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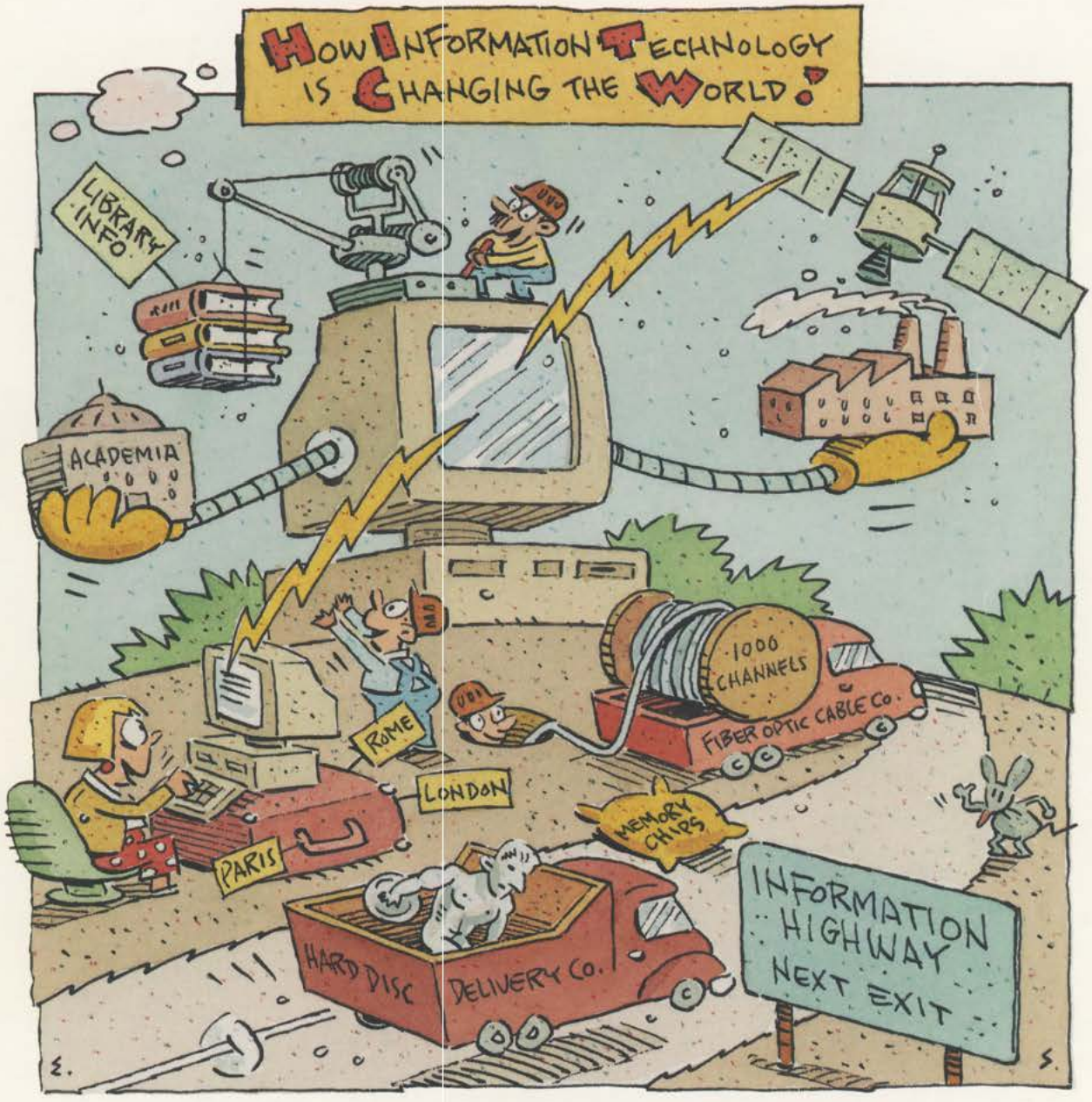

An Interview with IBM's James A. Cannavino

SPECIAL SECTION

Information Technology in Our Lives and Our Future


MARIST COLLEGE
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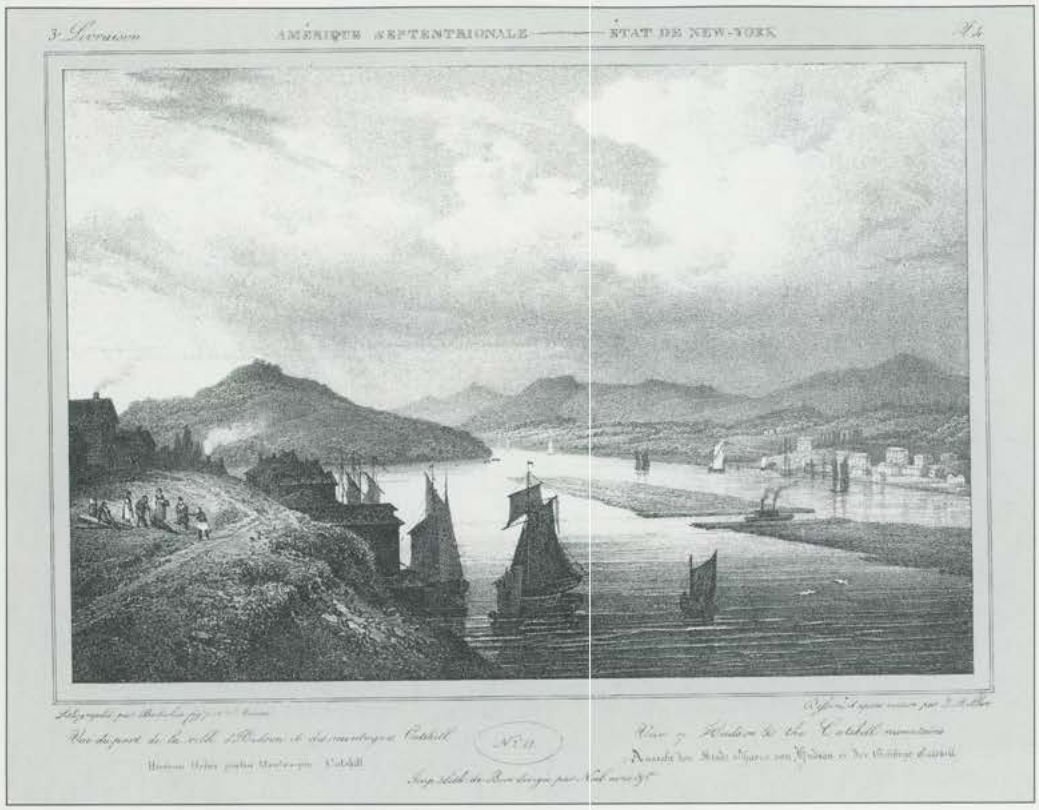


Documenting key years in the Hudson Valley

Marist library accepts a unique environmental collection

A unique collection of environmental papers on the Hudson River Valley is now available to Marist environmental science students. The Richard W. Barnett Memorial Library is a collection of some 1,500 documents that provide facts, policies and opposing opinions on prominent environmental issues on development in the Hudson River Valley during the past 28 years.

According to library Director John McGinty, this collection is the largest accumulation of environmental papers in any one location between New York City and Albany. "Marist is the only place where these studies can be found," McGinty said.

Housed in the college's library, this recently acquired collection provides students an unparalleled opportunity to prepare for major challenges they will face as environmental scientists and policy advisers. Library officials expect the collection eventually to attract the attention of students in several disciplines, environmental science in particular.

With 98 students during the 1993-94 academic year—compared with 10 in 1988--environmental science is one of the fastest growing majors at Marist. These students can use documentation from the Barnett collection for their own research or planning projects.

With the broad-based interest the documents generate, increasing numbers of elected officials, environmentalists and developers are expected to seek out this collection at the Marist library during the next few years. All of these pieces of information are in one central location where policy makers and environmentalists can conveniently research historical background and specific changes as they relate to current projects and plans.

Andrew Molloy, chairperson, Division of Science, said the Barnett collection is a valuable learning resource for students and public officials. "The student researching the chemistry of the aquatic ecosystem of the Hudson will find background data in this collection as will the person trying to formulate public policy on waste."

Among hundreds of projects in the collection, researchers will find surveys of the Hudson Valley watershed, a report on PCBs in fish, and the proposal to develop Stewart Airport. Among the collection are annual monitoring reports on the effects of power plants along the Hudson on fish and sediment.

Citizen advocacy groups, industry, governmental commissions and private foundations, representing various and often conflicting positions, will continue to send technical reports to Marist. Stewardship of the Barnett Library was given to Marist in mid-1992 by the Hudson Valley Environmental Society, a non-advocacy organization of scientists, administrators and academicians. The group has been meeting regularly since 1966 to hear opposing sides present their cases on controversial environmental issues. While the organization has no enforcement power, it reviews environmental reports from private and public groups and issues findings based on the data.

"We felt that decision-makers shouldn't be making decisions in a vacuum," Warren McKeon, executive director of the Hudson Valley Environmental Society explained. "Representatives of different interests came to our meetings and sent us their reports because they welcomed public exposure."

In 1969, the Hudson River Valley Commission urged people to begin a planning process to allow for economic development which would not outpace the ability of the natural environment to support future human activities. About the same time, public support emerged calling for research, repair of the environment and measures to protect it from further degradation. The collection spans the years that saw these trends become prominent in American thinking.

Students reading reports in the Barnett Library collection can imagine themselves taking on the mandate of this legacy, weighing competing points of view and looking for common ground as a possible basis for cooperation. McKeon said the collection honors Richard W. Barnett, a biology professor at Dutchess County Community College who was instrumental in founding an environmental field station at the river's edge, a few miles north of the Marist campus.

The Hudson Valley Environmental Society chose Marist to house the collection because members of the public can easily get there to use the collection and because of Marist's long-standing interest in the river. Marist students have participated in field studies for several years and the faculty have been members of the Society.

The Barnett material complements Marist's Hudson Valley collection of nearly 700 volumes, covering regional history, Franklin D. Roosevelt, artists of the Hudson Valley school of painters, folklore and even hiking.■

—VICTORIA BALCOMB

Making the vision a beautiful reality

Construction redevelops center of campus

There is a coming-of-age aspect to it that goes beyond the bricks and mortar. The $27 million expansion of housing and other facilities for students now underway at Marist College had its roots in plans made years ago, and in aspirations that go back decades.

Marist is redeveloping a central portion of the campus and creating one of the most beautiful cultivated areas along the Hudson River. The 22-month project was begun last December and is scheduled for completion by Fall, 1994.

This is the vision now taking shape for the College and its students:

■ The four-acre Champagnat parking lot will be replaced by a campus green overlooking the Hudson River. Crossed by walkways and dotted with trees and shrubs, the green will bring a beautiful and natural new focus to this area of the campus and will serve as an outdoor performing arts center. New parking lots will be located elsewhere.

■ The student center, renovated and expanded by 48 percent to 77,000 square feet, will offer students a greater range of facilities and services.

■ A three-story domed and columned rotunda, architectural focal point of the project, will link the new student center and a new five-story residence hall, and will be the main entrance to both. The rotunda will face out onto the campus green.

■ On-campus housing will increase by 468 spaces, or nearly 25 percent. Of these, 144 students have been assigned to townhouses completed in time for this Fall's semester; 324 will be housed in the residence hall next fall. This will allow a shift to campus of students formerly housed in apartments leased by the College off campus.

Marist is redeveloping a central portion of the campus and creating one of the most beautiful cultivated areas along the Hudson River.

The project, largest in Marist's history, is the logical next step in an evolution that began in the 1980s, when undergraduate enrollment increased by nearly 50 percent to the present level of more than 3,000 students and the College invested some $60 million in academic buildings, computer technology, athletic fields, housing and other facilities for students.

Dormitories, townhouses and garden apartments for about 1,700 students were built over the years, but 450 to 500 others who want college housing have been assigned to apartments leased by the College at a garden apartment complex a few miles east of the campus. The additional on-campus housing now under construction will make it possible for Marist to withdraw from those leased apartments.

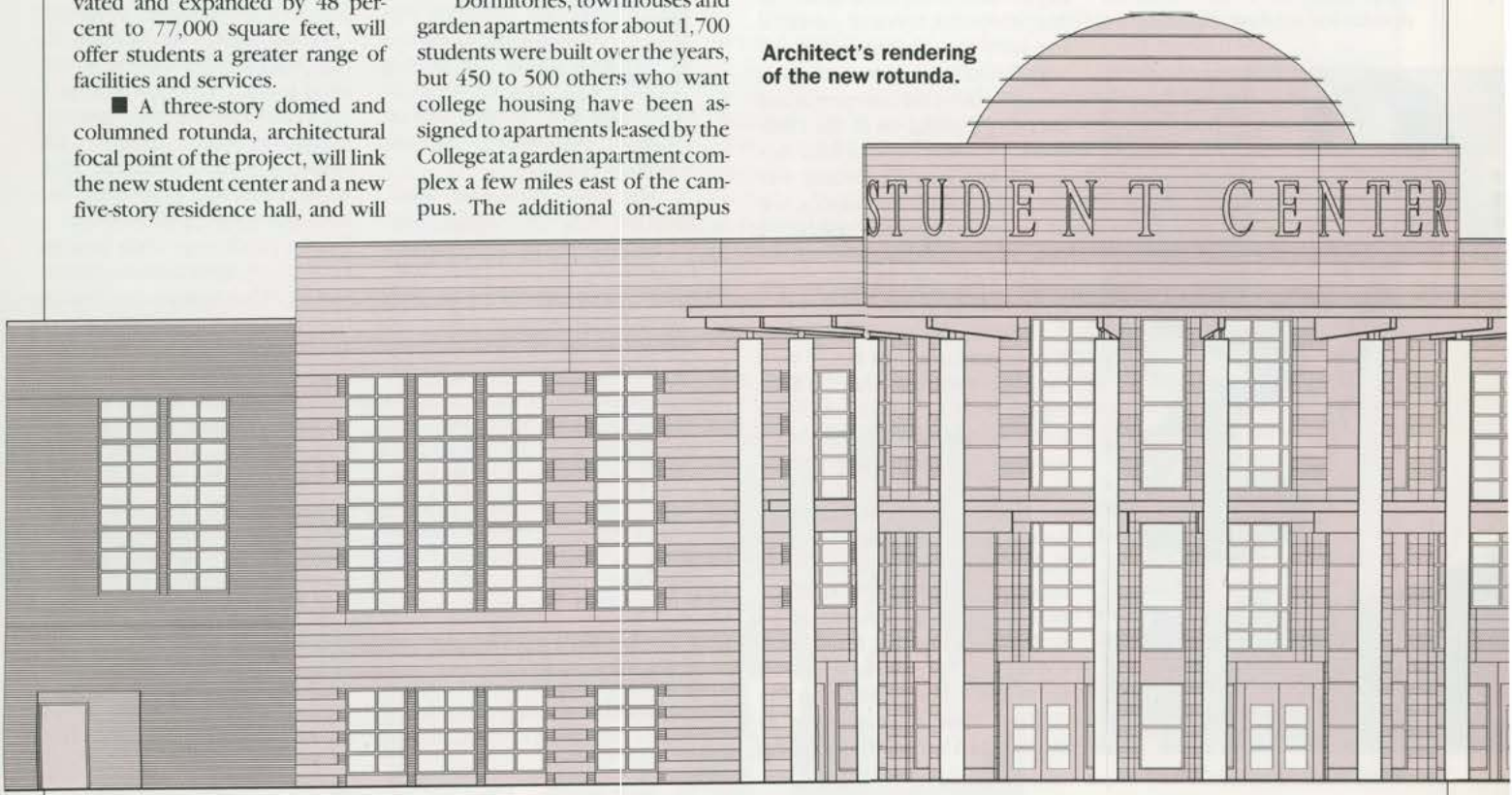
To finance the project, Marist sold 30-year revenue bonds through the New York State Dormitory Authority in mid-August, 1992, at an average of 6.05%, the lowest rate in years. Fees charged students for housing will not be affected; only the use of the fees will change, going toward debt repayment instead of rent receipts.

The new townhouses are located on land that slopes down toward the Hudson River from the Lowell Thomas-Dyson quadrangle, just north of the new campus green site.

Work on all other elements of the project will continue into August, 1994, to be completed in time for that Fall's semester.

The mid-rise residence hall for 324 students, six to a suite, is being built on a slope leading down toward the Hudson from the campus green site. The structure will also contain study areas, offices, and an art gallery. It will be five stories tall at the river end and three stories at the top of the slope, where the rotunda entrance will be located.

The three-story student center will include a new and larger bookstore, a fitness center, a campus cafe, an enlarged dining area and food court, a faculty dining room, classrooms and rehearsal space for the music department, the campus theater, health services, the student government office, and multi-purpose rooms for lectures, conferences and meetings. Renovations to the old campus center began in May and will continue through the 1993-94 academic year. ■



Architect's rendering of the new rotunda.

Marist's Special Services Program

Serving students with disabilities for 20 years

The Special Services program at Marist College begins with the idea that students with disabilities are very much like other students; their similarities far outweigh the differences. The mission then is to give students with disabilities the support they need to live, work, and study in the mainstream college environment.

Marist has been serving students with disabilities since the late 1960s. The program was formalized in 1973 with the creation of the Office of Special Services, and earned a national reputation in the field under its long-time director, Diane Perreira. Over the years, the program has been of service to some 1,500 students with a wide range of physical and learning disabilities.

Stephen J. Hopson, for example, a 1982 Marist graduate with a B.S. in Finance, is a registered financial consultant at Merrill Lynch & Co. And he is profoundly deaf. More than half his clients are deaf or hard of hearing. Hopson and his clients communicate through teletypewriters, or TTYs, which are devices for sending and receiving print messages through keyboards and screens linked to telephone lines. He is an MBA candidate at Fordham University.

Stephen J. Hopson '82

Before joining Merrill Lynch in January, 1992, Hopson had been the first deaf Senior Financial Auditor at the Bank of New York.

Looking back on his college years, Hopson says, "I was able to grow intellectually and emotionally because of the environment at Marist. Special Services provided me with an oral interpreter and with a note taker, which allowed me to focus on the interpreter and everything going on in the classroom. I was fortunate to have top-rated professors. My favorite was Gregory Kilgarif in economics, one of the most effective teachers I ever met. Unfortunately, he has passed away. He had knowledge, enthusiasm and patience."

Hopson grew up in Latham, NY, near Albany, in a family with two sisters and a brother, all hearing. He attended regular classes in local schools. He speaks clearly and signs fluently in American Sign Language.

He says he chose Marist for several reasons: "I was given a swimming scholarship. It was small, but it helped. I liked the potential for close relationships with the professors. It's a small college and the student-faculty ratio is good. The location on the Hudson River was attractive to me. Finally, I knew I would get the support I needed to do well."

Kindra Predmore '91

Another Marist swimmer who had the help of the Special Services program is Kindra Predmore, a 1991 graduate of the Fashion Design program with a BPS degree, now employed as an assistant fashion designer in New York City with Carolyne Roehm, Inc.

"I have been to Taipei and China overseeing the production of fabrics and garments, and I do a lot of other technical work at this stage, like finding the perfect button," she says.

Predmore has dyslexia, a reading disorder that she describes as "manageable," adding, "Still, you're not like everybody else. I couldn't have made it through college without the help I got taking tests, buying books, having tutors read along with me, proofread my work, and fix my grammar and sentence structure with by-the-book English."

She set more than a dozen Marist swimming records in the 200 meter butterfly in intercollegiate competition, and was Marist's athlete of the year in 1991.

Predmore grew up in Maryland and during high school competed with an AAU swimming team in Rockville. She chose Marist College because it was "the right distance from home, six hours, had a swim team, a fashion program and a program for the learning disabled." Marist gave her "the best of all worlds," she says. ∎

Taking a chance 24 years ago

A story of big dividends

Everyone involved was taking a big chance—the young man, his parents, and the dean of admissions. But the onus was on the dean, because the decision was up to him.

The young man, Mike Ward, fresh out of a New York City high school, was an excellent student, friendly, likeable, and a paraplegic as a result of cerebral palsy. Dean David Flynn admitted Ward to Marist College in 1969 knowing the College wasn't prepared. He had confidence in Mike's qualities of intellect and personality, and was counting on the people with those same qualities that he knew throughout the College.

Flynn, who is now the dean of admissions at Fairfield University, said of the decision: "Mike's parents wanted a Catholic college outside New York City, in a caring environment and away from them. They knew he would have to fend for himself eventually and wanted him to learn independence and to gain an understanding of himself. I did not inform the housing office, but I knew someone would agree to share a room with Mike."

Marist had not yet organized its Special Services program for students with disabilities. That would come four years later, just after Ward was graduated with a B.A. in psychology with honors. He went on from there to earn an M.S. in Rehabilitation Psychology from SUNY Albany in 1975 and in 1987 was awarded a Ph.D. in Special Education from the University of Maryland, close to his home and his long-term career with the Department of Education in Washington, D.C. He is chief of the Secondary Education and Transitional Services Branch in the Office of Special Education Programs.

But in September, 1969, it took a hurry-up meeting of student advisers to find Ward a roommate. Emmett Cooke, a sophomore who went on to become a star at center for the football team, volunteered for the semester and stayed two

Volunteers have a memorable week

Marist students play key role in Clinton visit

In a week they'll never forget, 44 Marist College students worked as volunteers with President Clinton's staff when the President visited Hyde Park in February, 1993. They were assigned to the President's advance staff, the Franklin D. Roosevelt Library, and the motorcade carrying the Washington press corps. ▮

Above, Marist College President Dennis J. Murray greets President Clinton at the FDR Library. Left, Senator Daniel Patrick Moynihan of New York (left) and William vandenHeuvel, President of the Franklin and Eleanor Roosevelt Institute, chat during President Clinton's visit to the FDR Library.

At the end of his visit, President Clinton was elated to receive a Marist baseball cap and sweatshirt given to him by Marist students at Stewart International Airport.

years.

"I'll never forget the week Mike arrived at Marist," Cooke said 24 years later from his home in Marietta, Georgia. "He was paired with a freshman whose parents were alarmed by the thought that their son would have to take care of Mike. So we had a meeting of student advisers. We had Dave Flynn and Tom Wade (then Dean of Students) come in and they got beat up pretty heavily for what we thought was a mistake. Turned out they knew better."

Cooke holds a Master's degree in social work from Adelphi University, worked for IBM for 10 years until 1992, and has since then been a software sales consultant with a company in Marietta. He lives there with his wife and two daughters.

Cooke said that, "Mike went through an interesting evolution at Marist. Mike's parents had raised him to be at least semi-independent, but he was also very sheltered. Within weeks after he got to college he had a large network of helpful friends. Someone was always taking lecture notes for him, or helping him in the cafeteria."

Cooke was graduated from Marist in 1972, the year before Ward. "We're still in touch every few months," Cooke said. "He'll be visiting in August for a Braves game."

Ward's recollections provide the key perspective:

"When I was 18 I no longer wanted New York City. I wanted to get out to a place where there were trees, birds, and fresh air. Going to Marist was my idea. It was not too far from home but far enough so that Mom and Dad wouldn't be up every day. They supported me in that decision and I thank them for that and all they did for me. I was a little apprehensive but it was a small school so pretty soon I knew everyone and everyone knew me."

Ward said he was able to find the help he needed in the cafeteria and in getting around the campus. But more importantly, he said, the other students helped by letting him make his own way.

"I made the Dean's List I think all but one semester, but I never missed a party. The most important impact on me during those years at Marist was not academic but my growth socially. I had come from a somewhat protective family environment," Ward said. "In my younger years I was brought to school and then immediately back home. Until college, I was never really around other kids outside of class, so I never picked up the ordinary social skills." But life at Marist soon changed that.

"Living in a dormitory you learn quickly. In that milieu, I was becoming an adult," he said. "I went through adolescence in college. Others did it in high school.

"Daniel Kirk, who died 10 or 12 years ago, was the person who most influenced me at Marist. He was chairman of the psychology department and my mentor. He took me under his wing and gave me a 'can do' attitude." ▮

Mike Ward '73 and Emmett Cooke '72 cross the campus in their undergraduate days.

Twenty years later, the two old friends get together at Cooke's house in Marietta, Georgia.

INFORMATION TECHNOLOGY

An interview with IBM's James A. Cannavino

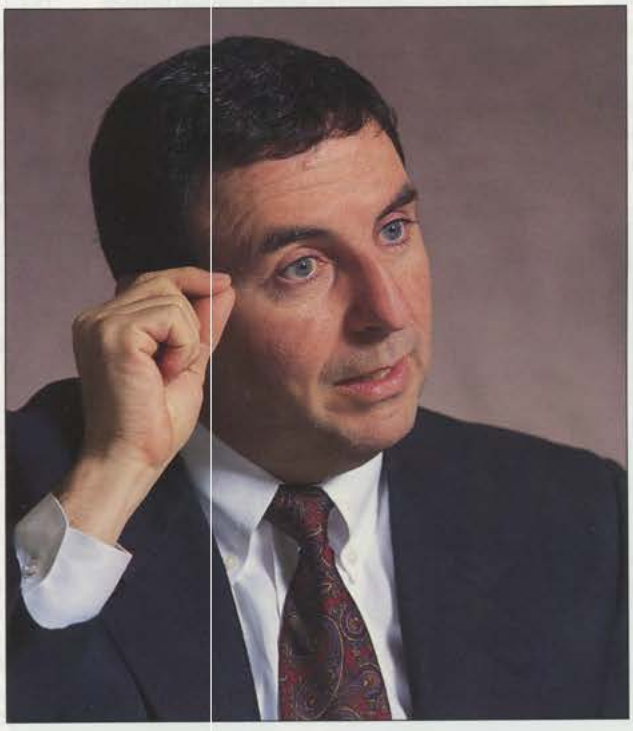
Looking beyond the horizon

How information technology is changing the world

James A. Cannavino, IBM senior vice president and general manager for Personal Systems, has been a Marist College Trustee since 1985 and is now Chairman of the Board.

PHOTOGRAPHY BY JAMES FOSSETT

"The future renditions of information that you'll want will be electronic and delivered to you virtually at will."



For James A. Cannavino, it's not enough to know that the world is in transition to what might best be called the Information Age. As a leader in that transition, he needs to know how it's happening, where it's heading, and what it means for the world. Cannavino, IBM senior vice president and general manager for Personal Systems, needs to be alert to what may lie ahead beyond the horizon of present knowledge.

One wintry evening this year, sitting in a high-tech conference room in the Charles H. and Margaret M. Dyson Center on the campus of Marist College, he spoke about current and emerging technologies in terms that had as much to do with philosophy as they did with electronics.

This was a talk, too, that revealed the man's zest for the high-stakes global competition in which he was immersed, and his grasp of the tools needed to win.

Cannavino is chairman of the Marist College Board of Trustees. The interview was conducted by Edward A. Hynes, Marist's director of college relations.

Marist Magazine: *Tell us something about what's happening, and what the implications are for society at large.*

James Cannavino: There's a profound set of changes going on in business. You can see them in a microcosm just by looking at the information technology industry itself. You see an industry that two decades ago was less than a hundred billion dollar industry and today is over four hundred billion dollars. But, back 20 years ago, there were fewer than a thousand competitors in the industry. Today there are over fifty thousand. As information technology gets more granular, there are competitors at every level, from chips to systems, software, and consulting, and that's caused an enormous rollout of products and processes.

MM: *So, on balance it's been very good for consumers, but difficult for the competitors.*

JC: It's always difficult for competitors. Wouldn't be very much fun if it were easy. The point is, there's a revolution being driven by fundamentals. This thing called a microprocessor is doubling every 12 to 18 months in its capabilities for about the same price, and that looks like it'll continue for at least another decade. At the same time, the ability to communicate data is probably going to grow as fast in this decade as the microprocessor did in the last decade.

MM: *Here we're talking about fiber optics as opposed to copper?*

JC: Absolutely. Coaxial cable had the limit of being able to handle hundreds of thousands of bits per second. There are implementations now of fiber for reasonably short distances—a mile or two—that run at hundreds of millions of bits per second, and we are readying technologies that move 1.5 billion bits per second over fiber optic backbone networks.

MM: *What does the information age mean for the general public?*

JC: It means very fast microprocessors with high power at low cost, very powerful switched networks that are going to be available ubiquitously around the world, and profound effects on people. You'll have every bit of everything you ever hoped for in two-way communication that fits in your vest pocket or carries in your attache case.

I believe that as we generate these technologies we will begin to see what I call the geo-independent worker. That means, instead of your going some place to do your job, everything will come to you. Why would we transport people in automobiles that pollute the air, and put them on trains and buses to crowded cities to very expensive square footage places in very-high-rise buildings to do logic-based jobs that you don't physically need to be there for? Just think of the impact on the environment. Think about the difference to running a business.

MM: *What about the impact on life off the job?*

JC: These technologies will probably bring thousands of television channels into your home. Now that sounds like you could get a new form of carpal tunnel syndrome in your thumb.

MM: *Exactly. Too many choices.*

JC: However, it's only true if you think about it in today's frame of reference. It's only true if you can't say to your television set, "I'd like to tour the Louvre." Maybe you won't have to deal with a clicker, or a printed television schedule. The computer will find what you want.

MM: *So you're sitting at home and you're the director of the program. You're taking the place of the TV control room.*

JC: Absolutely. And then if you take that technology a step further, you start to think about individual channels between people, where you're sitting in front of your TV and I'm sitting in front of mine, and I just pick you out of a call list, and your television rings.

MM: *What kind of everyday applications are we seeing now?*

JC: We've done a joint venture with a company called Homeview. People in Boston shop for homes, and instead of driving around the community, they tour through a set of very nice digitized pictures in the broker's office. That's the first step. These are just digitized pictures of the outside of houses.

Later, with GIS (geographic information systems), they'll be able to overlay on a home they think is pretty nice a lot of information about the neighborhood, its topology, its subdivision structures, its land use strategy, its school systems, its taxing rate, its demographics. They haven't left the broker's office yet. As the systems get a little bit more capable, they'll have a digitized inside, and so, with virtual reality technology, if they want to see what the sun looks like in that living room in the summer at four o'clock, so be it.

MM: *And all of this at reasonable investment levels for the broker?*

JC: At lower cost than they have today. As these technologies become pervasive, for modest fixed cost you get ever-increasing capabilities.

I expect to have things that fit in my vest pocket, and when I open them up I'm as connected to the world as I was when I was in my office.

On an airplane, instead of sitting back and watching the movie they've selected, there's no reason there can't be a thousand channels in the airplane, as well. Very easily. So you could select what you'd like to watch. In fact, it could be sessions on your computer system. It could be a two-way video conference with anybody any-

where in the world.

MM: *How do those signals get transmitted? Is it the same technology we use today?*

JC: Well, techniques get better, and the technologies get better. When you're in broadcast mode, things like satellites are very effective. For two-way communication satellites have not been so hot an idea.

MM: *Because they're not private?*

JC: Private's a little easier now. We can encrypt things to the point where the data's not perfectly safe but it's safe enough.

MM: *Well, then, what is the problem?*

JC: The satellite is 22,500 miles out in space so it can sit in one position relative to earth. They call that geosynchronous. Well, the amount of delay you'd get in a conversation traveling that distance is a third to half a second. That's not a conversation. So it hasn't worked. Motorola has looked at a system they call Iridium, where they will orbit 66 satellites in north to south orbits.

MM: *They can be lower then...*

JC: Yes. They're not in geosynchronous orbit but there's enough of them so there's always one over you. They're only a hundred miles or a hundred and ten miles up, which means you could have a communication virtually at any band width with anybody on earth without a wire.

MM: *That would take a tremendous investment.*

JC: Yes. They talk about capital requirements of between two and four billion dollars.

MM: *They're not going to do that alone.*

JC: Right. And so they'll look for partners. The point is that infrastructure will keep building. People have been laying fiber optic cables now for 20 years.

MM: *There's so much work to be done. The long-term outlook for the economy can't be too bad.*

JC: Right. The real challenge is to generate wealth. Service industries have been very popular and are, of course, growing. But it's very hard to generate wealth with just service industries. You have to have other things. You have to think about ways to generate a balanced trade. And, as the technologies improve, the service industries can reach a little farther as well.

MM: *What do you mean?*

JC: We have voice recognition systems now that recognize voices in multiple languages very accurately. That technology has advantages in business where it could reduce the cost of support services. But take it a step further. If I can understand it, then I can translate it. So why can't I then speak to a computer system that would translate to German, for example, as I speak. Then I could have a conversation with someone in Germany, with him speaking in German and me speaking in English.

MM: *You're hearing English, and he's hearing German?*

JC: Absolutely. It shrinks the world, a lot. Boundaries of economies and societies will change.

MM: *How does this change the society in which we live? What happens?*

JC: The amount of information available to virtually everybody on earth with low cost devices is going to be virtually unlimited. So, first off, societies built upon the fact that they were isolated, or where information is controlled, are quickly passing. Second, I think that languages and even customs over time are going to homogenize a little and, therefore, barriers between people will be reduced.

And I think it's going to make cultures less unique, which might be sad. I'm not so sure that I'll like that quite so much.

I have one other thought that always crosses my mind. I think we have about another 20 or 25 years where we are intellectually superior to computers.

MM: *Please tell us what you mean.*

JC: I think that as this revolution continues, within a quarter of a century computers will be intellectually superior to us in every way. They'll be smart, articulate, remember better, and communicate better with other computers and with more people than we can. Now that can be a very profoundly assisting thing. It can also be a very depressing thought.

MM: *The term artificial intelligence is being booted about a lot, but one of the attributes of human intelligence is self-awareness. Is a computer ever going to be self-aware?*

JC: I see no limit in the capability over time. If you take it out far enough, clearly if you go a hundred years, I think you'll have computers that are self-aware.

MM: *Do you find that threatening in any way?*

JC: Well, I'm not so sure I'd like to live in that world. I'm sure there would be a lot of benefits to it, and the human race has shown itself to be pretty adaptive. Maybe we'll use a higher percentage of our gray matter than we have in the past, and the race will go on.

MM: *Let's bring it back just a little bit, say to the turn of this century. What do you think going to college will be like?*

JC: The first thing is, everybody who wants to go to college will first see if they can get into Marist, so the chosen few will be very happy. The rest will have to scramble. That said, I really believe that we'll be bringing a very information-literate population into school and our challenge will be to make sure that they have the social values to live the kind of quality of life that we've had the luxury of enjoying.

MM: *Are you suggesting that social values could be put at risk by an overly intense focus on information gathering?*

JC: If you look at graduating high school students, the U.S. is about 37th best now in the world, in measured capabilities. If you look at the number one country, it's Korea, by far. But that comes at some expense. The Koreans also have the highest suicide rate for high school students.

You know, we all pass this way one time, at least according to most. And you'd like to contribute some things. You'd like to be socially responsible. You'd like to do the things in your community that I call the rent you pay to be on this earth. And you'd like to take some satisfaction out of that, as well as make a contribution to your business and support your family. And so I worry a little bit that as we get more able to assimilate information that we just might not develop all of our potential. I think that has to become a more important role in college. We need to start to balance things.

Marist has gotten off to a great start as it builds its information base, its network, its capabilities. The College can start to say that information technology is an accepted part of life, and now let's get on about how we live it. That's going to be very, very important. That's going to be one of the differentiators of colleges.

MM: *Marist is well positioned, obviously, because of the joint partnership with IBM. Do you see our early start providing us with a continuing edge for some distance into the future?*

JC: Competition's like a race that never ends, so you can't ever get to a place called ahead, you can only get to a position called ahead. Your relative position is almost unimportant. Your rate of change over the long period of time is important. So Marist got an opportunity. You have started a learning process sooner than most. And if you go ahead and keep that edge, to press what's possible, then the College will be very hard to catch. However, if you stop too long sitting around enjoying your accomplishments, you will notice a blur or two go by.

MM: *What role do you see for multimedia technology in education?*

JC: First off, multimedia is not a thing. It's a series and a collection of advances in the computer industry that we gave this new name to because they crossed boundaries. It used to be that we tended to do things one at a time with the computer. We tended either to display something in a graphic form with no audio output, or we had computers that generated audio output and there wasn't much display with them, and so forth. But all of a sudden, we started to see enough technology to allow us not only to have great graphics with color but full motion associated with it as well. And not only be able to make noises out of a computer but actually have some form of audio output, including music, and audio input, and audio recognition. Those collections of things are called multimedia technology. They're fundamentally natural advances in computers.

Now, what are we going to do with them? Well, the more natural we can make both the inputs and the outputs of a computer, the more ubiquitous they can be. The amount of information you can communicate is startlingly greater. That's going to allow you to think about problems differently, whether it be education, preparation for classes, or help and information systems. These advances are going to cause an enormous change in everything that we do. The development of virtual reality technology will take us a step past multimedia.

It won't be long before I can generate holograms, so that we can be sitting across a table from each other having this meeting, and only one of us is really here, and the others are sitting at tables in other geographies, whether it be home or another building. So we'll have this

meeting, and our images will travel but, we won't. *(Editor: Holograms are three-dimensional images created with laser technology.)*

MM: *Is technology so compelling that it's going to push itself right into our everyday lives? Is that what you're suggesting?*

JC: I think so. We can make these super fast highways of information. So, if you have something you want to send, you just put it in a little packet and hop it on there with the destination. Pffhht, off it goes. Think of it as a mail system that goes close to the speed of light. That ubiquitous communication network, coupled with the natural communication interfaces that multimedia generates, will change our lives.

MM: *Using the geo-independent concept that you described before, do you think that there will be more distance learning courses, more people learning at home rather than on campus? Do you think our student body might include people who do their course work from long distances away?*

JC: Some of them learning in different languages. One of the startling realizations you come to is that the information you have dates itself pretty quickly, education no exception. A lot of courses tend to be five or six years old in their current presentation style and that's built off research information that could be dated another five or six years. You could be in the 10 or 15 year old fundamental concept range...

MM: *If you're bound by hard copy.*

JC: Yes. Information technology can make you more current in a four-year education program, but that's not the end of education. Now how do you keep at it?

Review and refresher courses have been things we have done very poorly. Now the technologies we have come to would let you pick your course topics in natural history or statistics, or whatever. Marist alumni, for example, would be able to customize a set of updates right from home based on the College's course offerings. So you're not doing a pre-set six-week refresher course, which can be very discouraging because you're covering stuff in those courses that you already know and waiting to get to what you don't know. So I think for sure we'll have a profound effect on that. You'll have a continuing education process.

The second thing is this. To structure and get some discipline in education, we have constructed grades, kindergarten through twelfth grade, and four years of college, right? Where does it say that children all learn at the same rate? Did we do that for them or did we do that for us? So as technology allows us to get more individual and more custom will we continue to bore the heck out of the folks who learn the quickest at that period of their life on that particular subject? Why don't we get back to something like the one-room schoolhouse, or maybe a two-room schoolhouse, where they work in groups based on the rate at which they're learning that particular subject? And is it so bad that a fifth grader gives a hand to a first grader? Is it so bad for either of them? I don't think so.

This technology will actually get us back to some of the things that were redeeming social values in the past. Maybe we can start to apply them again and let people be more individual because of this mass computer capability. We can use some of this technology to give everybody a fair chance.

"This technology will actually get us back to some of the things that were redeeming social values in the past."

MM: *That's a wonderful vision. What does it mean for libraries as we know them?*

JC: What's the definition of a library? It's a place you go to get access to information you need. "Place" may start to disappear, although some argue with that.

The future renditions of information that you'll want will be electronic and delivered to you virtually at will. We coined a phrase in the industry called "personal digital assistants," surrogates for you that are always watching, waiting for information you asked for, whether it's a book you'd like to read or the latest piece of research on a new set of chemical compounds.

MM: *Sounds like a great idea.*

JC: If you have to think about all of this technology every time you want to use a computer, very few people would use them. If I made you understand fuel injection and anti-lock brakes before you could drive a car, very few cars would be on the road. So, as computers get more capable, let's have devices the size of this case, or smaller, that are more powerful than the mainframes were 25 years ago. They would keep in contact with the flow of new information, keep it organized, collect it and configure it the way I would like to have it. It's my assistant. I have told it how I want things to be, and it then deals with the complexities of the information I want.

MM: *The New York Public Library at 42nd Street may be the greatest in the world. There are other great "place" libraries, such as the Beinecke Rare Book and Manuscript Library at Yale. Surely, those places will endure and, to the extent that we can preserve the original hard copy, we will.*

JC: I agree with that. Just like museums. You know museums display one tenth of one percent of their holdings, on average. Now, wouldn't it be nice if their holdings were digitized and available on a database? Wouldn't it be nice if a student wanting to look at early American artifacts, searching for certain kinds of arrowheads, could actually generate a hologram of an arrowhead right at his desk? Not that you wouldn't want to visit and browse in a museum, too.

MM: *You've laid out a very dazzling picture. But are there limits to the kind of evolving world that you just described?*

JC: I can't see it. You know, the patent officer around the turn of the century said, "I think we ought to close it 'cause all the good ideas have already been invented." I'm always reminded of the flatlanders' story. People who live on the surface of the table. They only have width and length. They have no depth. Think of their perspective on the world. Very flat. Think about a ball coming along through their world. They see a dot. It grows to a line, shrinks to a dot, and disappears. And I often wonder about what it would be like to try to explain to them that that was a ball. And so, I think some of the limits that we think we see are because on those subjects we live on the surface of the table. As we get farther on down the road we'll find another dimension.

MM: *And the world is round.*

JC: And the world is round. So I really believe that there isn't any limit, and there isn't any limit to what people can do, as well. ▮

SPECIAL SECTION

Information technology in our lives and our future

Today's emerging technologies enable anyone with computer fluency to tap into the information explosion sweeping the world. With the global reach and high-speed capacity of fiber optics and microwave transmissions via satellite, "anytime-anywhere" communication is possible. All this impacts how we work, learn, and try to improve our lives. *Marist Magazine's* special section provides a sampling of how this is happening in fundamental ways:

- Communicating with each other
- Educating for the future
- Accessing information
- Remaining competitive
- Planning for better communities

Illustration by Elwood Smith

COMMUNICATING WITH EACH OTHER

Moving 100,000 pages per second

There's a digital super highway coming

It's 5:00 a.m. and 12 tired graduate students and professors at an East Coast college are finally turning the lights off in a computer lab. They had been working for more than 24 hours compiling reams of material, including audio and video tapes, graphics and photographs of their year-long artificial intelligence project. The frenzied activity was in preparation for work that was scheduled to begin at 9:00 a.m. by teams of researchers in San Francisco on a series of immense multimedia presentations. Before the last light went out in the lab, all of the material, the equivalent of six packing cases, had reached the West Coast destination.

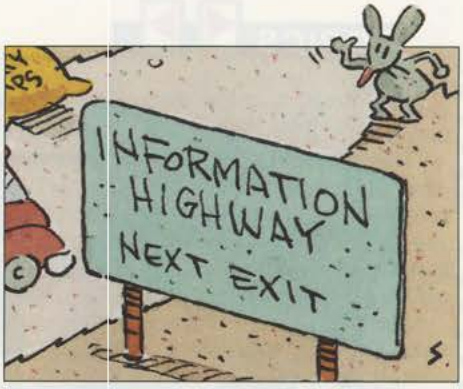
Impossible? Under standard operating conditions, certainly. But if the proposed National Research and Education Network (NREN) is built, simultaneous transmission of several bodies of voluminous material at mind-boggling speeds will be commonplace.

That is the vision proponents of the NREN have for this super telecommunications highway—a network with the capability to move the equivalent of 100,000 typed pages per second. In technical terms, NREN would have a network capacity of three gigabits, or 3 billion bits, per second—the equivalent of 300 copies of *Moby Dick* per second—more than 65 times the capacity of Internet, the global network for E-mail and other services. With a top speed of 45 megabits, or 45 million bits, per second, Internet can transmit the equivalent of 1,500 typed pages each second.

Proponents of the multi-lane, high-speed, data superhighway have said that NREN would provide American researchers and companies the advanced computing tools needed to develop new technologies, new manufacturing processes, and new products.

Speaking out in support of the High-Performance Computing Act of 1991, which he had sponsored while a member of the United States Senate, Vice President Al Gore has warned that without a system like NREN in place relatively soon, this country's foreign competitors in Europe and Japan will outstride the U.S. in the development of new technologies and innovative manufacturing processes.

While there is almost unanimous agreement on the need for an electronic network of NREN's magnitude, there is disagreement about who should build or operate it. Robert E. Allen, chief executive of AT&T, said in a January, 1993, *New York Times* article that such enterprises should be the domain of computer companies and the nation's telephone companies. He said the government should not become involved in the NREN project.



"I believe that the private sector can be and will be incented to build these networks," Allen said.

Bruce Flanders, director of technology at the Kansas State Library, has said extraordinary speed is needed to handle the dramatic rise in the use of networks to share information. In a June, 1991, article for *American Libraries*, Flanders said data traffic on systems like the National Science Foundation network (NSFNet) had been increasing at a monthly rate of 25 percent. More than 100,000 computers are linked to NSFNet, he said.

"With the advent of NREN, this number would easily grow in 10 years to over 500,000 computers," Flanders added. "Moreover, still and full-motion video images, which are vastly larger and more complex data packages than text, would increasingly be transmitted over the network."

David L. Wilson, a writer who follows the technology, speculated in the April, 1992, issue of the *Chronicle of Higher Education* on the role of high-speed data transmission in education, research and industry. "The high-speed network will enable scientists to work with supercomputers from distant locations and allow high-quality transmission of moving pictures and virtually instantaneous transmission of an entire book, for example," Wilson said.

Flanders, like Wilson, speculates on the distinct advantages NREN will bring to education and research. Colleges and research organizations could share the costs of expensive resources. "Laboratories can easily and rapidly receive data from experiments performed on remotely located, expensive equipment; libraries can share information from expensive serial publications via digital document delivery," Flanders said.

Because of NREN's interactive nature, researchers and scholars in geographically remote locations would not have to be isolated from significant information, he said. ▮

TOPICS

Why NREN should not be a partisan issue

The notion of a super electronic highway is regarded as essential and inevitable, but there are questions as to how it should be built. Jerome A. McBride, associate professor and director of the Information Systems Graduate Program at Marist College, offers this view.

As an advanced hi-tech national information infrastructure, NREN offers many potential benefits to a truly diverse audience in commerce, industry and academe. A major risk to NREN is that it is being perceived as a purely Democratic initiative.

Since the NREN initiative promises so many real benefits to so many in this country, it is imperative that it become a critical bipartisan issue that both parties will fully endorse and actively support.

NREN will be risky, but the security and privacy issues involved can and will be solved. NREN will be expensive, but the rewards to be gained by the country in competitiveness and in productivity will be well worth the investment.

As a proud and progressive country, we can ill afford to sacrifice NREN on the national political altar.

Marist generates E-mail election debates

New campaign frontier: electronic "discussion lists"

Observers of the last presidential election saw the usual frenzy of polls, TV debates, bus tours and whistle stops. But amidst the traditional excitement of the campaign, most spectators were unaware that a new frontier of political participation was quietly emerging.

This frontier is inhabited by a vocal and active segment of the electorate who have discovered the advantages of computer-based telecommunications, and may never go back to radio call-in shows or to the local op-ed pages to express opinions and debate the issues. These pioneers have learned the difference between E-mail and e-text, know the new meaning for old words and terms like "list" and "newsgroup," and are more or less comfortable with such concepts as "file transfer protocol" and "remote log in."

Lee Sakkas, a Marist computer analyst, was in the middle of it all, along with several Marist colleagues: systems programmer Martha McConaghy, systems manager Harry Williams and former network administrator Charlie Murphy. This team developed three "discussion lists" devoted to the major presidential candidates. Discussion lists allow subscribers to post notices and to engage in continuing dialogue, and are popular features on most electronic networks.

Sakkas recalls that she was not prepared for the volume of traffic that followed the announcement of Marist's Presidential discussion lists on Internet in 1992. The original objective in creating the lists was to give supporters of the various candidates a forum to sound off and generate discussion, and educate themselves on the issues.

"The response was terrific. Within three days, the Clinton list had almost 200 subscribers and Bush had 100," Sakkas said. Independent candidate Ross Perot had just announced his withdrawal from the campaign, so his discussion list did not generate nearly as many postings as the others during those initial days.

Now that the election campaign speeches are part of textbook manuscripts and campaign buttons have become collectors' items, the three lists still claim more than 500 international and domestic subscribers.

The Clinton list continues to be a popular discussion and data-sharing forum. The Bush list, which has been renamed "Repub-L," has become the electronic equivalent of the "honorable opposition," Sakkas said. There is still some activity on the Perot list. ▮

TOPICS

Creators of the Marist/Presidential "discussion lists" work on the program in Donnelly Hall. Below is a typical message from the 1992 campaign.

```
FILE: CLINTON  DEBATE   A1  VM/ESA Conversational Monitor System


> print 2389
>>> Item number 2389, dated 92/10/05 11:07:32 -- ALL
Date:         Mon, 5 Oct 1992 11:07:32 EST
Reply-To:     Discussion of campaigning for President by Bill Clinton
              <CLINTON@MARIST.BITNET>
Sender:       Discussion of campaigning for President by Bill Clinton
              <CLINTON@MARIST.BITNET>
Comments:     Resent-From: Lee Sakkas <URLS@MARISTC>
Comments:     Originally-From: Clinton for President <75300.3115@compuserve.com>
From:         Lee Sakkas <URLS@MARISTC.BITNET>
Subject:      CLINTON TEXT: DEBATE AGREEMENT

SEND COMMENTS AND QUESTIONS REGARDING THIS INFORMATION TO THE
CLINTON/GORE CAMPAIGN AT 75300.3115@COMPUSERVE.COM
(This information is posted for public education/information purposes.
It does not necessarily represent the views of The College.)
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FOR IMMEDIATE RELEASE
OCTOBER 3, 1992

JOINT STATEMENT BY MICKEY KANTOR AND ROBERT TEETER

We are extremely pleased to announce that representatives of the Bush
and Clinton campaigns have reached agreement to hold three
Presidential and one Vice Presidential debate to be sponsored by the
Commission on Presidential Debates.  The schedule is as follows:

October 11,    Presidential    St. Louis,     7:00 p.m.
  1992                         Missouri       EDT

October 13,    Vice            Atlanta,       7:00 p.m.
  1992         Presidential    Georgia         EDT

October 15,    Presidential    Richmond,      9:00 p.m.
  1992                         Virginia       EDT

October 19,    Presidential    East Lansing,  9:00 p.m.
  1992                         Michigan       EDT

     All debates will be ninety (90) minutes in length, will take
place before live audiences and will be open to all subjects.  The
October 11 debate will be before a panel of questioners using the
format used in previous Presidential debates.  The October 13 Vice
Presidential debate will be before a single moderator as proposed by
the Commission on Presidential Debates.  The October 15 debate will
use a single moderator who will solicit questions from a live
audience and ask appropriate follow-up questions. . The final debate
on October 19 will use the single moderator format for the first half
of the time and the panel format for the other half of the time.
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Elected join electorate online

By Joe Abernathy, Staff Writer, Houston Chronicle

This article is reprinted with the permission of the Houston Chronicle. *It was received via Internet.*

A grass-roots experiment in electronic democracy is turning into a sophisticated new means of communication between the electorate and the elected.

Both the Clinton White House and the 103rd Congress are establishing a presence on the global network of computer networks known as the Internet.

Jonathan Gill, who directed the electronic mail effort for the Clinton campaign, has been named director of the White House's new office of Electronic Publishing and Public Access Electronic Mail (E-mail). He will report to Jeff Eller, director of Media Affairs.

Gill's new role means that the estimated 20 million Americans with public electronic mail access—such as that offered by CompuServe, MCI Mail, America Online and other systems connected to the Internet—now have the ability to interact directly with administration offices and with the public documents associated with governing.

This could evolve into a tool to pry open the lawmaking process, perhaps allowing savvy citizens to wield power rivaling that of professional lobbyists.

But difficult issues lie in wait, including fear that such information-age tools could create a society of information haves and have-nots. There is also a fundamental tension between representative and direct democracy.

"The question is, are the politicians going to control the public, or is the public going to control the politicians," said John Mallery, a researcher at the Artificial Intelligence Laboratory of the Massachusetts Institute of Technology, where the experimental White House system was developed.

"Given the American view, we want checks and balances," he said. "We want everyone to have their fair say and allow a consensus to emerge."

Mallery, a doctoral candidate in computer and political science, and Eric Loeb, doctoral candidate in cognitive neuroscience, created an experimental system that is considered as a model for possible use by the White House and Congress for managing what is expected to be a high volume of public correspondence.

"All (congressional) representatives have Internet access and need correspondence systems, so it's a prototype for many of these agencies," said Loeb. "There's a general problem: How do you get (E-mail) to work without overloading people?"

The project, the MIT Presidential Information Service Experiment, offered open electronic access to a library of position papers and other online information for all the major presidential candidates and several minor ones as well. Computers are being provided by MIT's AI Lab.

Anyone with public electronic mail access could use the service during the campaign to subscribe to regular electronic mailings on topics such as the economy, foreign policy and other matters of interest.

Nearly instant, low-cost polling also can be conducted, although Mallery notes that caution must be used in generalizing the results because of the skewed composition of today's online community.

"Today, there are potentially 20 million people in the United States with E-mail access, strongly distributed toward universities, research laboratories and high-technology companies—but current trends are moving rapidly to the mainstream," Mallery said. There's the issue of why that group should have preferred access.

"Are the politicians going to control the public, or is the public going to control the politicians?"

Smart systems such as MIT's can better serve people by maintaining information on their interests. But this increases the potential for loss of privacy—a problem the researchers hope to resolve or at least bring into the open before the technology becomes wide spread.

And in the face of an increasingly high-profile online presence of law enforcement officials seeking out computer crime, Mallery cautions that it is important to guard against excessive monitoring: "These kinds of technologies will make it so that if you want to look for little things to harass people over, you could."

Since Clinton took office, feedback from the public has gone through the roof. Phone calls have increased from 5,000 during the Republican years to 40,000 to 65,000 a day.

And when the White House began advertising its temporary electronic mail address, it immediately became swamped as more than 500 people a day sent messages. These electronic letters are now being printed and included among the White House flow of 10,000 to 20,000 letters a day.

MIT's campaign system, which was not publicized, drew 7,000 to 8,000 messages a day, and its designers anticipate that that number will quickly escalate when a successor to the system goes online at the White House.

"The problem was that it raised expectations a bit high, and to deliver a system for the White House, you need to make it really robust," Mallery said. "Once they make that effort they'll have a box that each of the congressmen can get to handle their E-mail."

The lack of such a system is seen as the main drawback to a new technology called ISIS that is being brought online for the Congress. ISIS offers connections to nearly every electronic mail system in existence, but busy lawmakers may be avoiding the system until there is a way of managing the potential volume.

"A lot of congressmen aren't looking forward to that," said James P. Love, director of Ralph Nader's Taxpayer Assets Project.

Some observers also worry that the White House and lawmakers could use the direct contact of E-mail as a tool for massive propaganda, although others believe it may favor average citizens.

"It will have an equalizing effect on propaganda, or advocacy," said Jim Warren of San Francisco, a noted figure in the emerging electronic democracy, "in that now citizens will be able to perform mass advocacy to legislators as well as legislators, with their access to the media, can perform advocacy to the public."

One of the characteristics of Internet Access is that if they have access to the White House, they have access to the virulent, unfettered discussions that go on on the Internet. That is as much an advantage in killing propaganda as in increasing it.

"I see it as an advantage, particularly as the press starts to come online and traditional print media start to provide the same kind of coverage that they've always provided, but provide it online." ▮

The Emily Post of Internet logs on

Minding your network manners

"Keep paragraphs and messages short and to the point!"

"Focus on one subject per message."

"Be careful when using sarcasm and humor..."

Notes from a class on "Intro to Journalism" or "Expository Writing 101?"

Hardly.

Those directives comprise a small sampling of "netiquette." They are included in *The Net User Guidelines and Netiquette*, by Arlene H. Rinaldi of Florida Atlantic University. "The Net," users slang for the Internet, is a group of thousands of individual electronic networks that allow traffic to pass among them. It has also been called the world's largest anarchy because millions of people all over the world are accessible through this maze of electronic systems.

There are, however, attempts to manage The Net. There is a two-tier system of national and regional organizations that monitor Internet, and new systems are supposed to register with regional coordinators.

The National Science Foundation Network (NSFNet) is the backbone of the network. The next level is comprised of regional or mid-level networks. These regional networks were originally designated to cover particular geographic areas, but with the national and international proliferation of networks, many now overlap in places.

An enormous number of informal relationships thrive on the level below the regional networks. That's because potentially any machine on The Net with the necessary storage and transmission capacity can communicate with any number of other machines. This willingness to share information is considered one of the hallmarks of good citizenship in this flourishing world of electronic networks.

With all of this activity on Internet, it's small wonder that some serious users like Rinaldi saw a need to develop protocols that would enable net citizens to coexist in relative accord. Originally developed for use at her institution, "Netiquette" has circulated widely among Internet users.

Working in collaboration with like-minded Internet users across the country, Rinaldi compiled an extensive document that includes directives on electronic mailbox maintenance. For example:

- Check E-mail daily and remain within your limited disk quota;
- Delete unwanted messages immediately since they take up disk storage;
- Keep messages remaining in your electronic mailbox to a minimum.

There is also an extensive section on "Electronic Communications" which advises users on acceptable writing and ethical standards for The Net. For example:

- Cite all quotes, references and sources;
- Limit line length and avoid control characters;
- Follow chain of command procedures for corresponding with superiors. For example, don't send a complaint via E-mail directly to the "top" just because you can.

Along with recommendations for conducting discussion groups, Rinaldi included some guidelines for all computer users—"The 10 Commandments for Computer Ethics," from the Computer Ethics Institute.

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not use or copy software for which you have not paid.
7. Thou shalt not use other people's computer resources without authorization.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of the programs you write.
10. Thou shalt use a computer in ways that show consideration and respect.

And what happens if someone violates these rules? Is there any Internet enforcement? According to Rinaldi, "The use of the network is a privilege, not a right, which may temporarily be revoked at any time for abusive conduct."

The impression of a freewheeling, survival-of-the-fittest environment on The Net can be deceptive, Rinaldi said, because various systems of governance exist within the system. Although users are allowed to access other networks within The Net, they must be aware of policies and procedures operating within those individual networks, she said.

"Actions which are routinely allowed on one network may be controlled or even forbidden on other networks," Rinaldi said. ▮

TOPICS

Ten years ago, the Internet consisted of a few hundred computers at a few sites across North America. Today there are more than 700,000 computer systems connected to the Internet in 39 countries across seven continents. The Internet is currently comprised of 4,500 networks—many of them located outside the U.S. The Marist community is part of this global telecommunications network of networks. The following is a sampling of the networks within the Internet available at Marist:

- **NSFNet** (National Science Foundation Network)—the backbone connecting most regional educational networks.
- **BITNet** (Because It's Time Network)—supports electronic networking among colleges and universities throughout the world.
- **NYSERNet** (New York State Educational and Research Network)—serves corporate, academic and research organizations in New York State.
- **NORDUNet**—a collaboration among national research networks in Denmark, Finland, Iceland, Norway and Sweden for academic and research traffic.
- **EMBNet** (European Molecular Biology Network)—provides access to biotechnology information services for the European research community.
- **BOSNet** (Bosnian Electronic Network)—furnishes news summaries of the political situation in Bosnia.
- **EDUPAGE**—supplies twice-weekly news briefs on information technology issues.

Interactive multimedia brings lessons alive

The sound of learning is changing.

From the most primary levels of elementary schools to the halls of higher education, the dominant sound isn't the authoritative, knowledgeable voice of the teacher. The sound of learning is becoming many voices. It is the distinctive clicking of computer keyboards; the muted soundtrack of a video on a color monitor; the gentle prodding of an instructor challenging a class to explore its computerized resources. It is primarily the sound of students engaging each other, their teachers and their computers in the process of learning.

This approach—interactive multimedia—is gradually tilting education in the direction of this form of engagement. Like any innovation, the approach has its detractors. But according to R. Mark Sullivan, Marist College executive vice president, that's because there is still some confusion over a definition of multimedia. "There's no clear cut definition," he said. "Multimedia is an invented term which really deals with the merging of different technologies."

In interactive multimedia, he said, the computer allows people to interact with and control information in several forms, such as music, text, graphics, full-motion video and other images. Sullivan said there is a logical rationale for this reluctance to accept interactive multimedia as an appropriate educational tool. He said most technological devices are still viewed in isolation and relied on for specific functions.

"We don't interact with the TV, we simply see it as a viewing instrument. But we do interact with the telephone and we do interact with a computer," Sullivan said. "This, in essence, is interactive technology."

Sullivan predicted that the artificial boundaries that currently limit the widespread interaction of telephones, televisions, VCRs, laserdisk and videodisk players with computers will soon disappear. "We are talking about interactive communications devices that will facilitate delivery of information and knowledge over a single platform," he said.

Those artificial boundaries are gradually being erased in classrooms across the country. In New York City, for example, every classroom in the School of the Future is equipped with multimedia computers and software. Students in this futuristic, public junior high school in mid-Manhattan are encouraged to use those technological tools for class projects, problem solving and exploring new concepts. Funding for the multimedia equipment comes from a Fund for Innovation in Education grant sponsored by the U.S. Department of Education.

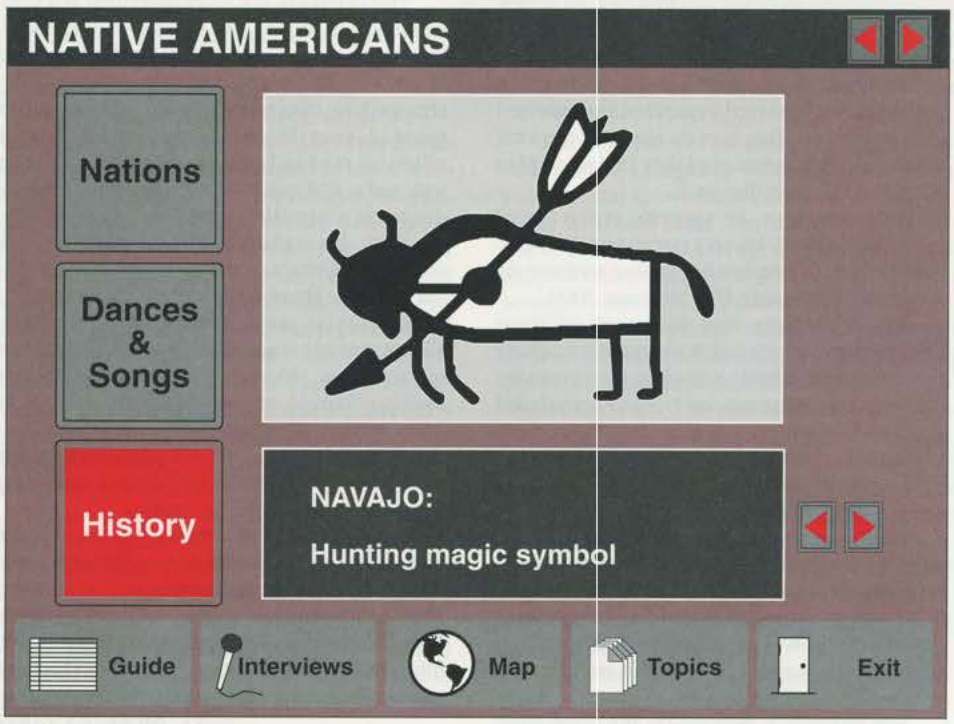
There is little reliance on classroom lectures and reading textbooks. Students in this ethnically and economically diverse school are not tested on how well they memorize statistics and facts. This is a convention school officials have maintained from its inception. In a 1991 interview with *Business Week*, Director Gwen Solomon spelled out the school's position on memorization. "Memorizing facts all year for exams isn't learning," she had said.

Instead, students are encouraged to get, understand and manipulate information. Solomon stressed the importance of the students' ability to uncover and utilize information over their proficiency with memorizing facts.

This ability to discover information pays off as students are able to use electronic data bases to research topics, gathering relevant digitized images, sounds and books. For example, in a Spanish class, students will work in small groups to create audio-visual storybooks on computers that feature their own stories, recorded dialogue and graphics.

This trend to place less emphasis on memorization is hardly new. More than 70 years ago, Jean Piaget theorized that children develop by interacting with their environment. The Swiss psychologist's concept seems to harmonize with this de-emphasis on the traditional teaching norms of lectures and tests. Scott A. Shamp, assistant professor at the University of Georgia, stresses that television, computers and other high tech gadgets are central parts of students' environment.

Writing in the February, 1993 issue of *Technological Horizons in Education Journal*, Shamp said, "Any teacher who has seen stu-



In this multimedia exercise, the student has called up a picture of a Navajo symbol.

dents' excitement at watching a film or television program as part of a lesson can appreciate the promise of multimedia in educational settings."

He said educators must become more alert to the available teaching tools that could create this level of excitement around their teaching. Shamp, who is on the faculty of the Department of Telecommunications in the university's College of Journalism, said interactive multimedia will capture that enthusiasm, especially with students at different intellectual levels and with diverse interests.

"Systems that can respond to each student's individual needs and that utilize the audio and visual channels so much preferred by today's students, hold great potential as teaching tools," he said.

Multimedia has the capacity to respond to those individual interests. For example, a college anthropology course on "American Culture" would go past the traditional textbooks and lectures about religious, political and cultural differences. One student might have a special interest in dance while another might be interested in Native American culture. Working with several multimedia programs, these two students can view videos of various Native American ceremonial dances, call up documents and illustrations relating to this dance form, and get commentaries by authorities on audio and videotapes. These students will then have an opportunity to unveil their research to the class as a multimedia presentation.

One value of this new educational technology is the flexibility it affords the learner to approach topics from numerous angles. This approach forces students to decide what information is needed and how to look for it. Advocates of multimedia education stress that these are critical skills in an information-based society.

Multimedia proponents like Peter E. Kneedler, a consultant with the Education Technology Office of California's Department of Education, insist that this approach must eventually dominate textbooks in the classroom, especially in science-related courses.

"Texts do not actively engage students, appeal to a variety of senses or cause students to develop life-long interests in science," Kneedler stated in the February, 1993 issue of *Technological Horizons in Education Journal.*

He offers "Science 2000" as an alternative. The interactive multimedia science project was developed in California and is being used in schools across the nation. In "Science 2000," nine clusters of lesson plans are built around each of four major units. Each lesson plan has its own focus and approach. Built into the program, however, are a number of tools, such as overviews, simulations, videos, photographs and illustrations, glossaries, and lists of careers related to the subject being studied.

Kneedler offers a brief description of a typical unit in "Science 2000":

"Students follow the steps of a group of scientists as they attempt to unravel the mysteries of kuru, a disease that almost eliminated the Fore tribe of New Guinea. The disciplines of the life sciences, health sciences, anthropology and languages are woven throughout the lesson plans." The unit covers topics such as disease; the nervous, digestive, and immune systems; nutrition, genetics, micro-organisms, cultural customs and maintaining optimum human health.

According to Kneedler, it is unrealistic to expect textbooks to carry all of the resources needed for the modern classroom. The task of evaluating the immense amount of data generated by the "knowledge explosion" is growing increasingly difficult, he said. "Every day that passes by adds to the potential store of information that must be sorted, organized and assessed for possible use. Teachers do not have the time to plan and sort volumes of data for lesson plan preparation," Kneedler said.

The alternative, he suggests, is the use of videodiscs, CD-ROMs and computers that permit teachers to employ interactive multimedia educational programs like "Science 2000."

The technology that frames all of these components into the viable alternative teaching tool works on a basic principle of converting data—movies, illustrations, books—into digital formats. Computers can then transform them into sound, video and text. CD-ROM (compact disk, read only memory) is the most popular version of multimedia technology to date. The 4.72-inch discs, which resemble music CDs, store an enormous amount of information and reproduce rich images and sounds. A single CD-ROM disk can store an entire set of encyclopedias. Users, however, are limited to watching the computer screen. They cannot interact with other sources of information.

For interactive systems on the most basic level, two components are essential: a computer and a storage system for audio and video material. The computer will furnish textual and graphic information, control the audio and visual storage mechanism, and respond to the user's input.

Videodiscs and videotapes have become prominent elements in the development of interactive multimedia because of their superior storage capacity over hardware such as computer hard disks.

The videodisk has been described as a laminated record album. But that's where the similarity ends—at the appearance. Unlike the record album with its grooves, the videodisk has "pits" arranged in concentric circles rather than a spiral. A laser beam, directed at the pits, is reflected, read and converted by the disk player into audio and video signals that can be reproduced on a television monitor.

With the availability of 1/2-inch VCRs, videotape has become a viable option for multimedia systems. These machines can be controlled by computers without expensive interfaces. Videotapes can store up to two and a half hours of audio and video material. Shamp says this multimedia platform gives students the ability to be more than observers.

"The videotape platform provides students with the opportunity to go beyond use—they can become creators," he said.

That window of creativity is one of the greatest attractions interactive multimedia holds for educators as they peer into the 21st century. They believe the technology will empower students to rely less on memorization, approach information from several directions, and act as a vehicle for non-linear thinking. ▮

—G. Modele Clarke

TOPICS

Multimedia at Marist

Multimedia technology is finding its way into the classrooms, laboratories and studios at Marist College, with support from Director of Academic Computing Mary Beth Commisso. Among current projects:

- Chemistry Professor J. Richard LaPietra has just added "chemical equivalents and titration" to his growing inventory of topics in multimedia form.
- Visiting Associate Professor Eugene Melan has developed total quality management topics in a multimedia package for use widely in the Division of Management studies.
- Associate Professor Casimir Norkeliunas is using multimedia technology for topics in Russian language and culture.
- Library director John McGinty has developed a multimedia introduction to services and resources available in the library.
- Assistant Professor of Art Richard Lewis is digitizing a large collection of text and slide materials, to be incorporated in a range of multimedia lessons.
- Works by Italian Renaissance artist Sandro Botticelli were digitized and made part of a multimedia lesson by two senior art students in their "capping" course.

Marist College Executive Vice President R. Mark Sullivan on multimedia: "Personal computing has rapidly become more a process of communicating than calculating numbers. We now use computers to communicate over global networks. Over the next few years, the fusion of sound, text, video and still images within a multimedia environment will revolutionize the communications process as well as the learning process."

EDUCATING FOR THE FUTURE

Middle School teachers tap NYSERNet

Marist leads science forum

The science teacher decided to check the bulletin board on her way to the teacher's lounge. She was anxious to see if anyone had responded to a message she posted the day before. But instead of heading for the large, paper-littered corkboard outside the teacher's lounge, she made her way to a personal computer in the school librarian's office.

Her tenth grade Environmental Science class had just ended, and as the 22 inner-city high school students streamed out of the room, she had again attempted to read their faces for the faintest signs of excitement. The teacher was growing increasingly concerned by the class' lack of enthusiasm for the impact of acid rain on the environment. The class discussions generated by this and other environmental topics had been dispassionate at best.

She was, however, a few keystrokes away from a solution to her dilemma. As she called up this electronic bulletin board, the high school teacher smiled broadly as indications of responses filled the computer screen. She now had a storehouse of suggestions from her counterparts in area schools and from the faculty of colleges and universities throughout the area.

Science division chair Andrew Molloy (left) and adjunct professor John F. DeGilio help a middle school teacher learn to use the Marist science network.

This scenario illustrates one application of NYSERNet, a New York State-based electronic network service to advance science, technology, and education among educational institutions, library services, hospitals, government agencies, and industries involved in education and research. Through the use of high-speed computer networks, some NYSERNet users can access national networks and the global Internet.

Because of a two-year-old joint project between Marist College and the Dutchess County Board of Cooperative Education Services (BOCES), science teachers in middle schools in Dutchess County, NY, have been taking advantage of this network.

Andrew Molloy, chairman of the Marist Division of Science, said an initial goal was to determine how to link elementary school science teachers to NYSERNet through the College's computer system to share data gathered by their counterparts throughout the region. "We wanted them to share the experiences of success and failure in the classroom, the laboratory and the field," said Molloy.

The solution to that linkage dilemma was the Personal Computer Work Station (PCWS) software that allows these educators to communicate with each other. Marist's IBM 3090 mainframe computer is serving as the hub of the regional venture until BOCES develops the computing resources to accommodate the network.

But before any benefits from the electronic network could be achieved, Molloy and John F. DeGilio, adjunct professor of science, had to do their homework. The educators they were targeting had to be introduced to the technology. Also, Molloy and DeGilio had to determine how this proposed system would actually meet the needs of these science teachers and their pupils. The result was a six-hour training program at Marist in the fall of 1991. About 20 area science teachers participated in that initial evening session, and were introduced to the fundamentals of E-mail and, later, Internet.

The sessions were also instructive for Molloy and DeGilio. According to DeGilio, they learned, for example, how much time would be devoted to training teachers on the system; what kinds of hardware hurdles had to be cleared before teachers could take advantage of the resources from their schools; and to what uses these resources would be put once they were available.

"It allowed us to focus on the specific problems that must be solved to make electronic communications a resource available to the school community," DeGilio said.

It wasn't long before the enthusiasm was running high among the teachers. Many of them, eager to probe the potential of electronic networking, did not wait for a solution to the projected hardware problems. DeGilio, who is also on the faculty of Vassar College's Education Department, said they began to communicate from home personal computers.

"Some teachers purchased modems on their own that could be brought to school or used at home," he said. "Some focused on the E-mail potential of the network to communicate with colleges, individuals, and interest groups." During the 1992-93 school year, 40 Dutchess County science teachers participated in the program. Although budget cuts in most of the county's school districts have prevented greater participation, about 100 science teachers are now trained to access NYSERNet. Molloy said he is encouraged by the progress he has seen to date.

Funded by a Title II Eisenhower grant through the New York State Education Department, this Marist-led program involves schools from 12 Dutchess County public school districts. In addition, science teachers from eight parochial and three private schools are involved. These teachers are making use of the technology in innovative ways, he said. Several have been using the Internet to enhance their lessons. "Some teachers have communicated and interacted with schools in South America and the Caribbean to discuss the migration of birds between those areas and Dutchess County," said Molloy.

He stressed the importance of keeping students in the middle schools interested in science. He is convinced that NYSERNet will allow science teachers to bring greater excitement to their classes that will in turn give students more incentive to investigate the mysteries of science. ▮

ACCESSING INFORMATION

Everything a scholar could want

The electronic library: a whole world of knowledge

The frontiers of library science and practice are being stretched electronically.

Computer technology adapted to support library automation has changed the traditional way of processing and accessing information resources. Much material is now available in electronic formats from personal computers in remote locations—a faculty member's office or a student's dorm room, for example.

The principal characteristic of the electronic library is that information is no longer locally determined and controlled, but rather networked within a hierarchy of accessibility, usage and control. An information network can be understood to be the links or paths down which electronic signals pass. It can also mean the actual content of the databases linked on the network proper. A network also represents a functional operation that controls the administrative rules and technical protocols of usage. Librarians and other academic providers of information service have been more involved with the information available on the network, but are now beginning to focus on the organizational and structural responsibilities that provide the basic support of the network. Currently, academic institutions and libraries participate within a hierarchy of networks operating to provide a myriad of scholarly, administrative and communication functions.

The most basic network is the institutionally installed campus-wide information system, such as InfoFox at Marist, and the local area networks (LAN) that crisscross a campus linking libraries, offices and dorms to share data.

Then there are regional consortia of like-minded institutions who share resources and costs. These networks may limit access to affiliated individuals because of the expense of resources and legal implications.

State-wide systems, NYSERNet for example, link disparate entities such as government agencies, large research groups, colleges, universities and commercial organizations to share resources that would be unavailable otherwise.

Networks at this level operate as discrete, managed systems in which membership is controlled and significant fees are charged for access. They may be viewed as host systems.

The current operating model of The Internet, a world-wide network of networks, links users to a vast array of electronic resources that have essentially been mounted on the system by network members and to which access is controlled through the host nodes, such as NYSERNet. The Internet is not a discrete entity, nor is there an organizational structure; rather, it is a super transmission system. People with full Internet access can exchange mail and data, download files from publicly accessible archive sites, log on to remote computers with full library catalogs or supercomputers with immense power, and converse in real time with others users around the world.

Resources on the Internet have not generally been subject to copyright restrictions and are non-commercial in nature. Much of the information has been created by academicians and librarians as by-products of the educational and administrative process. Textual materials that have been published are not generally mounted on the Internet. The general question of unlimited accessibility to full-text documents electronically remains to be worked out.

The electronic library of the future needs to be understood within the context of communication.

Regional networks with limited membership have been formed to provide levels of access to full-text documents electronically.

The Marist College Library has entered into a pair of agreements over the last two years to provide a range of electronic library services to faculty and students. Marist joined the Westchester Academic Library Directors Organization (WALDO), a consortium of some 26 academic libraries, including Fordham, Iona, Manhattan, Marymount, Pace, Sarah Lawrence, and St. John's University, to gain access to its MPALS online system. The MPALS system includes an online union catalog of the library holdings of each institution, an array of indexes and abstracts and reference databases not available at Marist, and transmission capability for full-text periodical articles identical to Marist's PROQUEST system. The Marist College Library formed a local consortium with Bard, Vassar, West Point and SUNY/New Paltz, called the Hudson River Schools, to share library resources over an electronic network to be established during the next two years. Initial emphasis will be on sharing unique materials held at each library, especially maps, manuscripts, photos and drawings in the archives that will be digitized for electronic transmission.

Cost effective means for high quality digital capture and printing of visual materials are now becoming available. The process utilizes imaging technologies, whereby documents are scanned and copied electronically into image form. Accurate facsimiles of original documents are created through high resolution binary scanning. The bitmapped images are stored and can be accessed from a workstation on campus or on a network.

The Hudson River Schools are exploring this technology developed at Cornell University to provide high resolution copies of the many unique materials held in consortium archives. An example of the digitized material that would be made available are the original, hand-drawn Revolutionary War maps in the West Point collection. These would be viewable in classrooms, faculty offices, dorm rooms and the libraries at Marist, Bard, Vassar and SUNY/New Paltz, and could by printed on demand in high quality paper copies.

The challenge to librarians will be to organize the electronic resources for effective use by the academic community. There are several key attributes that an electronic library must possess for successful usage. Information must be in a form that is easily manipulated, readily available, transparently presented, applicable to specific needs, functional, cost effective and user appropriate. The most difficult problems within this environment will be the potential for information overload, document mutability, and the inability to distinguish between valuable scholarly information and unsubstantiated news, unless adequate controls are devised that allow effective access and retrieval.

Just how practical is all of this to the everyday operation of a college library?

By John W. McGinty
Director, Marist College Library Services

The electronic library's importance to the academic community is emerging at Marist. Using the capabilities of InfoFox, the campus-wide information system, as the base system to access library information or other networks, a number of scenarios are possible for solving information problems that occur daily on campus.

A faculty member preparing to introduce a visiting lecturer who is about to lead a seminar on the balance of trade needs a current list of the visitor's publications. On her office computer, the faculty member connects to the library's Local Area Network and from a menu chooses ABI/Inform, an index of business periodicals. Typing in the lecturer's name, she quickly retrieves several recent articles published by her guest.

Imagine a student working in his dorm room after midnight, feverishly trying to complete his paper on global warming. He realizes that he is missing several key statistics on the effects of seasonal temperature fluctuations on agricultural production in South America and Africa. He switches out of his word processing program and connects to InfoFox. Navigating through the menu of choices, he cannot find any library source of world-wide temperature statistics. Getting on The Internet, he is able to locate the United Nations Food and Agriculture Organization statistics on the UN Library Bulletin Service.

While in Europe attending a conference on zebra mussel infestation, a biology professor needs to consult with his laboratory assistant on the latest results of the samples taken from the Hudson River. It is 10:00 a.m. in Germany, 4:00 a.m. in New York. With the time difference and the tight conference schedule, the biologist skips the phone and instead uses the host institution's electronic mail capability to send a message back to Poughkeepsie. After lunch he checks his mailbox at the conference's workstation and finds five pages of data the lab assistant sent just minutes earlier, at 8:00 a.m. The biologist was able to report the latest concentrations of mussels in the Hudson at a discussion during the afternoon break.

A faculty member is teaching a new course on French culture. She wants to present the impacts of American jazz on literature, art, music and film and particularly the forms of idiomatic speech in France. Using digitized collections of video and sound recordings, she takes excerpts from 22 French feature films produced from 1952 to 1991 and creates a series of multimedia lectures that illustrate the evolution of Americanisms in the French language. Later, any student who was unable to attend the class can call up the hypermedia file and review the presentation.

The electronic library of the future needs to be understood within the context of communication. Written manuscripts and printed books were produced to communicate information through the technology available at the time. The digital library needs to be viewed as a complex communication medium. The speed, accessibility, storage capability and versatility of computer mediated communication has begun to change how academics conduct their work.

The principal role of librarians and indeed all academic information professionals in this evolving future will be to collaborate in support of scholarly communication by insuring that order, structure and effective access occur despite political, economic, social or even technological constraints. ▮

TOPICS

Using InfoFox

With access to Marist's DOBIS system through the campus-wide InfoFox network, junior Christopher Schmitz avoids a late-night hike to the library to solve a term paper crisis.

DOBIS

Online catalog of library holdings by author, title and subject; includes books, periodicals, audio-visuals.

INTERNET

Global network of 4,500 networks in 39 countries, and growing.

InfoFox

Library Resources

Periodicals

Partial list of 700*

Advertising Age
Aging
Behavioral Science
Byte
Congressional Digest
Crime and Delinquency
Educorn
Film Quarterly
Harvard Business Review
Journal of Contemporary History
Journal of Small Business Management
Modern Language Journal
Monthly Labor Review
New England Journal of Medicine
Public Opinion Quarterly
Public Administration Review
Social Science Journal
Solar Energy
World Watch
Yale Review

*Abstracts of 9,000 others are available

Newspapers

Indexed and abstracted on compact disks

New York Times
Wall Street Journal
Washington Post
Christian Science Monitor

Reference Databases

Partial list of 30 available

ABI/Inform
ACM Computing Reviews
Books-in-Print Plus
Columbia Granger's World of Poetry
Compact Disclosure
ERIC
Information Finder (World Book Encyclopedia)
National Trade Data Bank
PsycLIT
Periodical Abstracts
New York Times on Disk
Social Work Research & Abstracts
1990 Census of Population

In addition to Marist's library resources, students and faculty can electronically access the catalogs or 29 academic libraries in New York State with 4.5 million titles.

ACCESSING INFORMATION

On publishing's cutting edge

Marist librarian editing national electronic journal

For Katy Silberger, mild-mannered head reference librarian, work is substantially more than cataloging books and helping students identify source material they need. She's on the cutting edge of a new technology that is revolutionizing the way scholarly articles are published.

Silberger, a part of the Marist College library for more than nine years, was asked recently to be an associate editor of a newly created electronic journal, the brainchild of scholars and educators from colleges and universities nationwide.

Her selection for this innovative method of publication reflects Marist's commitment to the use of sophisticated technology in higher education.

"We're extremely fortunate to have the facilities at Marist that permit us to be part of an E-journal," said Silberger. "Many colleges and universities don't even begin to have that kind of ability." She said she was asked to become editor after several months of correspondence with the journal.

Interpersonal Computing and Technology: An Electronic Journal for the 21st Century is published by the Center for Teaching and Technology, Academic Computing Center at Georgetown University in Washington, D.C.

Operating via the BITNet and INTERNet networks—electronic mail and communications lines that connect computers worldwide—the journal's prime objective is to provide a peer-reviewed electronic forum to explore the integration of computers and other instructional technology in the higher education classroom.

"E-journals are being explored as a scholarly publication medium in which institutions of higher education maintain control of the copyright of the scholarship they finance," Silberger said.

Currently, more than 75 percent of the printed scholarly journals are produced by commercial publishers, she said. "Faculty, whose salaries and research expenses are paid for by their home institutions, sign over the copyright for the research articles to the commercial publishers," Silberger said. In addition, higher education, which financed the research, pay increasing subscription costs for these journals.

Reference librarian/editor Katy Silberger

According to Silberger, because E-journals eliminate the need for high production overhead, they represent an economic alternative for publishing research. One distinct advantage is the immediate and free access libraries have to these journals. In addition, the copyright statements accompanying the individual articles allow them to be used within higher education while protecting them from commercial resale.

The electronic journal's ability to create and distribute manuscripts, newsletters and articles, and display them on computer monitors, combined with a faster and virtually cost-free production, makes it a sought after accessory at any center of learning.

In her role as associate editor, she also functions as a peer reviewer, whose responsibility is to read manuscripts and judge their quality, accuracy and appropriateness to the mission of the journal. The identity of peer reviewers remain unknown to the authors. These authors submit articles to the journal's editor via electronic mail. The articles are then forwarded to the peer reviewers. According to Silberger, the use of E-mail for the journal's review process reduces publication delays. "Authors have found this quick response time to be very beneficial," said Silberger.

The first issue of *Interpersonal Computing and Technology* appeared in January. ▮

—KIRELL A. LAKHMAN, '93

TOPICS

Start up screen for *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*

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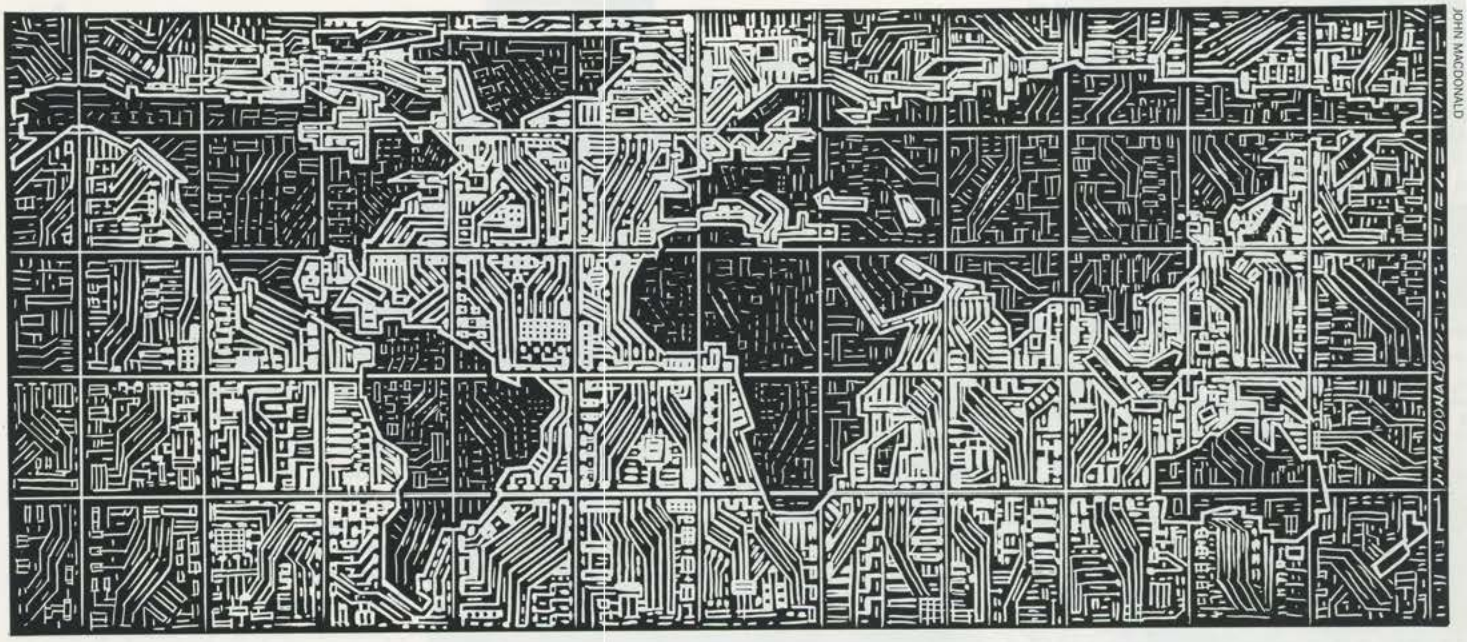
REMAINING COMPETITIVE

Why your job is not your career

Keeping pace with the information age



JOHN MACDONALD

Among rare commodities in a world of constant and rapid change, job security must rank at or near the top, as millions of employees and entrepreneurs at all levels in all industrialized countries have discovered in recent years. Peter G.W. Keen, chairman and executive director of The International Center for Information Technologies, in Washington, D.C., spoke to that point in his commencement address at Marist College in 1991.

His words are as noteworthy now as they were then.

Keen asked the graduating class, "What makes a career in your lifetime in a world of absolutely constant change where prediction is impossible and where information technology pervades every aspect of society? We're at the point where there is nothing implausible we can say about information technology."

Citing the much greater value of electronic financial transactions compared with world trade in physical goods, Keen said, "Gross national product no longer is a meaningful economic indicator. We are in the era of the gross information product."

He also noted that information management is the basis for competition among cities. "Singapore has moved from the tenth largest port in the world to the busiest by recognizing that electronic data interchange can reduce the amount of time for processing customs clearances, government authorizations, down from four days to 15 minutes. Rotterdam clears goods in 10 minutes."

His advice for career builders:

"First, understand that your job is not your career. If you're in an area where your value is the knowledge you bring into the job, think about what that knowledge will be worth a few years later. The half-life of knowledge is shrinking.

"Second, if you don't spend 10% of your time on education you will become depreciated capital. Half a day a week must go into the commencement, the continuing commencement of your education. The notion that we can give you some knowledge that will last you 10 or 15 years, and then occasionally we send you in for a tune-up, a three-day course, doesn't work anymore.

"The third point is to make sure in your career that you are computer fluent so that you can use the tools in your work. To be lacking in computer fluency is to be stranded abroad, unable to speak. And then change is not an ally; it's a constant threat."

Citing the Marist/IBM Joint Study that began in 1988, Keen said, "I congratulate Marist and the IBM Corporation on recognizing the importance of my third point. What Marist is creating is, to my knowledge, the world's first computer fluent campus, taking computers out of a special subject area and imbedding them across the liberal arts and across campus life." ▮

As the head of the International Center for Information Technologies in Washington, D.C., Peter G.W. Keen has served as an advisor to business and governments on four continents. He has taught at the Harvard Business School, MIT, Stanford, the Wharton School of Business and the London Business School. He holds an honorary Doctor of Science degree from Marist College.

REMAINING COMPETITIVE

State supports Marist network

Linking small manufacturers to spur growth

The president of a small electronics manufacturing firm was just informed that one of her shippers is leaving the area and she has a warehouse full of merchandise that must be delivered immediately. She turns to a personal computer on her desk. At the same time, a plastic products manufacturer several miles away is reaching for his personal computer after hanging up the phone; he learned that his cardboard box supplier is going out of business. Besides problems that impede their businesses, what do these small manufacturers have in common?

They are part of ExceLink, an innovative telecommunications network that provides solutions to business-related problems.

Aware that American businesses need reliable commercial information, Donald Calista, director of Marist's Graduate Center for Public Policy and Administration, has created ExceLink, the Small Business Communications Network. The network is designed to serve small manufacturers throughout New York State who are finding that to remain competitive they must have access to dependable technical, financial and legislative data. ExceLink can, for example, help manufacturers to find new techniques for bar coding products and to locate new suppliers.

"It's an affordable way to enhance present operations."

ExceLink is being funded with $1 million from New York State's Higher Education Applied Technology program. State Senator Stephen M. Saland and State Assemblyman Lawrence Bennett, whose constituencies include the mid-Hudson area, were sponsors of the bill that made the funding possible.

Saland said he was enthusiastic about the role the network will play in enhancing the region's economy. "This high tech network is developing technologies that will help us to increase the economic viability and competitiveness of small manufacturing firms in the Hudson Valley and beyond," Saland said.

Through ExceLink, small businesses can gain technical and marketing information and the advice of business experts and college faculty. "The telecommunications network will give small manufacturers the same caliber of staff expertise that ordinarily only large companies can afford. It's an affordable way to enhance their present operations," Calista said.

With Marist as the hub, Calista said New York State businesses and their trading partners will be directly linked through modems to information of specific interest. For example, a small firm can search a network database for demographic information to complete a marketing plan. Others might be interested in the availability of raw material for a new product line. Calista said most small manufacturers cannot afford the investment of time and money to develop their own telecommunications network. By participating in the College's existing network, however, firms can save time and create more efficiency within their companies while receiving expert information and advice, he said.

"In assisting small businesses, Marist's role is to make the network services user-friendly, and act as a powerful communications tool throughout the community," said Calista. "It is an active network for active participation, because it allows its users to interact with each other, to share information and to solve problems." In addition, the network is a teaching tool that allows Marist students to experience how small businesses actually operate, Calista said.

Harold King, executive vice president of the Council of Industry of Southeastern New York (CISNY), located in New Paltz, NY, said most small businesses rely on the mail, faxing, telephones and sales staff to communicate and collect information. The network, he said, has the potential to create more efficiency in the way some business transactions are performed. "Eventually, one of the advantages for small firms will be the ability to do business with customers and suppliers through the computer instead of sending invoices, letters, memos and checks by mail," said King.

New York State Senator Stephen M. Saland (seated) and Marist's Donald J. Calista tap into ExceLink, the innovative small business network serving New York State.

Peter Polhamus, president of Newburgh Molded Products in Newburgh, NY, said he has used the network to find information that is not readily available to smaller firms. Polhamus, who manufactures caps for cosmetics bottles, said he now has immediate access to information on topics such as worker's compensation and employment rate increases.

"For example, a worker had left the company and wanted to receive worker's compensation. Not being an expert on this kind of matter I sent out a message to other members of the network on how to get help with this situation. I received the name of a local man who runs his own company. He gave me advice on what to do, and I now go to him when similar situations arise," said Polhamus.

King, whose organization includes 100 manufacturers in the Hudson Valley, said he hopes the telecommunications network will streamline the way small firms do business with other companies. He said some CISNY members have limited information about neighboring suppliers. That situation, he said, will improve significantly as more companies take advantage of the Marist network's resources. "The network will help local companies to know what is available around them, and make it easier for these manufacturers to buy supplies within the state and locally," King said. ▮

—CHRISTINE URGOLA '93

Managing the information explosion

GIS technology corrals data for decision-makers

At the dawn of the Information Age, the question may well be, do we have too much of a good thing? Are we in danger of drowning in data? The challenge isn't getting access to information but making sense of it all or, rather, sorting through it all to what is truly useful and putting that to good use.

One powerful response to the challenge is the Geographic Information Systems (GIS) technology that has begun to transform the way we do things. Whether it is establishing the road network for navigation systems in cars or accessing full-motion video images of the street system, GIS is the "hot" technology.

It enables smaller, smarter, more powerful computers to tell travelers where they are, how far they've gone, and the best route to take.

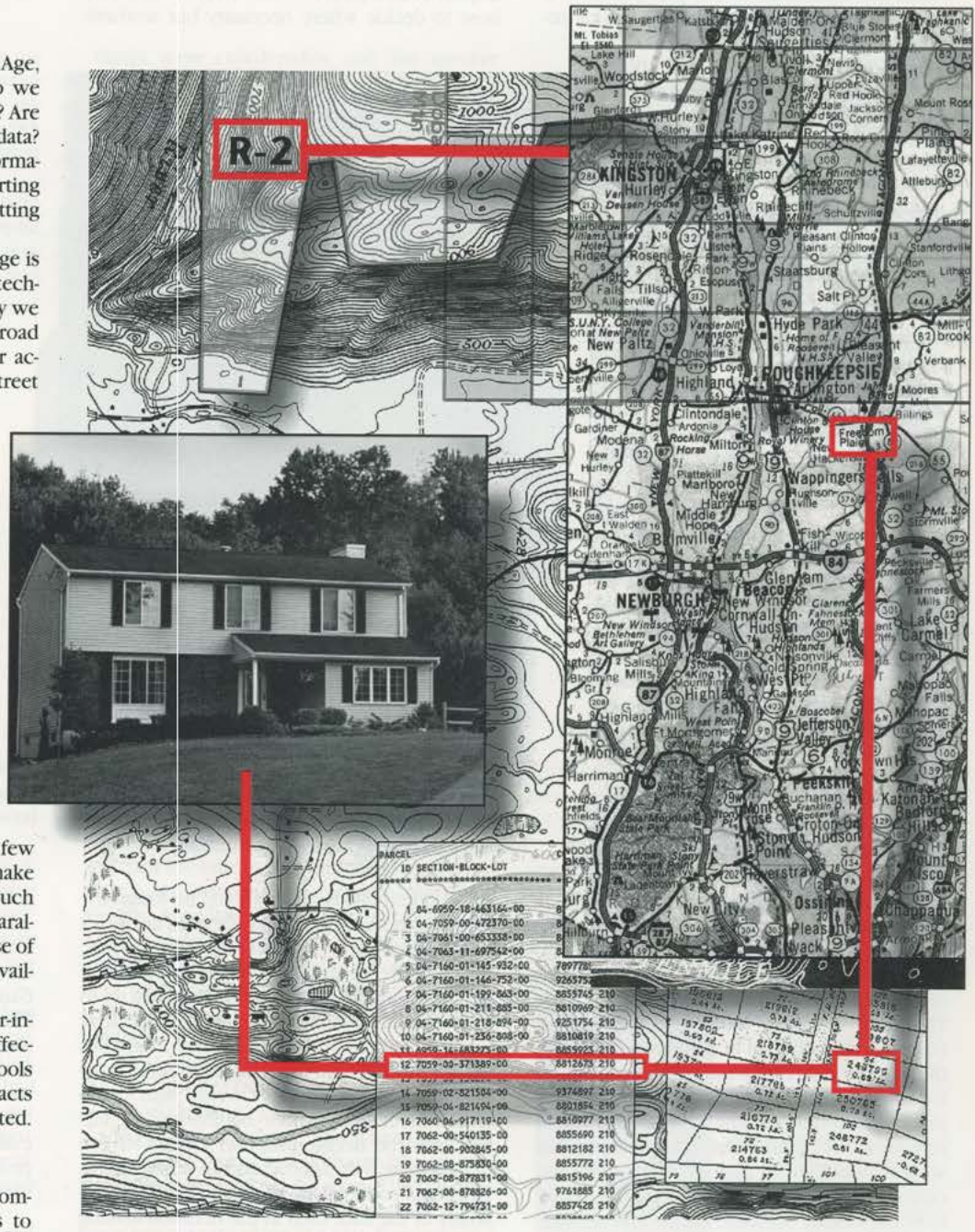
More importantly, it empowers the public to have access to all of the information available for any location, including demographics, topography, tax rates, and physical infrastructure.

Not only is it possible to link disparate sets of information through geographic information systems, but a variety of new technologies can be linked through GIS as well. Full-motion and still images can be accessed through GIS, as can Global Positioning Systems (GPS), which are so accurate they can locate any point on earth's surface to within a few centimeters. Wireless communications make GIS data available almost anywhere. Touch screen interaction provides ease of use unparalleled in the computer industry, while the use of CD ROM technology makes large data sets available as never before.

GIS users have the tools to meet ever-increasing demands for services in a cost-effective, environmentally sound manner. These tools also help the public to understand the impacts of policy decisions before they are implemented.

What is a GIS?

A geographic information system is a combination of hardware, software and tools to create, maintain and analyze data spatially. GIS technology encompasses many fields and disciplines and it is this interdisciplinary nature that



GIS graphically integrates all the information about any location, including demographics, topography, tax rates, and infrastructure.

reveals the power of the technology. GIS technology includes map creation and maintenance tools, map overlay tools, polygon processing tools, address matching tools, thematic mapping tools, and ad hoc query tools.

With all of the diverse sets of data available across the disciplines, analysis is difficult without a common reference. For GIS, location is the common denominator that allows divergent data sets to be combined, analyzed, modelled, and depicted in easy-to-understand graphics. Just as a picture may be worth a thousand words, the thousands of GIS pictures offer a window into the vast databases of natural resources and the built environment, providing a capability to interact with both.

More than 90 percent of all data has a geographic component that can serve as a link to other sets of data. For example, whether an individual lives in an apartment or owns a home, that person has an address and that address is tied to a specific point on the earth's surface. Just as the address of any building is tied to a location, so also are a variety of other data.

For instance, an apartment complex is located within a town. That town boundary forms a polygon. There are many other similar boundaries that relate to these buildings, such as the boundaries of the soil type found under the structure; the zip code; the county; the subdivision; the school district; the fire district; the census tract. There are also networks that relate to this particular apartment complex. These include the street system; the water and sewer lines; telephone and cable TV networks. All of these systems represent data spread over geography, tied by location. Each of these polygons and networks contain data that describe their details. By selecting the apartment complex, the district, or the street, we can view the relevant data. With GIS a picture is worth a thousand words.

One of the values of a GIS is the ability to present data in mapped form. The simplest form is a dot map. Let's suppose health officials were interested in looking at reported rabies report sites for 1993. Each person filing a report gives his or her address. By using the address-matching capability of a GIS, officials could quickly create a map showing all of the rabies sites reported over a given area. This dot map would clearly show the distribution and concentration of rabies reports. Using the GIS, we could create a similar map of reports for 1992 and 1991. Using the map overlap tools of GIS, we could combine the three maps and now view three years of data. The resulting map would allow the GIS user to see patterns and concentrations of the data to better understand how the disease spreads, where it originated, and most importantly, where mitigating efforts should be concentrated. Similar maps of the spread of lyme disease could also be prepared and compared with the spread of rabies to see if the patterns were similar. There are limitless ways to combine data to look for patterns and relationships.

What can a GIS do?

GIS is the "what if" tool of the 1990s. It allows us to create models to determine the best routes for emergency vehicles; the impact upon water quality of alternative development scenarios; how to mesh the provision of services with growth; how to model and predict the impact of one policy decision versus another; how to decide where necessary but aesthetically undesirable facilities should be located.

Associate Professor of Biology Thomas Lynch and science students Kurt Klein (middle) and Jack Kunicki collect Hudson River water samples for Marist's GIS water quality database.

GIS can be used to make the hard decisions facing government officials easier. For example, selecting the location for a required facility is a common local government problem. Just try to pick a site for a landfill, a new jail, an incinerator, an AIDS clinic, a waste transfer site or even a bus garage. Most people would agree that the facilities are required, but few would sign up to locate them within their neighborhood. GIS becomes the decision-support system. It can demonstrate why a particular site was selected. Decisions could be more objective as the availability of the data used in the decision-making process can be made available during the public review process. GIS can serve as an effective "what if" tool to examine the impacts of an alternative or to determine precisely who will be impacted.

GIS allows the combination and permutation of data sets that could not efficiently be combined, analyzed or reported before. Using a floodplain map, we can overlay the individual lot lines, the structures, the roads, the zoning districts and the utilities. Analyzing the data, we can now create nearly infinite combinations of data to determine answers to questions like these:

- *What structures are within the floodplain?*
- *Where are the single family homes built from 1960 to 1970, of wood frame construction, in an R1 residential zone, and assessed at more than $100,000.00?*
- *What percentage of R1 zoned lands are within the floodplain?*
- *What will the financial impact be to the town if I reassess properties and structures within the floodplain to reflect lower market values?*
- *How will full development under the Master Plan impact the floodplain?*

GIS provides a decision-support system. Most policies, plans and operations, whether government or private, depend on accurate information that is inextricably tied to location. The demand for services in government and cost control in industry has given heightened importance to finding ways of doing more with less.

County Executive Habern W. Freeman of Hartford County, Maryland, illustrates the problem.

"I have never become accustomed to the lack of information available to those who make decisions," Freeman said. "I have concluded that most poor decisions in government are due to a lack of information or the inability to integrate many sources of information."

The importance of GIS as a technology for the future is underscored by the current economic conditions. People are forced to think in terms of reducing costs, minimizing environmental impacts, and truly understanding the interrelationships of our activities.

And there are indications that the GIS of the future will outgrow its outmoded name. According to a recent article in *Local Government Guide to Geographic Information Systems: Planning and Implementation*, GIS will play a more significant role in local governments. "It will be known as the glue that helps government work, the connection machine that permits local government to move forward with a customer orientation, the generator of valuable products and services that can bring in new revenues." ▮

—JOHN LANGE

John Lange is a GIS Specialist for IBM, and teaches GIS to environmental science majors at Marist College.

COMMENTARY

I ♥ technology

Joel's revenge

By Andrew H. Malcolm

Frankly, I blame Joel Edelman for my problems with technology. He was an intelligent boy. You might even say extremely intelligent, through eighth grade in northeastern Ohio in the 1950s, when I last saw him.

Joel walked a little strangely—there was an unexpected bounce in there somehow, despite the two armloads of books he perpetually portaged, even to gym class. In his shirt pocket, Joel carried enough pens for the entire class. He also owned a lot of brains. I never actually saw Joel Edelman's report card, but moms had the time to talk to each other in those days. And I heard plenty about Joel's straight A's from my mom.

This, you might imagine, did not entirely endear Joel Edelman to me. Or any other guys who also did not receive straight A's but did get regular reports from their moms about Joel's many successes.

Some scientists believe mankind evolved from monkeys. I trace adolescent males back to sharks. We constantly snapped towels at each other, pushed, chided, derided, mocked. "Nice face," was one favored greeting. "Well, at least I don't pick my nose in algebra," was a great comeback. From there, the skirmish might grow mean. At the first sign of tears, the pack fell into a taunting frenzy. This could escalate to scuffling. When caught, we said this showed our close friendship.

We were especially close friends with Joel. "Nice briefcase," we'd tell him. Or, "Hey Joel, if you need any more pens, I can loan you mine." To be honest, not every Joel joke was a screamer like that. He never responded, however. Not until the early '80s.

I was thinking of Joel the other day when this word-processor informed me with a peremptory beep that I had just made an "ILLEGAL COMMAND." Since I own this machine, I had thought of myself as the keyboard boss. I do not remember programming an impudent jurisprudence to correct the boss, and allow no appeal.

This is how I learned Joel Edelman went into computers.

I was thinking of Joel the other day when I noticed the Fade button on my new car's stereo sound system. Now when I grew up, these things were called radios and one speaker seemed sufficient. You turned a knob that moved a needle that found a station (you did not want radios to fade in those days). Then you pulled out and pushed in a shiny silver button. Voilá, your car radio was set for the cool stations (just leave the middle button for Dad's non-cool station). The car clock, which cost extra, was accurate twice a day—at 9:14. I figured all this out myself.

"Don't release 'Set' too soon or your clock will flash the time in Newfoundland."

The new car's radio-cassette buttons do not, however, come out. They go in, as long as you also simultaneously hold several other buttons. But don't release "Set" too soon or your clock will flash the time in Newfoundland. And given the choice between two buttons—Metal and Normal—you know my favorite every time.

By the way, whose idea was it to move the gearshift lever from the steering column to the floor where the cup holder belongs so we can spill hot liquids on our good clothes while driving?

This is how I learned Joel Edelman went into the automobile business.

I was thinking of Joel the other day when I made a long-distance call. Now when I grew up, we got along pretty well with one phone company. You grabbed the receiver. The operator came on. You gave her four numbers across town or seven numbers in a city. Everyone had easily-remembered numbers, like OLympic 3-5542.

I went to call my office the other day. I had to punch in 41 numbers, roughly one number per mile; good thing I don't work in Delaware. Even then, I reached no living person. First, the voice-mail machine interviewed me by button about what kind of phone I own and what kind of service I desired. More buttons allowed me to spell my boss's name, then punch in his extension. But the machine knew he was away from his desk. So I left a message, which he didn't get because I didn't close it with 21*.

This is how I learned Joel Edelman went into the telecommunications business.

I was thinking of Joel the other day when "T 120" began flashing in the viewfinder of my videocamera. "Stop" and "Start" I handled right away. Also "Zoom In" and "Zoom Out." But who is Iris Auto?

Also, where did Channel A and Channel B come from? When I was young, TV channels were numbered and you changed them with one knob; you turned it like a clock. Tell me, what is this "TCP" button on my MRC 550 Remote Control TV System Programmable Channel Changer? I tried the "Learn" button and I didn't learn a thing (except that the Learn button does nothing). I sat on the remote box once while watching HBO. Suddenly, Mel Gibson was speaking Spanish.

This is how I learned Joel Edelman emigrated to Asia.

Then a son returned from college. "Sure, Dad," he said patiently. "It goes like this."

I don't understand; his name is Chris. ▮

Andrew H. Malcolm wrote the "Our Towns" column each Tuesday and Friday in The New York Times. *Currently, he is executive assistant to Governor Marc Racicot of Montana. His latest book is* "Huddle: Fathers, Sons and Football," *which has no buttons.*

Executive Director Fred Apers shares laughter with a youngster at the Cardinal Hayes Home.

■ **Cardinal Hayes Home for Children**

A legacy of giving

The sun's powerful rays shine directly into the bright-colored room, illuminating two small beds. A wood-framed portrait of a smiling child hangs next to a painting of Bongo, one of the 101 Dalmatians.

Robbie, a nine-year-old boy, has called this room home most of his life. He was brought to the Saint Christopher's unit of the Cardinal Hayes Home for Children when he was five months old. He weighed only 9 pounds, 8 ounces, and was a carrier of an infectious disease.

The staff treated Robbie for his illness and helped him to cope with his cerebral palsy and mental retardation. They also gave him the love and the support he needed to grow. In recent months Robbie has learned to get around with the help of a walker. He is gradually learning other basic skills.

Fred Apers, executive director of the Cardinal Hayes Home and a 1970 Marist graduate, said the Home provides residential care and developmental services for children with mental retardation, cerebral palsy, autism, brain damage, seizure disorders and other physical disabilities.

"The focus of the work is to help youngsters with handicaps achieve their maximum potential through programs which teach basic skills for daily living," he said. "Through our day-to-day experiences, we have developed an ability to care for these medically frail children," he said.

Apers is one of scores of Marist graduates who have served the children of the Hayes Home through several decades. Many are there today in key positions.

Guided by a philosophy of the Franciscan Missionaries of Mary, the home has been in operation since 1941, and currently has a staff of nearly 300 at eight sites in the Hudson Valley.

The main facility, in Millbrook, NY, is home to 43 multi-handicapped youngsters. "Individualized programs focus on the physical and developmental needs of the children who range in age from infancy through adolescence," Apers said.

Other facilities include five community intermediate care facilities in Dutchess County. Each offers specialized care to ten clients. In addition, Cardinal Hayes operates a school for individuals with special needs. Respite services are available to give families a break from the constant care of a handicapped son or daughter.

Fred Apers '70 is one of scores of Marist graduates who have served the children of the Cardinal Hayes Home through several decades.

Sister Emilie Duchaney, staff supervisor at the St. Christopher's Unit and a 1979 Marist graduate, said, "Over the years, through a lot of hard work, we make the world a better place because we are in it." She said there are many quiet heroes involved with caring for the 15 children that call St. Christopher's home.

One of them is Wayne Frenzel, a 1972 Marist graduate and the director of operations at Cardinal Hayes Home, who became Robbie's godfather at the boy's recent baptism. Frenzel said that the staff provides the support and care the clients need. "This is a place where good people do good work," he said.

Bill Busby, a 1967 Marist graduate and the director of residential services, said working at the home gives him a sense of personal satisfaction. "I get more than I receive," he explained, "These could be my children, my nephews. I feel fulfilled here because I have done something better for myself and others."

Edward O'Keefe, professor of psychology at Marist College and the director of psychological services at the Hayes Home, has been involved with both organizations for more than 30 years.

O'Keefe described the professional pride and sense of ownership people exhibit at the home. "This is not some place you work at. You begin to say this is my place. This is when you become heavily invested and you go the extra mile," he said.

"It develops a sense of place and a sense of mission. It makes a place come alive."

O'Keefe said that over the years, about 50 individuals from Marist—faculty and graduates—have become involved with the Cardinal Hayes Home. These have included eight psychologists and 25 graduates who have worked as child care workers, social services workers or business office staff.

In addition, Marist students have traditionally volunteered hours through independent studies and internship programs to help out and to learn. "They are attracted by the sense that the staff cares. They are also moved by the clients. It's a great place to grow and develop," O'Keefe said. ▮

—JOSEPH CALABRESE '93

Visiting Executive reveals the reality of business ownership

Entrepreneurs must challenge the status quo

Entrepreneurship is not for the fainthearted.

That sober counsel likely was given to would-be entrepreneurs even before the ribbon cutting at the first wheel manufacturing franchise. And it was given again recently by one who knows—Peter F. Lordi, Jr. '65, sales representative-turned-company president who started out as a school teacher after college.

Lordi, the 1993 Visiting Executive at Marist College and president of Ulster Scientific, Inc., a medical technology corporation, was addressing a business class at the Dyson Center and a gathering of science students in Donnelly Hall in April. It was part of the Executive Seminar series sponsored by the Division of Management Studies and the Office of Career Development and Field Experience. Peter Pirner '66, president and chief executive officer of Adidas USA, was the College's first visiting executive in 1992.

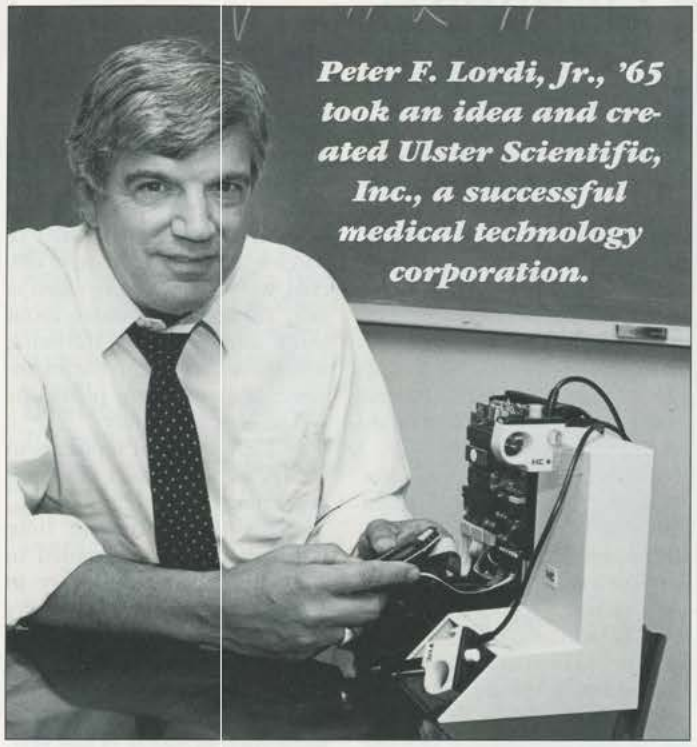
Lordi underscored the difference between small business people and entrepreneurs. Small business people tend to be "other-directed," he said, sensitive to the needs of the marketplace and the advancement of existing businesses.

"Entrepreneurs, on the other hand, are inner-directed. They have a great sense of personal mission. These people either want to do something differently or do something conventional in a new way," Lordi said. "Entrepreneurs usually seek to make a statement, to demonstrate to the world that their ideas have validity."

Proving the validity of long shots seems to be Lordi's forte. A decorated Vietnam veteran, he went home in 1969 to Highland, NY, joining the sales department of a large medical supply company. Lordi sold medical equipment in and around New York City for a while and did well.

But it was not satisfying. He was still just one little cog in a large corporate machine. Lordi wanted to run the machinery.

"I had to get out," he said. "One way or another I would start my own company." His opportunity came at a 1974 medical convention in Florida. Lordi recognized the market potential of a low-priced but overlooked plastic dispette, which is a very thin, sharp-tipped tube used for drawing small quantities of blood—usually from the fingertips.



Peter F. Lordi, Jr., '65 took an idea and created Ulster Scientific, Inc., a successful medical technology corporation.

With a $300 investment and a vision, the former biology teacher decided to build a business—Ulster Scientific, Inc.—based on that potential. His earlier contacts as a sales representative were a help. "I went back to all my buddies in New York and said, 'Hey, I've started my own company and now I have this product,'" he said.

Corporate headquarters at that time was the garage of his childhood home in Highland, NY, and his staff consisted of family and friends. Within four years, Ulster Scientific had $1 million in sales.

In 1977, with the plastic dispette market still growing, Lordi uncovered the Autolet, a British-made device that extracts a drop of blood painlessly. It was being used primarily by diabetics to test glucose levels but now has other uses, such as in cholesterol testing. Since then, the company has added several other medical devices to its inventory and is manufacturing a number of products at its New Paltz, NY facilities.

"Being an entrepreneur is not for the fainthearted. They are somewhat removed from the society around them. What distinguishes them from mere dreamers is the unique ability to both visualize and actualize an idea," he said.

Lordi, who majored in biology at Marist, has sent both his children to his Alma Mater; his daughter, Tamra, was graduated in 1989 with a degree in psychology, and Tara will graduate in 1994 with a degree in international business. ▮

Fatherly advice

World Boxing Council super bantamweight champion Tracy Patterson listens to his father, trainer and manager, Floyd Patterson, a Marist Trustee and former world heavyweight boxing champion. The younger Patterson defended his title against Jesse Benavides March 13 at Marist's James J. McCann Recreation Center. The 15-round fight, which Patterson won by a decision, was aired live on ABC Television's "Wide World Of Sports." It was the first world title boxing match in Poughkeepsie.

Bringing freedom of the press to Kiev

Marist professor teaches journalism in Ukraine

John Hartsock, associate professor of journalism, usually tells students that their job is to challenge politicians and interpret events. Ordinarily, this is not an alien concept for the students of this Fulbright scholar and veteran journalist. The challenge, however, was conveying this message to a classroom where freedom of the press is a relatively new concept.

Hartsock received a Fulbright Foreign Scholarship to spend the Spring 1993 semester abroad teaching and researching at Kiev State University in the Ukraine Republic. Established in 1946 by Arkansas Senator J. William Fulbright, the prestigious scholarships are awarded yearly to teachers and professionals to increase mutual understanding between people of the United States and other countries.

In Ukraine, where news coverage has traditionally been government-controlled and reporters rarely questioned government officials, Hartsock taught American-style journalism, using American scenarios he brought with him on computer disks. "Ukrainian news stories usually open with long-winded sentences with the important details in the middle," he said. His Ukraine students practiced writing concise stories using ordinary American situations.

"I wanted them to get a feel for America," Hartsock said. "I taught them the basics of American journalism and let them decide what approach was appropriate for their own culture."

The political climate in Ukraine is more accommodating to these previously unconventional concepts, he said. Under the reforms of the new government, newspapers are gradually winning freedom from government control over news, explained Hartsock, whose students are keenly interested in investigative reporting. Under Soviet-style journalism, news articles often consisted of statements from government officials, with their opinions taken as fact. Through discussions about leads and content, Hartsock stressed to his students the importance of questioning politicians and writing objectively.

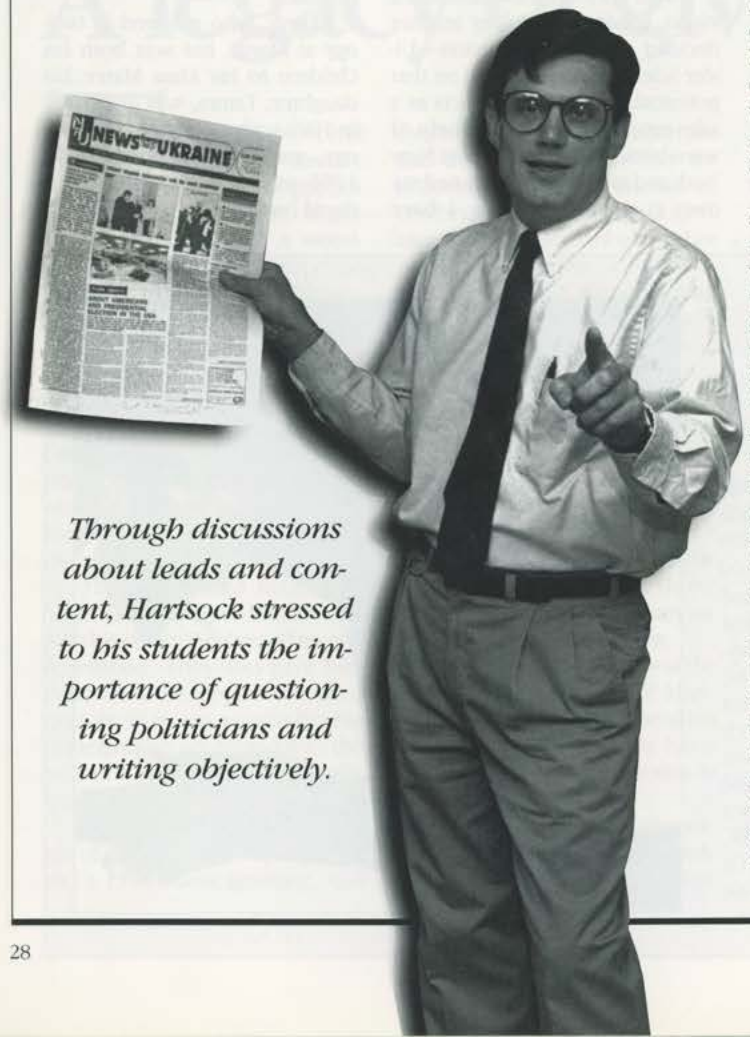
"It is the job of reporters to convey the significance of what is happening in daily life," he said.

This is the second time Hartsock has been assigned to teach at Kiev State University. In 1991, he became the first faculty member from Marist to participate in a unique exchange program between Marist and Kiev State University. Because of the failed coup in August of that year, he was prevented from teaching. Instead, he covered the breakup of the Soviet Union for the San Francisco Examiner and reported on events in Latvia and Siberia, where he has relatives. Hartsock's mother immigrated to the United States from Latvia in 1939.

Hartsock said he finds the struggles for independence have made the former Soviet citizens very cynical. Disillusioned with their own government and way of life, young Ukrainians would like to believe that America is the land of opportunity to become rich. "They are obsessed with America," said Hartsock. "However, they've discovered that democracy and the free market don't necessarily provide immediate answers." A society Hartsock described as one "that learned to keep to itself," now seems volatile and unstable.

Before coming to Marist in 1989, Hartsock covered the Reagan and Bush administrations for various wire services in Washington, DC. While in Ukraine, Hartsock also researched articles on the country's environment, its social and economic difficulties, and the emergence of Ukrainian nationalism. ▮

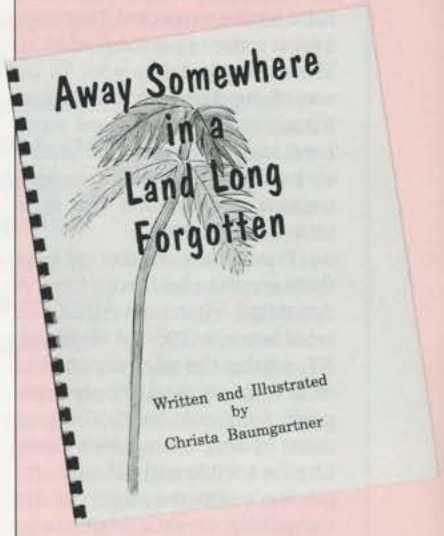
—VICTORIA BALCOMB



Through discussions about leads and content, Hartsock stressed to his students the importance of questioning politicians and writing objectively.

Story time!

Thirty-two Marist students in Nora Jachym's class, "The Teaching of Reading: Process and Strategies for Elementary and Special Education," were given a different kind of challenge in 1993. To help master the education principles involved, and to learn the computer skills they'll need as teachers, they were required to create their own storybooks for children, using computer word processing programs and, in a number of cases, desk top publishing technology. Toward the end of the year, the Marist students read their books to children at various child care programs in Poughkeepsie and then gave the books to the organizations. Each story included some aspect of ethnic and cultural diversity. ▮



Milton Teichman co-edits book on Holocaust literature

Milton Teichman, professor of English, and his wife, Sharon Leder, assistant professor of English at Nassau Community College, Garden City, NY, are the co-editors of a unique anthology of literature that draws from nine languages to make creative and profound comments on the Holocaust.

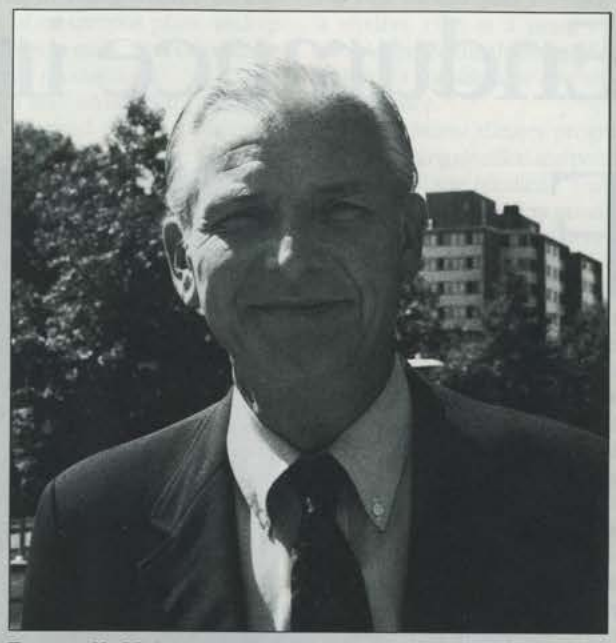
Truth and Lamentation: Stories and Poems on the Holocaust, published by the University of Illinois Press and scheduled to appear this fall, is the first anthology of its kind to focus on poetry and short fiction dealing with the systematic destruction of European Jews by the Nazis between 1933 and 1945. The project was supported by the Max & Clara Fortunoff Foundation and by Marist College.

The book includes 20 short stories and 90 poems translated from Polish, German, Dutch, French, Italian, Russian, Yiddish, and Hebrew. It also includes works originally written in English. The anthology contains pieces written by Holocaust victims who perished as well as those who survived. It also includes significant works by writers who did not experience the Holocaust directly. Some of the well known writers represented are Nelly Sachs, Primo Levi, I.B. Singer and Elie Wiesel. Less known authors who wrote in ghettos and camps include Sincha Bunim Shayevitsh, Yitzhak Katzenelson and Josef Zelkowicz. The editors' scholarly introduction discusses truth-telling and lamentation as the two main tendencies of the literature presented.

According to Teichman, who is also director of the College's Jewish Studies Program, the volume's stories and poems translate events that today seem almost mythical into the experience of flesh and blood human beings. "This anthology will heighten appreciation of what the genres of poetry and short fiction bring to an understanding of the Holocaust," Teichman said.

Teichman has been teaching a course on Holocaust literature at Marist since 1975. ▮

Milton Teichman



Eugene H. Melan

NY Governor thanks Eugene Melan for TQM leadership

Eugene H. Melan, visiting assistant professor in the Division of Management Studies, was recognized recently by New York State Governor Mario M. Cuomo for his contributions to the 1993 Governor's Excelsior "Quality of Work" Award Program.

The Excelsior Award Program, initiated in 1991, is a major part of the effort by New York State government to encourage and recognize organizational excellence in business, education and government. Melan, a consultant to industry on total quality management (TQM), was an examiner for the award program.

Program examiners and judges visited government facilities, college campuses and industrial sites across the state. Gov. Cuomo said the advice and suggestions from the site visits gave employers the opportunity to re-examine their operations and to achieve new standards of quality.

"The men and women who tirelessly served as examiners and judges for the Excelsior Award are helping all of New York's public and private institutions to speak the language of quality," Cuomo said.

The governor also thanked Marist College for its strong participation in the program and the donation of Melan's time toward the successful completion of the selection process.

Before coming to Marist, Melan worked for IBM in various positions in systems and technology development, manufacturing and staff operations in the United States and overseas. He has served as a consultant to Bell Laboratories, Dupont, MCI, and the University of Pennsylvania. McGraw-Hill recently published his book, *Process Management: Methods for Improving Products and Services*, which focuses on TQM within business operations. ▮

■ **'Dee' Nell '82 brings her love of theater to her work**

Endurance in Horn of Africa

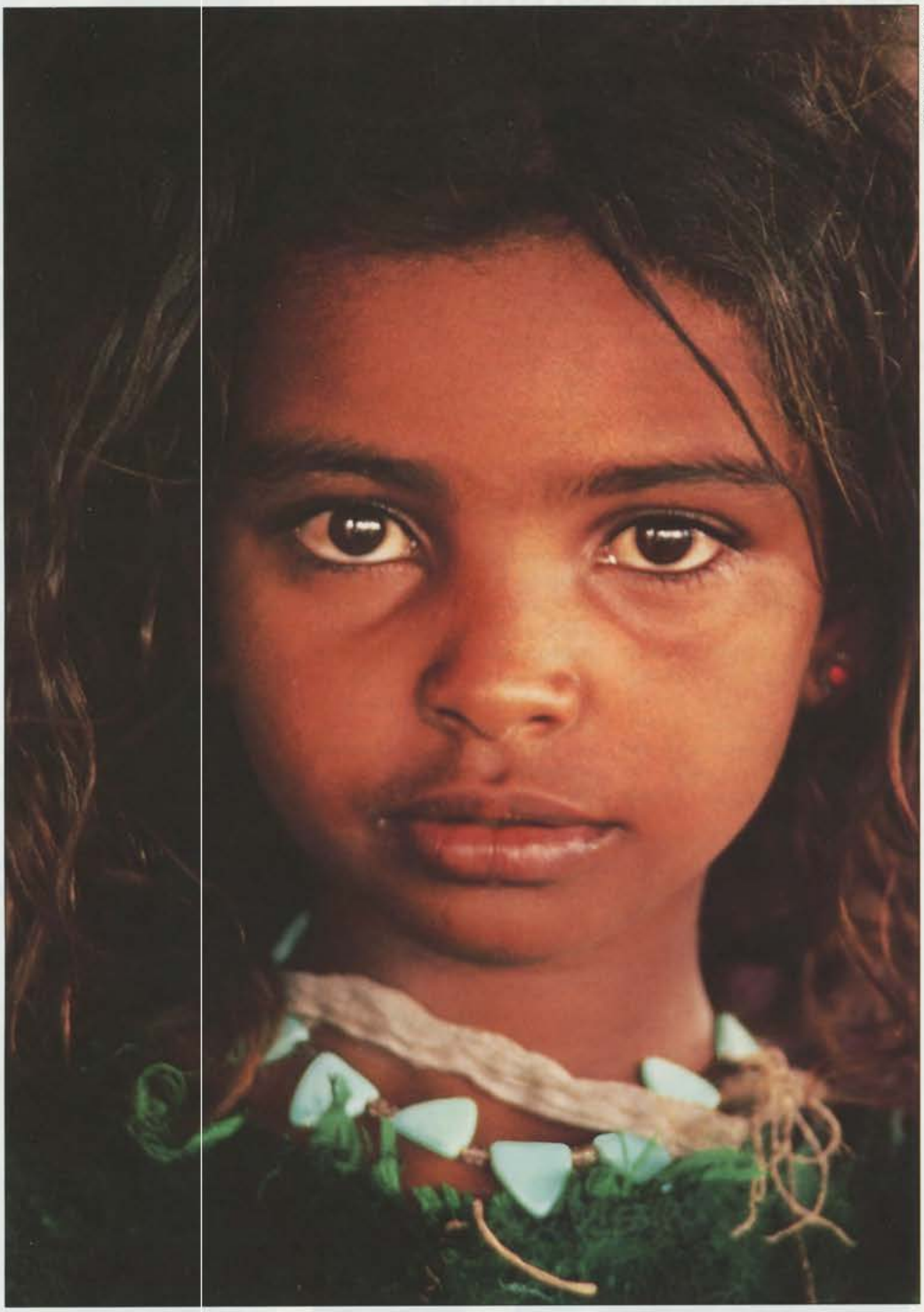


PHOTO BY DIANE NELL

For Diane Nell, a day at the office could mean driving for hours chasing an elusive desert mirage, or conducting business crouched under her desk as bullets whiz across the room from fighting in the streets. Whether she's working with rural farmers in Liberia or photographing the plight of refugees in Sudan, Ethiopia or Somalia, Nell brings a little of Marist to work with her every day.

As the Horn of Africa program officer for Save the Children Federation, Nell has a front row seat to the evolving events in that volatile part of the world. She credits Marist College with giving her the skills and the opportunity to develop several interests that led to her exciting career.

In testimony to the U.S. Congress in 1992, Nell and her colleagues predicted the current drought and human misery in Somalia. She has also addressed the United Nations about the situation in the Horn of Africa. For the last two years, Nell, as the person responsible for coordinating Save the Children's activities in the Horn of Africa, has worked in Somalia, Egypt, Sudan, and, most recently, Ethiopia.

The job does include enormous administrative responsibilities, such as coordinating emergency food programs. Then there was the constant danger of being shot, especially in Somalia.

"Somalia was like M.A.S.H. It was either very good or very bad—there was no middle ground. It was always dangerous with all of the shooting going on. I had to be evacuated twice," she said.

She once hid in her basement for two days while fighting raged in the streets above. And there were those occasions she would literally be forced to work under her office desk in Mogadishu, as bullets slammed into the building from outside.

But then there were the times she would strap on her prized, multi-pocketed journalist's vest, her 35 mm and video cameras, and climb into a land cruiser. Her destination would be some remote area of Somalia, Ethiopia or Sudan, where she would use her cameras to document children, women, and refugees in the agency's development projects.

Her apartment in Westport, CT, which overlooks the Saugatuck River, is filled with these pictures, masks, pottery, and other artifacts from her and husband Ivor Melmore's work in Africa. Melmore, an agriculturist with Save the Children, is a consultant to various African countries. He

helps to design agricultural plans that incorporate traditional and modern farming methods. They own a home in Jefferson, a rural upstate New York community.

The women she met during those trips hold a particular fascination for Nell. It is reflected in the enlarged color photographs hanging throughout her apartment, in her voluminous slide collection, and in the tone of reverence her voice assumes when she talks about them. There is no ambiguity when Nell communicates the respect and admiration she holds for these strong, resourceful women who are dedicated to their families' survival despite overwhelming odds.

Sitting in her living room on a cool, crisp evening last winter, she seemed oblivious to the sounds and activity on the street below. She was adjusting the slide of an elderly Ethiopian woman on a light table. The intense eyes, with no trace of defiance, staring out of that wrinkled face, reflected a sullen pride in the midst of acute hardships.

Nell was recounting the story behind that spectacular slide. It was during the rainy season and her vehicle became bogged down in mud. Unable to get to her destination, she and her companions walked to this village where the old woman was sitting at a fire in front of her house with some other women.

"I just walked over and I just sat down in front of the fire right next to this woman. I was totally accepted. I might as well have been her daughter. I couldn't tell what they were saying, but I could tell they were pleased, or at least amused that I was there," she said.

Eventually, the women became interested in Nell's hair, and soon she had established a relationship that transcended language. This contact with women in the countryside has become one of the delights of her job.

"I don't know, maybe I just missed having my mother. Whatever it was, it was a level that I was connected with them at and it would happen in Somalia, Ethiopia or in Sudan," said Nell. And this connection with the people she encounters is evident in her still and video work.

By all accounts, the Marist graduate's work is highly acclaimed. One of her photographs—of a Sudanese girl—appeared on the cover of the Geneva-based International Save the Children Alliance 1991 Annual Report. She was flown from Africa to Florida to receive an award for a 1991 video documentary, *The Street Children of Addis Ababa.*

Her photography and video documentaries that have become such an integral part of her work are a reflection of some of the skills she acquired at Marist, Nell said. She thought about the many radio, television and photography courses she took with some vague awareness that, despite liking them, those skills could be useful at some point.

"The thing is, I learned all of this stuff at Marist. People like Jerry Cox took the time to be my teachers and mentors," Nell said. "I remember getting up to speak before 2,000 people at the U.N. and recalling things I had learned in Jep Lanning's public speaking class."

And being so closely involved in theater allowed her the creative freedom she has always craved. "If it was just to do the lighting for a play or how I was going to direct a production, having that whole exercise of having a completely wide open, blank slate on which to put my stuff was so rewarding," Nell said.

As a high school student, Nell had a single-minded purpose—a career in theater. She said she had originally applied to Vassar College, but she and her mother got lost on a scheduled visit to Poughkeepsie and ended up on the Marist campus instead. An admissions counselor advised her she could combine her love for theater with a strong communications program at Marist. Vassar never saw her after that.

As a communications major, she literally devoured classes in radio, television and theater production at Marist. In addition, she was the disk jockey for a late night jazz show on WMCR, president of Marist College Council for Theatre Arts (MCCTA) in her junior year, directed several children's theater productions, became involved in acting and the production of on-campus plays, and appeared in a number of community theater productions.

"I was addicted to theater. I was involved in just about every aspect of theater productions, both at Marist and off campus," Nell said.

Her off-campus theater activities kept her quite busy. She produced *Hair* at Poughkeepsie's Bardavon 1869 Opera House in 1978 for the Hyde Park Players, and appeared in *You Can't Take it With You*, directed by Marist student Daniel Edgcomb and his wife Lucia Squicciarini '75. On campus, Nell was involved in a number of productions, including *The Odd Couple, Graffiti and Doctor Doolittle* for the Children's Theatre. She also directed several by Donald Anderson, Marist assistant professor of English.

"I was addicted to theater. I was involved in just about every aspect of theater productions, both at Marist and off campus."

Meanwhile, she was developing her other skills by cramming as many photography courses as possible into her schedule and accepting whatever creative and freelance photo assignments that came her way. Some of these included portraits of students.

Despite all of these activities, she insists that she managed to maintain her identity as a unique and impetuous individual. Hers, she said, was never one of the faces that blended into the fabric of the college community.

"I was not a shy person, and I was pretty eccentric. I guess I dressed kind of weird," she said.

Nell admitted she was part of a student elite at a time when people involved in theater at Marist enjoyed a considerable amount of prominence.

"The Marist theater program was becoming glorified and people envied us," she recalled. "Understandably, we were very proud of ourselves, and I suppose that made us stand out."

After her 1982 graduation, Nell, a former child model, returned to New York City, where she was involved with some avant garde theater groups for about a year. Eventually becoming disillusioned with New York's theater scene, she made an unpredictable and radical career decision.

"I sent away for a Peace Corps application. I didn't know what I was doing because, on the one hand, I felt people in these impoverished areas of the world need water and wells, not actors," Nell said. "On the other hand, I wanted to be involved in something meaningful, to make a difference."

She described her decision as a major turning point because, when Peace Corps officials finally called her, she was told they had an assignment that was tailor-made for her. It was a radio project in Liberia, West Africa.

"They needed someone with theater and radio production background to teach and train people from the rural areas as producers," Nell said. "The challenge was how to take a topic like breast feeding, for example, and dramatize it to teach a broad audience."

Between 1984 and 1987, she produced children's radio dramas, a weekly radio drama on health issues for women and other programs directed to rural farmers. The weekly educational radio dramas, she said, had the impact of television soap operas. They attracted a large devoted audience.

"I decided I had found my niche. I can still do theater, the thing I love most. I can still be crazy and exciting and I can do it in a different environment—Africa," said Nell. ▮

—G. Modele Clarke

Marist video manager by day, TV writer by night

Take my script, please!

Janet Lawler '85

Janet Lawler has probably made millions of people laugh, but she's not a comic. And despite the often volatile and sometimes violent nature of the television dramas she has written, she is not a brawler.

Quite the contrary, there's an intriguing gentleness about this soft-spoken woman that masks an immense determination to succeed at her craft. Lawler, who is the audio visual/TV operations manager at Marist College's media center, writes and produces instructional videos for the college community. She and William Ryan, director of the media center, also produce about four videos annually for organizations such as hospitals and mental health institutions.

Students are always involved in the projects, Lawler said. They get to participate in all of the production phases, including script writing, creating graphics and video editing.

At the end of Lawler's work day of filming, creating sets, editing videos and writing video scripts, she heads home to write some more.

The 1985 Marist graduate has written jokes for comedians Rodney Dangerfield and Joan Rivers. It was that unpretentious, but deep-rooted self-confidence that propelled her into freelance comedy writing. Several years ago when Joan Rivers was the guest host on the "Tonight Show," Lawler listened intently to the comedienne's opening monologue and to the continuous stream of one-liners. Lawler was so convinced she could write for Rivers that she immediately dashed off a letter with some jokes. That moment of impulse initiated a three-year relationship with the comic.

The same combination of impulse and confidence pushed her to contact Rodney Dangerfield. By then she had a good handle on his self-effacing I-don't-get-no-respect one-liners. The comedian not only gave her respect, he gave her a break. Dangerfield bought her jokes regularly and used them in his routine. He once sent her a hand-written card inviting her to be his guest at an Atlantic City resort where he was appearing.

Rodney Dangerfield not only gave her respect, he gave her a break.

"He was extremely personable. He had my mother and me as his guests and arranged to have everything at our disposal. It was a wonderful weekend," Lawler said.

Although writing full-length television scripts is her first love, she acknowledged it is an extremely competitive and difficult field to get into. For that reason she continued to peddle her one-liners while working on her script-writing craft. Also, there was the immediate gratification she got from supplying big-name comics with funny lines.

"It was exciting to hear Joan Rivers and Rodney Dangerfield tell my jokes on TV," Lawler said.

But she has never had the urge to run out on stage, grab a microphone, face an unpredictable audience and deliver her own jokes. In fact, she once turned down an opportunity that could have launched her career as a comedienne.

"During the mid-'80s when a lot of new comedy clubs were opening up, Rodney invited me to do some stand-up comedy. He offered to get me on one of those shows, but I declined," she said.

Lawler, whose gentle bearing could be mistaken for shyness, allowed that she would be uncomfortable being the center of attention. She conceded that her current preference for anonymity would be a major career obstruction for a stand-up comic. She said, however, she was not always this tower of reserve and restraint. Lawler recalled that as a youngster, she was always the center of attention, either as the prankster-in-residence or as the presiding smart aleck.

"In high school I was voted `The Class Clown,'" she said. "As I got older, especially in college, I became more introverted even as I became more comfortable in my writing."

Clowning aside, Lawler wants to leave her mark on television. In discussing the scripts she has created, some of her trademark reserve falls away as she shows a hint of excitement. One of her latest works, about a New York City detective's determination to capture a serial rapist, is fast-paced, vivid, turbulent and saturated with Big Apple indifference, street savvy and survival genius. It is hard to make the connection between the script's hard edge and the serene disposition of the writer.

"In script writing, you can't rely on paragraph after paragraph of copy to set the scene. Every word has to advance the story or it doesn't work. You have to move the story along quickly to grab the viewer's attention and then hold it," she said.

Although she has not sold any of her scripts as yet, Lawler is not discouraged. She is the epitome of optimism as she thumbs through a large red three-ring binder on her desk. The binder is crammed with scripts, correspondence from television production companies and some rejection letters.

"Deep down I believe in my own ability. These letters have not extinguished my desire to be a script writer," Lawler said. "John Grisham was rejected by 20 publishers and 16 agents. They all turned down 'A Time To Kill' until a small publisher became interested. Margaret Mitchell's 'Gone With the Wind' was turned down 70 times."

For this woman who has put words in Joan Rivers' mouth, she knows it's only a matter of time before a television producer says to her: "Can we talk?" ▮

Marist campus now a registered arboretum

The 30 species of trees that grace the campus at Marist College range from two huge red oaks that pre-date the American Revolution to a tiny tortuous beech tree that in winter resembles nothing so much as a very large pretzel.

The campus is registered as an arboretum with the American Association of Botanical Gardens and Arboreta, a designation that reflects the College's commitment to the care and maintenance of the trees and gives Marist access to other arboretum managers.

"The original inspiration for the arboretum project came from William Perrotte, a biologist who taught here for 25 years and died in September of 1991," explains Assistant Professor of philosophy Thomas Casey, who worked with Perrotte and carries on as the arboretum's mainstay today. "Bill was a dedicated teacher, an extraordinary person and a delight to work with."

Each tree is number-tagged, catalogued and entered into a computer file listing its size, location and identification. Some of the trees are name-tagged, as well. The inventory includes pine groves that were on the grounds in 1905 when the Marist Brothers bought the property. Other species, many added over the years since then, include the mountain ash, the crimson king, the Japanese cutleaf maple, the weeping hemlock, and the purple beech.

Thomas Casey conternplates a weeping hemlock on campus.

Casey says that new trees "are selected to get a variety of colors and shapes, such as the tortuous beech. We also select species for their durability. And we consider what kinds of birds each tree will attract so we can have a wide variety of birds here, too."

With clumps and splashes of vivid red, plum purple, pine green, khaki and other hues, the plant life at Marist gives the College a striking natural beauty. Casey credits grounds operations supervisor Ralph Short and his staff for keeping the grounds in "excellent condition."

The arboretum at Marist is one of several located in the Hudson Valley. An exceptional arboretum is on the property of the Vanderbilt Mansion, just a few miles north of Marist. Casey notes that "it was acquired by the United States government when Franklin Roosevelt was president. The president knew the importance of the Vanderbilt property because he lived just down the road in Hyde Park and was a great tree man. He used to list his occupation as 'tree farmer.'" ▮

—ANASTASIA CUSTER '93

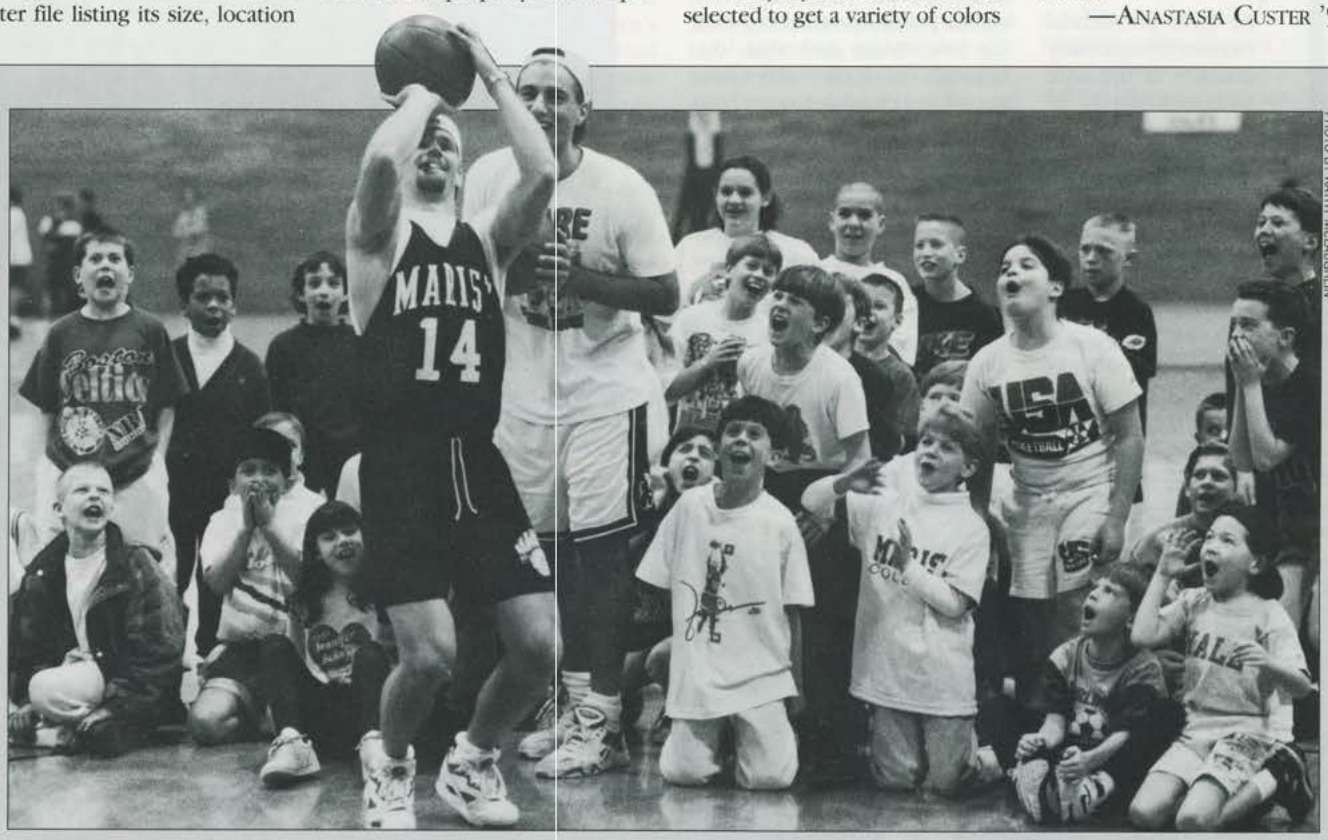


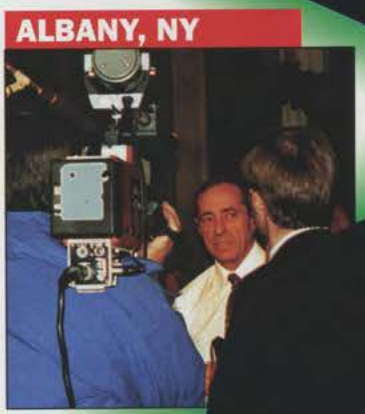
PHOTO BY KATHY MCLAUGHLIN

ALL EYES ON THE BALL Marist guard Andy Lake demonstrates how to score consistently from the line despite some spontaneous coaching from the crowd. Andy's demonstration was part of the annual "Kids' Day Out" basketball clinic at Marist's James J. McCann Recreation Center. Children attending the one-day clinic learned fundamental basketball skills from senior players and coaches of the men's and women's teams. Their registration fees benefited the College's scholarship fund for disabled students. The event was sponsored by the Red Foxes and the Office of Special Services.

■ **The Marist Institute for Public Opinion**

On the Presidential Campaign Trail

LEE M. MIRINGOFF, *Director, MIPO*
BARBARA L. CARVALHO, *Director, The Marist Poll*



Editor's Note: Lee M. Miringoff, director, Marist Institute for Public Opinion, and Barbara L. Carvalho, director, The Marist Poll, had a unique vantage point throughout the 1992 presidential campaign from the earliest speculation about who would seek the presidency to the election night finale. This is an account of some of their experiences.

The 1992 presidential election brought many changes in the style and technology of campaign politics and offered many clues to the successes and failures of the new Clinton administration. The campaign is remembered for its many distinctive elements including the speculation over who would challenge President Bush and the big-name Democrats who reached the conclusion that such an effort would be futile, the wide-open New Hampshire Primary, the emergence of the send-a-message candidates, the contrasting public response to the two political conventions, the talk show formats with their direct appeal to voters, the proliferation of polls, and the victory of Bill Clinton ending the GOP lock on the White House. We had a front row seat to witness the new ways candidates reached voters and to make news in an election year characterized by changes in the use of polls and the role of the media.

Washington, D.C.

November 10-16, 1991

Tim Russert, Moderator for NBC's "Meet The Press," was carving up then Louisiana gubernatorial candidate David Duke as we and a group of Marist College students stood off-camera watching a top-notch journalist at work. With some trepidation, the students awaited the program's completion for their turn with Russert, who seemed nothing less on camera than a barracuda.

Our discussion about the nascent political campaign, however, was thoroughly engaging and enlightening, as were each of the seven seminars with the nation's leading political journalists during this information gathering trip. Although the election was a long way off, and President George Bush had high ratings in public opinion polls, these journalists all hinted at potential voter turbulence, particularly if Bush were unable to come to grips with growing concern over the economy. They pointed out that it would take an unusually strong Democratic effort to dislodge the GOP from the White House.

The Cuomo Decision

December 19-20, 1991

The evening prior to New York Governor Mario Cuomo's announcement (finally) that he would not seek the presidency found the Miringoff half of the MIPO duo in the statehouse in Albany where the Governor was chatting informally with a dozen national and New York reporters about everything except the big question of the moment: "Would he or Wouldn't he?"

Miringoff was circling the corridors of the second floor in the capitol when a senior Cuomo adviser ushered him into the impromptu press gathering. What was striking was the pressure on a man poised to make an historic announcement who had cornered himself politically by committing not to run for president unless New York's budget picture was solved. The conventional wisdom was that on the following day, the deadline for filing for the New Hampshire primary, Cuomo would announce that he was indeed a presidential candidate.

On Friday, December 20, 1991, Carvalho arrived in Albany to join Miringoff for Cuomo's decision and to participate in the numerous press interviews to follow. The entire morning and afternoon were spent, in what many of the 200 veteran political reporters crowded outside the Governor's office called, a most eerie political non-event.

The deadline for filing in Concord, NH was only hours away. A chartered plane was at the Albany Airport pointed toward the New Hampshire capital and Cuomo aides were waiting by a phone booth there ready to file for him in absentia.

Our scheduled television appearance in New York City was approaching and off we went. We were on the West Side Highway in New York City when Cuomo announced that he would not run. Miringoff's interview dealt with a far different political landscape as a result.

The New Hampshire Primary

February 18, 1992

Four years ago, we found a thriving New Hampshire economy. This time, the shopping malls were empty and the voters were in a grumpy mood. MIPO polls identified early on renewed voter interest in politics and issues this year which foreshadowed the bumpy ride for many candidates on the road to the White House. The salvos launched by Patrick Buchanan in this first-in-the-nation primary demonstrated President Bush's weakness within the conservative wing of his party. The emergence of Paul Tsongas telegraphed that politics as usual would not be the calling card for this election year.

In New Hampshire we observed the competence of candidate Bill Clinton to withstand a series of potentially devastating knockout punches about his character. At three different campaign rallies, we saw in Clinton a gifted campaigner who could tailor the fabric of his speeches without changing his message. His campaign organization looked impressive, from the Arkansas travellers who served as hosts to these events, to the rock band, "The Clintones," who entertained the expectant crowd (no saxophone).

The morning following the primary provided the chance for Miringoff to do a live interview on WNBC's "Today in New York," the first of his 50 appearances on that program during the campaign.

CONCORD, NH

The New York Democratic Primary

April 7, 1992

The road to the White House inevitably passes through the Big Apple, and 1992 was no exception. By April, President Bush had all but claimed renomination and Clinton had amassed a substantial delegate lead in the race to be the Democratic challenger. The New York Primary was Jerry Brown's last chance and it placed Paul Tsongas back on the press interview list, but it is best remembered for Bill Clinton's claim that he never inhaled.

The Marist Poll closely monitored electoral trends leading up to this pivotal primary. Press interest in the Marist Poll and the activities of the candidates literally crossed paths on the Donahue set following an appearance by Bill Clinton. Miringoff and Carvalho were besieged by dozens of reporters seeking the results of Marist's latest overnight tracking of New Yorkers—all within earshot of the future president.

Each of the 200 Marist College student pollsters who participated in these primary polls made news through their involvement in MIPO activities. On the day before the primary, Miringoff was interviewed in seven New York television studios and with Carvalho, conducted 74 additional interviews with reporters and pollsters from every major media outlet in the nation.

Fortunately, in an environment where you are only as good as your last poll, the Marist Poll was on the money. We live until 1996!

The Political Conventions

July and August, 1992

The Democratic and Republican national conventions offered the opportunity for extensive analysis and commentary. Our vantage point from the floor of the Democratic convention and from the press galleries was particularly interesting and provided many lasting memories. (Who will ever forget surviving on 13 hours of sleep for five nights).

There was the steady stream of speech makers, the constantly changing political spin, a national audience responding, and New York City at its best. Clinton/Gore (the whole was greater than the sum of its parts) left New York City to commence a series of buscapades. The desire for change and an appeal to the baby-boom generation of voters would carry them to victory in the fall.

Marist College was well represented at Madison Square Garden. April Amonica, class of '92, was assisting MIPO, Mary Gannon, class of '78, was in attendance, Peter O'Keefe, class of '91, was working for the Clinton campaign, and Renee Parrott, class of '94, was an intern for WNBC.

NEW YORK CITY

Election Night

November 3, 1992

The year of polling and press interviews culminated on election night when we participated in each of the New York City television stations' political coverage and exit poll analyses. Ironically, Carvalho was interviewed by WCBS' Marcia Kramer and Jim Jensen within minutes of Miringoff's interview on WNBC by Gabe Pressman. (Her market share was 21 and Miringoff's was 19 for that time slot.)

The country elected a new president who pledged to bring about economic change. The measure of Clinton's success will ultimately be taken at the very same New Hampshire shopping malls where he launched his 1992 bid. Will there be an economic recovery by 1996?

Marist College students participated in the political process throughout the campaign. Our students were called upon to assume important responsibilities in polling and interviewing. Memories of an exciting election year will be long lasting for us all. ▮

Founding President came to Marist in 1943

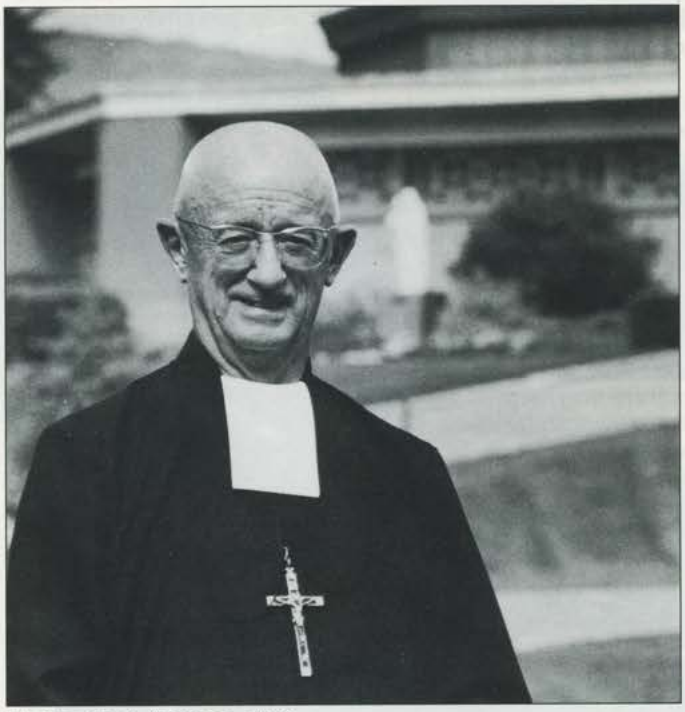
50 years and still home

Marist College in its formative years earned a reputation as "the college that built itself," and Brother Paul Ambrose Fontaine is the man who got the do-it-yourself project started.

The organizer and founding president of the College was 29 years old in 1943 when two important events occurred on the same day: He completed his master's degree in English at Catholic University of America in Washington, D.C., and his provincial called him to Poughkeepsie

He was told that he was to be the new Master of Scholastics at the Marist Brothers' Normal Training School, and that he was to transform the two-year institution into a four-year college. He did that in three years and stayed on as president another 12 years to build the campus, the faculty and the academic program.

Brother Paul left Marist in 1958 when he was elected Assistant Superior General of the Marist Brothers worldwide. He was gone for many years, working out of France and Rome. His most recent extended overseas assignment ended in 1990, when he returned to the College at age 77 and was named President Emeritus. He continues to travel the world for the missions, but his home is the Kieran Gate House on the College grounds. Brother Paul is a life trustee of the College. He holds an honorary Doctor of Humane Letters degree from Marist. ▮



Brother Paul Ambrose, FMS

Center for Lifetime Studies

Keeping up with eager learners

The students left the classroom slowly, some reluctantly. The class had been over for more than five minutes, but still they hung together in small groups discussing, and in some cases, continuing an in-class debate on the struggle between conservatives and liberals to develop a Mexican national identity. An earlier lecture had generated similar intense discussion on Mexico's indigenous people and the impact of the Spanish conquest.

This scenario may be typical of any number of thought-provoking college courses on campuses across the country—except that these are not typical college students. They are more likely to be the grandparents of traditional college-aged students. They are part of the approximately 240 men and women enrolled in the Marist College Center for Lifetime Study (CLS), which provides them intellectual and cultural opportunities in a relaxed atmosphere free of exams or grades.

Since CLS is a membership-based, nonprofit organization sponsored by Marist, members design and develop more than 20 courses each semester. These courses, offered in two series each year, represent a wide range of interests and disciplines. Most, however, are in the social sciences and humanities and include topics such as, "English Romantic Poets: Wordsworth and Coleridge"; "The Movies Grow Up. Maybe!"; "FDR and Eleanor"; and, "International Affairs."

Because creativity is so integral to the courses' development, many of them revolve around activities and special events. As a result, while most classes are conducted at the Franklin D. Roosevelt Library in Hyde Park, NY, and on the Marist campus, some include visits to artists' studios and exhibitions.

Newlyweds Betty and Adrian Perreault await the start of class.

Raymond and Elvira Haddad know the importance of a good education.

"We always tried to continue our education even though we have been transferred so many times, due to work," Elvira Haddad, a resident of Hyde Park, NY, said. "But no matter where we were, we always went to school."

The Haddads have been CLS members since its inception in 1992 and are currently council members of the program. CLS is open to people 55 years of age or older who have a desire for lifelong learning. It is an affiliate of the Elderhostel Institute Network.

Eleanor Charwat, executive director of Adult Education, said the program, now in its second year, has been well received. "It's met a real need for retirees who want intellectual stimulation," Charwat said. "The evidence is the relatively short time it took to catch on. It usually takes several years to get this size membership."

She attributed the program's rapid success to the leadership of Jonah and Joan Sherman. Jonah Sherman, CLS's president, and a Marist College Trustee, agreed that the Center is beneficial.

"So far, the response has been very positive from the community. People are being exposed to courses and information they have always wanted, but have not been able to explore before," Sherman said.

For retirees like the Haddads, the Center provides continued intellectual growth. "It helps to keep us current in the world and it gives us the opportunity to increase our fellowship with people who have similar interests," Raymond Haddad said. ▮

—PATRICE SELLECK '93

■ **Unconditional reaccreditation**

Marist College receives high grades in Middle States team report

Most people associated with Marist College, directly or indirectly, will agree that it has accomplished a great deal in its relatively short history. This opinion was reinforced recently when the Commission on Higher Education of the Middle States Association of Colleges and Schools granted the College "unconditional reaccreditation."

The Commission's action followed a site visit to Marist by a Middle States evaluation team. In its report, the 11-member team declared, "Marist should be justly proud of what it has accomplished and can legitimately show even more self-confidence and pride in itself than it, in point of fact, does."

Unconditional reaccreditation means that the Commission on Higher Education found no areas at Marist that require a follow-up visit or report. College President Dennis J. Murray said that is a significant achievement. "This is a credit to the entire Marist College community, and we should all take pride in this accomplishment," Murray said.

The site visit team, headed by Msgr. David A. Rubino, president of Gannon University, Erie, PA, found that while Marist is achieving remarkable success in its institutional life, there are sometimes "different understandings of purpose... It seems to the Team that these occasional collisions are the direct result of the remarkable growth and development of Marist over the past 10 years."

"Over and over, the team noted the commitment of the College to the art of teaching so well practiced by the faculty."

Among colleges and universities represented on the evaluation team were Bucknell University, Carnegie-Mellon University, Drew University, Franklin and Marshall College, the University of Pennsylvania, and the University of Scranton.

The team praised the College's policy on issues of equity and diversity and acknowledged the progress made in diversifying the student body and faculty. Marist's recruitment and admissions efforts also received high marks from the team. The report stated: "The recruitment and admissions effort at Marist are excellent. The program has beaten the demography. This success is the direct result of a well-managed program by a committed and competent staff."

The report applauded the College's academic programs. The team found a highly collegial atmosphere at Marist among faculty within the various divisions. The report found, "The academic programs are blessed by the greatest strength at Marist—excellent teaching. Over and over, the team noted the commitment of the College to the art of teaching so well practiced by the faculty."

The Middle States report also noted the sophisticated technological resources at Marist and the high degree to which they are incorporated into the College's academic, administrative and external programs.

The team applauded the Library's "excellent leadership and dedicated staff." The report observed the need for an enhanced location for the Library but stressed that student and faculty needs are being met. "With the availability of sophisticated information technology, marked improvements in materials budgets and an effective bibliographic instruction program, the Library basks in an improved and enhanced image."

President Murray said the report confirmed some of the points the College identified earlier in its Self Study, which was an analysis by the College community of the institution's educational effectiveness and capability.

"Overall, I found this report to be a very positive statement about our College. The team recognized that Marist has accomplished a great deal in the past 10 years," Murray said. ▮

■ **The McCann Baseball Field**

Marist's field of dreams

Marist's new Division I baseball team has one of the finest playing fields in the Northeast. The McCann Baseball Field, located on the south end of campus, has an infield of sod grass and beam clay, which is used in many professional ballparks. The field was designed and built with a major grant from the James J. McCann Foundation. Long-time Trustee John J. Gartland, Jr., who has maintained a strong interest in the development of the Marist campus, was instrumental in the creation of the field. ▮

President Dennis J. Murray (left) with John J. Gartland, Jr., President of the James J. McCann Foundation, at the baseball field dedication ceremony.

Marist batter gets a hit against Iona College.

"It is important to find a way of developing a praxis of educational consequence that opens the spaces necessary for the remaking of a democratic community."
—Maxine Greene in
The Dialectic of Freedom


JOHN MACDONALD

Praxis and the Public Good

The public world is constituted by multiple realities, often unconnected and seemingly with little in common. Eight-year-old Jarrell has been in 13 different foster homes, and desperately wants to be with his mother. His mother is an addict, sick with AIDS. In another part of the same town, 10-year-old Brian is a Nintendo expert whose parents add biweekly to his college account. Jarrell's and Brian's lives are on very different courses and project considerably different life chances. Their respective worlds rarely intersect and yet are parallel realities within shared public space.

In a larger way, the world of a college campus and the nearest inner city are separate realities. Each has little contact with or knowledge of the other, and this at a time when across the country cities are in a profound and unprecedented crisis. Evicted elderly, released psychiatric patients, tubercular homeless, the addicted, and the abandoned huddle under bridges, in basements, troubled in mind and body, distraught. The social system is breaking apart as it tries to cope with the countless uncherished children of our cities—as it attempts to intervene in the lives of an overwhelming number of young Jarrells. Despair and rage of urban youth rise from the entrails of urban poverty. "The Great Urban Crisis," writes Edmund G. Brown in a *New York Times* Op-Ed piece (Nov. 8, 1992), "is just as much a threat to our society as the Great Depression. Our second-largest city would not have exploded in burning and insurrection if something was not profoundly wrong. In community after community the intolerable conditions are worsening."

This reality of immense suffering requires, in the name of humanity, a response as profound and unprecedented as is the crisis. Although the response needs to come from all sectors—business, government, religious—a response by those concerned with education is crucial for reasons moral, civic, and academic.

We in academe do not have to surrender to parallel realities within a common world. We must bring into a portion of our curriculum a transformative *praxis*. With a view to the public good, *praxis* involves active participation at public sites and critical reflection on this action. It is an on-going interplay between active involvement and reflective analysis—with each informing the other. It is "connected learning." Already, internships and student volunteer activities connect college reality to social need. Yet, these threads of connection are only a few threads in the weaving of what could be, in the weaving of that great possibility—the "beloved community," articulated by Martin Luther King, Jr. King's vision, more biblical and historical than the rational construct popularized earlier by Josiah Royce, "included all races, all classes, all religions, all ethnic groups, and ultimately, all nations. The community transcended economic, social, political, and cultural lines." Yet, at college, the threads for this more ideal community are woven after class, after work, between terms—woven from the periphery of academic life. Meanwhile, the larger world of academe (like other centers of affluence) continues its own way, a parallel course with little connection to the harsh reality outside the borders of its academic interests.

There are exceptions.

Yale University's Law School requires students to take a two-semester course in which they employ legal channels to procure low-cost housing.

Cornell University's hotel school requires students to put "hotel industry expertise to work on the problem of homelessness." The coordinator of the program says the students "come from privileged backgrounds. They don't know reality, and they're shocked when they go into a shelter."

In Rutgers University's Civic Education and Community Service Program, a recent "Advanced Exposition" class taught writing skills to a longshoreman, recovering addicts, and a convicted murderer while at the same time reading John Dewey's *Democracy and Education*.

Stanford University has opened a Public Service Center that helps students and faculty to integrate into their course structures work with immigrants, refugees, Native Americans, and other people on the margins of shared social space.

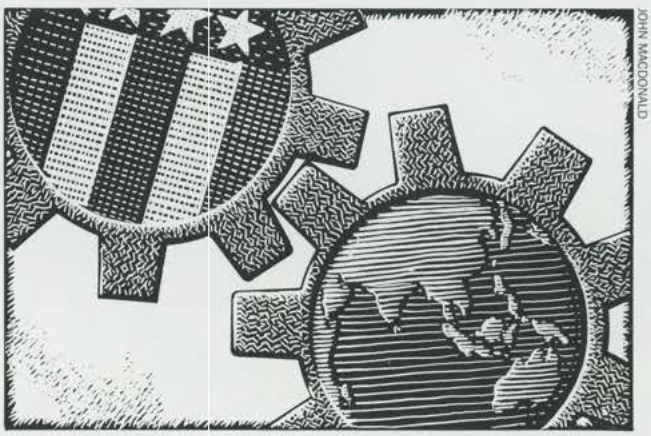
When these connections are made between the academic world and the world of people on the margins, students learn something that isn't learned through theory alone. They learn that the "poor" have more in common with their own humanity than they imagined. At the same time, they find in some of the toughest places glorious people already there caring, working, and transforming some of that reality. ▮

By Mar Peter-Raoul

Mar Peter-Raoul is an assistant professor of religious studies at Marist. She is first editor of Yearning to Breathe Free: Liberation Theologies in the U.S.

Competing in the Global Economy

How the U.S. stacks up against its international competition



JOHN MACDONALD

By Ann Davis

THE INTERNATIONAL context of advanced industrial countries has undergone a critical change since World War II, resulting in changes of similar magnitude in the U.S. economy.

The post war expansion, stretching from the mid-1940s through the late 1960s, was the most prosperous period for the United States. The U.S. enjoyed technological leadership and relatively steady and rapid expansion of growth and productivity. By the 1970s, however, several of the favorable features of the U.S. position began to change, due largely to the end of the dollar's convertibility to gold, oil price shocks, and the developing challenge from European and Japanese competitors.

After the 1970s stagflation, the 1980s boom was unsustainable, fueled as it was by financial speculation, debt, and government defense expenditures. The U.S. economy was characterized by increasing inequality between the rich and the poor and the decline of the average real wage. The U.S. share of manufactured exports from advanced countries slipped to 15 percent in 1988, behind Japan (17 percent) and Germany (19 percent). Although the dollar has declined in value by 50 percent since 1985 to new Postwar lows recently—thus driving the cost of imports up in the United States— the trade deficit has actually worsened since 1991 by $20 billion. In fact, the bilateral deficit with Japan degenerated by 20 percent between 1979 and 1988, by 26 percent relative to Germany, and by 15 percent relative to the Newly Industrializing Countries (NIC).

The global economy is already shifting rapidly in this decade. The Japanese economic powerhouse appears to be weakening, partly from stock market and real estate deflation, partly from political upheaval. There is less foreign direct investment from Japan as a result, reducing the fear of "the buying of America" as well as cutting the number of new jobs which accompany the construction of "transplant" manufacturing facilities by Japanese companies operating in the U.S. The NIC on the Pacific Rim and Latin America are increasingly competitive with the major industrial countries in technological capability combined with low wage workers.

The European Economic Community (EEC), recently seemingly assured of the formation of a single market with one currency, is experiencing strains associated with the re-unification of Germany. The fixed exchange rate system among major European currencies operating since 1979, referred to as the European Monetary System, has unexpectedly broken down under the strains of drastically different economic policies and structural changes in each country.

The General Agreement on Tariffs and Trade (GATT), a postwar group charged with expanding free trade among capitalist countries, has been attempting to complete a "round" of tariff reductions since 1986. The negotiations, which are concerned with removing agricultural subsidies, facilitating trade in services, and protecting intellectual property rights, are still proceeding slowly now under the Clinton administration. Regional trading blocs are proliferating partly as a result of the lack of progress of the generalized open free trade system represented by GATT. There are now 23 such arrangements—including the North American Free Trade Agreement (NAFTA) with the U.S. and Canada—involving 119 countries and representing 82 percent of world trade.

Foreign trade flows in currencies and assets have increased in volume, fed by technological improvements in communications, the closing gap in economic power among the major industrial countries, and financial innovation. With volumes of private sector exchange that swamp the influence of central banks, exchange rates are all the more volatile.

Technological competition has intensified among even the largest corporations in the world. Giants such as IBM have changed strategies in this new international context. At first serving as a leading innovator of domestic industrial policy within its industry, IBM helped garner support for the formation of Sematech—a U.S. consortium with government and private support—by lobbying other firms, officials, and legislators on Capital Hill. IBM also lent its strength by investing in other firms that supplied important components for its products.

Recently, however, the focus of IBM's collaborative efforts has changed. Rather than seeing the strength of the domestic industry as essential to its own success, IBM has now launched a strategy of alliances with the major global competitors. Among these alliances are such U.S. firms as Motorola and Apple, and European and Japanese competitors such as Siemens and Toshiba.

The collaborative research effort by IBM, Toshiba, and Siemens to develop the 256-megabit semiconductor chip, to be located at IBM's research lab at East Fishkill, New York, is an example of the new global economy at work. Three multinational firms are collaborating in a research project costing in excess of $1 billion. Due to IBM's research preeminence, the facility is being located in the U.S. The U.S., and the Hudson Valley as well, benefit from the employment of research scientists and new manufacturing techniques used in this experimental development.

The location of such globally strategic research in the Hudson Valley illustrates a key point of many economic commentators. Economists such as John Cohen and Stephen Zysman, Laura Tyson, and Robert Reich, among others, have argued that "manufacturing matters" to the future competitiveness of the U.S.

Services, although important to the economy, ultimately rely on a healthy manufacturing sector as its customer. To continue to attract manufacturing to the U.S. in an era of intensified international competition from advanced as well as low wage countries, education, technology, and infrastructure are essential. These are strengths of the Hudson Valley but must be protected and further developed to assure growth of the region. ▮

Ann Davis, assistant professor of economics, is director of the Marist College Bureau of Economic Research. Her regional and state economic forecasts are often quoted in newspapers such as the Poughkeepsie Journal *and* The New York Times.

Actor James Earl Jones delivers address

Graduates told to treasure Marist values

In a dramatic blending of Shakespearian oratory and meaningful advice born of experience, one of the world's most acclaimed actors, James Earl Jones, told the Class of 1993 to value the principles to which they had been exposed at Marist.

Approximately 7,000 graduates, relatives and friends heard Jones deliver the keynote address at Marist's 47th commencement.

The College conferred honorary degrees on Jones and on two other distinguished individuals, Gene E. Likens, discoverer of acid rain in North America, and Orin Lehman, New York State's Commissioner of Parks, Recreation and Historic Preservation.

Jones received an honorary degree of Doctor of Fine Arts, Likens received an honorary degree of Doctor of Science, and Lehman received an honorary degree of Doctor of Humane Letters.

Jones told the 898 graduates to be prepared to play several roles during their lifetimes. Borrowing from William Shakespeare's "As You Like It" to illustrate his point, Jones' distinguished voice, which has delighted audiences worldwide, trumpeted across Leonidoff Field. "All the world's a stage and all the men and women merely players. They have their exits and entrances. And one man in his time plays many parts."

Jones advised the graduates that although Marist has given them an excellent start in the pursuit of knowledge, they were responsible for determining their ultimate ambitions.

"Treasure the ideas, the thoughts, the values which have been demonstrated for you here at Marist College. Take these with you into the future," Jones said.

Exploring Shakespeare further, he drew from "Hamlet" to remind the graduates about the importance of being true to their own ideals and aspirations: "This above all: To thine own self be true, and it must follow, as the night the day, that thou canst not then be false to any man..."

Jones, who has received numerous awards for his stage, television and movie performances, started in the profession 40 years ago, after his graduation from the University of Michigan. It wasn't long before he began appearing in leading roles with the New York Shakespeare Festival in plays such as *King Lear*, *The Merchant of Venice* and *Hamlet*. In Howard Sackler's Pulitzer Prize-winning play, *The Great White Hope*, Jones attracted worldwide recognition and won a Tony Award in 1969 for his portrayal of Jack Johnson, the first black heavyweight champion. In 1971, he received an Oscar nomination for the film version of the play.

James Earl Jones

Gene E. Likens

Orin Lehman

Likens, who has faculty positions at Yale, Rutgers and Cornell universities, developed the Hubbard Brook Ecosystem Study. It was the first comprehensive attempt to conduct controlled acid rain experiments involving whole ecosystems over long periods of time.

Now in its 30th year, the study is recognized for bringing worldwide attention to the global nature of environmental problems. It also revealed functional information on the impact forest clearing, fertilizer runoff and air pollution have on the environment.

Lehman, commissioner of New York State Department of Parks, Recreation and Historic Preservation since 1975, has guided the growth of the state's parks system by 18,000 acres. He has promoted opportunities for disabled people and was chairman of the Governor's Committee on "Employ the Handicapped," and was on the President's Committee on the Employment of the Handicapped.

A Marist trustee from 1964 to 1972, Lehman was a recipient of the Marist College President's Award. ▮