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Groundwork
Engineering

Professor Curt Theis at work in Urbauer Hall. Although Urbauer has a new facade, and, indeed, almost fades into Lopata Hall as the northern wall of Lopata's gallery (see story page 14), the work inside goes on uninterrupted. One of Professor Theis's major research areas focuses on the new technology of microencapsulation.
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Paul E. Lacy, M.D./Ph.D., began diabetes research when he joined the faculty of the Washington University School of Medicine twenty-five years ago. Today he and his colleagues are relentlessly pursuing the promise of a new therapy to aid the millions afflicted with this debilitating disease.

Paul E. Lacy, M.D./Ph.D., wants to be an astronaut. It is not that he wants to relinquish his career as an eminent experimental pathologist. Far from it; exactly the marriage of these activities intrigues him. And he doesn’t see why other people do not see the tremendous advantage of sending a senior scientist—namely, a fifty-seven-year-old biologist—into space and bringing him back to work on and teach what he has observed. If that is naive, Paul Lacy pleads guilty. It wouldn’t be the first time.

His career, his research, and the department of pathology which he heads have contributed much, partially because he approaches matters with great enthusiasm and optimism. He says—less frequently than he believes because the statement tends to evoke sly, sympathetic smiles—that nothing is impossible if you really work at it.

Naive? Yes. Productive? Evidently, infinitely so, because Lacy and his colleagues have come to the point that only time seems to stand between them and a “cure” for diabetes. Further, what they have learned and demonstrated about how to overcome biological immunoreactions opens new vistas for all tissue transplant (heart, skin, kidney, in particular) in laboratory animals and eventually in humans.

On April 14, the nation’s most respected federation of experimental biologists bestowed on Paul E. Lacy, Mallinckrodt professor and chairman of the department of pathology at Washington University School of Medicine, its highest award. On that occasion Lacy told the thousand biological researchers present that although others often pay tribute to their colleagues, “I feel that I must acknowledge the contribution of my institution—the Washington University School of Medicine.” His colleagues present felt a warmhearted glow.

“I cannot tell you how much I was moved by that,” says Philip Needleman, Ph.D., professor and head of the department of pharmacology. “It was so characteristically Paul.”

The award, a $15,000 prize to Lacy and the school funded by the 3M Company, was presented
by the Federation of American Societies for Experimental Biology (FASEB) for contribution "to the welfare of mankind by conducting research in the broad area of the life sciences that has led to a significant increase in scientific knowledge." Lacy is the sixth recipient.

In selecting Lacy, FASEB—known to its associates by the more human and telling designation "The Federation"—recognized the momentous import of Lacy's research in diabetes mellitus which has been carried on in the twenty-five years that he has been associated with Washington University School of Medicine and its Medical Center.

"The citation read upon presentation must have been written by someone who knew Paul very well," commented Needleman. "It touched upon every important aspect of his work."

"It was," confirms Lacy. "It was written by Irwin H. Lepow of Sterling-Winthrop Research Institute, Rensselaer Polytechnic Institute, who is now president of the Federation." In summary of Lacy's career Lepow wrote that initially, Lacy's work focused on the structure and function of the islets of Langerhans (special cells in the pancreas which secrete the insulin vitally needed for carbohydrate metabolism). Lacy established the first ultrastructural criteria for identifying islets, made the first immunological demonstration of insulin in the beta cells of the islets, and was the first to use quantitative histochemical techniques to study enzyme activities in the beta cells.

In 1967, Lacy developed a technique for isolating pancreatic islets, a technique used throughout the world.

In the early 1970s, Lacy's interest shifted to the possible treatment of diabetes by transplanting healthy islets into diabetic animals. To date, he has successfully transplanted healthy islet cells from nondiabetic to diabetic animals, and, by doing so, has reversed the disorder in the diabetic animals. The procedure does not require immunosuppression and transcends the usual problem associated with transplantation—rejection.

Paul Lacy is a Midwestern farm boy. His hometown is the tiny eastern Ohio community of Trinway, which during his youth in the 1920s and 1930s boasted a population of 150 souls. His mother and father, whose Scotch, Irish, English, and French ancestors had emigrated to the United States in the early nineteenth century, raised their four sons, Paul being the youngest, on a 500-acre home place.

When Paul was twelve, a teacher asked each pupil what he or she wanted to be. To everyone's astonishment, Paul announced that he would go to college and be a scientist. Both were unheard of under the circumstances: the time was 1936 and the community had no professionals, imported or homegrown.

To this day, Lacy has no idea how he came by that role model, except by reading. Since his next eldest brother was ten years his senior, Paul had been much alone and had always read a lot. When Paul reached high school, he learned that to take biology, he needed to pass a state qualifying examination. He studied hard for that exam, so hard that he passed the qualifying exam and biology. Suspecting from Paul's test score that he had, in essence, taught himself the course, the biology teacher had Paul tackle the biology final exam, which he passed handily. The teacher then suggested that Paul become a doctor.

"That sounded sensible to me, so I agreed," he says, but in rural Ohio that meant taking agriculture as well as the small number of science courses offered. During that course of study, Lacy and three other young men teamed talents to enter an agriculture judging contest. They won the regional, then the state, and finally the national competition. The feat brought Lacy a full fellowship to study agriculture at Ohio State University.

For some time, Lacy had realized he was intrigued by space and by biological sciences, so although he knew that his parents would find his action difficult to understand, he asked their permission to turn down the offer. Wisely, without quite comprehending how their youngest believed he
would get where he wanted to go but respecting and trusting him, they agreed. So Lacy entered Ohio State University as a premedical student.

The outbreak of World War II accelerated his program. After three undergraduate years, he entered medical school. He completed both degrees cum laude. Toward the end of his undergraduate years, he met fellow biology student Emelyn Ellen Talbot; they were married during his first year of medicine.

“We worked together in the lab the first years of our marriage. Ellen was in tissue culture and as we worked, I saw that this was the bridge I had been looking for between laboratory science and medicine. I was delighted.”

That work in anatomy earned Lacy the master’s degree in science, conferred concurrently with his medical degree. Without his realizing it, those events had determined his career. But he was so immersed in his work that when the question of internship arose, he was taken by surprise. He knew only that he wanted to do research; that internship did not exist.

Propitiously, he was accepted without premeditation for a general internship at Ohio State’s White Cross Hospital in Columbus. There he was on call every other night, so in his off nights, he and his wife started a laboratory to continue organ perfusion studies they had begun earlier. This move confounded the hospital bureaucracy, but in time, the Lacys were given a laboratory in which to continue research.

In 1949, after that year, Lacy entered the Army Medical Service to fulfill a year’s obligation incurred by its support of his last two years of medicine. He was sent to a general practice at Yokohama General Hospital in Japan. There he was on call every other night, so in his off nights, he and his wife started a laboratory to continue organ perfusion studies they had begun earlier. This move confounded the hospital bureaucracy, but in time, the Lacys were given a laboratory in which to continue research.

mental pathology at Mayo Clinic. “Someone had suggested to me that what I wanted to be was a pathologist. That sounded pretty good, so I was rather naively looking for an interesting situation and that sounded like one. I applied, was accepted, and we moved to Rochester, Minnesota. Once there, I discovered that they probably had trained one experimental pathologist in the whole history of the institution.” By sheer determination, Paul Lacy doubled that number.

“It was the worst and the best experience of my life," he says. “I was fighting the system, searching for my own path, and after a while I found Alexander Albert, an expert in thyroid research who was doing just what I wanted.” After two years, Lacy began a Ph.D. under Albert.

At Mayo he also met a young woman who was using electron microscopy in her work, and he became interested in this new instrument of research. Sarah Luse told him that she was going to Washington University to work in neuropathology under Edward Dempsey, M.D., then head of the department of anatomy. “After listening to Sarah for awhile, I decided that I might fit in there very nicely, too, so I applied and Ed Dempsey brought me in to do electron microscopy.

“When I arrived, he said, ‘Now, what do you want to work on?’ I said I hadn’t the faintest notion, but I was bored with the thyroid. He said, ‘How about the islets of Langerhans?’ I admitted that I vaguely remembered the islets of Langerhans, but he assured me that they were interesting and needed work.

“That’s how it all began, and it has never stopped.”

Lacy’s monologue describing his work is straightforward and comprehensible. It moves, as his mind must, in orderly progression, one solution unfolding to reveal the next set of questions. It is a tale told by one with enough mastery of the intricacies to simplify.

He stops often—to ask, “Does that make sense?”—to explain, “This is important because...”; to punctuate with a researcher’s triumph, “And it
worked," or "Good, but you see then..." He ties up details unnecessary to understanding with "and that led to a long series of investigations which..." With a tape recorder running, he talks with his hands to illustrate, to clarify.

Modern medicine's battle to understand and overcome diabetes began to show substantial success more than a hundred years ago. Diabetes was identified as an insulin insufficiency tied somehow to the pancreas. In 1869 Paul Langerhans, a German pathologist, identified the islets which bear his name as the specific pancreatic cell clusters which produce and release the hormone insulin. They make up less than 2 percent of that organ and are dispersed throughout it.

In the ensuing years, two types of diabetes had been clinically identified and studied. Juvenile-onset diabetes—in America 1.5 million persons—are usually struck by the disease between infancy and forty years of age. For them, it was a progressively disabling and eventually a life-threatening illness. Another group of diabetics—today 8.5 million Americans—suffer a breakdown of islet function in old age. For these, diet alone can usually control the disease, though long-term disabilities are identical for both types. Genetic studies have established that a strong tendency for adult-onset diabetes is certainly inherited. The genetic evidence for juvenile-onset diabetes is less clear.

For juvenile-onset diabetes, a usable insulin source was refined and its use researched and codified as a therapy. Today most juvenile-onset diabetics use daily injections of this hormone to help their bodies burn sugar.

"Many people looked on insulin therapy as a 'cure,'" says Lacy, "but it wasn't. Your body constantly monitors the blood-sugar level, keeping it within narrow margins. Insulin therapy produces wide swings of this level, and we suspected that that variation continued the complications that eventually lead to blindness, kidney failure, heart attacks, strokes, and gangrene. But we weren't sure because we didn't know enough about the islets; we did not have them accessible for in vivo study."

In 1956, Lacy's electron microscope work began to identify different types of cells within the islets, each having a specific function. His laboratory established criteria for identification, thus setting the stage for the use of an immunological as an antibody to insulin to demonstrate that only the beta cell produces and releases insulin. That work opened questions of how the beta cell recognizes glucose (sugar) to trigger a release of insulin, which in turn begins to break down glucose for the body's use.

Lacy believed one way to approach that question was to measure the metabolism of glucose in the beta cells. To do so, he worked off and on for nearly a year with Oliver Lowry, M.D./Ph.D., then head of the department of pharmacology, to learn Lowry's technique for measuring enzymes. The relationship followed an interdisciplinary approach which is now standard. It has established the Washington University Medical Center as a major center for diabetes research in the United States. The cross-pollination of work in pharmacology, pathology, internal medicine, surgery, and now within the Diabetes Research and Training Center, which also pursues clinical research, today feeds a work that compounds almost exponentially.

The Lowry-Lacy collaboration also set a pattern for Lacy. Frequently, when he realizes that a solid working knowledge of another area of research is essential to his progress, he educates himself rather than rely on a collaborator. As a result, in 1961, when he accepted the department chairmanship, he was absent for a portion of the first year while he worked in England under Fred Sanger, M.D., to learn biochemical techniques for determining the amino acid sequence of insulin in humans and in animals.

Lacy's application of the Lowry techniques to beta cells provided useful information, but "it wasn't on target for answering the question of glucose recognition," he says. "So I pulled out of it, and Franz Marchinsky, who was then in phar-
macology, continued. In turn, we returned to electron microscopy to study insulin formation, storage, and release."

Lacy, his students and colleagues described how packets of insulin in the beta cells are released by a process called emiocytosis, based on the Greek word *emesis*, meaning to vomit. "We found that a glucose granule would come up to the cell surface, the membrane would fuse, open, and dump out the insulin packet. It established importantly that insulin had to be packaged before release."

His research then turned back to the islets to understand what was going on in them. Researchers knew that the islets were tiny balls scattered throughout the pancreas, making study difficult. They needed to come up with a way to isolate 2 percent of the pancreatic tissue (the islet cells) from the 98 percent that produce digestive enzymes.

On April 3, 1966, Lacy and colleague Mery Kostianovsky, M.D., presented a paper at FASEB’s fiftieth annual meeting demonstrating how to isolate "Intact Islets of Langerhans from the Mammalian (rat) Pancreas." This successful technique for digesting away the rest of the pancreas without harming the islets was a giant step for diabetes research worldwide. It enabled scientists to study the direct effects of agents on islets maintained in tissue culture or in test tubes. Since then, researchers have shown that islet cells can stay alive outside the body for several weeks continuing to secrete insulin in response to glucose.

"With that approach," Lacy explains, "we began studies on the mechanisms of insulin secretion. We found that little rods (microtubules) and a series of tiny arms or tentacles (microfilaments) attached to them moved the granules of insulin along the system up to the cell surface to be dumped out."

"We demonstrated this, but we don't yet know how the granules are attached to the microtubular-microfilament system or what activates the movement. We know that calcium is somehow involved as a trigger."

Lacy and his postdoctoral students then began to look for an agent to study how the beta cells recognize glucose. "We found a very, very old agent called alloxan," he explains, "which when injected alone will destroy the beta cells making the animal diabetic. But by adding alloxan and glucose at the same time, we protected the beta cells and they continued to react to glucose."

Together with Michael McDaniel, Ph.D., Lacy began an investigation using alloxan as a chemical probe for the possible existence of specific receptors on the beta cell membrane that recognize glucose. "As yet we have only indirect evidence that a receptor exists on the cell membrane, but we are particularly interested in this because if it exists, it is such a logical area for a defect to occur."

"There are two schools of thought on glucose reaction. One maintains that glucose comes in, is metabolized, and some mysterious substance is produced that causes insulin release. The other postulates that glucose reacts with a surface receptor to cause those events.

"Although we are looking for a receptor, I believe that both concepts are correct. There is a rapid first-phase insulin release (we believe due to the receptor) and a slower later-phase release (I think due to metabolism within the cell). Studies on those are going on here and elsewhere."

While these studies moved along, Lacy took a right turn. In the late 1960s, he and Walter Ballinger, M.D., former head of the department of surgery, began to ask if islets from a healthy animal could be transplanted into a diabetic one. They began their work at the simplest transplant level: within one strain of rats. "It is like transplanting between identical twins," he explains, "and we didn't have to worry about rejection."

They isolated normal islets and injected them into the portal vein of the diabetic rat. From that vein, the islets found a home in the liver and began to function. "We reasoned, correctly as it turned out, that the islets were too small to damage the liver, but big enough to stop there. In the normal body, insulin goes from the pancreas to the liver, so this way we moved it a step closer."
“It worked. The islets began to function and continued to function, so we had a nice simple model to go on to the question of whether this would reverse the damage that caused complications in the eye, the kidney, and so on.”

Cooperative studies between Lacy’s laboratory, David Sharp, M.D., in surgery, and the department of ophthalmology demonstrated that in rats the transplanted islets would reverse the leakage of protein from the capillaries of the eye. This early complication is the same in man. Other studies showed that early kidney changes could be reversed. “In these, we dealt with early complications, because our laboratory animals are not long-lived enough to demonstrate a long progression of the disease. But that was very hopeful.”

Lacy and Ballinger next tackled the question of transplanting between rats, but across the species barrier. Results were not hopeful. The recipient animals rejected islet tissue more rapidly than they did foreign skin or kidney transplants. “That told us that human transplants were impossible without immunosuppressants, and you just wouldn’t use those. So the transplantation question was put on the shelf.”

In 1975, Lacy and Joseph Davie, M.D., head of the department of microbiology and immunology, decided to see if the islet cells could be altered before transplant to reduce rejection. Lacy says the idea was simple. Scientific literature had suggested that the white blood cells carried along with the islets might be responsible for inducing rejection. Lacy and Davie looked at ways to alter or destroy the white blood cells, but not the islets.

Their work yielded some hope, but no definite success, until they began adapting a technique being used by an Australian working with thyroid transplant. Kevin Lafferty had allowed thyroid tissue to culture three weeks at high temperature and 95 percent oxygen, then successfully transplanted that tissue without rejection.

Lacy’s laboratory began with the obvious question, what happened to the islets using that technique? They did not survive the high oxygen, but Lafferty’s work still offered a glimmer of hope. In the two or three years of these studies, experimenters learned that lymphocytes (white blood cells) maintained at room temperature for two or three days were alive, but unable to recognize foreign lymphocytes.

“That was what we were after! But we had to find out what happened to islets at room temperature for three days. The answer was nothing. They survived up to four weeks at room temperature.

“So we isolated our healthy islets, maintained them at room temperature for a week, gave our rats (of a different species than the donor rats) an injection of an antibody directed against the white blood cells, and injected the foreign islets. One hundred days later none of our formerly diabetic rats had rejected the tissue.

“But we were dealing here with crossing a major histocompatic barrier, so we repeated the experiment and exactly the same thing occurred.”

Two years ago, Lacy published this study; it was hailed as a major breakthrough.

Now unrelentingly, he and his colleagues have continued to push across the rejection barrier. They have successfully transplanted from rat to mouse without using immunosuppressive agents and demonstrated a 70 percent survival of transplanted islets.

“We have to push this way to get to man,” Lacy explains, “because we cannot transplant islets widely from human to human. Our original technique for isolating islets by digesting the rest of the pancreas works beautifully in rats, but poorly on the human pancreas. It means that healthy islets for human transplant must come from another species.

“We will now try pig islets into diabetic mice, and rat islets into rabbits, and then go the other way with both. That would be far indeed, because a rabbit is not a rat and a pig is not a mouse. I’ve no idea as to whether that is going to work, but if it does it will raise the possibility of transplant to humans.”

As Lacy and other researchers begin this work,
other studies in their laboratories are substantiating and refining their theories. Denise Faustman, an M.D./Ph.D. candidate working with Donald Shreffler, Ph.D., head of the department of genetics, has recently demonstrated that islet cells do not express the I-region transplantation antigens normally found on white blood cells and needed to stimulate immunoreactions.

This discovery opened the question of whether an antibody designed specifically to destroy I-region antigens—thus leaving the islet cells, which have none of the antigens, intact—could refine the technique of immunosuppression. Her work, which is awaiting publication, demonstrated that islets incubated for an hour and a half with this specifically targeted antigen could be successfully transplanted across the species barrier.

Lacy says with some excitement, “That would eliminate the long incubation period. It adds another bit of evidence to substantiate our findings, but it opens many, many new possibilities. For instance, there is no way to maintain a heart, skin, or a kidney at room temperature for a week, but do we have here an antibody with which we can perfuse the heart to get rid of all the I-region bearing cells in a relatively short time? That would raise the possibility of using a modification of this procedure to transplant other tissue.”

Another postdoctoral student in Lacy’s lab, Christine Janney, has begun to explore alternative sites for islet implantation. She has successfully transplanted rat islets into mouse spleens, but the islet survival rate is not as good as transplantation into the portal vein.

“Transplantation into the portal vein in humans worries us. There is no way to recover the islets should something go wrong; so we are looking at other sites,” explains Lacy.

A new Australian finding of interest to Janney proves that mouse islets cannot survive a high-oxygen atmosphere in their natural state, but can if they are swirled together in a dish to form a mega-islet. Janney confirmed that this technique could be transferred to rat islets, then she maintained her mega-islets at high oxygen for a week, and successfully transplanted them beneath the capsule of the kidney of diabetic mice.

“That confirms that we are on the right track, but it also makes it possible for us to look at the kidney as a transplantation site. We are looking for a site that gives us safety and an optimum possibility of delivery of insulin to maintain normal blood-sugar levels.”

Paul Lacy never speaks of the progress of their work, without finally cautioning, “None of these techniques will deliver a new therapy for diabetes next week or next month, but they do hold promise down the line.

“I have trouble too with the word ‘cure,’” he says. “To me that means that we understand the disease, its cause and the defect which occurs as a result. We don’t. We are looking at another clinical measure of treatment. What we are on the track of is a method which would require a very simple surgical procedure. I could do it myself," he says with a mischievous little smile.

The same smile plays on his face and his eyes take on a tiny sparkle, when he talks of being an astronaut. He applied for that program some fifteen years ago when scientists were invited to join an astronaut training program. “I talked to Kenton King (dean of the School of Medicine) and told him I wanted to take a couple of years leave of absence. He thought I was nuts, but agreed in the end. Then I asked my good friend Dave Kipnis (head of the department of internal medicine) to give me a physical. You should have seen his look, but he did and wrote a letter for me. After final consideration, I got a nice telegram saying I was out. I suspect I was overage and over grade.

“In the end, when the program should have opened to scientists, it didn’t. Then recently I went to Huntsville to talk with space planners about an experiment with zero-gravity blood separation they want to try sometime on a flight. Frankly, they’re not ready yet, but with the space-shuttle success, they will be.”

Then he nods and chuckles, “I’ll get there yet.”
I have finally found a good use for the vague passive voice," she says a little wryly. "I am not retiring. I am being retired. I don't know by whom." But custom is coercive.

Her history is a tale of teaching, more than sixty years of it. From the day a teacher in a one-room school in O'Fallon, Illinois, let a second grader take a first grader to the stove corner to practice reading, Bernetta Joseph Jackson has been teaching—in the classroom and out of it, in planning sessions and committee meetings and professional organizations, face to face, over the phone, in her office, in her backyard. Her intent is to discover what's needed; her gratification comes in helping students learn. "I've enjoyed all my teaching," she says. "Serious students don't change much. They are not different in different parts of the country. They always appreciate improving their own store of knowledge or skills."

In more than forty years of formal teaching, twenty-six of them at Washington University, Jackson has educated throngs of students. She's taught literature, composition, public speaking, technical writing, and teaching itself. She has supervised practice teachers, directed workshops on using drama in the classroom, evaluated high school English programs.

There are generations of her students on the faculties of high schools in St. Louis, as well as in Chicago, New York, California, and the other places Washington University graduates go. English departments in public and private high schools on both sides of the river are rich with Jackson-trained teachers: their number at the minimum is 300, says Alan Tom, who coordinates the secondary-school program in the Graduate Institute of Education.

You find her students at work on this and other university campuses, too. Here they train teachers in the G.I.E., teach composition in the English department and the business school, work in admissions, financial aids, administration, alumni relations, public relations. They count Bernetta Jackson a mentor, then and now.
From the moment of that second-grade certitude, she knew she wanted to keep on going, so she did. She was valedictorian of her high school class and in three years and three summers finished undergraduate work at McKendree College in Lebanon, Illinois, with First Honors in English and Mathematics. That last summer, she first connected with Washington University, taking courses in modern poetry and drama.

Back in O'Fallon, after a year of teaching second grade, she moved to the high school. The year was 1935, not a big year for opportunities in small Midwestern towns. Her contract specified that if she married, she would forfeit her pay ($82.50 a month). Social justice in that economy was one paid worker in a household.

She coached debate, sponsored the yearbook, directed plays, planned assemblies. After a night course in feature writing at Washington University, she started the school's first newspaper. She taught with energy, imagination, and care for the students in the classroom and out of it. Years later, when she received an Alumni Citation from Washington University for her teaching, the O'Fallon Progress reported the event to a
community that remembers her.

In 1944, Bernetta married a master sergeant in the Air Force, Stonewall Jackson, and began trekking about the country, finding a teaching place wherever they were stationed—Columbus, Ohio; Great Falls, Montana; Shreveport, Louisiana; San Antonio, Texas. She carried her college transcript and one letter of recommendation. That was all she needed. "I'd walk in," she remembers. "and show my letter and my transcript. There was never any question. In Columbus, Ohio, I took those two things to the Office of Certification. The man reached down into his bottom desk drawer, pulled out a blank form, filled it in by hand, and handed it to me. 'What's good enough for Illinois is good enough for Ohio,' he said, and I had lifetime certification in Ohio."

For Bernetta and Jack, marriage was a steady sharing of interest in reading, baseball, music, humor, and intelligent talk. They both had the gift of seizing the uncommon in experience, and at the end of the day they brought that richness to each other. They had an agreement that both would not get out-of-sorts at the same time, and it worked. He was, she says, the least chauvinistic man she ever knew well, and the most fair-minded. As his final years of service approached, he requested Chanute Air Force Base, near Champaign-Urbana, so that Bernetta could attend graduate school at the University of Illinois.

There, she did what she has a habit of doing: she asked an uncommon, though perfectly sensible, question: instead of following the classic teaching-assistant pattern of half-time classes and half-time teaching for two years, could she take classes full time and write her thesis the first year and teach full time the second? That sensible question received a sensible answer, and in the summer of 1949 she finished the master's degree with all A's and a 125-page thesis on Charles Lamb.

From Illinois they went to Dallas for five years where Mrs. Jackson found her place at Southern Methodist University teaching literature and composition. There, as elsewhere, she is remembered as a dedicated, conscientious teacher, eager to help students, and effective because of her sympathy, intelligence, and good humor. "When she left SMU," writes a former colleague, "there was a hope, never quite relinquished by the chairman of the department, that circumstances would somehow allow us to get her back or induce her to stay."

The Jacksons came to St. Louis in 1955. Here they stayed and Bernetta still stays—in a house where plants green in sunny windows and bookcases are standard in every room, where there is yard enough for gardening and picnics, where there's space for people to stay for a night, a week, or a semester. With "Mrs. J." it is also a proper setting for the spring departmental party, described as a colossal shebang, for other parties for advisees and advanced composition classes. The last handout in her classes gives the directions from the University to her house.

The past few years, since her husband died, Bernetta has lived alone. But to be Bernetta is not to be alone. Many people who love her watch out for her. If she's having a party or a picnic, nieces and nephews come from Illinois to work in the yard and the house. Students and secretaries help in the kitchen. She's close to two brothers and their families who live in O'Fallon or nearby. A host of friends in the multitude of former students who live in St. Louis keep up their associations, take lunch or dinner with her, go to the theatre. Those in Chicago, Connecticut, or New York call and write, still solidly within the circle of her concern, and she in theirs.

Though she has taught literature steadily for more than twenty-five years, and loves that teaching, the weight of her contribution is felt in composition and the teaching of teachers. There she has no peer, no equal in professional accomplishment, influence, or prestige. Her students say again and again that she is without equal, a gifted teaching critic, an astute judge of competence, a wise counselor, and a generous friend.

For many years she was the only person in the department of English to give serious attention to advanced courses in composition. The current crisis in literacy has made her work more visible, and more respected by her colleagues, but serious students have always known where to go. Now with students more aware and pragmatic, there's more pressure than ever to get into her classes. Dan Shea, chairman of the department of English, says flatly, "She gets results. Students know they will get real substance, real teaching."

She balances the learning that can go on in the classroom, through lecture or discussion, with that which occurs in small-group conferences over papers. Four years ago that method, which she had long followed in her own classes, was
finally instituted departmentally.

The change came slowly. Over the years freshman composition, traditionally taught by graduate teaching assistants under the direction of a member of the English faculty, has been modified and class size reduced. In the fall of 1974, Jackson began offering TA’s a seminar on the teaching of composition. But the real advance was a firm commitment to workshop structure. Jackson also urged, and finally convinced both department and deans, that TA’s could combine their two sections for the class meetings, thus reducing that part of the teaching to use the time for conferences. Now she directs the Freshman Composition program herself, transmitting to each new generation of TA’s her particular blend of rigorous standards, unobtrusive directiveness, and real faith in individual capacity to learn.

Composition teachers often get burned out, caught up in the mechanics of writing, crushed under a burden of papers to be read, corrected, and graded. Before that inexorable tide of imperfect prose, they lose their freshness. Not Jackson. She still brings to each paper the same quality of attention—careful, thorough, respectful. She reads each paper at least twice, she tells students, first to see what they’ve said, then to criticize. That criticism is meticulous, clear, instructive.

“It’s her patience that sets her apart,” says Ken Noel, a chemical engineering student now finishing law school at the University of Chicago. “She doesn’t let anything get by her! No error in logic or approach, no looseness in expression, no rough transition. She explains your errors so that you see how you could have done better and feel certain you will next time. She makes certain you understand how to do it correctly. This allows you to examine your own writing in the light of thorough criticism. It takes a great deal of patience to convince you you’ve done something incorrectly and then allow you to correct it yourself. When she left a lot of blue marks on the paper, you always knew you’d done a lot wrong, but she never made you feel stupid, only ignorant, which is something else.”

“You never feel defensive,” explained John Dacey, a current student. “It’s very clear that the reason she is criticizing is to help you learn. From the first day of class, you realize that here’s a woman who’s genuinely concerned about you as a student. She’s very free with her time. When you go to see her, you don’t get the impression that you’re bothering at all, but that she’s glad to see you and eager to help. She teaches you how to express yourself both completely and concisely.

“It’s not a matter of pleasing her. She doesn’t give excessive praise; she’s known more for gentle criticism. When she draws a smiling face on your paper, you know you’ve done something good for her. When you see P.D.G., you know you’ve done something more or less wonderful.”

As Cathy Drury, who now teaches composition for the department of English sees it, it’s a matter of not being judgmental. “Bernetta expects mistakes. By making them, you learn to make other choices. It’s as though she is saying, ‘It’s perfectly all right to make a mistake; here’s what it is; now that you know, let’s get on.’ She can’t abide excuses or the laziness that accepts ignorance. And she won’t budge from what she knows is right. In that way she’s very tough. She’s generous and patient, but she can’t be manipulated. Her method is to ask questions that allow you to arrive on your own. She’ll keep asking till you do arrive.”

As a teacher of teachers, she has brought the most recent developments in curriculum and method before her classes. She knows all the strategies and seems to have an infinite supply of fresh handouts. Her office is a resource library, floor to ceiling with books and files of materials. Her class is, time after time, a masterful demonstration of the use of questions that lead to learning. Just there, in teaching curriculum and instruction in English and in supervising practice teaching, her reach is immense. Rosemary Kennedy, who chairs the English department at Parkway West High School, describes Jackson as the most respected English-teaching professional in the area. Even people who have not taken a Jackson course or workshop come to feel she’s almost a member of the department. “She’s a professional godmother to the whole Parkway system,” says Kennedy. “She’s the first person I call when there’s a sudden vacancy. She knows the schools so well and is such an acute judge of competence that she can unfailingly recommend the right person for each opening.”

Al Burr, former principal of Parkway West, comments, “When Mrs. Jackson says that she believes a candidate will be a good teacher, we go after that person as a college football coach recruits an all-state quarterback. Her ability to predict success is remarkable.”

Jackson’s book, English Composition: Funda-
mental Principles of Effective Writing, coauthored with SMU associate Charles Vivian, established her as a scholar. Since 1961, when it was first published, it has never been out-of-print. In a field prone to sudden changes in pedagogical fashion, that durability is sure evidence of value. Its success brought her a commission to develop a study guide in composition for use in university-without-walls programs. Reading assignments and writing exercises are coordinated with seventeen lectures, all written by Jackson. Typically, she shared the opportunity with colleagues: Herbert Metz, drama, and Leon Gottfried, English, read the lectures for the tapes, and Jarvis Thurston's anthology, Reading Modern Short Stories, was the source book for reading.

One stumbles on Jackson's activities everywhere, back in time, across the University, and within the English-teaching community. That landscape is studded with Jackson programs. She designed and directed two summer institutes with Performing Arts faculty on teaching dramatic literature and conducted a writers' workshop for teachers. In 1975, she served as state coordinator for a writing program sponsored by the National Council of Teachers of English. She was active on a citizens' committee that planned the new Richmond Heights Memorial Library and is now on its board of trustees. She has served for years on the executive board of the local chapter of NCTE. A high school principal reports that her work on North Central Evaluation Committees has had an important influence on the quality of secondary English teaching. "In her quiet way," wrote Al Burr, "she became the E.F. Hullon of the committee. When she spoke, the others listened."

She tells her classes that, given a little time, she can write a "pretty mean letter of recommendation," and her offer to do that is open to all. Her recommendations are solid gold. Though her students report her fair and gentle, they also are quick to note her rigor in judging competence. She does not praise easily. Her letters are as clear and precise as her English sentences: they do not take people where they should not go.

Humanities Day is a classic example of Jackson at work—imaginative, realistic, indefatigable, effective. The admissions office wanted to bring St. Louis area high school students to campus for a taste of the University, so they went to Jackson. Using her contacts on campus and her network among high school faculties, she put together a program that brought 1200 students in April 1975 and 1650 in October 1976, the greatest number in the history of the University. "Without her ability to organize and follow through, to pursue and persist, her connections in high schools on both sides of the Mississippi, and her creative behind-the-scenes guidance—these events would not have enjoyed the extraordinary success they did," says Ted McDonald, associate director of admissions.

A participating teacher wrote Jackson, "Your touch was evident in a well-planned, worthwhile experience."

Another honor came this May when University College gave Jackson its first faculty award "for outstanding teaching and dedicated service." She has regularly taught an introduction to literature course for adults in that division of the University. Jackson may never have stood in the front line of a demonstration for women's rights or raised her voice stridently, but, in her years at Washington University, she has done a great deal for women, as well as for men, both formally and informally. She has been a mainstay of the all-University affirmative action committee since it was established in 1973, as well as chairperson of the monitoring committees of the Faculty of Arts and Sciences and the University's administrative units. According to Gloria White, affirmative action officer of the University, Jackson has been a balancing force, eminently fair with everyone and toward every issue. "She listens well and hears all sides, but when it comes to making a decision, she acts independently based on her evaluation of the issues, and she holds to her position, never yielding on ad hominem or expedient grounds alone. Beyond that, Mrs. Jackson has educated others on the meaning of fairness, equality, and cooperation. For many of us, she is a role model."

For another year, after becoming professor emeritus, but before actual retirement, Jackson will be a full-time faculty member in the department of English, teaching, directing, counseling. Chairman Dan Shea, considering her loss, remarked, "Her field is the higher literacy, a love for the right word in the right place, the nail driven cleanly home."

Bernetta Jackson lives her own definition of a good teacher. She finds her students' strengths and builds on them. Whatever that process requires, she willingly gives. The sign on her office door says, "By appointment or by chance." For twenty-six years, Washington University students have found that chance worth taking.
LOPATA HALL

Stanley and Lucy Lopata (right) with Dean James M. McKelvey at the June 5 dedication. The Lopatas' generosity was a major component in making the building possible.

The east, ground-level entry to Lopata Hall gallery. The walkway east leads to a small, almost newly found quadrangle between Lopata and the ground level of Compton Hall (physics). The new face of Urbauer is at right.
Lopata Hall is a bridge, an access, a building that ties together a school, and yet, its own entity. Its conception is the stuff of an architect's nightmare; its reality, an architect's joy. It works! Only time will tell how well.

"We were faced with the question of how to put a new building into an established environment so that that building not only was compatible with the rest of campus and added to it, but also tied three of the four existing engineering buildings together," says Constantine E. Michaelides, dean of the School of Architecture and designer of Lopata Hall in association with the firm of Smith and Entzeroth, Architects and Planners.

Lopata connects on the south with Sever Hall (1948), on the west with Cupples II Hall (1904), and on the north is nestled against Urbauer Hall (1957). "One of the major problems was that each of those buildings almost rejects the others. There had been no attempt to reconcile them; in fact, one almost feels that they turn their backs on each other. Not a single floor in any one has a relationship with any other.

"In addition, we wanted Lopata Hall to fit the original campus plan of long narrow buildings on a strong east-west axis combined with other long narrow buildings placed at 90-degree angles to form green spaces between. We found on this northeast corner of the Hilltop, an informal science complex that Lopata Hall had to fit into as well, so that it had some relationship with Crow and Compton Halls (physics) to the east."

Lopata Hall straddles this informal east-west axis and the dramatic three-story stairway at the west end of its gallery is a peg which ties the axis together vertically, as well.

In addition to the structure's function as an interface among the engineering buildings, it houses engineering's department of technology and human affairs and its library, six classrooms (including a large lecture/seminar room), a student lounge, and offices for the assistant dean and registrar and engineering placement. Tucked away on its fourth floor is a computing-facilities space that connects to the University's main computing facilities on the second floor of Sever.
"We were blessed," says architect Michaelides, "with a wonderful group of stonemasons and fine wood craftsmen."

"One of the special qualities of Missouri red granite," Michaelides notes, "is that it does not show wear, so this building can look just like its neighbors and we do not have the combination of a new jacket and a rumpled shirt."
"In part," says Michaelides, "people's concern today about their environment has made this building a joy to be a part of. Through its gallery Lopata Hall strives to be a good citizen, to add something to the campus. This is a 1980 interpretation of the campus's quadrangles."

Lopata Hall is the first campus building to be fully accessible by wheelchair. "That factor and its multiple connections to other buildings made Lopata a more expensive project than might normally be expected," says Michaelides. Cost for the 37,000-square-foot structure was approximately $4 million.
ON CALL
By Eric Staros, M.D.

Eric Staros took his undergraduate education at the University of Pennsylvania and this month began internship at Cornell University medical center. In between, he successfully labored through the academic maze of the Washington University School of Medicine. He writes here about a part of that experience.

My third year of medical school has been exhausting, frustrating, and enlightening. Now, in the last six weeks of this year of rotation through the medical services, I'm assigned to a general internal medicine clerkship at St. Louis City Hospital. The experience is special, for I am one of the last group of eight students who will be trained in internal medicine at City. After more than thirty years, the University has dissolved this association.

My first day is also my first call-day—a day when I work thirty-six hours with no official breaks. I arrive early to find the parking lot across the street filled with potholes and broken glass. I had been told in a letter from the chief resident that I could park in the “fenced-in” lot across from the hospital. The fence I see is a single wire supported by three-foot metal posts. Most of the posts have been knocked horizontal. Cars within are parked at obtuse angles to each other, leaving at least a dozen without an exit to the street. I park so as to avoid the chaos and head for the guarded front door.

The building inspires both awe and disappointment. The entrance is framed by Greek columns ascending to the third floor, where the administration offices are housed. Protruding above the columns are window air conditioners. As I enter, I’m struck by the thirteen-foot ceilings which give the corridors and wards a feeling of spaciousness. The tiled floors seem sensible and clean compared to the carpeted hallways of the Washington University Medical Center, but in combination with lofty ceilings and painted stone walls, they produce an acoustic environment like a mine shaft. While architectural art and the practice of medicine have changed in the past half century, the physical plant of City Hospital has not. Unlike most private hospitals, it retains the general medicine wards, enormous rooms (approximately 100 feet long and thirty wide) where as many as thirty-five patients lie in metal-framed beds. Usually there is enough room so that the beds may be placed against the walls, but during times of crowding, it’s common to see beds filling the center of the room as well. At the end of the ward is a community bathroom; in the corners stand giant fans which provide the only relief from the heat of the St. Louis summer. There are few waiting rooms or lounges for the patients’ families.

At 8:15 a.m. the other students and I meet with John Vavra, M.D., the chief of the medical service, who outlines some of our responsibilities.

“Patients, not textbooks, teach medicine,” Vavra states emphatically. “‘Know your patients’ is the first and most important rule here at City Hospital. You can always read a textbook, but medicine is taught by the patients if you make the effort to know as much as possible about them.” A lecture schedule is circulated. We are also given a schedule for professor’s rounds, a didactic exercise in which a student presents a case to a faculty member. Vavra launches into a discussion of the usefulness of a complete problem list in writing up a patient.

“Many of you haven’t been using problem lists in working up your patients at Barnes, but here it is essential because so many patients have multiple medical and social problems, some related to others and some independent.” Vavra puts a typical list on the chalkboard:
Problems: 1) adult onset diabetes mellitus
2) cirrhosis
3) intravenous drug abuse
4) alcoholism
5) amputation of the right leg

Before we depart to find the medical residents to whom we had been assigned, Vavra gives some final advice: ‘Don’t forget tuberculosis. TB is a disease that is now most prevalent in the poor, and it’s a disease that can be present in a hundred different ways. Just remember to consider TB in all your differentials.”

I meet with my resident, Dominick Meldi. He is a fair-skinned, blond Washington University graduate who is reported to have been near the top of his graduating class. Dom has delayed starting morning rounds so I can join him and the intern. We walk to the far end of the men’s ward, where Dom greets his first patient with a casual smile. He picks up the clipboard hung on the metal bed frame and flips through the pages, while he tells me the essentials of the patient’s history, physical exam, and laboratory data.

“We’ll have you get a chest X-ray today, Mr. Thomas.” Dom looks up and gives Thomas a big smile. As we turn to the next patient, Dom informs me that there is no reliable transport, so I’ll have to find a wheelchair to take Thomas down to X-ray. We continue morning rounds through the men’s ward. With each patient the process is the same: Dom checks the vital signs on the clipboard and at the same time he tells me about the patient’s case. We chat a moment with the patient, and if needed, Dom performs some small part of the physical exam, perhaps listening to the heart or lungs. Then Dom makes a decision concerning the patient’s care, and I make a mental note if it involves me.

The women’s ward is an exact copy of the men’s. It is perpendicular to the men’s ward, with the nursing station at the junction of the two enormous rooms. We take our tour into the women’s ward.

“Doctor Meldi! It’s the white shadow.”

The patient in the first bed on the left is a black woman who appears to be about sixty years old. She props herself up in bed and repeats “the white shadow” twice more. We all have a good laugh. I look over to Dominick, who brushes a little as he glances down at the clipboard. But his huge grin is proof that he enjoys his new nickname more than he thinks of it as an embarrassment.

“Rick, would you draw a CBC today on her?” Dom tells the patient, “Mrs. Johnson, if this blood test comes back all right, you can go home tomorrow.”

We continue as before. The last patient seen is at the far end of the ward, and we walk back toward the nursing station.

“Hey, doctor…doctor!”

Dom and I stand and wait as the intern approaches and then talks briefly to the patient who has called out.

“It’s always good to start at the end of the ward and work back to the nursing station,” Dom says. “That way you don’t get slowed down by a lot of ‘hey-docs’ on the way out.”

The chores of the day—wheeling Thomas to X-ray, drawing blood, running electrocardiograms, and charting laboratory data—keep me moving at a fast pace through the morning and early afternoon. While I’m not overjoyed by the menial tasks, I do find satisfaction in dealing closely with the patients. This is lacking at the Medical Center, where little patient contact and responsibility is expected of a third-year student. In contrast, City Hospital offers a student an opportunity to care for and manage patients. While the hospital’s inadequate nursing care is an indictment of it from the standpoint of the patient, medical students find it a dubious blessing.

At 8:45 p.m. I’m sitting at the nursing station aimlessly flipping pages in a chart when a nurse answers the telephone. She informs me that Dr. Meldi wants me in the emergency room immediately. I pull my black bag off the table and use the stairway. The hospital was constructed in sections over a period of many years, making navigation from one area to another a test of cleverness and perseverance. I eventually reach my destination to find Dominick attending a black woman. The emergency room data sheet is on the patient’s stretcher. Guinevere Harding is a thirty-two-year-old female who presented to the emergency room after vomiting blood clots and bright red blood following an evening of drinking. There is a note which lists the blood tests already sent to the laboratory. A tube of blood has also been sent to the blood bank for a type and cross.

Dominick lifts his head, removes the stethoscope from his ears, and reaches for an ophthalmoscope. “Rick, this is Ms. Harding.” Dom starts. “I want you to work her up, so why don’t you step outside and talk to her friend.”

I leave the examining room and turn the corner into the waiting room where I find a dishevelled, underweight man. As I approach, he stands slowly, balancing himself against the wall with his left hand while his right holds a cigarette. “Hello, I’m Dr. Staros. I’m interested in asking a few questions about Ms. Harding.” The verbal response to my questions comes in mumbles and light groans. I ask only a few before deciding that this conversation isn’t producing an adequate history of Harding’s present illness. I return to the examining room. Dominick has finished the physical and is tearing a slip of paper from a mechanical device which prints out the lab data that is sent from the other end of the hospital.

“She’s got a hematocrit of 28.5,” Dom notes, “so the anemia is not critical, but she should start getting blood tonight. Look Rick, stop what you’re doing there and take her for a chest X-ray, then to the floor.”

I put my stethoscope with the rest of the doctor gadgetry in my bag, find a chart the aide has

*All patient names have been changed.*
senselessly. The only sounds I hear come from its on a distant muffled quality created by the enormous room. In the far corner, a solitary fan malfunctioning wheels. An occasional cough takes my progress through the darkened ward to wander my patient. Shining from behind me, the light from the electrocardiogram machine, The blood is ready. The workup is dated July 17, 1976. and admission. The gunshot wound captures my interest, so I flip through the pages looking for that admission. The workup is dated July 17, 1976, and that admission history starts: "Mrs. Harding was playing Russian roulette with a pistol earlier this evening and shot herself." My search for more information reveals an admission to the surgery service two weeks ago. On this occasion, the patient stated that she was drunk and was hit by a truck. Refusing an abdominal exploration, she left the hospital against medical advice eight days ago.

Under the glare from the stark lighting, I start to ask questions and perform a physical. Harding is drowsy, but able to make short replies. In her current state she is a very poor historian—unable to respond adequately to the more difficult questions. So I concentrate on the physical examination.

When the X-ray is done, I wheel my patient to the elevator which takes us to the internal medicine wards. I halt the stretcher and let the nurses take over. This pause gives me time to call the blood bank and an opportunity to locate an electrocardiogram machine. The blood is ready. The trek to the blood bank is long, but I make efficient use of my time by borrowing an EKG machine on the way back.

Now it's late at night, and the women's ward radiates an uneasy quiet. Without turning on the overhead lights, I enter with the hope of finding my patient. Shining from behind me, the light from the nursing station casts my shadow across the enormous room. In the far corner, a solitary fan slowly oscillates. The lame EKG machine causes my progress through the darkened ward to wander senselessly. The only sounds I hear come from its malfunctioning wheels. An occasional cough takes on a distant muffled quality created by the reverberative acoustics of the room. Harding is in the middle of the ward, and I spot her without much difficulty. She is awake but drowsy.

Despite her protest, I draw blood for the lab, take an electrocardiogram tracing and recruit a nurse to help hang a unit of packed red blood cells. This task requires two persons to read the coded numbers from the bag of blood. I had accomplished my previous activities in the ward without turning on the overhead lights. As the nurse enters, she casually flips a switch which engages a seventy-foot row of fluorescent lights. A woman in a nearby bed clutches her top sheet and pulls it over her eyes. Patients throughout the enormous room roll over in bed.

Afer midnight the wards are quiet, my chores are few, and my only responsibility is to write a complete history and physical. This includes the laboratory data, EKG results, an evaluation of the chest X-ray, an overall impression, a differential diagnosis, and a problem list. My problem list reads: 1) gastrointestinal bleeding, 2) alcoholism, 3) cirrhosis, 4) previous abdominal trauma, 5) previous gunshot wound to right forehead. Harding's medical problems are multiple, and it is difficult to implicate any one as the cause for the others. Yet there is good reason to assume that her acute gastrointestinal bleeding is related either directly or indirectly to alcoholic abuse.

Proximal gastrointestinal bleeding in a young woman is likely to be caused by four pathological entities: ulcers, gastritis, a Mallory-Weiss tear, or varices. Ulcers are erosions of the gastric mucosa, sometimes associated with a high acidity in the stomach. Gastritis is simply an inflammation of the stomach, many times caused by alcohol or aspirin. A Mallory-Weiss tear is a small rip in the mucosa most commonly occurring at the gastroesophageal junction.

Gastric or esophageal varices are slightly more complicated. The formation of varices, an engorgement of veins most commonly found at the gastroesophageal junction, is caused by the body's need for collateral circulation as a response to cirrhosis. Blood pumped from the heart to the intestines returns through a network of small sinuses in the liver. When the liver is cirrhotic, the resistance to blood flowing back to the heart increases dramatically. The blood then finds alternate pathways to bypass the liver. One of these runs from the intestines to the cardiac vein, then to a venous plexus which encompasses the gastroesophageal junction and up the esophagus, entering the superior vena cava and finally the heart. The bleeding can occur when the enlarged veins at the gastroesophageal junction open and spill blood into the stomach.

I get two and a half hour of sleep between 4:30 and 7:00 a.m. At 7:10 I meet Dominick and the intern for a quick breakfast in the hospital cafeteria. On the way upstairs, Dominick informs me that a specialist is coming from the Medical
When we enter the women’s ward we find the specialist already prepared. His equipment is a flexible fiberoptic tube approximately half an inch in diameter. On the tip is a light and on the doctor’s end is an eyepiece and a special port for taking photographs. The patient has been slightly anesthetized. The specialist approaches this often-performed procedure with precision. Within moments, he finds the gastrointestinal junction. He manipulates a crank near the eyepiece to flex the scope so he can scan the anatomy in all directions. When he has a diagnosis, I’m offered a look. The tip of the scope is situated at the gastrointestinal junction, and I can see large red outpouchings which impinge on the esophagus. These are varices. I turn the crank to survey the extent of the disorder. The varices have completely encircled the lumen of the esophagus, diminishing the opening to the stomach to about half its normal size. There are a few blood clots, but no sign of active bleeding. I slowly withdraw the endoscope, searching for the limit of these engorged veins. After pulling back only two inches, I can see that the involvement of the varices is limited to the distal four centimeters of the esophagus. The remainder of the esophagus appears normal.

When we have finished, I step out to the nursing station and encounter Jim Kelly, the chief resident in general surgery. I had worked under Kelly when I did three weeks of general surgery at the Veterans Administration Hospital.

“Hey Rick,” Kelly starts. “How’s it going?”

Kelly, who is a few years older than most of the other surgical residents, has a quick, efficient manner, a sharp wit, and an ability to focus on the important aspects of complex problems. It is good to see him again, and I’m pleased that he has remembered my name.

“So, now you’re a medicine doc. What do you think?” Kelly asks.

“Well, it’s a little early to tell,” I say, “but I got something that will interest you. Do you remember Guinverere Harding? She was on your service a week ago?”

“Sure. Did you get her as your patient last night?” Kelly asks.

“She threw up blood,” I answer. “We’ve just scoped her and she’s got varices.” As I finish, Dominick joins the conversation.

“Hey, I hear that you have my former patient Ms. Harding,” Kelly says. “If you want to transfer her over, we can do a portal-caval and decompress her veins.”

For reasons unknown to me, Dominick seems reluctant. What Kelly is proposing is a plastic tube with a one-way valve which would reroute the blood around the liver.

“Well,” Dom says, “let me think it over. There are other things to consider. I’ll let you know.”

“OK,” Kelly replies. “You know that this woman is only thirty-two, she’s got the good protoplasm, and I think we can help her. I mean, otherwise she’s going to die from rebleeding.”

I’m confused. I recall in surgery we had implanted similar shunts in patients with liver disease and ascites to bypass the liver. Why couldn’t we do something like that and relieve the swollen varices?

“When you shunt these patients, they become encephalopathic,” Dom explains later. “The liver processes the nitrogen-containing substances absorbed from the intestines. Under normal circumstances the liver receives all the venous drainage from the gut, so the liver gets first crack at the absorbed nitrogen. But our patient already has a sick liver. If we shunt her, toxic nitrogen compounds will be formed and these will destroy the function of her brain. This isn’t a theory; it’s all been studied at the Boston City Hospital. A patient with alcoholic cirrhosis has a sixty-five percent chance of dying in the next year from rebleeding. If you operate, the patient still has a markedly increased chance of dying from becoming encephalopathic. You have to weigh the alternatives.”

I learned something. There may not be much that we can offer Harding other than blood transfusion and attempts to stop any acute bleeding that occurs in the hospital. The damage to her liver is irreversible.

Harding’s case illustrates something which is humbling to the physician. Medicine is almost completely unable to deal with medical-social problems such as alcoholism and drug abuse. Her continued abuse of alcohol is a choice she makes—consciously, but irresponsibly.

Perhaps, the difficulty arises from her disbelief that serious illness relating to alcohol will affect her personally. For every case-a-day beer drinker who develops cirrhosis, there are at least five who will never experience liver disease. Most people simply assume that they will be among the lucky majority, rather than one of the unfortunate few.

It is now 8:15 a.m. and the area around the nursing station is a flurry of activity. The medical residents and students are busy drawing blood before starting morning rounds. As I move behind the nursing desk, I see Vavra holding two laboratory requisition slips.

“Well, did you work up a patient last night?” Vavra asks.

“Yes,” I reply, and I give him some of the details.

“Well, that sounds interesting,” Vavra says. “We’ll have you present the case at professor’s rounds on Thursday. There’s plenty of pathology to think about in this one—I hope you wrote a complete problem list.”

“Yes, I did, and I think there’s probably a lot to learn by considering the problems, medical, social, and all together.”

He smiles, “There’s always something to learn, especially when you let your patients guide your study.”
Sunday Supplement
The story is simple. Every Sunday afternoon during the spring semester six or so Washington University students would pile into Ed Silverman's car and drive to Friedens United Church of Christ in the Hyde Park area of St. Louis (a poor, integrated, painfully decaying neighborhood struggling for rebirth) to run a crafts and recreation program. Some Sundays they would have twenty children; some, they would have sixty. Usually David Mehl, who shares the urban ministry with his wife, Martha, and Sunday school superintendent Marie Smith would be present to help as they could—authorizing the use of sports equipment, providing the name of a shy newcomer, opening up and locking up later.

Ed, a biology major from Altoona, Pa., and Katie Hocker, a freshman in fine arts from Lawrence, Kans., began the program with the support of the Campus Y, which paid the church a small fee to cover utilities. But Ed and Katie bought art supplies from their own pockets because, as Ed said, "We think these kids need some role models, as well as something to do on Sunday afternoon. And because we ourselves need some community involvement."

Ed had worked in the area the previous summer supervising a youth-employment housing rehabilitation crew. He had been recruited by John Dargan, a graduate student in engineering's Technology and Human Affairs who lives nearby. Dargan continued to be involved as time permitted, but the regulars were Ed, Katie, Bob Lazere, a freshman from Sioux City, Iowa; Teri Takehiro, a sophomore from Hilo, Hawaii; Mike McGlew, a freshman from Enfield, Conn.; Tom McGarey, a freshman from New Canaan, Conn.; and Duncan Badertscher, a sophomore from Cleveland Heights, Ohio. "We hated to leave the kids over the summer," said Ed, "but we'll be back there in the fall."

The northside program is one of a half-dozen such community-service activities which last year involved more than a hundred students. Traditionally at Washington University these programs are coordinated and supported by the Campus Y.
Giant monsters, colossi, and grotesque beasts are the bizarre fantasies of nightmares and the exotic sculpture of Bomarzo, a weird and wondrous garden of the High Renaissance. Rooted in ancient lore, this seeming anomaly of its age intrigued Washington University scholars Peggy Darnall of Architecture and Mark Weil of Art and Archaeology who determined to fathom its meaning.

In the middle of the Italian Renaissance, an eccentric scion from the now extinct Mugnano branch of the Italian House of Orsini set about to create a garden "which resembles itself and nothing else."

Having inscribed his intent on the soft, gray volcanic rock which he had sculpted into a menagerie of monsters, their begetter, Vicino Orsini, boasted (on other stone outcroppings) that his creation at Bomarzo surpassed the marvels of the ancient world. Even in his day, few took the latter claim seriously, but it remained for two members of the Washington University faculty to prove through ingenious scholarship that the fantastic gardens at Bomarzo, in the Lazio region some seventy-five miles north of Rome, "unusual as they are, can no longer be said to be an anomaly of the sixteenth century."

These researchers, Professor Margaretta Jean Darnall of the School of Architecture, an authority on the history of gardens, and Professor Mark Steinberg Weil, an art historian in the College of Arts and Sciences' department of art and archaeology, are preparing to publish their findings. If they opt to write a popular account, their narrative could become a best-seller. The story of Vicino and his wonderland, fabricated between 1552 and 1577 in what he affectionately called his sacro bosco (sacred wood), is as enthralling and mind-boggling as an Agatha Christie mystery.

In the mid-1550s in Italy, landscape architecture was emerging as a nascent art. It flourished particularly among the princes of the Church, who delighted in building magnificent estates adorned with dramatic fountains and carefully plotted trees and shrubs. Just eight miles from Bomarzo, one of Vicino's neighbors, Cardinal Gambara, ordered the popular designer, Vignola, to build for him the Villa Lante at Bagnaia. Its gardens moved Montaigne to comment that "for the use of water certainly this takes the prize by a long way," and inspired a dazzled Sacheverell Sitwell to write "were I to choose the most lovely place of the physical beauty of nature in all Italy or in all the world that I have seen with my own eyes, I would name the gardens of the Villa Lante."

Not far away, Cardinal Ippolito d'Este of Ferrara directed Pirro Ligorio to create heaven on earth for him at the Villa d'Este at Tivoli, some twenty miles from Rome. Georgina Masson, in Italian Gardens, describes it as "the quintessence of the Italian garden of the High Renaissance." In the early seventeenth century, Cardinal Alessandro d'Este revealed in its lifestyle which his contemporary, Fulvio Testa, described paradoxically "as a blend of gracious magnificence and frugality." Two centuries later, Franz Liszt lived and worked there, and according to Masson, was inspired to reflect the rippling sound of its fountains "in the sparkling cadences of the music that he composed there."

Like Bomarzo, the garden at Tivoli was crowded with sculpture, but instead of being carved out of living rock as Vicino's was, the Tivoli statuary, including gargoyles spouting water and a mechanical owl fountain, were plundered from Hadrian's villa, built between 118 and 138 A.D. Interestingly, it was Hadrian's villa, according to Weil and Darnall, which served as Vicino's model. In contrast, they explain that the Villa d'Este and the Villa Lante were "inspired by terraced complexes such as the imperial gardens on the Palatine Hill in Rome or the temple complex of Palestrina."

This bond with antiquity is of utmost significance. It is a link in the chain which Darnall and Weil insist connects Bomarzo with the other elaborate gardens of sixteenth-century Italy. At first glance, however, Vicino's bizarre Park of the Monsters as its present-day owner, Signor Giovanni Bettini, calls it, seems alien to anything else created then or since. Another relationship between the elegant, symmetrical terraces of the Villas Lante and d'Este and the sprawling ambiance of Bomarzo is that each has a central thematic itinerary. This observation, though not unique to Weil and Darnall, is fundamental to their scholarship.

Such a dominant refrain is comparable to that of the frescoes decorating palace interiors of this period. Weil and Darnall note that these thematic programs "were usually based on ancient mythology and served to elevate the owner to the stature of the gods. The theme of the Bomarzo gardens was not, however, rooted "in the heroic deeds of ancient deities, but rather, in the trials in love and war of a modern hero, the mad Orlando, depicted in Ludovico Ariosto's
popular sixteenth-century epic, *Orlando Furioso*.

Other researchers have commented on this relationship, but Weil stresses that he and Darnall are the first to insist that it is the key to a comprehensive and coherent understanding of Bomarzo. They assert that Vicino's landscape—littered with stone relics which may look as out of place at his Renaissance villa as dinosaurs would cavorting among the lily pads of Giverny—is an interpretation of Ariosto's literary images.

In the division of labors between collaborators, Weil has grappled with the nuances of the sculptural iconography of Bomarzo. In deciphering these allusions, he has had to master an assortment of other authors including the obscure and the abstruse. Meanwhile, Darnall has been preoccupied with an analysis of the garden itself. Inherent in her endeavors has been a determined effort to compare Bomarzo with its garden contemporaries to place it in proper perspective. With the assistance of a young anthropologist, Richard M. Leventhal from the Peabody Museum at Harvard University, Darnall has also mapped the Bomarzo garden.

Their physical labor was done last summer when Darnall, Leventhal, and the Weils (Mark and his wife, Phoebe, a research associate at Washington University's Center for Archaeometry), converged on Bomarzo. Phoebe Weil recalls their early summer visit in detail.

It was an unusually lush June and the fields from Viterbo to Bomarzo were alive with tawny-colored grass and great clumps of yellow and purple wildflowers punctuated with neon-bright polka dots of poppies. As they drew near Bomarzo, the terrain became more rugged with yellow and white broom cascading down the craggy hills. "It's a gorgeous place," she explained. "The town of Bomarzo itself sits smack on the top of a ridge with the entrance to the garden in the valley close by a gurgling stream spanned by a small bridge."

Darnall, a veteran of archaeological digs in Sardis, Turkey, and Leventhal are both experienced surveyors able to handle a transit with precision while fielding questions from the curious school children close on their heels. Weil and Darnall note in the introduction to their manuscript that "since Bomarzo did not fit the stereotype of the Italian garden, no overall plans or views were drawn until the 1950s." These measurements have proved inaccurate, but Darnall is confident that their calculations of the approximately ten acres encompassed by the garden itself will enable readers to view it much as it existed when Vicino was lavishing his attention on it during the 1570s.

Certain inconsistencies were apparent to Darnall even before she picked up the tools of her trade. She first noted that the gardens at Bomarzo were atypical in that they were not adjacent to the villa. Darnall writes: "Vicino's principal residence was an old family castle atop the promontory of the village. His garden was placed in a narrow valley below the castle and its dependencies, so that while the gardens are visible from the principal apartments in the castle and the castle looms up from certain points in the gardens, the two are completely separate.

"Instead of a garden ordered by axes with vistas focused through carefully clipped trees, Vicino's gardens were found in the midst of the literary wood. Their structure was internal and contained, to be discovered by
following a path through the dark woods, open meadows, and shaded gardens." She suggests that some of these features were copied from Hadrian's villa and others corresponded to Pliny the Younger's second-century description of one of his gardens. He writes in book five of his letters about grassy lawns and box shrubs "clipped into innumerable shapes," and contrasts them with a meadow outside that was "as well worth seeing, as the formal garden I have described."

In reminiscing about last summer's experiences, Darnall recalled that one of their most exciting discoveries was the existence of a water system. Those knowledgeable about Italian Renaissance gardens had long been puzzled because Bomarzo was dry and seemingly lacked the characteristic sprawling fountains. To their obvious delight, the Weil-Darnall team located a cistern at the top of what is now a parking lot. "We realized," she explained, "that there must have been a reservoir up there which fed the garden. It probably broke down several hundred years ago, but we were able to reconstruct it on our map." At Bomarzo, however, water did not serve to reinforce axial, linear elements in the design, "rather, it was used to highlight and complement the architecture and sculpture and to dramatize links in the narrative that ran through the gardens."

Darnall found another distinguishing characteristic of the gardens at Bomarzo—their stylistic resemblance to the Etruscan necropoli of the region. "I have been learning a lot about Etruscan art," she continued, "and now I realize how very close most of the sculpture at Bomarzo is to Etruscan sculpture. This discovery has been quite a revelation. In Italy, the Etruscans have always been considered the most noble people. The Etruscan style at Bomarzo, then, had two purposes: first, to allude to the great antiquity of the site, and second, to glorify the Orsini family."

Darnall believes that Vicino's penchant for relating Bomarzo to an Etruscan heritage "says a great deal about his attitudes."

Weil concurs. "He was not a politically powerful man, but rather a small landowner. He was relatively well off, but not rich by Renaissance standards." Yet, Weil added, Vicino arranged to marry Giulia Farnese, who came from one of the two most powerful families in sixteenth-century Italy. She was the niece of Alessandro Farnese, who in 1534 became Pope Paul III. His grandson, Cardinal Alessandro Farnese the Younger (1520-1589), the builder of the famous Villa Farnese at Caprarola in Rome, in 1544 divided the property of Gian Corrado Orsini, Duke of Bomarzo, between Vicino and his brother Maerbale. Through this settlement, Vicino acquired Bomarzo and shortly thereafter wed the beautiful Giulia. To prove his devotion, he dedicated a temple (believed to have been the one in the Bomarzo gardens) to her and staffed it with priests to say mass for her soul. With this dedication, Giulia Farnese Orsini became a symbol of divine love, according to Weil. "It was Vicino's way of complimenting the Farnese family."

In the course of their study, he and Darnall have made a determined effort to learn everything possible about Vicino. Weil began to wonder about...
him during the late sixties when
he and his wife visited Bomarzo for the
first time. "It was still in a very wild
condition," he recalled, "with monsters
popping out of overgrown woods and
odd bits of sculpture strewn about."
The subject of local legends, its
sculpture was rumored to have been
the work of Turkish slaves captured
in the Battle of Lepanto, which was
fought nearly twenty years before the
garden was begun. According to other
old wives' tales, the Turks had been
taken prisoner at an earlier date. Some
discounted the Turkish connection
completely, and maintained that the
gardens were of Persian origin. There
were also those who believed that the
garden harbored a dark family secret.

W

eil and Darnall believe that
because of its isolation and
uniqueness, the garden was
virtually ignored by artists and
historians from the seventeenth
century until shortly after World
War II. Then people, including
Salvador Dali, began making pil­
grimages there. Dali arrived with Italian
writer Mario Praz in 1949, and four
years later Praz wrote an article about
the visit for the magazine, *Illustrazione
Italiana.* Weil and Darnall have written
that in it "Praz describes the ever­
flamboyant Dali arriving at the site with
film equipment and setting out straight­
away to assume the role of the pro­
tagionist in a film short. Praz," they
added, "concentrates on the exoticism
evoked by dreams and nightmares of
the volcanic terrain, with monsters in
the labyrinthine thicket." They attribute
his interpretation to Bomarzo's chaotic
condition at the time. Certainly, it did
not reflect the original appearance of
the garden, but, unfortunately, his
views have influenced thinking about
the garden ever since.

During the 1950s many other
published accounts stressed this inter­
pretation including a now-famous novel.
*Bomarzo,* by the Argentine writer,
Manuel Mujica-Lainez. Weil and
Darnall describe his book "as an
intriguing blend of fact and fancy in
which the author distorts both the body
and the mind of Vicino Orsini." Vicino
is portrayed as a man unhinged by the
magic and mystery of his garden who,
after his wife's death, retreats to a
hermitic world bounded by the
laboratory of an alchemist, the study
of a collector of odd items, a chapel
where magical liturgies take place, and
a garden with gigantic monsters
gleaming among the trees. "This
Freudian psychology turned the garden
into a surreal, Daliesque dream world
that has little to do with its origins."
Weil and Darnall conclude. This
Mujica-Lainez interpretation, accurate
only in the sense that it attributes
the meaning of the garden to Vicino's
obsession with *Orlando Furioso* and
with Etruscan antiquity, became more
firmly entrenched as the opera,
*Bomarzo.* With music by another
Argentine, Alberto Ginastera, and
libretto by Mujica-Lainez, it was given
its world premiere in Washington, D.C.,
in May 1967, after an irate mayor in
Buenos Aires banned it as "obsessed
with sex and violence."

In 1972, the late Edmund Wilson,
a gifted essayist and critic, relied on
the opera to write about Bomarzo for
the *New York Review of Books.* He
gave the impression that his opinions
were based on firsthand observations,
but later admitted that his distorted
impressions came from the opera. His
article is notable for a number of
reasons including his penchant for using
words, such as "horripilating," as
strange as Bomarzo itself.

Darnall and Weil say that thanks
to all of this publicity, "Bomarzo has
captured the interest of innumerable
visitors, artists, writers, and scholars
over the last thirty years." At the
urging of Praz, the first scholarly inves­
tigation of the garden was undertaken
in the late 1950s by a team of Italian
architects and art historians headed by
Arnaldo Bruschi. Their work has
become the foundation for any subse­
cquent study, but Darnall and Weil are
convinced that the thesis that Bomarzo
is related to other gardens of its time
is the most valid.

A

lthough Weil has reflected on its
meaning since he first saw
Bomarzo, only within the past
two and one-half years has he con­
centrated on it. In undertaking an
investigation, it was logical for him to
enlist the aid of Darnall, for as a land­
scape historian, she possessed skills
which supplemented his. Fortuitously,
she, too, was fascinated by Bomarzo.
"It's the kind of a project that every­
body finds interesting," she observed.
"If you say that you are working on
Bomarzo, people become ecstatic. The
response has been overwhelming."

In their efforts to fathom this mystery,
both researchers have burrowed into
musty archives abroad. "The Italians,"
Weil remarked, "never throw any piece
of paper away. I have spent a great
deal of time simply reading Vicino's
mail." There are valuable caches of his
letters at the state archives in Parma
where the Farnese papers are deposited.
The correspondence of the second
Cardinal Farnese with Vicino is a lode
of useful information. Vicino and
Giovanni Drouet, a French friend who
lived in Rome, also exchanged confi­
dences regularly and this trove is on
file at the state archives in the Eternal
City. Through an examination of these
papers, Weil and Darnall have almost
encyclopedic knowledge of Vicino
including his peculiarities and
pecadillos.

Some of what they have found is
amusing. Both Weil and Darnall delight
in his sense of humor. They chuckle
when recalling that in 1574 when
Vicino was 61, he sired out of wedlock
a daughter whom he whimsically
named Orontea after the Queen of the
Amazon. Vicino also had a great deal
of fun with many of the emblematic
motifs he used at Bomarzo. Frequently,
they were identical to those found in
other gardens of the period, but he
employed them in an ironic or
facetious manner. "He could be very
Darnall said. "That's what makes his garden so interesting. He was extremely sophisticated and very, very witty. I hope that some of this delicious humor will come through in our publications."

It is fortunate that Vicino was blessed with that saving grace, for he experienced many disappointments. In one of his letters, he was hopeful that Pope Gregory XIII would stop at Bomarzo while on a garden tour in 1578, but then decided not to invite the Pope because he realized that he could not afford to entertain in the style to which this prelate had become accustomed. Undoubtedly he was right, for the second Cardinal Farnese staged a pageant for this Pope at the Villa Caprarola in 1585. Masson describes its pièce de résistance as a "procession of one hundred maidens dressed in white, bearing olive branches and clashing cymbals."

Yet, Vicino was no clown. Weil and Darnall write: "The patron, Vicino Orsini, created the gardens as a psychomachy—a half-serious, always entertaining, series of episodes based on Orlando Furioso which reflects his struggle to achieve an understanding of the true nature of love.

Vicino identified himself with Orlando—a modern Hercules figure—at the same time that his peer, Cardinal Ippolito d'Este, was representing himself at the Villa d'Este as an ancient and virtuous Hercules. At the nearby Villa Lante, Cardinal Gambara structured his garden to represent the transition from the golden age of Saturn to the age of civilization of Jupiter. The structure of Vicino's garden, by comparison, was a modern one based also on Dante's Divine Comedy and represented the struggle and final attainment of divine love."

Vicino also paraphrased poems by Petrarch. Weil has found other connections with ancient literature including the letters of Seneca, and he suspects that he may yet find references to Virgil's eclogues. "Vicino himself was a poet with a thorough grounding in the Italian classics. It is very unusual in the sixteenth century to have a garden as literary as Bomarzo. One expects that of the eighteenth century, but it was uncommon in Vicino's time."

Of all these sources, Vicino was most influenced by Ariosto.

"About a year and a half ago," Weil explained, "when I was struggling with the iconography of Bomarzo and feeling a little bit desperate, I sat down to read Orlando Furioso, and everything began to fall into place."

Weil suspects that others have not explored this reference thoroughly because the poem is incredibly long and complicated. Translated into English, it runs some 1300 pages. "It's a little bit like reading War and Peace in poetic form," he added.

Ariosto published three editions in the thirty years of writing and rewriting. "It is," Weil stressed, "a fascinating poem." Epic in length and intent, it is based on the adventures of Roland and the knights of Charlemagne's court, with additional input from the King Arthur legend. Ariosto had a marvelous command of language, and his work is filled with double meanings and puns. "In a sense, it is the first, great secular narrative in Italian literature expressed in the form of a poem."

Captivated by the genius of Ariosto, Weil persuaded William H. Matheson, professor of comparative literature, to join him in teaching a course on this author and the profound influence of his work on Italian literature and art. Translated
appealing.

as a false paradise. This theme, evil. it is nonetheless profoundly of the evil of earthly love.

In Italian literature was often treated as a garden of marvels, a theme. Weil, Pegasus is meant to be a warning though a life of love and ease may be.

tearing images which have special meaning. For example, according to Weil, Pegasus is meant to be a warning of the evil of earthly love.

The researchers Weil and Darnall emphasize that the Italian garden of the sixteenth century was multipurpose. Perhaps Vicino resolved to suggest that. For some, Bomarzo is quite simply a garden of curiosities; for others it represents the age in which it was built as a monument to human achievement during the High Renaissance.

Although many centuries separate Vicino from another garden enthusiast, Ann Leighton, author of Early American Gardens. "For Meate or Medicine," he undoubtedly would have appreciated her style and perhaps chosen as an epitaph for Bomarzo the first two sentences of her book: "The gardens of any period in history are its most intimate spirit, as immediate as its breath, and as transient. Yet, unlike all else about a particular time, they are capable of being recaptured and recreated today, in essence and in fact."
Tell Me A Riddle

Alumnae Rachel Lyon (left) and Mindy Affrieme themselves became a happening when they visited campus this spring.

Actress Lee Grant (left) tells Lila Kedrova (center) and Lili Valenty how she would like a scene played. Tell Me A Riddle was Grant's feature film directorial debut.
Anyway," said one of the two young women standing in the front of Brown Hall auditorium, "it began here, so we had to bring it back." Mindy Affrime turned down the corners of her mouth and, arms stiff, spread her palms to the floor, almost a Chaplin gesture. Then she and Rachel Lyon strode up the aisle and out into the spring night.

The lights in the auditorium went out and their film, *Tell Me A Riddle*, began. For the next ninety minutes Lila Kedrova, Melvin Douglas, Brooke Adams, and the camera, spun out the bitter story of estrangement, old age, reconciliation, and finally, death which Tillie Olsen told so well in her novella of the same title. Meanwhile, Lyon and Affrime walked down to the School of Fine Arts. Lyon went in to visit the halls and classrooms she had left six years ago. Affrime sat outside, realizing that here on the campus from which she had graduated in 1976, she had absolutely nothing to do for an hour. It was, she said, their first time to dream in the three years that they had been involved with producing this film.

When Lyon came out, they sat together occasionally glancing at the clock, knowing each time almost exactly which sequence was then flooding the screen in Brown Hall. For they had birthed, lived, and breathed their film right into its final version. It had opened in New York in December, gathering very good and mildly critical reviews. It was premiering commercially in St. Louis on the following night.

They talked together some, already recognizing the distance their lives had come since they left this campus each then going her separate way. At shortly after nine, they walked up the hill to be in Brown Hall Lounge in time for a reception which followed the showing. They were pleased with the comments they heard from students. "Many people came in with tears in their eyes," said Affrime. "That's the response we wanted, but they are not tears of sorrow, only of sadness and maybe some hope."

The tears shed in 1981 in response to the film *Tell Me A Riddle*, well from the same emotional tension which brought tears to Mindy and Rachel as they walked from the Women’s Building in 1973 after hearing Olsen read from her novella. Though friends through the campus Feminist Coalition, they had gone to the reading separately, neither aware of the other's presence or response. But in 1978, when after rediscovering each other in San Francisco, they decided to make a film—"Not an underground film that would be seen by twelve of our closest friends," says Affrime, but one that would reach for the sky commercially—*Tell Me A Riddle* was their first story choice.

By then, having settled on the fringes of San Francisco's experimental film community, they had acquired a third partner for Godmother Productions, Susan O'Connell, a former actress. "Susan gave us the experience we needed, but she was burned out. We gave her the exuberance," says Lyon. They spent six months convincing Olsen that they were serious about their project and might be able to carry it off. She finally agreed to sell them an option. Then, although the script won the commitment of Grant and then Kedrova, Adams and Douglas, the producers ran out of money.

Daunted, but not defeated, the three women raised $50,000 in three weeks, then went on the road with a $2 million prospectus. With it they called on 5,000 people to raise $1 million. From that base, they arranged loans. "We actually ended up with thirty-five men and women backers, not one of them from Los Angeles. Almost everyone in the industry there was interested, but it wasn't their film. Most of our money came from friends of friends in San Francisco and Chicago," said Lyon. She sat cross-legged on a couch in the Women's Building the day after their film was shown. "It's very hard for young women to raise money. Being young is almost as damaging as being female."

"What we did was start a business," said Affrime. "It's glamorous, because it's the movies, but it's just a business. I know more about taxes and contracts than I ever cared to know, but it's part of the job. It demands hard work and long hours. We have an office, a small staff, and we go to work every day." They had come back to Washington University by invitation to show their film, talk with students about how it was done, and drum up some box office. They had spent a long day at it, and it came in the backwash of a years-long effort, now launched. They were tired and estranged from campus, from their youth here.

"Washington University gave us a very safe base from which to experience the world," said Lyon. "I absolutely loved it here; I took sanctuary in the Midwest, but you have to leave that."

"We took a tremendous chance, but we did it because we cared about something," Affrime attested. "That's why we were successful, we cared."

Now they are counting on that success to make the way easier. Their experience will do that too: they've learned much; they've a track record. They also have a second effort to their credit, an ABC-TV feature called "The Oklahoma City Dolls." But that undertaking, though financially successful, has taught them the worth of buying their artistic independence.

Mindy Affrime came to Washington University to take prelaw and ended up studying political theory, philosophy, and English. After knocking about the Southwest for a couple of years, Rachel Lyon came to study electronics and fine arts and quit when her multimedia program ended. So far, they have caught a little bit of the sky.

Now, they will begin again, wiser and perhaps more worldly, but still looking for another property of which a fine actor like Douglas might say, "In no way is it a commercial script," and then take the part anyway.
Comment

By Dorothy A. Brockhoff

Gothic Graham Chapel has been the scene of innumerable joyful events, but on a warm May fourth afternoon of this year, the mood was somber. The campus community gathered there with the family and friends of Richard L. Admussen to honor his memory.

Dick Admussen, professor of French in the University’s department of romance languages, was dead at forty-seven, having succumbed to leukemia, which he had fought tenaciously and heroically for some two-and-a-half years. Those assembled comprised a large and heterogenous group including dozens of the students who adored him, as one speaker carefully pointed out. The verb “adored” would have embarrassed the modest and self-effacing Admussen, but it was nonetheless, on target, for he was a teacher not so much revered as loved.

Six of his colleagues, including Chancellor William H. Danforth spoke on that occasion. These speakers, a disparate group, were united in a common purpose—to give voice to what it was that made Dick Admussen a special human being endowed with a grace of spirit: “It is also a time of celebration. To mourn is right and fitting. To celebrate what it was that made Dick Admussen as a friend, father, teacher, and scholar. Burton Wheeler said: “Certainly he cared about literature and language, but it was those with whom he worked to whom he gave himself unstintingly. He was excited by the potential of his students, aware of their individuality, delighted in their development, eager to assist them to achieve their goals. He could make fun of pretension and folly, but never of persons. The only times that I recall his becoming angry or indignant were instances when he saw behavior which he thought was destructive or unworthy of the high standards he set for his vocation. To the art of teaching and to the life of this community, he brought a desire to achieve a grace which bespeaks that grace to which we all aspire.”

Admussen was a big man—figuratively and physically. Often hard put to match his athletic stride to those of smaller stature, he measured his pace with a patience which was the essence of the Admussen style. Ira J. Hirsh, professor of psychology, alluded to this quality when he prefaced his remarks with the observation, “Not all of our colleagues in the humanities are humane. Not all gentlemen are gentle. Dick Admussen was both—humane and gentle.” Admussen would have chuckled at this aphorism, for he was a man of wry humor.

This sense of humor surfaced even during his suffering, which he bore stoically. Richard Stang, professor of English, recalled his good nature and redoubtable courage. He observed, “I will also never forget the face he put on his illness and the determination to live with the knowledge that he was a dying man. He resolved to make the best of the indeterminate time left him and not discomfort others. His determination to teach again, to teach two courses back-to-back and continue to be as available to students as ever, was the act of a hero.” He added, “Dick’s secret, if someone as open and guileless as he could be said to have one, was to bring out the best in people.”

This sensitive concern enabled Admussen to relate to others with sympathetic understanding. Because of it, he was a masterful teacher and an able administrator. During his tenure as chairman of the department of romance languages, “it ran as smoothly and as efficiently as a finely-tuned engine,” Professor John L. Grigsby, his successor, recalled. It was also why “his colleagues called him to represent them on the highest elective body in the Arts and Sciences, the Faculty Council, and, later, the highest elective body of the University, the Senate Council,” Ralph E. Morrow, dean of the Faculty of Arts and Sciences, recalled.

Those who spoke at this memorial service did so not out of a sense of duty, nor with the pretense of eulogy, but because they, like all of those gathered there to honor Admussen’s memory, rejoiced in his life. Perhaps Hirsh expressed it best when he concluded, “We are his memorial when his leadership, his compassion, his teaching, his skill with persons, and his warm style become a guide and model for our own continuing lives.”

Admussen lies buried in the hamlet of Augusta, Missouri, which he loved and where he was wont to go, as Chancellor Danforth explained, “with a pickup truck full of neighborhood children.” To this tranquil and last resting place, we like to think, the echoes of this elegy were wafted by the soft, spring breeze.
One beautiful spring day, quite without fanfare, this strange-looking vehicle appeared at the bottom of the Brookings' stairs for a trial climb. It was quite at home in those environs until the campus police protested and ran it off.

Upon inquiry, we discovered it is an all-terrain vehicle designed by mechanical engineering students as a senior project. After its Brookings' run, students entered it in a nationwide contest in Tennessee. Unlike most commercial all-terrain vehicles, the Washington University version has two hydraulic motors and a jet pump, instead of a propeller. Professor Mario Gomez, faculty adviser to the builders, will use the vehicle for future hands-on teaching.

In Tennessee Technological University's Mini-Baja contest, entries were judged on acceleration, deep-water maneuverability, ability to pull a 500-pound load, and cross country endurance. Our entry emerged in the top third of the competition.