1968 election Nixon launched the "Vietnamization" program, saying he was pumping in massive aid so the South could prevail on the battlefield, while concealing from the public the fact that US military commanders "regarded Vietnamization as slow surrender." But South Vietnam was a political, not a military, force, Fine said, and in February 1971 the South was beaten up when it invaded Laos, and US forces had to rescue it.

Finally, in January 1973, Nixon accepted peace terms that guaranteed the defeat of Saigon by leaving the North in place in the south while the US withdrew. After Gerald Ford succeeded Nixon, the North attacked, and the South's army "collapsed—the officers running as fast as they could to the rear." The character of the South Vietnamese army and its leaders, not the reduction in US aid, was the reason "for the defeat and for our humiliating exit from Saigon," Fine said.

The Watergate scandal was the other major historical event of the Vietnam War, Fine continued. In 1969, Nixon began the secret bombing of Cambodia. When reports were leaked to the media, Nixon ordered 17 illegal wiretaps. Daniel Ellsberg, a Pentagon staffer who had originally supported the war, leaked the Pentagon Papers containing records of Nixon's and Kissinger's actions, and the *New York Times* began publishing the documents in July 1971. Nixon authorized the setting up of the "plumbers" burglary team, and the plumbers burglarized the office of Ellsberg's psychiatrist. The felony was carried out in search of records to confirm a rumor that Ellsberg had participated in orgies. Nixon planned to discredit Ellsberg and the anti-war forces.

"Watergate further weakened the American people's respect for their government, and contributed to the Vietnam experience's being one of the greatest tragedies of US history," Fine said. The US armed services lost 58,712 dead in the war. The North and South Vietnamese military lost 1.1 million, and another million Vietnamese civilians were killed. The United States dropped 1,333 pounds of explosives per Vietnamese citizen. One thousand US officers and noncommissioned officers were killed by fragging—that is, by being killed intentionally by their own troops, and US desertion reached 73.5 per 1,000.

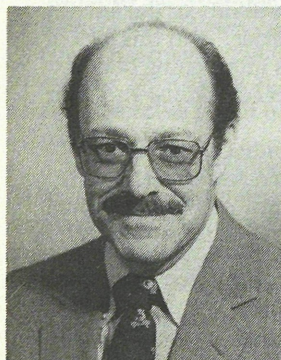
Veterans of the war have shown a high incidence of drug abuse, crime, depression and suicide. The US inherited a refugee problem: 900,000 Vietnamese emigrated to this country, and 50,000 have died trying.

"Our society was riven, the universities were riven, there was an erosion of trust in authority because our leaders had deceived the people," Fine said. "We wreaked terrible destruction on Vietnam, Laos and Cambodia, and we inflicted serious damage on ourselves.

"Would we have been any weaker if we had stopped the war in 1945 or 1954 or 1965? Has our security been weakened because we finally quit Vietnam? No. Every death in Vietnam was in the final analysis in vain. Perhaps we can at least learn something from that terrible failure."—J.W.

Don't pay attention to those little s***s on campus — LBJ

BACK TO CLASS, continued



Hymans

incentive to lend more money rather than invest in government securities.

- We need a long-range budget plan that spends more now, and follows that with lower spending and higher taxes to cut the deficit later—but not much later.
- Adoption of the proposed North American Free Trade Agreement with Mexico and Canada. The long-run benefits of rationalization of production through NAFTA are solid. A 10-year-or so program may well be required, however, to help those of our workers who will be hurt in the short-term by NAFTA.—J.W.

Goals of the Schools, Colleges and units

M CAMPAIGN

The Campaign for Michigan is a comprehensive campaign actively involving all the Schools, Colleges and units of the University on its three campuses in Ann Arbor, Dearborn and Flint. The summaries below suggest the great scope and diversity encompassed by the Campaign. Certain projects, such as the restoration of Hill Auditorium, do not fall under the aegis of any School or College, and so are not included here.



COLLEGE OF ARCHITECTURE AND URBAN PLANNING

Goals: \$6 million; \$1.5 million in bequests



SCHOOL OF ART

"Visions That Make a Difference"

Goals: \$3.5 million for endowment of professorships, scholarships/fellowships, research, exhibitions; \$550,000 for discretionary operating funds; \$350,000 in bequests



SCHOOL OF BUSINESS ADMINISTRATION

"The Point is the People"

Goals: \$100 million for student support, faculty support, teaching and research support, undesignated support

SCHOOL OF DENTISTRY

Goals: \$5 million for renovation of buildings/laboratories/clinics and purchase of scientific equipment; \$3 million for endowed professorships/faculty support; \$3 million in bequests; \$2 million for need- and merit-based scholarships and fellowships



SCHOOL OF EDUCATION

Goals: \$5 million for endowed professorships and scholarships; \$2.5 million for facilities and equipment, including a joint Education/Social Work Library; \$2.7 million for program support, including scholarships



COLLEGE OF ENGINEERING

"Design for Impact"

Goals: \$35 million for endowed professorships, fellowships, scholarships; \$20 million in expendable program support for research and instruction; \$15 million for construction of the Engineering Center; \$10 million in Annual Giving Funds.

SCHOOL OF INFORMATION AND LIBRARY STUDIES

"Reaching for Excellence/Today for Tomorrow"

Goals: \$1 million for endowed scholarships; \$790,000 in discretionary funds; \$500,000 in bequests



LAW SCHOOL

Goals: \$15 million for endowed faculty support; \$15 million for endowed student support; \$15 million for endowed program support; \$15 million for Law School Fund unrestricted gifts; \$15 million for new bequest commitments



COLLEGE OF LITERATURE, SCIENCE AND THE ARTS

"Shared Discovery"

Goals: \$110 million for endowed chairs, fellowships, scholarships and a variety of other needs



MEDICAL CENTER

"Momentum: Advancing Medicine at Michigan"

Goals: \$100 million for ongoing program support; \$70 million for endowment of scholarships, fellowships, professorships and research funds throughout the Medical School; \$50 million in new bequests, \$30 million to support construction of the new facility for cancer and geriatrics



SCHOOL OF MUSIC

"Investing in the Future of the Performing Arts"

Goals: \$7.5 million for endowed deanship, professorships, fellowships, scholarships; \$7.5 million in program support



SCHOOL OF NATURAL RESOURCES AND ENVIRONMENT

Goals: \$6.3 million for teaching and research related to conservation of biological diversity, ecosystem management and ecosystem restoration; global environmental change; corporate environmental management; risk perception, assessment, communication, management; environmental equity and urban environmental issues



SCHOOL OF NURSING

"A Century of Excellence"

Goals: \$2 million for graduate student aid; \$1.5 million for faculty research support; \$1 million for undergraduate student aid; \$1 million for unrestricted support; \$600,000 for development of honors and accelerated programs; \$400,000 for development of local area computer network



COLLEGE OF PHARMACY

"Investing in Pharmacy's Future"

Goals: \$4 million to establish the Center for Drug Design; \$3 million for endowed professorships; \$3 million for endowed fellowships; \$2 million for endowed research funds; \$1.4 million for facilities; \$1 million for endowed scholarships for doctor of pharmacy students

SCHOOL OF PUBLIC HEALTH

Goals: \$6 million for faculty endowment; \$3 million for student aid; \$1 million for intramural research support; \$1 million for lab renovation and new equipment; \$1 million in discretionary funds (Enrichment Fund)



RACKHAM SCHOOL OF GRADUATE STUDIES

Goals: \$7.5 million for endowed and expendable financial aid for graduate students including dissertation-level support, research partnerships with faculty, discretionary travel and research awards; \$500,000 to refurbish the Rackham Building



SCHOOL OF SOCIAL WORK

"Building Leadership for a Changing Society"

Goals: \$20 million for a new School of Social Work building; \$5 million for endowed professorships; \$3 million for endowed scholarships; \$3 million for innovations in teaching and research



DIVISION OF KINESIOLOGY

Goals: \$1 million for expanded services to students, including financial aid, career development, counseling, tutoring, research initiatives, assistantships and fellowships



INSTITUTE FOR THE HUMANITIES

Goals: \$12 million for interdisciplinary scholarship, fellowships, workshops, conferences, seminars, performances, and public education programs

INSTITUTE FOR PUBLIC POLICY STUDIES

Goals: \$4 million for student aid; \$2 million for faculty and program support



MATTHAEI BOTANICAL GARDENS

Goals: \$200,000 to support research and teaching in the environmental sciences; \$300,000 to develop two specialty gardens



KELSEY MUSEUM OF ARCHAEOLOGY

Goals: \$2.25 million for research and travel; \$1.5 million for excavations; \$1 million for purchase of antiquities; \$1 million for education and public programs; \$500,000 for exhibitions; \$437,800 for preservation

MUSEUM OF ART

Goals: \$3 million for endowments to support development/preservation of permanent collection; \$3 million for endowment of museum directorship and curatorships; \$1.5 million for endowments for changing exhibitions; \$1 million for publications



INTERCOLLEGIATE ATHLETICS

Goals: \$8.1 million for new tennis facilities and golf course renovation; \$5 million for the Athletic Scholarship Fund (Annual Giving); \$4 million for endowed coaching positions; \$3.85 million for endowed athletic scholarships; \$1.5 million for endowed golf holes

UNIVERSITY LIBRARY

Goals: \$11.7 million for endowments for collections, curators, deanship; \$8.01 million for renovations; \$6.8 million for expansion of science libraries in Undergraduate Library; \$200,000 in expendable funds



FLINT CAMPUS

Goals: Nearly \$5 million for permanent quarters for the public broadcasting station, WFUM-TV28; acquisitions for the proposed Frances Willson Thompson Library; an endowed professorship in social change

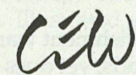
DEARBORN CAMPUS

Goals: \$7 million for the Center for Engineering Education and Practice and related laboratories; \$4 million to preserve and restore the Henry Ford Estate; \$3.25 million for teaching and research programs in the School of Management; \$3.5 million for an art gallery to display a contemporary glass collection and other works of art; \$2 million for electronic and multi-media classrooms and laboratories; \$1 million for scholarships and loans; \$750,000 for the Campus Entrance Plaza; \$500,000 each for liberal arts and sciences programs, education programs, the Mardigian Library, the Armenian Research Center, environmental education.



ALUMNI ASSOCIATION

Goal: To enlist the volunteer resources of the Alumni Association to raise funds for undergraduate financial aid



CENTER FOR THE EDUCATION OF WOMEN

Goals: \$2.5 million in endowment funds and \$500,000 in expendable funds for research programs on women's lives, scholarships/fellowships, career development, women in science programs, single parent/child care fund, Advocacy Initiative Fund, Women's Leadership Initiative, enhancing Center's visibility and showcasing women's accomplishments, Director's Discretionary Fund, library

LETTERS

CATHOLIC OUTLOOKS

I THOUGHT Moira MacDonald Prekel's negative comments about Prof. Thomas Tentler's February '92 "Thinking Seriously About Comedy" were rather severe, and just slightly off the point. But then I read the vicious and intemperate response from Professor Tentler—a man I now have the distinct pleasure of not knowing.

In the course of his four-paragraph harangue he even managed to attack several ideas (anti-intellectualism and limitations on academic freedom, to name two) which nowhere occur in Mrs. Prekel's letter. Thank you for allowing Professor Tentler to prove, in his own words, that he is precisely the ill-willed, insensitive, cruel and destructive personality that she said he is.

John E. (Jack) De Pree '57 M.A.
Land O'Lakes, Florida

PROFESSOR Tentler shows an incredible ability to misinterpret the letter written by Moira MacDonald Prekel. He takes offense that she judges him to be "ill-willed insensitive, unkind and cruel." But she never so stated. Rather she said he "appeared" to have these traits. The difference is important. Mrs. Prekel was not quick to judge on incomplete information. She left room for Professor Tentler to produce a conciliatory response that would restore his reputation. Instead he chooses to launch a diatribe suggesting that her comments that his course, "Comedy in Catholic Contexts," is "offensive and is a verbal desecration. It should not be part of the curriculum of a great institution." is a call for censorship.

I did not read it that way. I see no request for either government or University authority to compel the removal of this course. Rather I saw a polite request that the good professor search his heart, determine whether his choice of subject matter is indeed offensive and then, voluntarily, choose to "Do the right thing." Tentler turns the issue into a defense of academic freedom. He tells us that his teaching of repugnant and stupid ideas serves to protect us against something even nastier, stupider and more repugnant. I do not know either of these people, and I am not a Catholic, but I know offensive writing when I read it. As a professor myself I resent having my academic freedom "protected" by Tentler's boorish behavior. But please, don't misinterpret what I say. I do not ask that any action or discipline be taken against Tentler. I only urge him to grow up.

Prof. Allen J. Schwenk '73 PhD
Western Michigan University
Kalamazoo, Michigan

I AM responding to Moira MacDonald Prekel and Thomas Tentler. The professor speaks of his concern for educational freedom and his concern for being told what to teach. I think it is ironic that in the same issue (p. 3), school financing, and the need thereof, receives considerable attention.

The education establishment wants to receive taxpayer funds, yet does not want direction on how it should be spent, on what curriculum and for which teachers? Would those that espouse such a philosophy be quite delighted if they were to give a car dealer money for a new car and then be told which car they were going to receive? And add to this a self-righteous lecture from the car dealer about the virtues of "car selling freedoms" to any customer that may express displeasure in the car! Can the education establishment understand this?

Also, if educational freedom exists, why is the Creation model for the beginning of the universe as well as the

origination of species not taught? Can a student reject the evolutionary model, since it is only a theory, because he or she sees the inadequacies of the evolutionary model? Inadequacies that include the sudden starting point of all matter and the laws governing the physical universe (Big Bang versus Steady State Theory), lack of evidence pertaining to transitional life forms, the logical fallacies of life originating from non-life by chance, the low, low, low, percentage of fossils found, etc.

Paul Hofmann
Machesney Park, IL

THIS IS a response to Moira MacDonald Prekel's criticism of Professor Tentler's Catholic Comedy course: The last time Professor Tentler taught a course about Catholicism, I was there. It was 1983. Most of the class was Catholic. Folks were upset. I remember the feeling. Then, as now, he taught many works of fiction written by Catholics for Catholics. Many months ago Dr. Tentler sent me the reading list for his 1992 course "Comedy in Catholic Contexts." Back in '83 he wasn't planning to teach David Lodge or Boccaccio, but did teach Graham Greene, Mary Gordon, Ignazio Silone, Georges Bernanos and others. From Prekel's letter I can't really tell if she's upset by Tentler's personal style, what's in the books or his choice to teach religion via comedies.

The sorts of fiction Tentler teaches consistently portray Catholicism as it is and has been lived, by "real" people in all sorts of surprising and real places in the world. For Catholics who believe in heaven, the holy and the good, and in the historical church—a mysterious, political entity which somehow purports to stand between the world and these orders—these books provide a courageous and appropriate place to begin exploring religion as a moral system.

It takes courage for an ordinary Catholic to request loudly that people with power in the church and the state improve morally. When we call values "traditional," though, I think we ought to remember how short a time ago it was that inquisitors sent Menocchio Scandella (Carlo Ginzburg, *The Cheese and the Worms*) to the stake because he read all sorts of books the institutional church said he shouldn't have read. Scandella also stood up and admitted he didn't understand the word "predestination"; he thought religion had become a business, and would bet that God was in the neighbor you tuned out.

Murder is unfortunately "traditional," too, and Catholics and non-Catholics can be killed off in small ways, like telling them what they can't laugh at, and rise above.

Eileen Condon
Stamford, Connecticut

'A SLICK REVISION OF HISTORY' SHAME ON *Michigan Today*. The article "Alumna is only woman in Mideast peace talks" in the June issue is a complete hoax. It's a fraud, not just because it's riddled with inaccuracies. This piece is primarily a slick revision of history, attempting to falsely portray Jews as the aggressors and Arabs as the victims. Nice try, but no cigar. Fourteen centuries of history prove just the opposite.

Superficially the article presents a fawning, pandering portrait of Suad Amiry, a demure anti-Israeli activist. *MT* glorifies the Intifadah as though it was a Middle Eastern version of Woodstock. The truth is the Intifadah has been four years of racist violence aimed at killing Jews and those who would live in peace with Jews. A pogrom by any other name is still a pogrom.

Ms. Amiry is given a free ride to

spread virulent anti-Israel propaganda which she cloaks in a soft-spoken veil. This is properly attired hatred and bigotry. Not even a gentle gibe, quiet quip or raised eye brow when she misrepresents the "Palestinian position." The "Palestinian position" is, as the Palestinian Arab delegates proudly boast, subservient to the PLO position. And the PLO position is, as it remains enshrined in their covenant, the total annihilation of Israel and the extermination of the Jewish people. They share this lofty goal with the other Arab participants at the "peace" talks, not to mention the vast majority of Arabs in the world. Ms. Amiry appears to omit all of this in her polite little chat.

Ms. Amiry is the smiling face holding the gun aimed at the back of Israel's head. *MT* has either been unwittingly used or has actively collaborated in the Arabs' war against the Jews. If Yassir Arafat was a U of M grad, would we then be subjected to a cozy little interview with the godfather of terror? I can't wait. Please check his CV.

Douglas J. Miller MD '67
Miami Beach, Florida

IN REFERENCE to the article "Alumna is only woman in Mideast peace talks" by Laurie Fenlason, Dr. Hanan Ashrawi, a woman, was seen kissing Yassir Arafat in Jordan this month, not alumna Suad Amiry. Dr. Ashrawi, from the Ramalla area (West Bank) is one of the primary negotiators on the Palestinian delegation to the peace talks. It is well known (here in Israel) that Ashrawi and Fiesel el Husseini (a man) head the Palestinian delegation.

I believe your headline to the article is incorrect. It might have been better to say that "alumna takes part in Mideast peace talks", although it might lack the feminist ring you obviously intended.

David Peiffer '84 MA
Rehovot, Israel

We regret that the headline was misleading. Amiry was the only woman on the negotiating teams for the two sides, Fenlason reported. The 25-person Palestinian delegation included nine negotiators. She was not the only woman involved in the talks—Ed.]

JORDAN OF MOSHER-JORDAN

I FOUND most interesting the June article concerning women who have been significant benefactors to the U of M. It brought to mind another woman who did not leave large endowments but who had a connection with the University of sufficient importance that a women's residence hall was named for her: Myra Beach Jordan.

I became acquainted with the Jordans during my undergraduate years, 1938-41. Several of us who were classics majors went twice a week to read to Mr. Jordan, who had become blind, and to take him for a walk down Washtenaw Avenue. He had been librarian under President Angell and was a classics scholar. In those days Professor Bonner ran the Greek Department and Professor Winter the Latin Department. Others were Professors Blake, Dunlap, Meinecke, and Hopkins. Drs. Copley and Pack were instructors.

Mrs Jordan sat in on the reading sessions, and both of them were full of stories about the University around the turn of the century. I recall Mrs. Jordan, who was dean of women under President Angell, telling about registration. She filled out the necessary papers and President Angell kept the money and made change out of his hip pocket. To a young freshman it seemed another world, and I guess it was.

Mr. Jordan died sometime during the '40s and the last time I saw Mrs. Jordan was when I returned after World War II to finish law school in 1946. I believed she died shortly thereafter.

They lived in a duplex on the west side of Washtenaw about one-half block north of South University. I still have a couple of mementoes which they gave me out of their apartment for my help and interest in taking care of "Freddy," as she called him. They are a pair of brass candlesticks from St. Peter's in

Rome and two floor tiles from Horace's villa at Lake Como.

Perhaps there are others still living who remember the Jordans and, like me, survived the old-fashioned hickory stick approach of the Bonner/Winter axis.

A.G. Webber, '41, '48 LLB
Decatur, Illinois

REUNION OF '41 DESIGN CLASS



From left to right: E. Lomneth, Ann Wills Van Veen, Henry Van Veen, Emil Weddige, Margaret Whittemore Kelleher, Marion Engel Spencer, Mary Mills McCabe.

I THOUGHT you might like to know that six of us of the 1941 class of Design in the Architecture School attended a buffet dinner and exhibit in honor of our former Prof. Emil Weddige. The party was given June 17, 1992, by Mr. and Mrs. John Porter of Ypsilanti, Michigan at the Parks and Recreation Building in Southfield. I am the only one living outside the Detroit area. We thought that was good attendance after 50 years since there were only about 20 in the original group.

Emil Weddige is now a well-known lithographer with paintings in many museums.

Evelyn Kalb Lomneth '41
Springfield, Illinois

INTEFLEX STUDENTS IN RESEARCH PROGRAM

I WAS DELIGHTED to read Eleanor Hoid Mayfield's article "Time Out For Research" in the June issue, in that the article clearly underscored the breadth of educational opportunities and experiences available to University of Michigan students. The article fits nicely with my own long-standing picture of the University as being that very special place where young people (and even faculty) are limited only by the richness of their ideas, the fullness of their energies and the clarity of their visions for the future. The medical students, Ravi Allada and Erica Wu, featured in that article on NIH Medical Student research, are indeed wonderful examples of high school graduates whose personal and academic strengths were well in place upon entrance to the University's Inteflex Program and have continued to flourish through the richness of the Michigan experience. This is, I believe, what our University is all about!

Alphonse R. Burdi, Ph.D.
Professor of Anatomy and Cell Biology
Research Scientist, Center for Human
Growth and Development
Director, Integrated Premedical-Medical
Program (Inteflex)

'SHE'S A REBEL'

I ENJOYED reading your article on the poet Marge Piercy in the June issue of *Michigan Today*. We have many like her in my state of Massachusetts, the land of Teddy Kennedy, Mike Dukakis and Ray Flynn. She's a rebel of the '60s, a classic "woman's libber," "color me pink" who whines and bitches about her sick condition and how she's being "screwed" by the conservatives. I pity the poor men who marry such misfits, or those who enjoy reading such drivel as hers.

John Minot '57 MS
Franklin, Massachusetts

THANKS FOR a wonderful taste of Ann Arbor and the super article on Marge Piercy, one of my favorite authors. Note change of address and please keep *Michigan Today* coming.

Tamera S Brown
Edina, Minnesota

They aren't creatures from a horror movie, but they can be cause for ecological alarm

The Day of the Fire Ants

Go to the ant; . . . consider her ways, and be wise.' — Proverbs VI, 6

Most casual conservationists associate Latin American rain forests with exotic birds, rare medicinal plants or the negative image of multinationals' logging crews.

Ivette Perfecto, an assistant professor in the School of Natural Resources and Environment, would rather imagine a field of coffee bushes growing among yams and corn beneath a canopy of shade trees. Her negative image of Central America is of row upon row of unshaded coffee plants shrouded by a pesticide cloud.

Perfecto spent the past three summers in Costa Rica and Nicaragua conducting field research. She has concluded that traditional agroforestry—the combining of long-lived perennials with annual crops—could slow down damage to tropical ecosystems.

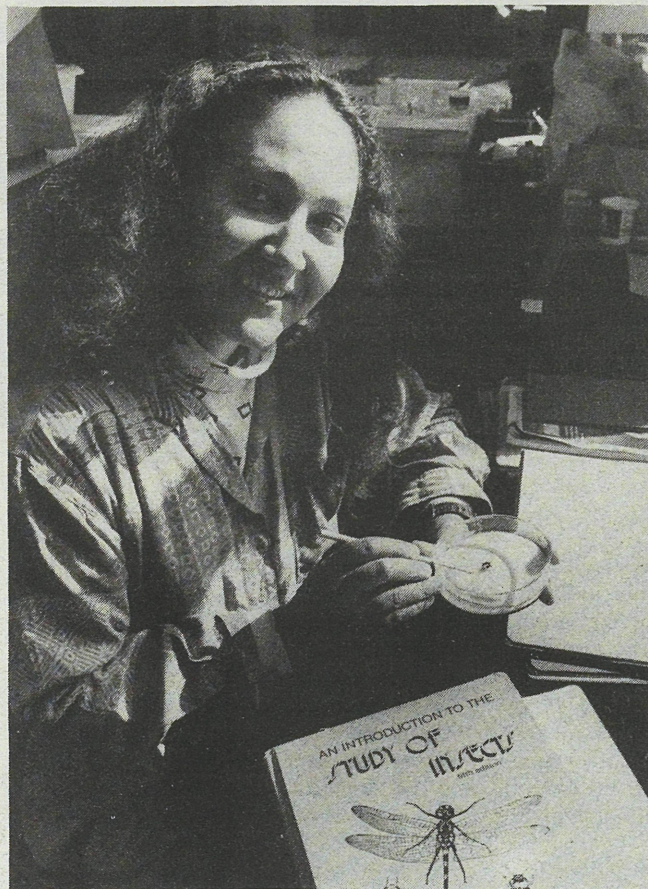
"The study of traditional agricultural practices among Latin American farmers has a lot to offer to the future development of sustainable agriculture," Perfecto says. "If we understand the basic ecology of these systems, we can improve on them, make them more efficient and productive, and at the same time, avoid the environmental degradation that results from modern, high-input agriculture."

Her interest in sustainable development in the Third World led Perfecto to focus on ants as agents of biological control. The predators of several crop-eating worms and insects, various species of ants could provide alternatives to pesticide use, Perfecto believes.

She is not alone among conservation biologists in her respect for this genus of 8,800 known members of the family *formicidae*. Edward O. Wilson, who won a Pulitzer prize for his book *Ants*, wrote in *Discover* magazine: "We depend on this seething mass for our existence. If ants were somehow exterminated, hundreds of thousands of species would become extinct, and most of the world's ecosystems might be dangerously destabilized."

Because of their sheer numbers and variety, ants are helping Perfecto explain some of the causes of species extinction. And her recent research shows why fire ants may help biologists determine the impact of modern coffee production on Latin America's biodiversity.

While doing field work on ant species in Costa Rica, Ivette Perfecto wondered why fire ants were thriving on modern single-crop coffee planta-



Perfecto

tions and yet were absent from traditional ones, where coffee plants are intermixed with shade trees and other food crops, such as corn.

Perfecto suspected that fire ants' pioneer-like ability to expand their territory in highly disturbed environments was related to the species' preference for what biologists call "large resources."

"Fire ants usually have large nests with thousands of workers able to move such large resources—from an ant's point of view—as cockroaches" and other big insects or spiders, Perfecto says. "But fire ants are not as efficient at finding those resources unless they happen to be close to one of their foraging trails."

To learn why the fire ants were doing so well, Perfecto compared their foraging success with that of another common ant species, *Pheidole radoszkowskii*, on the same plantation. She baited traps along ant foraging trails, got out her stop watch and held speed trials for the ants.

She found that *Pheidole*, which has small nests with only hundreds of workers, was nevertheless a faster and more efficient forager. After multiple trials she found the mean time necessary for fire ants to find all 10 baits was 53 minutes, while *Pheidole* found them all within 10 minutes.

"If resources are large, fire ants, with their greater numbers per nest, their ability to recruit other individuals fast and their aggressiveness will eventually find and monopolize them to the exclusion of other species," Perfecto says. "If resources are small, however, the more efficient foragers will be able to remove the resources before fire ants can locate them."

Given an environment in which food resources are small, temporary and randomly distributed, the fire ant is an ineffective forager and is competitively displaced by other species. But put the fire ant in a storm-damaged forest, beside a flooded stream, in a frequently plowed agricultural fields or on a younger coffee plantations where shade-trees are eliminated and pesticides are applied, and it gains a competitive advantage. Such severe

disturbances, on the other hand, dramatically reduce or eliminate other ant species from the local environment.

But isn't it a bit like straining at a gnat to invest time, resources and concern over the fate of bugs? Perfecto says no, that the public has a big stake in what happens to species of insects and other invertebrates when humans manage an ecosystem.

"Some people say, 'Why worry about ants?'" Perfecto comments, "as if we should only concern ourselves with the glamorous endangered 'megasppecies' like Bengal tigers. But small organisms, such as insects, dominate the structure and function of natural ecosystems and thus their loss could be much more damaging

to the whole ecosystem than the loss of a large visible mammal species. Their numbers indicate early on the relative health of an ecosystem."

Similarly, she continues, rain forests have received more public attention than agricultural fields. Yet approximately 95 percent of terrestrial ecosystems world-wide are managed, such as agricultural fields.

In general, having a variety of ant species is beneficial to the soil. Like earthworms in temperate zones, ants help recycle nutrients during burrowing and nest-building. And any environmental change that reduces diversity by favoring one species over others can upset important ecological processes.

"In the case of fire ants," Perfecto says, "we do not know if the species is beneficial or not. It may be useful in controlling other harmful ant species.

But it is clearly a potential pest under some conditions."

During the planting of tomatoes in the Sebaco Valley in Nicaragua, fire ants removed over 90 percent of the planted tomato seeds. And in southern Mexico the ants routinely remove corn seeds.

Moreover, fire ants often have a symbiotic relationship with root aphids—tiny insects that inhabit the roots of certain plants. The aphids are a large resource for fire ants, which "shepherd" and protect the aphids from their predators in order to obtain the carbohydrate-rich substances they release.

If allowed to reach high population levels, the sap-sucking aphids alone could constitute a pest—another instance of the negative effects of species disruption, notes Perfecto.

The most common human response to pest infestation is attack with chemical pesticides. "But that may be exactly the wrong strategy if the presence of other insects in the system could help control the problem," Perfecto says. She points out that, rather than wage chemical warfare against a pest species, farm owners could promote nesting sites for predators or other species that compete with fire ants for resources.

Perfecto has used ants as an indicator species to show how environmental changes, such as the transformation of agriculture, can so quickly decrease biological diversity. The move away from traditional agriculture and agroforestry (interplanting food crops with shade trees) is affecting a vast amount of land. But unlike logging, which already has deforested millions of square miles of Central America, agricultural practices don't immediately devastate the land.

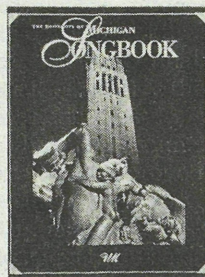
"It's not too late," Perfecto advises, "to reverse this trend by combining new and traditional agroforestry methods, thereby reducing dependence on pesticides and energy-draining machinery."

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U-M BOOKS

NATURE INCORPORATED: Industrialization and the Waters of New England (Cambridge University Press, 1991)

The mushrooming growth of textile mills along the waterways of 19th-century New England is a familiar story of the industrial revolution. Often the story recounts changing labor relations and gender roles, or technological innovations of the mills. Yet these traditional approaches ignore the water, which made such changes possible in the first place.

Environmental historian Theodore Steinberg treats the New England waterways as a major actor in the industrial revolution, shaping the way people behaved and what they believed. An assistant professor of history and Postdoctoral Scholar at the Michigan Society of Fellows, Steinberg draws on ecological, social and legal history for his book, a co-winner of the 1992 Willard Hurst Prize in American Legal History.

Steinberg documents the emerging view of water as a commodity. Both Native Americans and early European settlers viewed water as a common resource shared by groups to meet basic needs. Although the Europeans brought with them the notion of private property, best symbolized by the fences marking the boundaries of their land, water remained elusive to this type of control. It could not be fenced off and was used for such things as transportation, fishing and power for small local grist mills.

Yet in the early 1800s a group of Boston entrepreneurs set out to develop what ultimately would become a vast textile empire extending throughout many New England river valleys. Steinberg singles out two of these rivers for his study: the Charles in Massachusetts and the Merrimack in New Hampshire.

The mills required a strong, steady supply of waterpower from the rivers, and dams and reservoirs were constructed to meet this demand. At the same time, water was severed from land, making possible the eventual separate sale of both elements. By the



The Old Slater Mill was built in Pawtucket, Rhode Island, in 1840, before the water-barons era began.

1830s, water—in the form of mill power—was sold without including any land at all. Instead, a corporation bought from a waterpower company the right to draw a specified amount of water and legally could draw no more.

This unprecedented level of use and control of New England's waters gave rise to new sorts of conflict and new sorts of disputes over nature in courts of law.

"When I looked at that water and how it had been controlled, I thought someone must have raised an objection to this," Steinberg says. "This was just too much water in the hands of too few people for no one to have raised any objections. So I looked, and I found that indeed there were people who were rising up. There was a series of dam breakings. Once I had my hands on this dimension to the story, then the legal cases just suggested themselves."

The dam breakings reflected the frustrations of people who were losing control over the water and their way of life. People like farmers who could no longer harvest their grass fields because of flooding; small-mill owners who could no longer count on the flow of water at their mills; and loggers and fishermen who found the way barred for logs to run and fish to spawn.

Such people didn't find much solace in legal developments during the mid

1800s; the judiciary began to favor the economic use of water. For example, early laws allowed only very restricted uses of water, such as household uses and watering livestock. Yet beginning in the 1850s, a new standard allowed for any reasonable use that benefitted more than harmed a community.

"As the century progressed, a consensus emerged on the need to exploit and manipulate water for economic gain," Steinberg writes. "A stunning cultural transformation was taking place, a shift in people's very perception of nature. By the latter part of the 19th century, it was commonly assumed, even expected, that water should be tapped, controlled and dominated in the name of progress—a view clearly reflected in the law."

While waterpower eventually gave way to steam power, the legacy of controlling nature for progress remained. Steinberg thoroughly documents how this view came to be applied to New England's waters, drawing on business records, personal papers, and legal and government documents, among other data. In an informative narrative, he explores not only this changing approach toward water, but also its ecological consequences, and who won and lost as a result of this change

—Paula Drury McIntyre

COURT OF APPEALS: The Black Community Speaks Out on the Racial and Sexual Politics of Thomas vs. Hill, edited by Robert Chrisman (Ballantine Books, 1992).

This book, edited by Chrisman, a U-M lecturer in English and Afro-American studies, and Robert L. Allen, is a compilation of essays on the hearings on the nomination and confirmation of Judge Clarence Thomas to sit on the US Supreme Court in the face of charges made against him by law professor Anita Hill.

Most of the more than 50 essays appeared in the journal *The Black Scholar*, also edited by Chrisman and Allen. The writers include supporters of Thomas like poet Maya Angelou ("Because Clarence Thomas has been poor, has been nearly suffocated by the acrid odor of racial discrimination, is intelligent, well trained, Black and young enough to be won over again") and Lincoln University President Niara Sudarkasa, a former U-M professor (who argues that Thomas is a leader for the times and places him in the tradition of Frederick Douglass, Booker T. Washington, W.E.B. Du Bois, Martin Luther King and Malcolm X). There are equally strong denunciations of Thomas by Hill supporters Melba Boyd, associate professor African-American Studies at U-M, Flint ("Clarence Thomas—the nouveau pork chopper, the black-gowned equalizer of reverse discrimination") and Derrick Bell, visiting professor at New York University Law School ("History reveals no precedent for a Black man in a position of real power advocating racial policies that are so at odds with the convictions of a great majority of his people").



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From a 'stiff loner' at Michigan to champion of stage and screen James Earl Jones '65

By Jon Krampner

Toward the end of his sophomore year in 1951, an aspiring medical student named James Earl Jones decided to take the dreaded prerequisite anatomy class usually taken by seniors. But the professor "was like Darth Vader," says the man who would later give the *Star Wars* movie villain his voice. "I flunked."

"I said, 'All right, it's time to change gears,'" Jones says. He switched his major to theater, and the success of that shift can be seen in even the sketchiest list of his acting credits.

In film, his 1969 performance in *The Great White Hope* earned him an Academy Award nomination for best actor, while his role as a grouchy, reclusive writer provided a memorable counterpoint to Kevin Costner's wistful idealist in 1989's *Field of Dreams*.

On the stage, he won the 1986 Tony Award for best actor in a Broadway play for his performance in *Fences*. He has played Othello, Paul Robeson and King Lear, and starred in and coordinated an all-Black version of Chekhov's *The Cherry Orchard*.

Jones's television work includes an Emmy-nomination role in the 1963 series *East Side, West Side*; and a performance in *Third and Oak: The Pool Hall*, for which he won an ACE Award, cable TV's equivalent of the Emmy.

Despite having attained a level of success most actors only dream of, Jones, 61, is surprisingly devoid of the affectation that so often accompanies success in acting. Along with his wife, Cecilia Hart, and 10-year-old son, Flynn Earl, he lives in a comfortable but unpretentious home overlooking the San Fernando Valley of Los Angeles.

Part of his unpretentiousness, he says, comes from not forgetting his roots. He spent his early childhood in Arkabutla, a small town in Mississippi's delta country. Early on, his parents separated and left to pursue their livelihoods, his father, Robert Earl, as a boxer, and his mother as a migrant worker. Jones was raised by his mother's parents, sharecroppers who grew cotton.

"My childhood was dangerously impoverished," he says. "But children don't know that. All they know is, 'Do I have a momma and a poppa?' My grandparents were my momma and poppa. The poverty thing wouldn't have occurred to us unless we went to bed hungry, and my grandfather made sure that never happened."

When he was 4, he moved with his grandparents to Michigan. Jones's grandfather turned to truck farming, growing string beans, strawberries and cucumbers in Dublin, a small inland town near the middle of Michigan's little finger. "It once had a post office, but once it lost its post office, it lost its place on the map," Jones says. "There was one store and a cluster of houses."

Jones won a Regents Alumni Scholarship to attend Michigan. Adapting from rural village life to a megaversity was a challenge. "I was a frog in a big pond," he says. "It was traumatic. I lost touch with what I was convinced was the budding scientist in me."

Although he was one of only two African-Americans in the drama department at the time, Jones says his feelings of alienation were not a result of racism, but of being a farm boy lost in what seemed like a big city.

Jones lack of sociability was apparent to at least one of the few other Blacks on campus at the time. Writing in his autobiography, journalist Roger Wilkins, who was in school with Jones, recalled that when he told a counselor

of his ambition to be a writer, he was advised that it was an odd career choice for a Black at that time.

"But my choice of pursuit was no stranger than that of the stiff loner from the West Quad who was going to be an actor," Wilkins wrote of Jones. "We all knew he was crazy, partly because he never mixed with anybody and partly because everybody knew there were no decent acting jobs for Negroes anyway."

But having bombed out as a pre-med, Jones was determined to try acting, following in the footsteps of his father, who had moved into the theater as an alternative to getting pounded in the ring.

Jones had to pay his dues, as most acting students do, by helping to build sets and scenes and sew costumes while struggling for walk-on roles. But finally he landed a leading role. It was as Epops, King of the Birds, in the theater department's production of Aristophanes' *The Birds* in December 1952. Then in April 1953, he played Bret Charles, a Black GI returning home to the Deep South from World War II in *Deep Are the Roots*.

His star began to shine in Ann Arbor as Jones drew inspiration from the drama faculty that he hadn't found in the sciences. "I gravitated toward people like Claribel Baird," he says. "Her husband, William Halstead, was wonderful, as were Hugh Norton and Valentine Windt." Baird's support of the young acting student went beyond inspired teaching—she staged *Deep Are the Roots* as a way to gain recognition for Jones's talent.

"That was in the days when Black people only played Black roles," recalls Baird, who has retired from the University but still remains active in the Department of Theatre and Drama, now a part of the School of Music. "I chose it to give him a good role to play. He was a very fine actor. He always had a remarkable voice, for which no teacher is responsible."

Although Jones finished the bulk of his course work for a BA in theater in 1953, he didn't receive his degree until 1955, when he finished his last few courses after a stint in the Army's Ranger Training Program.

As one of his many part-time student jobs, he worked as a janitor, cleaning the Lydia Mendelssohn Theatre in the Michigan League. That custodial experience came in handy in the mid '50s when he and his father, now both striving actors, cleaned several New York City theaters to make ends meet.

After knocking around in the world of New York theater during the 1950s, Jones got his break when he appeared in a 1961 Off-Broadway production of Genet's *The Blacks*.



Jones

Soon the credits began to pile up: He played Lieut. Jimmy Zogg on Slim Pickens's Russia-bound bomber in *Dr. Strangelove*, appeared in television series such as *Dr. Kildare* and *The Defenders* and, in 1968, starred in the stage version of *The Great White Hope* by Howard O. Sackler.

The next year, he would sear himself into the nation's consciousness in the film version of *Great White Hope*, reprising his role of the Black boxing champion Jack Jefferson, a character modeled after heavyweight Jack Johnson.

The movie's most gripping scene was filmed in the train station in Barcelona, Spain. There, the champion's manager tells him he can return to the United States and escape prosecution on a trumped-up morals charge if he agrees to relinquish his title by taking a dive in a fixed fight. Jefferson refuses, saying instead that to spite his oppressors, he'll go sit on the Mexican side of the border and yell across, "Here I am!" as he pounds his chest for emphasis.

Jones continues to repeat his cry and pound his chest as the camera pulls back. Although the train station is cavernous, it still seems too small to contain Jones and the towering rage he projects. The scene's purpose "was to show the volcano in the man, that he'd had enough," Jones says.

Told that his anger appeared to dwarf his surroundings, he confides that he "felt just the opposite" during filming. "I felt, 'I will die yelling these lines' if they don't cut soon." I was having problems that day with that space. I'm glad it evoked the opposite, but I felt overwhelmed by that space."

Television roles have been quite rewarding to Jones lately, especially that of Gabriel Bird in the short-lived but acclaimed police series *Gabriel's Fire* and in *Pros and Cons*.

Jones says he expects to remain in Los Angeles for the next few years, at least until son Flynn Earl is ready for junior high school or high school. "I like the idea of doing TV as long as my son is in school out here," he says. "That's the kind of work that keeps me here, and it's steady work. I'm looking

for another series. In the meantime, I'm having fun doing cameo roles and my pick-up jobs in voice-over." (Jones also narrated and appeared in a recent video produced by the U-M admissions office.)

What he isn't looking for, he says, is live theater work, as he feels drained by the day-in, day-out pace for months on end that theater demands. This does not sit well with one of his former teachers.

"I was despondent to learn that he's not going to do any more stage work," Claribel Baird says. "From where I sit, he's still too young to think about retiring from the stage."

Jon Krampner is a Los Angeles freelance writer who specializes in the entertainment industry.



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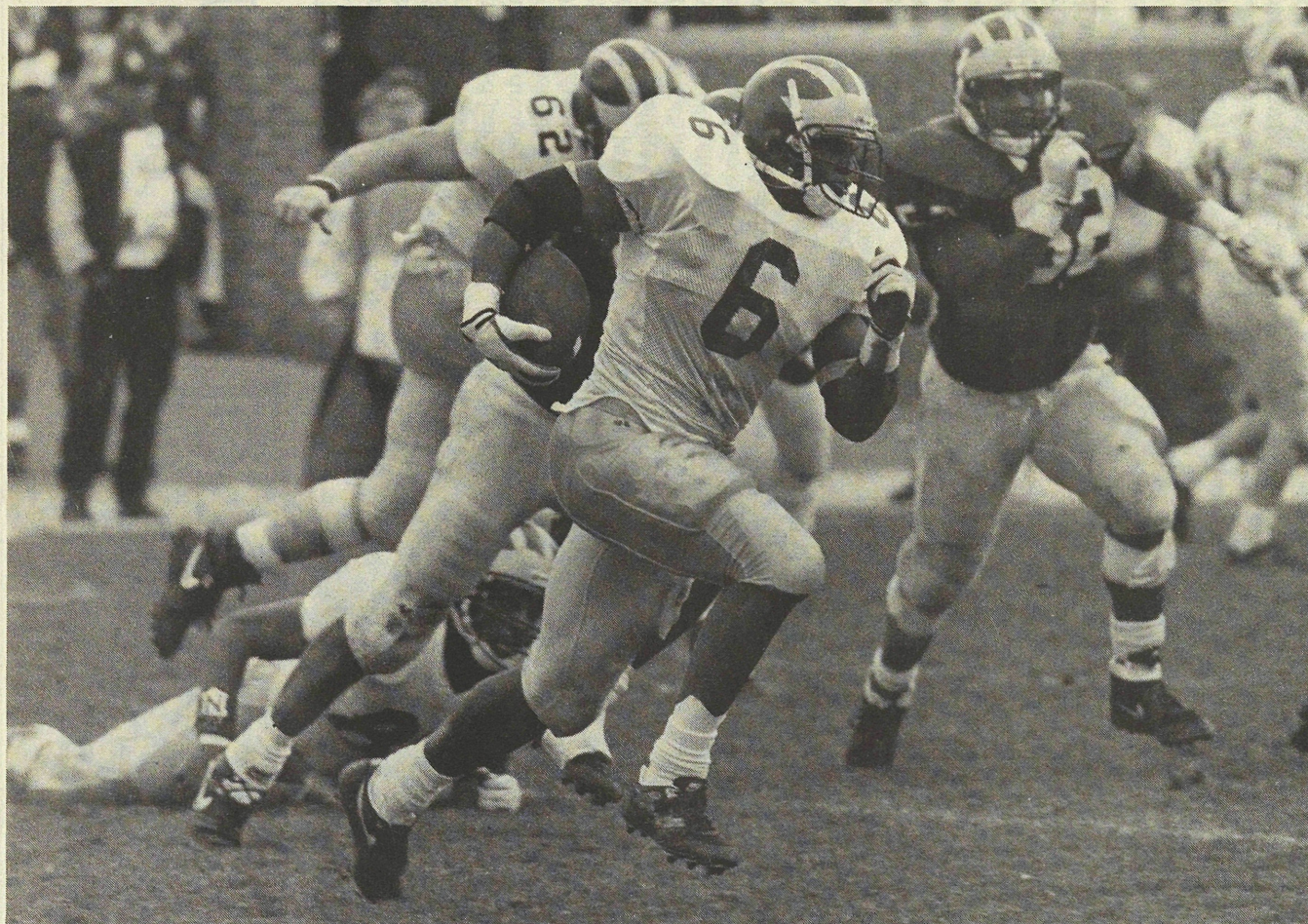


Photo by Bob Kaimbach

What is college football without a sophomore sensation? The 4-0-1 Wolverines' Tyrone Wheatley fills that bill this year. The 6'2", 225-pound running back from Dearborn Heights has blinding speed and bruising power.

U-M Regents: Deane Baker, Ann Arbor; Paul W. Brown, Petoskey; Shirley M. McFee, Battle Creek; Neal D. Nielsen, Brighton; Philip H. Power, Ann Arbor; Veronica Latta Smith, Grosse Ile; Nellie M. Varner, Detroit; James L. Waters, Muskegon; James J. Duderstadt, President, *Ex-officio*.

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