Fifteen years ago in a Washington University Magazine article titled “Nine Students,” Dan Freeman, ’68, now counsel to a congressional committee in Washington, D.C., was asked “Who are your heroes?”

“I suppose I would respond a little differently today,” he said in a telephone interview. “I suppose what I would say today is that I hope that there would be heroes in American life because this is somewhat diminished due to the torturous times we have been through. These torturous times began when I was at Washington University with the assassinations of John and Bobby Kennedy and Martin Luther King, Jr.”

The country has been through torturous times during the last fifteen years including the Vietnam War, Watergate, oil embargoes, inflation, and economic turmoil. That article in 1968 captured the feeling of student life at the time even though it did not interview every student on campus. This issue contains responses from nine students today along with the comments of those students of yesterday. Is there a difference between the two generations?

That’s hard to say. Dan Freeman, today, though, knows what it takes to be a hero. “I would define my current hero as somebody who has the courage to laugh often, to win the respect of intelligent people, to earn the appreciation of honest critics, to appreciate beauty, and to leave the world a little better than when he or she got here.”
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Morrow Named Provost

Ralph Morrow, dean of the Faculty of Arts and Sciences, Washington University, has been appointed provost, Chancellor William H. Danforth announced. Morrow succeeds Merle Kling, who retired in June 1983 after 371/2 years of service to Washington University.

In announcing Morrow’s appointment, Chancellor Danforth said, “Dr. Morrow has demonstrated a sensitive and profound dedication to academic values. His service to Washington University has reflected integrity, intelligence and courage. He will assume his new responsibility as soon as a successor dean is found.”

A native of Marshall County, Indiana, Morrow received his B.S. degree at Manchester College in 1943, and his A.M. degree and Ph.D. degree from Indiana University in 1948 and 1954, respectively. He joined Washington University in 1955 as an assistant professor of history and became a professor in 1963. He was appointed acting chairman of the history department in 1958 and was chairman from 1960 to 1965 and again from 1967 to 1968. He was appointed acting dean of the Graduate School of Arts and Sciences in 1967 and dean in 1969. He was named dean of the faculty of Arts and Sciences in 1979.

In 1954 Morrow received the Baruch Award in Southern History, and in 1959 was named a John Simon Guggenheim Memorial Fellow. He received an American Philosophical Society Summer Fellowship in 1957 and again in 1962. He has published numerous papers on Southern history, as well as on higher education, and was chairman of the American Historical Association Committee on College and University Teaching in 1967.

De-stressing Stress

For most people, being admitted to a hospital or even visiting one, is an emotionally stressful experience. But what is the effect on those who work in hospitals and face sickness and death on a daily basis? What kind of stress do they face in their work and how do they deal with the pressures of the job?

Rita E. Numerof, assistant professor of social work, has studied the job-related stress experienced by health care professionals, in particular physicians, nurses, and administrators. Her findings will be published in a book to be released by the Aspen Systems Corporation in September.

The book, Managing Stress: A Guide for Health Care Professionals, presents findings based on an exploratory study of health care professionals in three sections of the country. The research delineates the physiological, social and emotional effects that stress can cause in individuals and also explores the implications of these effects for health care organizations, particularly hospitals.

“The book is different from others on the subject in that it looks at stress from the viewpoint of the organization as well as the individual,” Numerof said. “Unlike other approaches, which place the burden of stress management squarely on the shoulders of the individual, the approach taken in the book suggests that organizations are responsible for monitoring and correcting stress through management practices and organizational structures and policies.”

Numerof said that individuals can be a source of stress to themselves and to their colleagues. But she also said that organizations do precipitate stress, some
of which is exhilarating and challenging to their employees and some of which is unnecessary and harmful to them.

It is to the organizations' advantage, she said, to set up healthy environments. By doing so, "we are likely to see increased productivity, effectiveness, and health for all participants in the health services system," Numerof said.

Numerof said that physicians, nurses, and administrators varied in which situations they perceived as stressful. However, she found that the three professional groups did agree on the top three sources of stress: 1) Too many demands on their time; 2) Problems meeting their own expectations for excellence; and 3) Not having things done by others as quickly as they would like.

Numerof is an adjunct assistant professor in health administration and planning at the WU School of Medicine and adjunct professor of the Estes Park Institute, a non-profit institute in Colorado devoted to studying health care management and education. She designed and implemented a graduate program in health care administration at LaSalle College, Philadelphia, Pennsylvania.

She has published two other books, Management and the Health Care Professional, which applies management theory to the health care sector, and Accent on People: A Course in Human Dynamics, which discusses increasing productivity through improved communication among health care professionals.

Clinical Sciences Research Building Update

Construction is 75 percent complete on the new Clinical Sciences Research Building, the $50 million facility that will physically unite all institutions of the Washington University Medical Center for the first time.

The building is scheduled to be occupied in August 1984. To date, the university has received $45.5 million in gifts and commitments for the structure, with another $4.5 million to be raised.

The 382,080-square-foot Clinical Sciences Research Building will encourage cooperative research and alleviate a critical shortage of research space for seven clinical departments: Anesthesiology, Medicine, Preventive Medicine and Public Health, Psychiatry, Pathology, Radiology, and Surgery. The 10-story building will contain offices and large research laboratories on the eight upper levels, with animal care quarters, animal surgery, and general lounges and conference rooms on the three lower levels.

A series of enclosed pedestrian bridges will link the centrally located facility to the Barnes Hospital, the Jewish Hospital of St. Louis, and the St. Louis Children's Hospital.

Construction is within a week of schedule, according to Paul Hips, Ph.D., coordinator for laboratory development of the building. All of the exterior brick work has been completed, and glass windows and the roof covering have been installed, he said. The building now has permanent power, and the building's five passenger elevators are being installed.

Architect of the Clinical Sciences Building is Hellmuth, Obata and Kassabaum. Contractors are McCarthy Brothers, and laboratory consultant was the international firm of Earl Walls Associates.

The Amazing Luis

Eager, bright, and friendly, LUIS hails, not from Latin America or Spain, but is, in fact, a transfer from Northwestern University.

LUIS knows a little about everything—from James Joyce to quantum mechanics to what's going on in jazz. Although English is not his native tongue, he is extremely fluent, speaking in short, easy-to-understand sentences.

LUIS has a few quirks, however. Smart as a whip when asked a question, he does not speak unless spoken to. An invaluable source for a difficult term paper, he is not someone you would take to Holmes Lounge for profound conversation. He has no opinions and he doesn't dance. But LUIS is always polite and eager to please: he never jumps down your throat when you ask him an inappropriate question.

Unlike other campus newcomers, LUIS will no sooner arrive on campus than he will become more sought after as a source of information than any dean or faculty adviser.

LUIS (ah, you've already guessed it's a computer program) stands for Library User Information Service, the Library's new on-line catalog.

LUIS was introduced this month at five terminals on level three of Olin Library. Over the past two years, LUIS has been loaded with catalog entries of more than 50,000 records—items catalogued since 1980. In
Take me to LUIS.

LUIS, for Northwestern Total Information System, the third generation of a library data management program first developed at Northwestern University in 1965. The catalog component is just part of NOTIS. Other modules can tell users whether a book is currently in the library and keep track of serials.

Although use for NOTIS's additional features is still very much in the future, it is because of them that NOTIS was selected for the WU libraries.

"We were looking for a comprehensive system that would perform many tasks," says Overholt. "NOTIS is a proven system that was designed for and has been operating at a private research university much like WU for several years."

Other libraries that have acquired NOTIS include the University of Cincinnati, Harvard and Clemson universities, and the National Library of Venezuela, among others.

LUIS is part of a larger program called NOTIS, for Northwestern Total Information System, the third generation of a library data management program first developed at Northwestern University in 1965. The catalog component is just part of NOTIS. Other modules can tell users whether a book is currently in the library and keep track of serials.

"Ultimately, there will be 50 terminals around campus," says Charles D. Churchwell, dean of library services. "Working in close consultation with the Faculty Library Committee, we next will place terminals on levels one, two, four, and five and then in the departmental libraries. We will work to increase the number of online entries and to place terminal units as fast and as soon as staffing and funding permit."

One can get hooked on LUIS very quickly, because it's so easy to use.

At every step of the way, commands that are acceptable at that point in the operation appear at the bottom of the screen. The process is so simple that it can be mastered in minutes, but if users forget what to do next, they can always return to the basic instructions.

Otha Overholt, director of technical services and data processing for the library, stresses that LUIS is exactly the same as the card catalog that library users have been using all along.

"LUIS is different only because the user is working at a keyboard instead of with cards. The informational content is still the same." Another difference she did not mention—LUIS has the card catalog beat on speed.

If the user makes a mistake, such as entering an incorrect command, alarms don't blare, lights don't flash. Instead, the screen offers the discreet message, "invalid command code," or softly beeps. The return or reset button takes the user back to square one. It is impossible for a user to damage the system or erase information.

"It is a very forgiving system," says Overholt.

LUIS is part of a larger secret, but Amendment 13 may go down in history as one of the more mysterious coincidences... ....and one of the more successful.

An annual carnival at Washington University had been a tradition since before Thurtene was founded; the event was originally called "Univee Surkuss." Thurtene assumed sponsorship of the carnival in 1933, and the annual fete is said to be one of the few campus traditions to survive the anti-tradition era of the 1960s.

Thurtene Carnival was held on a parking lot at the west end of the Hilltop campus, but the group of juniors nearly met its match when bulldozers began plowing up its carnival site for the new Athletic Complex. Obviously the carnival had to be relocated, but the solution was not so simple. Thurtene needed extensive power lines to service any new location, and the rental or permanent installation cost was exorbitant. The future of the carnival was in jeopardy.

Thurtene drew up an amendment to the Student Union Constitution to increase Student Union membership fees by $3.50 for three years (ending December 31, 1985) to "help finance the necessary relocation of the Thurtene Carnival." The referendum,
submitted to students in November 1982, was overwhelmingly approved in what was described as one of the largest election turnouts in the University's history.

The new site was the parking lot of North Brookings at the corner of Millbrook and Skinker boulevards. And Thurtene luck held.

"People thought the new site was much better because it was not so cramped," said 1983 Thurtene president Bret Eberhard. "They were not walking elbow to elbow all the way down the midway as they were at the previous location. We added a couple more rides, but mainly we had more space."

Because of the rent required for two diesel generators, they did not show the profits they were accustomed to, but with Amendment 13, they will be able to install permanent power lines and begin to recoup their losses in the coming years. And so the tradition continues.

Who said 13 was unlucky?

**Trustees Named**

W. L. Hadley Griffin has been elected chairman of WU's board of trustees. He succeeds George H. Capps, who has headed the board since May 1980. Six new trustees were also elected to the board.

Griffin is chairman of the board of Brown Group, Inc. He was elected to the Washington University board of trustees in July 1967. Capps, who is president of the Capitol Coal and Coke Co., has been a board member since February 1966. He is chairing the ALLIANCE FOR WASHINGTON UNIVERSITY, a program to raise $300 million in gift support. Capps remains a trustee and serves as vice chairman of the board.

Griffin, a native of Edwardsville, Illinois, is a graduate of Williams College and the Washington University School of Law. He began his business career in 1947 as counsel for Wohl Shoe Company. He joined the Brown Shoe Company in 1953 and served as chief executive officer from 1969 to 1982. In 1972, with the formation of Brown Group, Inc., Griffin was named chairman of the board of the new corporate entity.

Griffin, formerly vice chairman of the Washington University board of trustees, served as chairman of the Commission on the Future of Washington University.

The six new trustees are: Bernard Adolphus Bridgewater, Jr., president and chief executive officer of Brown Group, Inc.; Richard J. Mahoney, president and chief operating officer of Monsanto Company; George E. Pake, returning board member and vice president for corporate research for the Xerox Corporation; William G. Tragos, chairman and chief executive officer of TBWA, an international advertising agency; H. Edwin Trusheim, president and chief executive officer of General American Life Insurance Company; and William M. Van Cleve, chairman of the Bryan, Cave, McPheeters & McRoberts law firm.

Bridgewater was elected president and chief executive officer of Brown Group, Inc. in June 1982. He had been president and chief operating officer of the corporation since April 1979, after joining Brown Group's board of directors in May of the preceding year. A graduate of Westminster College, Fulton, Missouri, he earned an LLB from the University of Oklahoma and an MBA from the Harvard Business School. In 1973-74, Bridgewater served as associate director, national security and international affairs, of the Office of Management and Budget.

Mahoney was elected president of Monsanto Company in 1980 and assumed the additional duties of chief operating officer in 1981. He had been executive vice president since 1977. He has been a member of Monsanto's board of directors since 1979. A native of Springfield, Massachusetts, Mahoney graduated from the University of Massachusetts in 1955 with a bachelor's degree in chemistry.

Pake, a former WU faculty member, administrator, and board of trustees member, has been vice president of corporate research for the Xerox Corporation in California since 1970. Pake joined WU's faculty in 1948 as an assistant professor in the Department of Physics and was named department chairman four years later. He left the University in 1956, but returned in 1962 as a provost and professor of physics. He assumed the additional responsibilities of executive vice chancellor in 1967. He was elected to the board of trustees in 1970 and served until 1982.

Tragos, a native of St. Louis and a WU graduate, is one of the leading figures in international advertising. He and three European partners founded TBWA in 1970 in Paris, France. After opening seven TBWA offices in Europe between 1970 and 1977, Tragos returned to the United States to open his office in New York City, making TBWA the first agency to come from Europe to America.

Trusheim was elected president and chief executive officer of General American Life Insurance Company in May 1981. He joined the company as treasurer in 1964 and successively served as vice president, executive vice president and president. Trusheim graduated from Concordia Teachers College, where he later taught briefly. He received a master's degree in political science from Northwestern University and pursued graduate studies in political science and economics at WU from 1951 to 1954.

Van Cleve joined the Bryan, Cave, McPheeters & McRoberts firm in 1958, became a partner in 1966, a managing partner in 1973, and chairman this year. Before joining the firm, he was a lawyer with Dunbar and Gaddy, St. Louis. Van Cleve earned an AB in economics from Princeton University and a JD from WU. He is president of WU's Eliot Society and has been active in alumni activities at the School of Law.
A Time for Hope? There are, I believe, two aspects of hope which greatly enrich human life—hope about ourselves: and social hope, hope about the world that we live in. During the last 100 years both in Europe and in the United States, hope in both these contexts has had a severe battering.

The hope for oneself and the hope for one's world, of course, are very much involved with each other. But I want to treat them separately because when one is young, hope, thank God, comes easily to most of us.

The years at a university are pregnant with hope—about one's own happiness, about one's career, about one's future in life. Of course, I know there are clouds, disappointments of every kind—even tragedies, but there is infinite resilience in young people, a wonderful and moving sense of the possibilities of life and happiness. And it is my belief that one of the most important aspects of education and university life is to cherish that sense of hope.

One of the great destroyers of personal hope over the last century has been the spread of half-baked Freudianism on the one hand and on the other of genetic determinism, equally misunderstood. The belief that, in a sense, we are doomed to be ourselves has been known to mankind for millennia. I could never have walked six feet tall, short of being cloned before birth. I was doomed in the womb to be short, fat, pink, brown-eyed, and, possibly, above average intelligence. We will grant all of that. We were bequeathed our bodies and basic intelligence.

And the same half-truth of determinism can be said of our characters—depressive, manic, sensual, frigid, aggressive, pacific, all the strange varieties of men and women; we are, of course, genetically related, yes, to parents, and their parents and so back into the great pot of genetic soup. And I would grant that our characters are interlocked, too, with our bodies and its complex chemistry.

However, that basic determinism still leaves a huge area for will, for choice, for decision as well as the most important force of all upon our lives—our future.

It is all too easy for our educators and our gurus to try to force on us the belief that we have one identity which we must discover in youth and live with to old age. I believe most young men and women are closer to Walter Mitty or Woody Allen: that within each of us lives an assortment of strange and not very peaceful characters.

True, there are some men and women with very tight egos who know, it seems from childhood, who they want to be and how to maximize every drop of talent to get there. I used to envy them. I no longer do. I prefer the richness of conflict; in a sense the choices which our differing selves bring to us. Indeed, I think it is because most men and women have a variety of selves to nurture in the family, in the school, and, above all, in the university that is so important.

A primary duty is to teach crafts and skills—and these should never be narrowly conceived. The ever-increasing specialization of our academic disciplines presents great problems for general education, but they should be surmounted. The best universities, I believe, are those which present opportunities for students to taste other disciplines, to get excited about other forms of knowledge other than their major. It should always be moderately easy for students to change disciplines— to desert history and take up medicine, to cease to be an engineer and become a classics scholar.

Illustration by Bryan Haynes

One of the most fascinating of my colleagues began as a scholar in classics, took part of his degree in English, and the rest in philosophy, turned away from graduate studies to begin again as a junior medical student, and finished up as a professor of anatomy. In old age he has begun the serious study of Egyptology.

The best-read historian I have ever known, and he read history in eight languages, was a professor of pure mathematics. Intellectual appetite, like all our appetites, is most wolfish in the late teens and early 20s; those are the years of ebullience, of delight, of experiment, of creativity, and of hope. The university must feed that hope so that it avoids frustration. And we should always remember that formal education is only a fraction of our university experience. We make friendships here which last for life: we can quarrel, grow affectionate, argue in agreement or bitterness without thought of consequence. We can so very rarely do this once we graduate. Variety in thought and experience helps to keep hope alive. So long as there are choices, new worlds to explore, one stays a hopeful person.

Hope is closely allied with enjoyment—intellectual, social, physical. Of course that hope will be diminished by age, by experience, by the necessity to choose, but it need never quite disappear. And it must be nurtured. I think it is particularly necessary for the well-being of our societies on both sides of the Atlantic that students should leave their universities with hope for themselves and their countries; they should be encouraged to learn how to bounce back after setbacks, after tragedies, minor or major. It is essential for the world's well-being that the intellectual elite remains hopeful, joyful about life and man's prospects.

Of course, unless one is a very competitive personality like my professor of anatomy, it is difficult to preserve
one's hope in a society which is without it. And that is the reason for my question mark in the title. Is it possible for the most hopeful young men and women to go on hoping in this our world? The horrors are there—the prospect of a nuclear holocaust, the growing famine in Africa, the murderous governments that litter the world like a rash; the monstrous citadels of repression; the sheer burden of people; the sheer limits of resources.

It looks dark. But less dark, I suspect, to the historian who recalls that the Black Death killed a third to a half of the world's population and then went on decimating it for more than 200 years; or knows that the average age of man when this great country was first colonized by the Pilgrims and the Virginians was 29; that most children born at that time never survived beyond the age of five. For thousands of years, the life of mankind was short, disease-ridden, illiterate, and this was true of the West as well as the East, for those who lived in cities, or those who did not. We accept so easily what we have achieved. Indeed accept it so easily and think that it is so pitifully materialistic that we are taught to scorn it.

One of the great dangers of our present time I think has been the rejection of so much of man's achievement, an achievement which perceptive men longed for in the 18th and 19th centuries. Of course, they longed for more. They thought torture would cease; that justice would prevail; that men would grow in moral strength.

Perhaps in the light of what has happened in my lifetime they seem a little naive—two world wars. My first memories are of men in khaki—puzzling men to me as a child because they lacked arms and legs, and some could not see when they came from the hospital to my home for tea. And between these wars fascism, depression, the Nazis. The Second World War gave us hope again of a new world, but we only found ourselves deluded with a harsh, hostile world with two great monster powers who can eradicate the human race at any moment. Elsewhere civil wars or worse, famine, discord, and corruption.

Such facts may make the hopes of the men of the enlightenment look hollow and self-deceiving so that it becomes all too easy to mock them. And yet I would maintain that the world is a far better place now than it was 40 or even 50 years ago and with so much potential that the world should be surging into hope, hope for a future greater than my generation ever knew.

The achievements of the West, and particularly of America, are too readily taken for granted or ignored. And, alas, they are taught less and less frequently in our schools and universities. I am aware that New York is not America, any more than Venice is Italy, but sometimes in its love for the new and the futuristic it underlines a trend which may be weak elsewhere but one which may strengthen.

At present, American history in New York is under a great threat. Many years ago American history was subsumed in social studies. Now it looks as if the teaching time devoted to it is going to be radically reduced from an hour a week per teaching year to an hour for one semester only. Worse, the history to be taught will be themes—three only, politics, the role of immigrant groups, and foreign policy. World history and the history of western civilization are to be limited and again reduced to themes. No attempt is to be made to keep to chronology. Human rights in the Soviet Union is likely to replace study of the Renaissance or Reformation or even of Marxism itself, for the innovators want the themes to be contemporary.

The most important feature of historical study in its elementary stages is to bond the student to his society, to make him aware of its traditions, its constitution, its achievements in science, technology, and the arts. Not to be unaware of failures but also to savor its achievements and to discern its goals. To give the student pride as well as to engender wisdom.

And there is so much for America to be proud about. Never have so many people lived so long, so well, or—and this is just as important as long life and comfort—in freedom. Freedom to express themselves in every way. It is all too easy to take our life-styles for granted—for Western Europe and America have a basic common culture, a common desire to make democracy and the freedom of human thought work. Both the democracy and the freedom of thought have immeasurably enriched mankind.

It is easy to despise the motor car, the refrigerator, the air conditioner, the processed foods, and the supermarket when you have them. Most of the world still long for these simple comforts invented by us—the Western world. And the industrial revolution, begun in my country in the 18th century and brought to increasing fruition here, has not finished: indeed we are on the threshold of a new and exciting revolution.

Sir John Plumb

"Humankind is struggling on the North Face of Everest; it may meet disaster... but it will never succeed without hope fortified by determination."
The command of knowledge during the next century is going to be of revolutionary proportions and will change all our lives. This should be the basis for your social hope. Knowledge, the capacity to acquire it, to order it, and to transmit it in freedom, is the basis of man's achievement.

And a time for hope does not mean unawareness of dangers (knowledge helps to spell that out, too), or the possibility of tragedy or even failure. Hope does not mean blinkered optimism.

Humankind is, as it were, struggling up the North Face of Everest; it may meet disaster, it may have to turn back to search for another route, but it will never succeed without hope fortified by determination. And the leadership which is at present America's, must have faith in its capacities, in its abilities to respond to challenge.

It is time to get your recent failures and tragedies in proportion: every country has suffered rebuffs as you did in Vietnam, has committed horrors, has denied some of its citizens rights, which should belong to all, but most societies have refused to recognize their shortcomings or take action. You do. You began as a revolutionary society, and in many ways—in most ways—have remained one.

And so it is not a dark time. You have every right to be hopeful and confident.

Sir John Plumb, a scholar and author on 18th-century social history gave this address at Washington University's 122nd Commencement where he received an honorary degree. He recently retired after having been associated with Christ's College, University of Cambridge, since 1946 as tutor, vice master, master, university lecturer, reader in modern English history, and chairman of the history faculty.
As scientists probe deeper and deeper into the laws of nature, the laws in court are swelling with change—and not without confusion.

Fiber analysis, polygraph lie-detector instruments, brain scans, and other innovations of modern science have all met with varying degrees of controversy when introduced as evidence in judicial proceedings. Now, a new method of blood typing that is radically changing the nature of paternity lawsuits has legal professionals scratching their heads in bewilderment.

The new method, called HLA for Human Leukocyte Antigen, makes it possible about 95 percent of the time to rule out an innocent man accused of fathering a particular child.

But what if the man falls within the uncertain 5 percent? Does the blood test prejudice his case, marking him with a legal scarlet letter before the trial even begins? Some judges say yes. Some say no. And some say the probability formulas are simply too complex for the average person to fathom.

"As we progress through the years, evidence is going to get more and more complicated," warns statistician Edward L. Spitznagel Jr., professor of mathematics at Washington University in St. Louis. "Yet it's very dangerous to refuse to examine it. You have to ask the question, 'Could any judge or jury in the absence of such evidence have a better track record?'"

Spitznagel says that the statistics of paternity revolve around three little words—and they aren't "I love you." The words in this case are "previously established likelihood," which is an essential mathematical factor in posing the question, "Who done it?"

For Spitznagel, who has designed and interpreted statistical surveys on mental health, surgery patients, and breast cancer detection methods, paternity testing is a natural area of interest. At present, he is a consultant for the American Red Cross in St. Louis on cases where the likelihood of paternity is difficult to calculate. The St. Louis Chapter performs nearly 200 paternity blood tests each year. He also has testified in court and has served as a consultant for attorneys in paternity lawsuits.

The story of mathematics and the law has been one of legal mistrust, even before adding the complicating factor of HLA testing. Spitznagel says. Until the turn of the century, for instance, paternity decisions were based on hostile, conflicting testimony and perhaps equally flimsy evidence like the degree of resemblance to the child in question. The discovery of the ABO red blood cell system in about 1900 made it possible to safely rule out about one out of five randomly accused men. Still, the courts waited 30 years—and in some cases, longer—to admit the widely accepted red blood cell test as evidence.

One of the last to suffer from the court's tardiness was Charlie Chaplin, whose verdict of paternity was upheld in 1946 by the California Court of Appeals. In red blood cell tests, the mother, Joan Berry, was found to have type A blood, while Chaplin tests as type O. Consequently, Berry's type B child could not possibly have been fathered by Chaplin, who had no B genes to pass along. No matter. Chaplin was ordered to pay attorneys' fees and $75 per week for child support.

Later, the discovery of other red blood cell systems, including the Rh factor, made paternity tests even more accurate. For the most part, judges came to admit the tests as legal evidence of exclusion. The real confusion began with the advent of organ transplants.

It was during experimentation with the body's immune response—the tendency to reject foreign matter—that an intricate typing system for white blood cells was discovered. Known as HLA, the typing system deals with the most complex genetic system in man, involving hundreds of closely linked genes. Its accuracy is so much greater than conventional blood typing, scientists say, that it should be properly thought of as tissue typing. Unfortunately, notes Spitznagel, HLA and other blood tests can only rule out fatherhood; they cannot prove it. And therein lies the rub. How can the courts put a baffling schedule of odds, appearing like the tote board of a race track, in perspective?

They can't, ruled one judge in a California paternity lawsuit in 1978. The judge rejected outright blood test evidence that showed the accused man fell within a narrow 1.7 percent of the population that could have fathered the child in question. Such a statement, the judge explained, would have prejudiced the defendant's case.

Though the judge's decision was overturned, the question of perspective looms over all rulings involving statistics. In fact, one of the most famous cases along this line did not deal with a civil
paternity suit at all, but with a criminal trial involving a robbery.

In the California case of People v. Collins, a witness saw a white woman with a blonde ponytail snatch someone’s purse and flee in a yellow car driven by a black man with a beard and mustache. Though neither license number nor other details were available, police later picked up a couple matching this description. At the trial, the district attorney called upon a mathematician who testified that the probability of finding such a couple at random was one in 12 million. The mathematician reached this figure by accepting individual probabilities regarding the couple’s attributes from the prosecutor and multiplying them together.

A guilty verdict was reached, only to be emphatically overturned by the Supreme Court of California. To assume “independent probabilities” for each variable is false, the state supreme court said. For instance, the judges observed, most men with beards have mustaches, and most blonde-haired women are white. These factors are not independent of each other. The court further declared that “Mathematics, a veritable sorcerer in our computerized society, while assisting the trier of fact in the search for truth, must not cast a spell over [that person].”

The best spell breaker in such cases, argues Spitznagel, is “to be quite honest and admit what the limitations to the evidence are.”

The above case, he points out, relied solely on mathematics, and not very good mathematics at that. The mathematician who testified had no sure way of knowing that one in 10 cars was yellow or one in 20 men wore a beard or whatever figures he used to calculate the final probability.

The situation regarding HLA and other blood tests is less contrived. Tables of data published by medical organizations are available which list the general frequency of hundreds of blood types. Though these figures may differ slightly from one table to another, the use of HLA data as paternity evidence has been deemed reasonable by a joint committee of the American Medical Association and the American Bar Association.

According to Spitznagel, the Achilles heel of blood-test evidence in favor of paternity has less to do with blood-type charts than with a mathematical equation commonly used to figure the likelihood of fatherhood. Called Bayes’ formula, the equation enables statistical information like HLA data to modify a “previously established likelihood.”

But Spitznagel says the 50:50 chance which symbolizes prior likelihood must also be subject to review by the judge and jury, who are informed of extenuating circumstances that bear on the equation. For instance, additional evidence, such as the opportunity for intercourse during the fertile portion of the woman’s menstrual cycle and medical evidence about the man’s fertility, can either balloon or deflate the prior likelihood chances in the eyes of the judge and jury.

In other words, Bayes’ formula and the prior likelihood factors are not static numbers, but only aids subject to the due process of law.

Sound confusing? It is. But the alternatives are to deny the blood test evidence outright, or as some have done, establish a multiple-choice quiz of verbal choices ranging from “a certain hint” to “very likely.” The latter method, warns Spitznagel, comes dangerously close to deciding cases by mathematics alone.

“As expensive and time-consuming as it is, the judge and jury have to be made sure of the nature of Bayes’ formula, and they, themselves, have to supply their own prior probability for each case,” he says.

What this means is that lawsuits involving the same likelihood may result in different verdicts. Such was the situation recently with the cases of actor Chad Everett and boxer Aaron Pryor. Both were sued for child support, both were calculated to have the same likelihood of fathering the respective children, yet Everett won his case while Pryor lost his.

“If statistics alone were conclusive, you wouldn’t need a judge or jury,” says Spitznagel. “Mathematics is not sovereign in court. But it should be a more welcome friend than it has been in the past.”
Evaluating Brain Injuries in Premature Babies

By Don Clayton

Medical advances in the treatment of respiratory illness now enable most premature babies to claim victory over what had been their nemesis: suffocation due to immature lungs.

But physicians and parents were given precious little time to celebrate the victory before another threat to premature babies surfaced. The new nemesis is even more hazardous than the respiratory distress that used to claim scores of lives in intensive care nurseries nationwide.

Using modern portable ultrasound imaging, a physician at St. Louis Children's Hospital has shown that four out of every 10 premature babies fall victim to a serious brain injury during their first few weeks of life. The injury occurs when blood mysteriously leaks from a vessel in the infant's head, exerting flooding pressure on vital brain tissue and causing some parts of the brain to swell with backed-up fluid.

"The results of this study have shown us that the frequency of this type of injury is much greater than we expected," says Joseph J. Volpe, M.D., who found the potentially life-threatening hemorrhages in 173 of the 460 infants he examined.

"We are forced now to drastically change the way that we evaluate small premature babies. Because of this study, we're faced with a new challenge," continues Volpe. "Although we are keeping these babies alive, many more babies alive, are we going to keep them alive at the price of disturbing their quality of life?"

"A two-pound baby now has a 70 percent chance of making it. It's incredible. But with the tremendous increase in survival rates among these little babies, we're also seeing an enormous number of these hemorrhages," adds Volpe, director of pediatric neurology at Children's Hospital and A. Ernest and Jane G. Stein Professor of Developmental Neurology at Washington University School of Medicine in St. Louis.

Volpe's study of 460 premature babies weighing as little as 30 ounces is the largest study of its kind ever reported. It was published in a recent issue of Annals of Neurology.

"We did an ultrasound scan on every single premature infant in the neonatal intensive care unit and found that, regardless of how sick the babies looked, 40 percent of them had a hemorrhage. The baby with a hemorrhage may not look any different to the doctor than the baby who does not have a hemorrhage. Yet in most cases the injury is serious enough that it could cause brain damage and compromise quality of life," explains Volpe.

Studies conducted as early as 1978 and 1979 hinted that physicians were underestimating the frequency of brain hemorrhages among very low-birth-weight infants. These small, earlier studies used X-ray CAT scanning as the method of "photographing" an infant's brain. Recognizing the clues that these early reports presented, Volpe and other pediatric neurologists soon realized that it would take a very large sampling to determine the true frequency and seriousness of these brain hemorrhages.

But a large study involving CAT scanners was a problem. Such a study would require moving fragile infants back-and-forth from the intensive care unit to the CAT scanner—a significant distance in most hospitals. Premature babies often need the assistance of a respirator to breathe and must be kept in an environment where temperature can be controlled. Stress must be kept to a minimum. Transporting an infant to the CAT scanner was risky business.

"There was no way we could have done CAT scans on 460 premature infants," says Volpe. "It would have been impossible. Yet there was no way to determine the true frequency of the injury unless we could safely look into the brains of a large number of sick infants. And we needed to examine not only the infants that did indeed look sick, we needed to examine infants that..."
appeared to be in no distress at all. We needed to examine them not just once, but many times during their course of treatment in the unit."

Modern ultrasound technology and the peculiar anatomy of the infant provided Volpe with the conditions he needed to conduct safe, serial exams. The baby's anterior fontanelle—the "soft spot" at the crown of the head—served as a bone-free window through which inaudible sound waves could peer into the brain.

"The particular advantage of ultrasound, apart from the fact that you get very good pictures, is that it is portable," explains Volpe. "You can bring it right into the neonatal unit so that you don't have to disturb these babies, who might be on ventilators or have several tubes in place."

The physician simply places a wand-like transducer across the surface of the infant's anterior fontanelle, and an image appears immediately on a video-screen at the bedside. While the images may be indistinguishable to the untrained eye, to the experienced ultrasoundographer a tell-tale blotch of white against the grey image background probably means a hemorrhage has occurred.

Another advantage of ultrasound is that, unlike CAT scanning, it does not involve potentially harmful X-ray radiation. "The frequency and intensity of the ultrasonic waves used in these instruments is such that there is really very little if any concern that it could possibly be harmful," says Volpe.

With ultrasound technology, researchers were free to take pictures of all the babies in the nursery on a regular, frequent basis. Additional images could be obtained whenever doctors or nurses had an inkling that something may have changed regarding the condition of any particular infant.

"We wanted to get an image of these infants at least weekly and in many cases we might have to scan a baby more than once a day," says Volpe. "CAT scans at that rate would probably have been unethical.

"What we're concentrating on now," Volpe adds, "is trying to use ultrasound to define the causes of hemorrhage." He and co-workers have reviewed and tested the associations between hemorrhages and several other maladies common among low-birth-weight infants, including seizures and collapsed lungs.

"Both seizures and collapsed lungs seem to have an effect on the frequency and severity of these hemorrhages," Volpe reports. "The associations are so strong that we've been forced to change the way we care for these infants in many cases."

As an example, Volpe explains that previously doctors did not aggressively treat infants that had mild seizures, fearing that the strong medication might do more harm than good. "Now, because ultrasound scans have shown that even minor seizure events may cause a serious hemorrhage—or make an existing hemorrhage worse—we are recommending that doctors treat all seizures aggressively, immediately. The side effects of seizure medication are not as serious as the damage caused by a severe hemorrhage," he says.

Suspicious about the effect of lung collapse were also resolved by serial ultrasound scans. In a study of 80 premature infants published last year, Volpe reported that every baby with a collapsed lung subsequently had a brain hemorrhage, even if the lung complication was of short duration.

"These were infants we had scanned previously," says Volpe. "We knew that lung problems occurred first and the hemorrhage afterwards. We're so certain that the relationship is causative that we've changed the way we ventilate these babies in an attempt to avoid this complication and decrease the incidence of hemorrhage."

Rapidly fluctuating blood pressure seems to be the culprit behind the effects of both seizures and lung collapse. In the premature infant, slight changes in blood pressure seem to be "telegraphed" to the fragile, immature capillaries that branch out in the center of the brain. Adults have a self-defense mechanism that protects vulnerable brain vessels from spurious changes in blood pressure. In the infant, however, the self-defense mechanism seems to be inoperable.

"The result," Volpe explains, "is that even mild, temporary increases in systemic blood pressure can greatly increase the chance of hemorrhage in the low-birth-weight infant."

Scientifically sound evidence of a cause-effect relationship and revelations about probable mechanisms of action are usually comforting for researchers. Although Volpe says he is pleased at the progress of the research, some of the findings are rather ominous.

"There must be other factors causing hemorrhages, too," he reasons. "I think we'll be as surprised by some future findings as we were when ultrasound tests showed us that 4 or 5 out of every 10 of these infants have a brain hemorrhage."

"And we're not entirely sure how to best apply what we have learned about the relationship between [blood pressure] and these hemorrhages. Blood pressure in the low-birth-weight infant bounds up and down like a well oiled teeter-totter. "Just handling these infants, moving them for routine care and treatment or picking them up causes fluctuations in blood pressure," says Volpe.

It is ironic to consider that the hugs and cuddling that are such an important part of the bonding that occurs between the full-term infant and its parents might, in the tiny premature baby, cause brain injuries that compromise the infant's quality of life.
Spreading Education Too Thin

Society needs to stop looking for magic remedies and start setting realistic goals for its problem-plagued schools, say two child psychologists at Washington University School of Medicine in St. Louis.

People worried that the American educational system isn’t working are focusing on approaches without first defining what they want the end results to be, according to Barbara K. Talent, Ph.D., and Suzanne G. Busch, Ph.D. Talent and Busch are psychologists in the pediatrics department at the medical school, and both serve as educational consultants at the psychology laboratory of St. Louis Children’s Hospital.

The two main reasons that the educational system is not successful are, first, schools have spread themselves too thin and have tried to do too much. Second, while most teachers have been prepared to teach content, they are less equipped to deal with behavior and attitude problems that may interfere with learning.

"In addition to the traditional academic education, schools are expected to provide religious, moral, ethical, physical, sex, aesthetic, and value education,” Talent noted. “Although these are certainly important and worthwhile, we need to order our priorities and recognize that the educational system cannot be the only institution in our society held responsible for preparing children for life.”

Politicians, concerned citizens, and educators have proposed any number of solutions. These include a return to the basics, merit pay, longer school days, longer school years, more homework, and master teachers programs—which both psychologists believe have the most promise. Before coming up with answers, though, people should first ask what they want their schools to do, and then ask how the schools can do it better, Busch and Talent said.

“This society is looking to its schools to do a lot more than teach academic skills,” Talent pointed out. “There is increasing pressure on teachers to teach everything from social values to sex education to religion. We need to start by thinking about what are realistic goals for our schools.”

Helping children reach academic potential

A realistic and attainable goal would be to help every child reach his or her academic potential, Busch and Talent explained.

“By reaching academic potential, we do not mean that all children will attain the same level of skills, since potential varies from child to child,” Busch said. “Good teaching makes the span of difference wider in the classroom. In other words, good teaching encourages the individual.”

The goal of helping children reach their academic potential will benefit American society in the long run, they commented.

“We want a society that is made up of individuals who, on the whole, are satisfied and productive,” Talent said. “While literacy does not in and of itself ensure that people will be happy and productive, without a certain minimal level of competence, they most likely will not.”

Family, community, and religious institutions must accept their responsibility for providing aspects of education that are important but non-academic, they said.

“The first job of our schools should be to teach children academic skills,” Busch explained. “Once an effective academic program has been developed, any extra resources the school has can be channeled to offer additional programs.”

Help from a master teacher

Of the many approaches suggested to improve the ailing educational system, the master teacher program holds the most promise, the psychologists believe. Teachers are among the few professionals who begin practicing their craft, often without supervision, immediately upon graduation from college.

Having more experienced teachers available to serve as resources for help and advice could provide a valuable support system for teachers, they added. Although many school systems already have an informal network of such teachers, they said, a more structured, formal system of supervision and support should be established.

For example, teachers often are not prepared for the behavior problems that can prevent children from reaching their academic potential, Talent and Busch said.

“Traditionally, the focus of teacher training has been on how to work with the aggressive, acting-out child,” Busch explained. “Perhaps a more frequent and pervasive, though subtle, problem is the unmotivated child who is not disruptive but who certainly is not productive and is wasting his or her ability.”

By Debbie Fabian
In dealing with behavior problems, they said, it is important for teachers to understand what they can and cannot do.

"Teachers cannot change what happens outside of school, for instance, home environments or parent-child relationships," Busch said. "However, they can control what goes on during the five or six hours they have the child in their classroom. Teachers can provide consistency, a firm structure, and warm support. They also can reinforce appropriate behaviors and attitudes.

"No matter how many difficulties a child faces outside of school, the teacher can ensure that the child feels successful and productive in the classroom."

Return to basics not the answer

"Many people advocate a return to the basics, and by that I think they're referring to their impression of how things used to be," Talent said. "If that's the case, then a simple 'back to basics' move is not the answer. Society has changed in a number of ways, and the approaches that worked in the society of 30-to-40 years ago will not necessarily work today."

One example of the back to basics move is the increasing demand for teachers to retain children who have not succeeded in the classroom, they commented.

"There has been growing concern over the evils of social promotion, and more demand for detention of children who are having difficulty in school," Talent said. "Schools, principals, and teachers are under mounting pressure to retain those children who have not been successful. To those not directly involved in the daily school lives of youngsters, making the decision of whether or not to flunk a child may appear to be a relatively straightforward one. On the surface, it may appear to be beneficial for the child, but in reality, it may not be."

Before the decision can be made, Busch added, the underlying cause of the child's lack of productivity must be determined. Factors interfering with a child's progress can range from behavioral or motivational difficulties to limited intellect, development lag, or learning disabilities, they said: for those problems, retention is usually not the most effective remedy.

"It is our position that having children repeat a grade simply exposes them to the material again, and usually does little to help them develop their deficit areas," Busch commented. "It is when the child's difficulty is primarily due to insufficient exposure that retention may be an appropriate choice."

There are a number of points to take into account when deciding whether a child would benefit by repeating a grade, she continued. School personnel should consider what kind of difficulty the child is having and the reasons behind the difficulty, the effect another year's exposure to the same material will have on the child's basic problems, whether the potentially positive effects of retention will outweigh the negative effects on the child's self-concept and peer interactions, and how the school will help the child cope with any negative effects caused by retention.

It is only by clearly defining realistic goals for its schools, Busch and Talent reiterated, that society can develop an educational system that incorporates the best of the basics but still remains relevant to today's society.
Washington University

Annual Report 1982-83
Remarks of the Chairman

To follow George H. Capps as chairman of Washington University’s Board of Trustees is a real challenge—a challenge to try to match George’s energy and enthusiasm in support of the University. His will truly be a tough act to follow!

But I am grateful that I will have the opportunity to continue working with George in his new roles as vice chairman of the board and as general chairman of the ALLIANCE FOR WASHINGTON UNIVERSITY. Having been deeply involved in the long and rigorous planning process leading to this landmark campaign for the University’s future, I am delighted—as we all should be—that George agreed to head this vital program. His personal commitment to the University and his talent for guiding the efforts of others should ensure that he will succeed in this new undertaking. The team headed by George Capps and our strong and effective Chancellor Bill Danforth should prove a formidable asset to the success of the ALLIANCE.

Over the years I have had the good fortune to view Washington University from many perspectives: as a law student in the ‘40s, as an alumnus, as a friend in the community, as a board member, vice chairman, and now as board chairman. I cannot recall a more stimulating time to be associated with the University than right now and the years just ahead.

From the creation five years ago of the Commission on the Future of Washington University—a body I was honored to serve as chairman—through the announcement last May of the ALLIANCE FOR WASHINGTON UNIVERSITY, there has been a continuously growing sense of excitement about the future of this institution. It began with those intimately associated with Washington University; it now has spread beyond the University—through the Midwest to both coasts, and beyond.

This crescendo of excitement within and about Washington University began before the institution’s exhaustive self-study of the late 1970s and early 1980s. I predict it will continue as long as there are answers to be found and problems to be solved. And I am privileged to be a part of it.

Although the ALLIANCE FOR WASHINGTON UNIVERSITY is one of the most important undertakings in the institution’s history and the highlight of 1982-83, we must not forget the other indicators of excellence and vigor. They are, after all, what the University is about, and why we have embarked upon the ALLIANCE effort. The pages that follow help put the year in perspective.

In a year that also had its sadder moments, Washington University lost four loyal and generous friends: Trustee George E. Kassabaum, Life Trustee John M. Olin, and Emeritus Trustees Morton D. May and Theodore D. McNeal. They will be missed, but their names and their works will be remembered.

A final, happier note: To honor Merle L. Kling, Executive Vice Chancellor and Provost and a member of the faculty since 1946, who retired at the end of the academic year, the University has created the Merle Kling Professorship in Modern Letters. The first Merle Kling Professor is Stanley Elkin, whose novel George Mills won last year’s National Book Critics Circle Award.

W.L. Hadley Griffin
Chairman
Board of Trustees
The academic year 1982-83 was very special for me. The Alliance For Washington University was announced on May 2 after almost five years of planning that involved each of the academic units of the university. I am greatly encouraged by the Alliance. I see it as the renewal of a commitment—a commitment to Washington University and a recommitment through Washington University to the worth and value of institutions of higher learning.

I think frequently of the commitments of the past that have brought us to this point. Literally thousands of faculty have poured their lives into Washington University and the teaching of its students. Countless alumni and friends have devoted time, energy, and treasure into the support of an institution and of an ideal for 130 years. Now the responsibility rests on us. It is the turn of the present generation. Thankfully, the early response has been magnificent. Even before the announcement, commitments of $142 million were in hand.

I am very grateful. It is wonderful how such things happen. The dedication of faculty and staff is necessary or there would be no confidence, but our efforts are insufficient by themselves. Fortunately, many people look beyond their own needs and those of their families to make personal and financial contributions that will benefit others, not only those alive today but those who will come after. This impulse to do good and to provide for the future creates and sustains institutions that will carry out the work far beyond what any one of us can hope to do alone.

I am confident these efforts will continue to bear fruit. Universities endure through good times and bad, through changing beliefs and fashions. Clark Kerr, former president of the University of California, is reported to have counted 66 institutions in continuous existence since 1530: the Catholic Church, the Lutheran Church, the parliaments of Iceland and the Isle of Man, and 62 universities. Such stability has obviously not been achieved by power as it is normally conceived in economic, military, political, or demographic terms. Rather, universities endure because they embody so well the hopes and ideals of many and meet so well the needs of young people to understand better themselves and the world about them. I cannot express how fortunate I feel to be part of such an institution and to be part of the company of men and women who are working toward such high goals.

Alliance Goals

The financial goals of the campaign are very straightforward and build on the report of the Commission on the Future of Washington University discussed in the annual report for 1981-82.

One hundred million dollars is sought in gifts to cover operating expenses. It is hoped that $34 million will come from alumni, corporations, and friends as unrestricted annual support, which is part of the essential cement that holds Washington University together and keeps us functioning and improving every year. This support is especially important. The remaining $66 million will be for special programs, mostly in support of research and scholarly activities of the faculty.

One hundred and forty million dollars is sought for new endowment that will furnish the income to support our institution year after year, generation after generation. Endowed professorships and scholarships, the two biggest items, offer special opportunities for commemorating generous and far-sighted individuals.

Sixty million dollars is sought for construction. The three largest projects under way are:

- The Clinical Sciences Research Building that will provide space on the medical campus to develop the next generation of improvements in patient care;
- The new home for the School of Business that will allow much needed expansion of programs and personnel; and
- The new athletic facilities, the first major addition in that area in over 50 years.

The success of the Alliance For Washington University will require hard work. I feel certain we will succeed. I have this confidence because of the understanding, generosity, and willingness to work of our many friends.

Recognition

Washington University is an idea and a place, but most of all it is people. I have been privileged to work with many great individuals during my time in the University’s administration. Among these are successive chairmen of the Board of Trustees James S. McDonnell, Charles Allen Thomas, and Maurice R. Chambers. Most recently it has been an honor and a great experience to work closely with George H. Capps. No one has more ability, more energy, more good will, and, above all, more dedication to Washington University. This latter quality has been demonstrated by the fact that following his stint as chairman he has assumed the general chairmanship of the Alliance For Washington University. All of us in the institution owe an enormous debt to George Capps. He is being followed by W. L. Hadley Griffin, a long-time board member and a worthy successor.

Merle Kling has retired after completing his last year as provost. I have worked with Merle Kling since 1965. To do so has been a delight and a pleasure. I have learned much. I know that for many of us he personifies the academic virtues toward which we aspire.

William H. Danforth
Chancellor
Years of careful planning for the future of the University culminated in the announcement May 2 of the Alliance For Washington University, the campaign to raise a minimum of $300 million in private gift support by 1987. During the last year of planning for this campaign to ensure the future excellence of the University, an already distinguished faculty and an outstanding student body were earning more honors and recognition. These, and other events of the year, are chronicled in the reports of the Deans.

Among the Faculty

Paul E. Lacy, Edward Mallinckrodt Professor and chairman of the Department of Pathology in the School of Medicine, was elected to membership in the National Academy of Sciences, bringing to 14 the University's representation in that distinguished body. Peter H. Raven, Engelmann Professor of Botany and director of the Missouri Botanical Garden, was elected to a three-year term on the Academy's Council, joining 11 other scientists who set policies for the organization.

Two more members of the University's Writers' Program—Mona Van Duyn, award-winning poet, and William H. Gass, David L. May Distinguished University Professor in the Humanities—have been elected to the American Academy and Institute of Arts and Letters, joining Professors Howard Nemerov and Stanley Elkin. Elkin's novel George Mills won the National Book Critics Circle award for best fiction in 1982, and the professor of English became the first to hold the Merle Kling Professorship in Modern Letters, named in honor of the retiring provost.

Earlier in the year, Murray L. Weidenbaum, Mallinckrodt Distinguished University Professor, resumed his duties as director of the Center for the Study of American Business after serving as chairman of the President's Council of Economic Advisers.

A number of other faculty gained diverse honors during the year. Walter H. Lewis, professor of biology and senior botanist at the Missouri Botanical Garden, was elected a lifetime fellow of the international Linnean Society. Lewis is one of only 50 members of the prestigious natural history society from outside Great Britain. Michel Rybalka, professor of French, was named a Chevalier de l'Ordre des Palmes Académiques by the French government for contributions to French culture. Charles M. Wolfe became the fourth Samuel C. Sachs Professor of Electrical Engineering in May.

Students in the Spotlight

Edward A. Shpiz, a junior mathematics major, placed among the top five students in the nation in the 43rd William Lowell Putnam Mathematical Competition. The University's team entry placed among the top 10 for the seventh consecutive year. During that time, the University has won first place three times and second place twice.
A team of students from the School of Business won first place in the McIntire Commerce Invitational, the nation's only undergraduate business case competition, last winter at the University of Virginia. Washington University defeated teams from four other schools in the three-day competition.

Another University team also took first place in a national competition. Law students Cathy Gilbert and David Mason were undefeated in regional and national levels in winning the national Mock Trial Competition in Houston in March; Gilbert also won an individual award as Best Advocate.

Mark D. Gross, a 1983 graduate, and Phyllis Deutsch, a 1977 graduate of Arts and Sciences, were among the 96 college seniors or recent graduates from the United States and Canada selected to receive the Andrew W. Mellon Fellowships in the Humanities, awarded for the first time last spring.

Many other students earned individual and collective honors during the year. (See the Deans' reports beginning on page 6.) From the admission of a 1982 freshman class of 1,021 students that included 285 National Honor Society members, about 100 National Merit Scholars, and a majority in the top 10 percent of their high school classes, to Commencement where more than 2,500 bachelor's, master's, and doctoral degrees were conferred, the quality of Washington University students continued at a high level.

Visitors and Events

A parade of distinguished lecturers and guest artists enlivened the campus during the year. Nobel laureate David Hubel gave the inaugural James S. McDonnell Lecture during the First McDonnell Conference on Higher Brain Function in September. Former Secretary General of the United Nations Kurt Waldheim spoke at the University's 129th Founders Day on October 9.

Among other outstanding visitors were: medical physicist and Nobel laureate Rosalyn S. Yalow, delivering the Arthur Holly Compton Lecture; U.S. Court of Appeals Judge Leon Higginbotham, Jr., keynote speaker at the Black Arts and Sciences Festival; former Chancellor Thomas H. Eliot, delivering the Ferdinand M. Iserman Memorial Lecture; soprano and opera director Beverly Sills, keynoting the Eighth Annual Olin Conference on Women; playwright Fernando Arrabal, for an Assembly Series lecture and work with French classes; and David S. Broder, national political correspondent and columnist, presenting the Thomas C. Hennings Memorial Lecture.

Joan Mondale, wife of the former vice president and author of Politics in Art, gave the First Annual Chimes Lecture; former Attorney General Griffin Bell delivered the Tyrrell Williams lecture, and John Rassias, originator of the Dartmouth Intensive Language Model, keynoted foreign Language Week in March. Other spring semester speakers were: author James Baldwin, presenting a commentary and reading during the Martin Luther King, Jr., Symposium; Mexican writer and diplomat Carlos Fuentes, Lewin Visiting Professor in the Humanities during April; economist and Nobel laureate George J. Stigler, delivering the David R. Calhoun, Jr., Memorial Lecture. The year ended with the commencement address of Sir John Harold Plumb, scholar and author on 18th century social history.

A highlight of the year was the six-and-a-half-week Baroque Festival, which celebrated the theatrical arts, music, and literature of the 16th, 17th, and 18th centuries. The festival, which featured speakers, a symposium, art and book exhibitions, and a chamber music concert, was crowned by a nationally praised professional production of Handel's opera Orlando.

Another event of importance to students and faculty alike was a "kick-off" celebration for the renovation and expansion of the University's athletic facilities, which took the place of a formal groundbreaking ceremony. T-shirts with the slogan, "I'm Getting an Athletic Complex at Washington University," were the most popular souvenir of the event.
Two events which occurred in early May 1983 may be looked upon at a future time as turning points in the history of the Arts and Sciences at Washington University. On May 2 the Alliance for Washington University was announced with a goal of at least $300 million in private gift support by the end of 1987. The campaign is the largest in the University's history and one of the most ambitious ever undertaken by an American university. On May 6 the Board of Trustees of the University designated the Faculty of Arts and Sciences with its constituent schools—the College, the Graduate School, and University College—as a reserve unit effective July 1. This action removes the Arts and Sciences from the Central Fiscal Unit and places it on the same financial footing as the eight professional schools of the University. The implications of these two events for the Arts and Sciences deserve a few sentences of elaboration.

Alliance Objectives

In view of the magnitude of the effort required to complete successfully a campaign of $300 million, the University wisely has refrained from defining the goals and purposes of the Alliance simply as the sum of those expressed by particular schools, services, and activities. Within this framework, however, the Alliance holds the prospect of achieving important objectives in the Arts and Sciences. In the forefront of these objectives are, first, the endowment of professorships in order to attract and retain eminent scientists, scholars, and creative artists; second, financial aid funds for the support of gifted and deserving students; third, term grants and endowments for the improvement of teaching and research; and, fourth, the renovation or enlargement of physical facilities where these are clearly inadequate to the programs of instruction and research which they serve. Each of these objectives was assigned a high order of precedence by the Arts and Sciences Task Force whose work was summarized in the last annual report. Each also is worthy of the faculty, students, alumni, friends, and benefactors whose achievements, support, and reciprocal understanding sustain the quality of academic life in the Arts and Sciences.

The designation of the Arts and Sciences as a reserve unit has the result of putting it on its own financial bottom, so to speak. Hitherto the annual expenditure budget has been received as an allocation from the Central Fiscal Unit. Henceforth, expenditures in the Arts and Sciences will be apportioned directly to income from tuition, endowment, gifts, grants, and other sources. Admittedly, the transition to reserve status is not without risks. Ineptly managed, it can raise tensions between academic values which are especially dear to the Arts and Sciences and the requirement for fiscal accountability, confuse the pursuit of financial ends with the pursuit of academic quality to the hurt of both, and cause the Arts and Sciences to lose sight of the larger good of the University in the quest for goals peculiar to it. This having been said, it also must be said that the greater autonomy, which comes with designation as a reserve unit, opens many doors of opportunity. Used wisely this autonomy can heighten the visibility and sharpen the identity of Arts and Sciences within the University, greatly improve its financial health, enable it to set its own order of priorities and determine the means of reaching them, and, generally, to assume greater control over its direction of development.

Faculty Appointments

Two appointments to the faculty, both of which are effective July 1, 1983, merit special note. A search conducted by an interschool committee chaired by Dean F. Hodge O'Neal of the School of Law has resulted in the appointment of Douglass C. North as Henry R. Luce Professor of Law and Liberty. Professor North, who comes from the University of Washington (Seattle), stands at the pinnacle of economic historians and his many books and articles on institutional development have deeply affected the thinking of both economists and historians in Europe as well as the United States. The efforts of a search committee headed by Professor Luis Glaser, director of the Division of Biology and Biomedical Sciences, had an equally felicitous outcome in the appointment of Roy Curtiss III, of the University of Alabama School of
Medicine, as professor of biology and chairperson of the Department of Biology. Professor Curtiss, who combines administrative experience and scientific prowess to an extraordinary degree, is a highly respected investigator. His recent research on the biological mechanisms of leprosy and dental caries is characterized by theoretical sophistication and fraught with possibilities for improvements in the health of much of the world’s population.

Besides biology, three other departments will begin the 1983-84 academic year with new chairpersons. More than two years of study and effort have resulted in the reorientation of studies in education and the reorganization of the Graduate Institute of Education into the Department of Education. The reorganized department will be chaired by Professor Alan R. Tom. In Germanic languages and literatures Professor P. Michael Lützel, who recently returned from two years abroad as a Guggenheim and Humboldt Fellow, will succeed Professor James F. Poag as chairperson, and in economics, Professor Laurence H. Meyer will have as his successor Professor Wilhelm Neuefeind. It would be an egregious omission if this report failed to record another important change that occurred during the 1982-83 academic year. Following his resignation as chairman of the Council of Economic Advisers, Murray L. Weidenbaum returned to the University to resume his positions as Edward Mallinckrodt Distinguished University Professor and director of the Center for the Study of American Business. In the latter capacity he succeeds Clifford M. Hardin.

Student Honors

The string of annual successes scored by Washington University students in the national William Lowell Putnam Mathematical Competition was extended to seven this year when, from among more than 2,000 contestants, Edward A. Shipz, ’84, was one of the five to be named a Putnam Fellow. The five Putnam Fellows, in effect, are the co-winners of the competition. In addition, three other Arts and Sciences undergraduates finished among the highest 100. They were Paul Burchard, ’84, Richard Strong, ’85, and Patrick Abegg, ’86. Of the 348 colleges and universities which entered the Putnam Competition, only five surpassed Washington University in the number of students who finished in the first 100. The announcement of the results of the first national competition for Andrew W. Mellon Graduate Fellowships, which are designed to ensure the flow of talent into teaching and research in the humanities, brought the news that Washington University was one of a handful of institutions with multiple winners. The awardees are Phyllis Deutsch, A.B. ’77, who majored in English and comparative literature and Mark D. Gross, A.B., A.M. ’83, whose fields of study were the classics and French literature.

Professors Emeriti

The 1983 class of professors emeriti in Arts and Sciences is unusually large and illustrious. The members include Dan I. Bolef, whose 30-year career as a physicist spans both industry and the University; William H. Connor, who will be remembered long for his work in behalf of the preparation of teachers; William G. Madseh, whose memorable scholarly accomplishments in English literature were capped by two years as chairperson of the Department of Education; Norris K. Smith, the biographer of Frank Lloyd Wright and an exciting teacher of the history of art; James M. Vanderplas, who will find his first career as a psychologist useful in his second as a lawyer; and Arthur C. Wahl, who has ensured his place in the annals of chemistry by the co-discovery of plutonium.

The seventh member of the class of emeriti of 1983 is Merle Kling. A sterling teacher and impeccable scholar, his association with Washington University as an undergraduate, graduate student, faculty member, and academic administrator covers more than 40 years. He has served a term as chairperson of the Department of Political Science, two terms as Dean of the Faculty of Arts and Sciences and, since 1976, he has been Provost of the University. Among his principal concerns as Dean and Provost has been the nurture of the University’s creative writers, and it is fitting that his contributions in this respect have been recognized in the establishment of the Merle Kling Professorship of Modern Letters. It is equally fitting, as Chancellor William H. Danforth remarked at the induction ceremonies, that the first incumbent of the chair is Professor Stanley Elkin whose latest novel, George Mills, was acclaimed the best work of fiction of the year by the National Book Critics Circle.
The strains and limitations imposed by the national economy on our society in general, and on the architectural profession specifically, were again an ever-present concern during 1982-83. How to plan creatively for the future in an adverse environment and how to channel our constrained resources for the best possible educational results were the challenges that all of us in the School of Architecture continued to face. I am pleased to report that we have done well with regard to these challenges during the year, and we are confident that we will continue to do well in the future.

Discussions and negotiations with the University administration on the School's reserve status continued through 1982-83. As a result of these, the Washington University Board of Trustees, in its May 1983 meeting, approved a resolution establishing a reserve status for the School of Architecture. This resolution also assigned to the School a substantial endowment from the Danforth Foundation Challenge Grant which will allow us to produce an independent and balanced budget for 1983-84 and future years.

Reserve Status
Up until now the School of Architecture as a separate division of the University has enjoyed substantial academic independence. Budgetary decisions, however, had to be made within the context of the Central Fiscal Unit and in relationship to other academic divisions of the University. The new reserve status will bridge the gap between our academic plans and goals on the one hand and fiscal responsibilities on the other. Experience with our recent past financial performance—which we have monitored very closely—and the reinforcement which comes with the endowment from the Danforth Foundation Challenge Grant, as well as confidence in the quality of education offered by the School, make us feel very assured about the future and about the new reserve status which took effect on July 1, 1983. This assurance is also reinforced by the knowledge that we will continue to have the support of alumni, alumnæ, friends, and parents, whose annual contributions, future bequests, and endowment gifts will benefit the School of Architecture even more now than they have in the past.

Comments on the recently announced ALLIANCE FOR WASHINGTON UNIVERSITY will be found in other parts of this annual report. The School of Architecture is, of course, part of this effort to raise private support for the University, and we are working toward the full development of the campaign. We are also looking forward to its results, which in the next few years will help the School achieve its objectives and enhance its role as one of the leading schools of architecture in the nation.

Enrollment and Graduates
Enrollment in the fall of 1982 at both the undergraduate (193) and graduate (115) levels declined for a total of 308 students, a smaller number compared to enrollments in recent years. This total number included 92 women, 49 international students, and 25 minority students. About 16.5 percent or 51 of the total enrollment were Missourians.

During the 1982-83 year, we conferred 36 Master of Architecture and 10 Master of Architecture and Urban Design degrees. Bachelor of Arts degrees with a major in architecture were conferred on 35 graduates by the College of Arts and Sciences during the year. As continuing education has been an administrative responsibility of the School of Architecture since the summer of 1982, we also conferred in May 1983 for the first time two Certificates in Architectural Technology and five Bachelor of Technology degrees.

Accreditation
As part of the School's accreditation process, we were visited by a team representing the National Architectural Accrediting Board (NAAB), during the latter part of March 1982. This three-member accreditation team, composed of David L. Perkins, FAIA, of Lafayette, Louisiana, representing NAAB and AIA (also serving as the team chairman), Professor Anderson Todd, FAIA, of Rice University, Houston, Texas, and Joseph G. Burns, of Chicago, Illinois, went through an elaborate four-day scheduled series of class and studio visits, as well as meetings with Chancellor Danforth, Provost Kling, architecture faculty,
students, alumni, other Washington University faculty colleagues, members of the Architecture Task Force, representatives of the profession, and the Dean. Early in the fall we were notified that accreditation had been again extended for the maximum five years.

Concerns about what then appeared to be the bureaucratization of the accreditation process were expressed in an earlier annual report with regard to the 1977 visit. Much has happened since then, particularly through a number of national conferences of architecture school administrators to help avoid such a calamitous turn. We were pleased to note this past year that the 1982 visit was for us an experience superior to any previous visit. This is certainly due to the improvement of procedures and attitudes that has occurred over the years, but very much so to the quality of the individuals composing the team.

Visiting Faculty
One of our academic strengths for more than 20 years has been our visiting faculty program. In this tradition 1982-83 was a particularly rewarding year in that we enjoyed the presence of an unusual combination of talents, attitudes, and individual perceptions among our visitors. During the year we hosted Visiting Professor Neave Brown from London, England; Visiting Professor Norman Cinnamond from the University of Barcelona, Spain; Visiting Associate Professor William Curtis from Harvard University, Cambridge, Massachusetts; Visiting Associate Professor Philip Drew from the University of Newcastle, New South Wales, Australia; and Visiting Professor Gertrude Lempp Kerbis from Chicago, Illinois. Professors Brown, Cinnamond, and Kerbis taught architectural design studios at the advanced level; Professor Drew, history and theory courses and an advanced studio; and Professor Curtis, courses and seminars in architectural theory and history. At this time we are very pleased to know that Professors Brown and Curtis will be returning to Washington University for the whole year and fall semester of 1983-84, respectively.

Faculty Activities
Faculty activities through the year were highlighted by the following:

Associate professor Gerald Gutenschwager was awarded a Fulbright research grant to spend 1983-84 in Greece completing a study he began there earlier on that nation's health and health care through the National Center for Social Research in Athens.

Professor Leslie J. Laskey was among the four members of the Washington University faculty to be honored with the University's Distinguished Faculty Award "for outstanding commitment to teaching and dedication to the intellectual and personal growth of students."

Affiliate Professor Joseph Dennis Murphy was awarded by the American Institute of Architects/St. Louis Chapter their first Gold Honor Award, in recognition of his achievements in design, architectural education, and service to the chapter which has been a standard for architects in St. Louis since the early 1940s.

Affiliate Assistant Professor Dave van Bakergem spearheaded, organized, and coordinated the Kiener Plaza Design Forum, a four-day urban design program which included lectures, panel discussions, and a two-day design charrette by eight teams of architects and students presenting a range of ideas on the revitalization of a two-block area along the St. Louis Gateway Mall.

I was also pleased to be nominated by the AIA/St. Louis Chapter and be advanced to Fellowship in the American Institute of Architects in May 1983 for contributions to architectural education. Although this honor seems to be focused on a single person it must be shared by Washington University as a whole for its continuous, active, and nurturing support of the School of Architecture, and by my colleagues on the faculty for their dedication to teaching, their professional and creative activities, and their contributions to the learning atmosphere of Givens Hall.

During the year we also welcomed Visiting Associate Professor Elliott Littman who joined the faculty following teaching assignments at the University of Kansas in Lawrence, Kansas, and Miami University in Oxford, Ohio.

Alumni Support
The continued generosity of alumni and alumnae, parents, and friends once more provided gratifying support. During the year, 435 alumni/alumnae contributed nearly $51,000. Memberships in special giving clubs include 147 in the Architecture Century Club, 16 Fellows of the Century Club, 8 of the Dean's Committee of the Century Club, and 21 members of the William Greenleaf Eliot Society.

I would like to close this report by expressing my appreciation to the faculty, students, staff, alumni, alumnae, and other friends of the School for their efforts, dedication, and loyalty, which have made our progress in 1982-83 possible.
This has been a most exciting year for the School of Business. We have moved ahead with our plans for a magnificent new building—one that will give us everything in physical facilities that a business school of repute should have. Through a national competition we selected the Boston firm of Kallmann, McKinnell, and Wood, in association with Murphy, Downey, Woford, and Richman of St. Louis, as our architects. In December 1982 the Board of Trustees approved the building project. We anticipate breaking ground this fall and taking occupancy in 1985.

Our new facilities are just one aspect of the School's goal to achieve nationally recognized excellence in business education and research during the '80s. Hand in hand with bricks and mortar go the people who make up the school's community. It is our faculty, through their research and teaching; our students, through their qualifications and achievements; and our alumni, through their professional accomplishments and giving, who determine the quality of the School.

Student Honors, Enrollment, and Placement

We were made very proud by a team of four seniors who brought national distinction to the School when they won first place in the 1983 McIntire Commerce Invitational in February at the University of Virginia, the only business case competition for undergraduates. This instance of recognition and honor earned by our students reflects the steadily increasing quality of our student body in the B.S.B.A. program, as well as in the M.B.A. program. Enrollments this fall are on target, with 390 students in the B.S.B.A., 235 in the full-time M.B.A., and 290 in the part-time evening M.B.A.

The placement record of any business school is an extremely important measure of its status and respect in the business community. This was a very difficult year for job placement, the toughest many of us can remember. Many schools experienced a significant decline in the number of companies coming to campus. Interview activity at the Business School, however, remained strong: 112 organizations interviewed 104 M.B.A. and 77 B.S.B.A. graduates in 1982-83, compared to 115 organizations the year before. Average starting salaries for B.S.B.A.'s were $19,000; for M.B.A.'s, starting salaries from $21,500 to $45,000 with an average of $28,600, a ten percent increase over 1981-82.

Interaction with the Business Community

We took a most significant step to expand our position in executive education, another important part of the objectives for the School. The Executive M.B.A. Program was launched in September with a charter class of 35. Professor C. William Emory is directing the program. A two-year course of study offered on weekends, the Executive M.B.A. is designed for the manager with at least seven to eight years of experience who has significant potential to assume senior level responsibilities. Managers from 30 different organizations are in the charter class. Representative titles of the jobs held include president, vice president, controller, sales manager, and production manager.

The School continued efforts to strengthen bonds with the business community. The chief executives of several major St. Louis companies came to campus to share their experiences with our students and to participate in the classroom. A primary focus for these rich interactions was the M.B.A. course in business policy taught by Professor Armand Stalnaker, formerly chief executive officer of General American Life Insurance Co., who joined our faculty in 1982-83.

Members of the corporate community came out in strong numbers to support School activities such as the David R. Calhoun, Jr., Memorial Lecture, given by Nobel Laureate George Stigler, the Charles R. Walgreen Distinguished Service Professor Emeritus at the University of Chicago. Stigler spoke before a record crowd of over 900 in Graham Chapel in May.

The School's reputation in the area of financial markets continued to spread, largely due to the Institute of Banking and Financial Markets, now in its third year and ably directed by Jess B. Yawitz, the John E. Simon Professor of Finance. Four new members joined the Institute in 1982-83—Bank of America, First National Bank of Chicago, InterFirst Bank.
Dallas, and Mellon Bank—bringing the total membership to twenty-six. The institute gives focus to the School's reputation as a leading educational center in banking and capital markets. It brings top professionals to campus, sponsors research, and widely disseminates the results of its research through working papers and reprints.

Financial institutions across the country consider the School a principal source of new managerial talent, and in 1982-83, 38 firms actively recruited our students. The keen interest of these firms in our graduates was reciprocated with 46 percent of our M.B.A.'s and 43 percent of our B.S.B.A.'s accepting jobs in commercial banking, investment banking, and financial services.

Faculty Development
The past year culminated in a rewarding payoff for our insistence on the highest standards in faculty recruiting and development. Our most important appointment beginning in 1983-84 was at the senior level when Nicholas Dopuch, formerly of the University of Chicago, joined us in July as professor of accounting. Editor of the Journal of Accounting Research since 1968, he is among today’s foremost scholars in accounting. One of his great strengths is his record in guiding younger faculty, and since January, three very promising young assistant professors in accounting have been attracted to work with him. In addition, very strong appointments at the assistant professor level were made in finance and marketing.

A special highlight throughout 1982-83 was the presence of Harold Demsetz of UCLA as distinguished visiting professor of business economics. This eminent scholar’s visit was immensely successful, as he offered special electives to our B.S.B.A.’s and M.B.A.’s, conducted research on his own and with members of our faculty, extended our visibility at leading universities, and in general greatly enriched our academic environment.

Microcomputers in the Curriculum
In a move which promises far-reaching consequences, the School launched a development program in the microcomputer in 1982-83. This powerful analytical tool is essential in research and for tomorrow’s business managers to master. Professor Lyn D. Pankoff is directing the integration of the microcomputer into the curriculum and working with faculty to develop in this area. A laboratory containing 10 microcomputer units became available this fall.

For the first time since becoming an independent financial unit within the University, the School operated at a deficit. The surplus accumulated in the previous three years was able to absorb the deficit. This undesirable operating result is temporary and is traceable basically to a rapid development of programs in our strict adherence to the goal of achieving the highest quality in business research, teaching, and programs. Excellence in business education is expensive: good students require financial aid; top faculty require competitive salaries and substantial support; new developments such as the microcomputer must be undertaken; general administrative expenses increase proportionately.

Finances and Annual Giving
Fortunately, we continued to show impressive gains in annual giving, which rose to 14 percent of income. Our recent progress and our hopes for the future simply would be impossible without the marvelous support of our alumni and friends. 2,195 alumni, or 32 percent, contributed $284,238, a 33 percent increase over 1981-82, ranking us second among Washington University schools in alumni giving. The School registered 51 new members in the Eliot Society in fiscal 1983, and by the end of the year had 185 Eliot Society members; both rank first among all divisions. There were 104 named scholarships in force at year-end under the highly successful Scholars in Business Program. In fiscal 1983, 1,181 persons, or 54 percent of those giving, were members of the Business Century Club. A class-giving program was established, and 58 percent of the School’s 222, 1983 graduates pledged alumni support of $35,555. This record of support is a tribute to our Alumni Executive Committee, headed in 1982-83 by Robert B. Karn (B.S.B.A. ’65), and our many other volunteers.

Through the ALLIANCE FOR WASHINGTON UNIVERSITY, the School’s goal is to raise over $30 million for endowment, and annual support. The ALLIANCE is our opportunity to realize the goals of excellence and recognition set for the School by the Task Force. With the continued support of our alumni and friends, we will.

This progress has been due entirely to our faculty, staff, students, alumni, friends, and our volunteers. I am deeply grateful to them.
The School of Dental Medicine has completed another successful year in spite of national economic uncertainties and an increasingly competitive environment in dental education. Despite some obstacles, the School noted significant qualitative improvement in the 1982-83 academic year, and we see no reason why such progress should not be maintained throughout the 1980s.

Our School, established in 1866, is now the fourth-oldest continuously operated dental school in the United States. It has evolved over the years from an institution of mostly local and regional emphasis into a truly national enterprise. Our 2,400 living alumni practice dentistry in almost every state and a number of foreign countries. Further reflecting this national character, almost half of our student body of some 220 men and women come from the Pacific Coast, Hawaii, or the Rocky Mountain states, while one-third come from the Midwest, and the remainder from the Eastern United States and from other countries. Our 1982-83 student body included representatives from 31 states and seven foreign countries.

Student Recruitment

Our most pressing concern at present is to maintain an adequate enrollment of well-qualified students in the face of a reduced age-group pool of potential applicants for dental education and a concurrent national decline of interest in dental careers among young people. As a result, competition among dental schools for the best applicants is intense. We are competing vigorously for such applicants. A well-planned and executed student recruitment program is in operation and our alumni in many areas are assisting us as recruiters and interviewers. Our program produced more than 1,000 applications for places in our 1983 entering class, a healthy ratio of better than 12 applicants for each available place. This represents a decline from the previous year, but we feel that the decline would have been much greater without our aggressive recruiting program. The program continues and, we are confident, will keep us competitive.

A key element in the student-recruiting effort is financial aid. As a private institution, our tuition is relatively high and we must compete for students with various state dental schools, many of which now are recruiting nationally. In 1982-83, 95 percent of our students applied for financial aid. Our resources permitted us to grant such aid to 81 percent of our students. This figure compares favorably with other dental schools, but does point out the great need for student scholarship, endowment, and financial aid programs. Such aid totaled $2,824,064, an increase of more than 100 percent over the last five years. Therefore, one of our highest priorities must necessarily be to increase our student aid funds—particularly our scholarship funds, which are woefully lacking.

Alliance Goals

The augmentation of financial aid for students is one of the key goals cited by the School of Dental Medicine Task Force, and it is a principal objective of the School's participation in the ALLIANCE FOR WASHINGTON UNIVERSITY. Our other major goals in the campaign are: to strengthen the faculty and add new graduate programs, to expand research activities, to maintain an ongoing program of equipment replacement, and to implement a program of facility improvement. The attainment of these goals through the ALLIANCE will keep our School in the forefront of dental education through the 1990s.

Our financial aid capability was improved further last year by the generosity of Mrs. Jeanette Musgrave of Springfield, Missouri, who contributed an additional $50,000 to the Dr. Edward F. Musgrave Student Loan Fund in memory of her husband, a 1910 graduate. An overdue word of appreciation should be said, too, for the many other loan funds which have been of such enormous help to our students over the years. An example is the Auer-Rosenfeld Memorial Loan Fund, established in 1970 by Mrs. Albert Auer in memory of her husband and her parents. This fund, still generously supported by Dr. and Mrs. Auer's son, Arthur I. Auer, M.D., is deeply appreciated by the many students it has aided.

The School's alumni continue to give us their steadfast financial support. Our class of 1958 marked its 25th anniversary of graduation with a class gift of $10,500, one of the largest—if not
the largest-class gifts ever presented to the School.

Faculty and Research

As mentioned, the School looks to a continued expansion of its research activities and our burgeoning research program has already come a long way. Recently, several major administrative changes and faculty additions impinging on research have been announced. Dr. Arnold J. Kahn, professor of anatomy, has been given the additional responsibility of director of research and will coordinate research programs and stimulate new ones. He also chairs a new Research and Development Council that advises me on all matters relating to research.

A New Department of Biomedical Sciences and Pathology has been established within the School and is chaired by Dr. Charles Waldron, adjunct professor of pathology and assistant dean for biomedical sciences. The department includes a Division of Cell and Molecular Biology and Biochemistry headed by Dr. Kahn, a Division of Anatomic Sciences and Physiology headed by Dr. Richard Brand, and a Division of Pathology, Microbiology, and Pharmacology headed by Dr. Samir El-Mofty.

Emblematic of our School's increasing research relationships with other divisions of Washington University and with other institutions—the "research without walls" concept—are two important recent additions to our faculty. Dr. Roy Curtiss, III, professor and chairman of Washington University's Department of Biology, has accepted joint appointment on our faculty as professor of cellular and molecular biology. And Dr. George Wilner, director of laboratory medicine at Jewish Hospital of St. Louis, has accepted a joint appointment with us as research associate professor in cell biology and biochemistry.

Such cooperative scientific relationships are producing significant results. Two current examples: Dr. Brian L. Clevinger, assistant professor of cell biology and biochemistry at the dental school, is working with Dr. Steven L. Teitelbaum, who holds joint appointments at the dental school and at Jewish Hospital, and Dr. John Haddad of the University of Pennsylvania on the development of a new diagnostic aid to measure Vitamin D levels in blood. And Dr. Kahn and Dr. Teitelbaum are doing promising work on the relationship between Vitamin D and the control of cell function. Their research suggests that Vitamin D seems to promote the maturation of both normal and abnormal (cancer) cells.

Retirements and Appointments

Dr. John R. Ring, an outstanding teacher of anatomy at the School for 36 years and the holder of many major administrative positions, has retired with our best wishes and heartfelt thanks. He is succeeded as director of admissions by Dr. Richard Brand, who had worked closely with Dr. Ring for a number of years, and as head of the Office of Student Services by Dr. Charles Waldron. In the latter role, Dr. Waldron will oversee the areas of admissions, recruitment, registrar, financial aid, counseling, and the grievance committee.

A significant updating of the School's administrative procedures will result from the appointment of Mr. Robert B. Wilson as administrative officer. Mr. Wilson, a member of the WU Hilltop campus staff since 1966, will develop operational systems for the years ahead and will focus on the computerization of data and records.

A Community Resource

Our Department of Community and Preventive Dentistry, headed by Dr. Shirley Pierce, continues to do a highly commendable job of providing treatment for underserved patient groups and of educating our students in the special problems (and pleasures) of treating such groups. The department provides staff and students for an Elks Mobile Dental Unit operating in out-of-state Missouri and also provides dental services to the Herbert Hoover Boys Club and City of St. Louis Juvenile Detention center. In addition, Dr. Pierce and her staff recently have played a major role in the opening of an Elks Dental Clinic at 634 N. Grand in St. Louis for the care of mentally retarded and developmentally disabled patients. The School staffs the clinic, which is funded by the Missouri Elks Benevolent Trust, the State of Missouri, St. Louis city and county agencies, and the Monsanto Company. The clinic is a valuable new health care resource in the St. Louis area.

This has been a year of frequent travel for me, including a month-long stay in Indonesia, where I advised the government on graduate dental programs, and a visit to California for our very successful alumni meeting there—the first such alumni annual meeting held outside St. Louis. Travel is fine, but it's always good to get home, especially with the confidence that all is well at the School of Dental Medicine and that the future looks bright.
Following are some of the highlights of the 1982-83 academic year:

- A total of 269 bachelor of Science degrees were granted, the largest number since 1949's 335 degrees.
- The engineering undergraduate enrollment was 1,005, again in the target range of 950 to 1,050 students.
- Applications to the 1983 engineering freshman class and the Three-Two program reached new records.
- After many years of being depressed, graduate engineering enrollment experienced a significant upturn.
- On the negative side, funding for sponsored research declined significantly, primarily because many of the research funding agencies have insisted upon "stretching" appropriated funds and have taken longer to respond to proposals.
- As a consequence of the decline in research funding, the School incurred a significant deficit in its operating results. The School will draw upon its reserve funds to cover this deficit.

Current Students and Programs

During the 1982-83 academic year the School granted 269 baccalaureate degrees to 241 students, taught 17,800 undergraduate credit-hours, and enrolled an average of 1,005 students. The most popular department for undergraduate students continues to be electrical engineering, which awarded 82 B.S. degrees, followed by computer science with 62. Of interest also is the decline in chemical engineering graduates from 69 in 1979 to 42 this past year, clearly reflecting the depressed conditions in the chemical, petrochemical, and synfuel industries. The total number of students graduating each year has not changed significantly over the past five years, although the distribution among the departments has undergone two major changes, which have created difficult staffing problems because of the length of time required to effect changes in departmental faculties.

The largest number of master's degrees, 26, were granted in civil engineering. An important factor in the department's graduate program is the new Master of Construction Management degree, which has attracted a large number of part-time students from the St. Louis construction industry, as well as students continuing their education on a full-time basis.

The Department of Technology and Human Affairs granted its first doctoral degrees during the 1982-83 academic year. The development of this doctoral degree program was greatly assisted by a generous grant from the Exxon Foundation.

The Class of 1987

The 1983 engineering freshman class looks very good. The traditional indicators of academic ability show that the class is very strong. The SAT averages of 602 for Verbal and 693 for Math are outstanding and, with 55 percent of the freshmen having graduated in the top ten percent of their high school classes, they have also demonstrated motivation and ability to perform in a competitive environment.

The class will have 24 percent women, and 21 percent of the class will be from the St. Louis metropolitan area. Neither of these statistics has changed significantly over the past five years. Black student recruiting was particularly successful, with the percentage of black students increasing from two to eight percent.

The percentage of new freshmen receiving scholarship assistance has increased steadily over the past six years from about 46 percent to 66 percent. Honorary scholarships awarded to students without financial need has remained steady in the four-to-six-percent range. This constitutes a relatively small portion of the total scholarship budget, but it is considered a very important part of the overall engineering student recruitment effort.

The Class of 1987
Resignations, Appointments, and Promotions

During the 1982-83 academic year there were two resignations: Mario Gomes, professor of mechanical engineering, and Lester Eastwood, associate professor of technology and human affairs. Three new faculty appointments were made: Thomas Harmon in civil engineering, Jonathan Turner in computer science, and Eric Tuegel in mechanical engineering, all at the assistant professor level.

There were three promotions to the tenured faculty: Noor Gillani in mechanical engineering and Will Gillette and Takayuki Kimura in computer science, all at the associate professor level. With one of the resignations being from the tenured faculty, the net result is a gain of two in the number of tenured faculty. Over the past six years there has been a growth in the total engineering faculty from 66 to 73, with a corresponding growth in tenured faculty from 44 to 52. The percentage of the faculty holding tenure has increased during this period from 66 percent to 72 percent.

Placement

The softening of the job market which began in the spring of 1982 continued through 1983. Companies curtailed recruiting activities by 20 percent, and the average number of offers made to students were two to three per student as opposed to seven to eight per student in previous years. In spite of this, Washington University engineering graduates fared well. Only 14 percent were still seeking employment after graduation as opposed to a national average of 20-35 percent. Chemical engineers were the hardest hit. The demand for electrical engineers remains at a high level. Average starting salaries for students with the B.S. degree were in the range of $26,000 to $28,000, a three percent increase over last year.

Engineering Technology Program

During the past year the School's Engineering Technology Division enrolled 460 students, all on a part-time basis. These students include those working for a baccalaureate degree in one of five different areas of industrial technology, as well as pre-engineering students preparing for admission to an engineering degree program. Most of these students are employed locally on a full-time basis by 86 different companies; 70 percent of them received financial assistance with their tuition from their employers. A total of 40 Bachelor of Technology degrees (with majors in electrical, mechanical, and structural design technology) and Bachelor of Industrial Production Management degrees were granted. In addition, 20 certificates of proficiency, representing the completion of the equivalent of two years of college-level work, were awarded.

Department Head

Professor Robert Morgan, chairman of the Department of Technology and Human Affairs, spent the year at the Brookings Institution in Washington, D.C., as a Science, Engineering, and Public Policy Fellow. During the period of his absence, Associate Professor William Darby served as acting chairman of the department. Dr. Morgan has been a member of the faculty of the School of Engineering since 1968. During this time he initiated instructional programs in technology policy which ultimately resulted in the establishment of the Department of Technology and Human Affairs in 1976. The department has achieved national recognition for expanding the academic horizons of engineering education. Professor Morgan has asked to be relieved of his administrative responsibilities, starting with the present academic year, in order to devote full time to teaching and research. Professor Darby will continue as acting chairman, pending a decision regarding a new chairman which will be made during the current year.

Facilities

The School of Engineering presently has five buildings (Cupples II, Sever, Urbauer, Bryan, and Lopata Halls) which provide 120,000 square feet for laboratories, offices, and classrooms. With the final stages of the Engineering Facilities Improvement Plan now complete, the School has excellent facilities. With its full undergraduate enrollment, all available space in these buildings is being fully utilized.

In order to provide space in the engineering complex for the new Institute for Biomedical Computing, a fifth floor is being added to Lopata Hall. This new space will be designated the Bowles Laboratory in honor of Edward L. Bowles, a distinguished alumnus of the School. The Institute for Biomedical Computing provides graduate instruction and research in the application of computer science and technology to problems in medicine. It is jointly governed by the Schools of Medicine and Engineering.

One additional construction project was recently completed. The attic space in Cupples II, which at one time housed the ROTC rifle range, has been converted into a computer instructional laboratory for the Center for Engineering Computing. The new laboratory has space for 100 microcomputers and terminals and will be used primarily for beginning courses in computer science.

Decline in Research Funding

The effect of the decline in research funding from $5.7 million in FY82 to $4.4 million in FY83 had a major impact on the School's financial results. The School ended the academic year with a deficit of about $180,000, which was covered by withdrawing funds from the engineering reserves. The budget for the current year is based upon conservative projections of research funding, and it is anticipated that expenditures and income will be in balance.
Once again this past year, the School’s people proved to be ever more central in maintaining our stature as a nationally recognized institution for educating professional artists. A distinguished faculty and outstanding student body have been consistent characteristics of the School.

The great tradition of painting and drawing established and advanced by such noted artists as Oscar Beringhaus, Paul Burlin, Max Beckman, Fred Carpenter, Fred Conway, Werner Drewes, Philip Guston, and Arthur Oser is continued today by such distinguished painting and drawing faculty as Edward Boccia, James McGarrell, Hylarie McMahon, Barry Schectman, and Stanley Tasker. Today’s faculty also includes artists representing a broad array of disciplines: Howard Jones, innovator in electronic light and sound; Heikki Seppa, creator of the shell structure metal forming process; Peter Marcus, experimental printmaker; and James Sterritt, pioneer in foundry processes. Adding strength and vitality to the full-time faculty for 1982-83 were: E. Gyuri Hollosy, teacher of figure sculpture; Susan Moore, instructor in drawing and painting; photographer Stan Strembicki; and a fine addition to the “Core” faculty, Alexis Wreden.

Visiting Artists
A host of interesting and distinguished artists participated in the Visiting Artists Lecture Series for 1982-83, including photographer Ernst Haas, environmental artist Mary Miss, graphic designer Malcolm Greer, fiber artist Francis Wilson, and ceramic sculptor Tom Rippon. Chicago and New York art dealer and early supporter of the “Harry Who,” Phyllis Kind presented the annual Saul and Dorothy Dubinsky Lecture.

Painter Irving Kriesberg taught here for six weeks as the Visiting Distinguished Louis D. Beaumont Professor of Art. In a workshop entitled “Processes of Developing and Transforming Imagery,” Kriesberg helped each student to perceive the possibilities inherent in his or her own temperament or aspiration. Kriesberg’s own paintings are a play of colorful creature-like shapes generated from “the images that well up behind my eyes and which I see on the canvas as the brush moves.” That work was shared with the public in an exhibition at the Washington University Gallery of Art and in a slide lecture in Steinberg Auditorium last fall.

Student Statistics and Honors
September 1982 freshmen exemplified many years of entering classes: 27 percent of the 67 students were in the top five percent of their graduating class; 72 percent of the class were ranked in the top 20 percent of their graduating classes. The mean SAT scores for the class of 1986 were 560 in the verbal test and 580 in the math test, a combined mean of 1140—demonstrating an exceptionally balanced academic preparation, with a mean total score above the national average for the class of 1986. That freshman class included two National Merit Scholars, nine Washington University Chancellor’s Scholars, two Fred Conway Scholars, and two Presidential Scholars in Visual Art designated by the National Foundation for the Advancement of the Arts.

Undergraduate students at the School consistently win national recognition in various art competitions. Painting majors Christopher A. Johnson, ’83, Paul A. Breuer, ’84, and Suzanne Witte, ’84, were nominees for fellowships at prestigious summer art programs conducted respectively at Skowhegan, Maine, and Yale-Norfolk, Connecticut. Kathleen May, a junior in fashion design, won the $1,000 second place award in the Gretchen Bellinger, Incorporated, Quilt Design Competition. The Governor’s Committee on Employment of the Handicapped gave the two top awards to Fine Arts graphics students for their entries in the 1982-83 Missouri Poster Contest. Three graphics students were included in the Society of Illustrators Student Competition Exhibit. Jim Meddick, whose cartoon strip “Paperback Writer” appears in the Student Life newspaper, was selected as one of the nation’s ten best college cartoonists by the Chicago Tribune.

Successful Alumni
A strong indicator of the School’s measure of service to its students, community, and society can be found in the accomplishments of its alumni. The majority of the School’s 2,400 alumni are actively and professionally
working at their crafts in St. Louis and throughout the world. A few notable examples of success stories in 1982-83 can best help illustrate: "Adri," Mary Adrienne Steckling, has been so successful with her loose, easy looks for the clothing she designs and manufactures that she was this year's Coty Award winner for women's fashions—an honor equated to the Tony on Broadway or the Oscar in Hollywood. Cheryl Goldsleger was awarded an individual artist's fellowship in 1982 from both the National Endowment for the Arts and the Ohio Arts Council. Marilyn Mahoney was awarded a $10,000.00 Louis Comfort Tiffany Foundation grant for painting this past year. John G. Dickson was one of ten artists recently selected to participate in the 75th Anniversary Sculpture Exhibition: Atlantic Coast-Pacific Coast, which started its national tour in San Francisco.

Special Programs

Supplementing the traditional curriculum of the School are opportunities for both undergraduate and graduate students to gain experience in the larger St. Louis community. Programs are offered in which students participate in the dynamics of the art marketplace and establish intellectual, practical, and, in many instances, apprenticeship relationships in the professional world. Many of the programs are exceptional; for their innovation, for their academic leadership, for their contributions to the community. The programs of the School of Fine Arts are organized in such a way that the body of knowledge and the educational experiences will prepare all the students it serves for personally and professionally satisfying lives.

The Create Studio, for instance, furnishes a unique educational opportunity for graphic design students, providing services to a variety of non-profit organizations in the St. Louis community. Create Video and Create Photography are the most recently added laboratories for students to study and experience the delivery of problem-solving communication services.

Increasingly, the School is providing a wide range of seminars, workshops, and continuing education courses, including an evening certificate program in graphic design for special students, professionals in art and business, friends of the School, and the general public. The Print Workshop, the Create Studio, and the many other programs are integral components for the professional education and training for the student-artists, and these programs serve the community.

Facilities

Bixby Hall, constructed more than a half-century ago, serves as the central facility for the School of Fine Arts. Because Bixby Hall is fully utilized, several programs are housed in various locations. Start of construction of new physical education facilities has begun to impact on both the undergraduate sculpture and graduate and undergraduate ceramic (clay and glass) programs housed in the quonsets. Study to consider the feasibility of consolidation of the School's several locations, some remote from the Hilltop campus, to a second Hilltop location within close proximity to Bixby Hall is under way. In the meantime, further attempts to solve the needs of the School for space resulted in the relocation of the graduate painting and printmaking studios from the Tyson Valley Research Center to a University-owned warehouse space at 9th and Spruce Streets in downtown St. Louis.

Reserve Status

Challenged by the continuing commitment to the important educational objectives we espouse, and after careful analysis of the School's financial position, a decision to meet the future through reserve school status became effective in July 1983. Combined with the announcement of the ALLIANCE FOR WASHINGTON UNIVERSITY, these undertakings are designed to ensure that we continue in our role as a leading national university which includes a School of Fine Arts well able to maintain its stature as a nationally recognized program, destined to maintain a place for the artistic education of future generations.

The role of the School of Fine Arts in fulfilling the University's mission and the importance of the support for the School in the context of the University's $300 million campaign proves a challenge and commitment to which all those concerned for the visual arts are becoming increasingly involved. The generosity demonstrated by alumni and friends during 1982-83 reflects a 164 percent increase in the School's annual fund-raising results. Clearly, the School can meet the challenge to contribute its part in the ALLIANCE FOR WASHINGTON UNIVERSITY and toward securing a healthy financial position for its own future as well.

Faculty Activity

It is difficult, at best, to report about the full-time faculty's professional activity in any given year without risking important omissions because the levels of energy and quality are intense and full inclusion would result in a list of accomplishments longer than space will allow. Among those given "one-man exhibitions" this year: The "Current" series of American contemporary art now includes a one-person show by Kim Strommen at the Saint Louis Art Museum (Fall 1982); and a retrospective exhibition of Edward E. Boccia was given by the trustees of the Mitchell Museum, Mt. Vernon, Illinois (April 23-May 29, 1983). The Boccia retrospective was dedicated to the memory of Morton D. May, a dear friend and benefactor to Washington University and the School of Fine Arts and a man who loved art above all else. "Fifty Years of Sculpture" by Professor Emeritus H. Richard Duhme, Jr., was presented by the School of Fine Arts at the Bixby Gallery.
The 1982-83 academic year was an unusually good year for the School of Law. Once again, the faculty excelled in scholarly research and writing. The student body, steadily growing in credentials and overall quality, performed well academically and, as we have come to expect, achieved outstanding success in regional and national competitions. Alumni and friends of the School provided generous and enthusiastic support.

Faculty and Faculty Activities

The School's faculty continues to be as productive of scholarly research and writing as any law faculty in the country. New books published by members of the faculty since my report last year included Professor Ronald Carlson's *Successful Technique for Civil Trials* and a supplement to his *Criminal Law Advocacy* volume; The Law of Unfair Trade Practices in a Nutshell* by Professor Charles R. McManis, and two books on consumer transactions by Professor Michael Greenfield. Professor Edward Imwinkelried, in addition to publishing numerous law journal articles, has written another book, this one titled *Materials for the Study of Evidence*. The prolific Professor Daniel Mandelker authored *Land Use* during the year, and Professor and Law Librarian Bernard Reams edited three books, *Federal Laws of the Mentally Handicapped, Education of the Handicapped,* and *Insuring the Law Library: Fire and Disaster Risk Management*. Professor Gary Boren will publish a book on qualified plans of deferred compensation in November 1983, and Professor Kathleen Brickey has sent to the publisher a manuscript for a two-volume set on corporate criminal responsibility. Other members of the faculty published articles in a variety of legal journals during the year.

The public service activities of several members of the faculty are worthy of note. Professor Mandelker served on the Board of Directors of the American Planning Association and as director of the National Coalition to Preserve Scenic Beauty. Professor Bruce La Pierre served the U.S. District Court as Special Master in the St. Louis school desegregation case and did an amazingly effective job in delicate settlement negotiations with the various school districts involved in that litigation. Professor Merton Bernstein served as principal consultant of the National Commission on Social Security Reform and delivered testimony before the Missouri Senate Committee on Problems on the Aging. Others involved in public service activities include Jules Gerard, Gray Dorsey, and Associate Dean Philip Shelton. Among his various public service activities, Dean Shelton serves on the Board of Directors of the Legal Services of Eastern Missouri, Inc.

An addition to our faculty in the fall of 1982 was Stanton D. Krauss, who holds a B.A. degree from Yale and a J.D. degree from the University of Michigan, where he was note editor of the *Michigan Law Review*. A former Bigelow teaching fellow and lecturer in law at the University of Chicago, he also served as law clerk to the Honorable Joel M. Flaum, United States District Court of the Northern District of Illinois.

Students

A class of 225 students selected from 1,450 applicants entered in fall 1982. Students matriculating came from 114 colleges and universities and 33 states. The class is composed 39 percent of women and 5.6 percent of minorities. The median grade point average was 3.31 and the median Law School Admission Test (LSAT) score was 632. These figures represent an increase in the credentials of first-year students for the third straight year.

The students' achievements during the year were most impressive. More students than ever before participated in moot court, mock trial, and client counseling competitions. During the last three years our teams have been unusually successful in regional and national competitions. This year the Washington University School of Law mock trial practice team of David Mason and Cathy Gilbert, coached by Professor Ronald Carlson, became the champions of the National Mock Trial competition in Houston. Further, Ms. Gilbert received the Spiegelberg Best Advocate Award. More than 1,500 students from 106 law schools throughout the nation took part in the competition. During the regional and national competitions the Washington University team never
Faculty for 1983-84

The 1983-84 academic year will be exciting. Joining our faculty in the spring will be Otto Stolz, a highly successful lawyer-business executive and an outstanding authority on corporate finance and securities regulations. Currently managing partner of the Washington, D.C., law firm of Mudge, Rose, Guthrie, Alexander, and Ferdon, he formerly served as chairman of the board, president, and chief executive officer of Cannon Mills Company, a leading manufacturer of towels, sheets, and similar products. Earlier he was special counsel to the Under Secretary of the Treasury, a professor of law at Duke University, and a consultant to the U.S. Department of Treasury. He received his undergraduate education at Stevens Institute of Technology and holds a J.D. degree from the University of Virginia Law School, where he graduated with highest honors. Roy D. Simon, Jr., joined the faculty this fall as an assistant professor. He holds a B.A. degree from Williams College and a J.D. degree from New York University School of Law, where he was editor-in-chief of the law review. He was an associate with the Chicago law firms of Hannafan and Handler, and Jenner and Block. An experienced litigator, he is teaching in the applied lawyering skills training program. Stanley Paulson, who has taught in the Philosophy Department of Washington University since 1972, recently was granted a joint appointment as associate professor of philosophy and law. He has been a National Endowment for the Humanities Fellow, a Rockefeller Foundation Fellow, and an Alexander von Humboldt Foundation Fellow at the Free University of Berlin, to name just a few. He holds the B.A. and M.A. degrees from the University of Minnesota, a Ph.D. from the University of Wisconsin, and a J.D. from Harvard University.

Visiting Faculty for 1983-84

The John S. Lehmann Distinguished Visiting Professor of Law this fall is Pierre R. Loiseaux. Formerly the Baker and Botts Professor of Law at the University of Texas School of Law, he is currently a professor at the University of California School of Law at Davis, where he served as dean from 1974 to 1978. He is an authority on commercial and bankruptcy law. His most recent books are Contracts, Cases, and Materials and Cases in Debtor Creditor Relations. Professor Loiseaux has lectured at the Max Planck Institute in Hamburg, Germany; was a director of the University of California-Egypt AID project; and served as a Fulbright Fellow lecturer at the University of Helsinki and the University of Leuven of Belgium. Other visiting professors for the 1983-84 academic year are Gary C. Loedes, professor of law at the University of Richmond Law School and a candidate for the S.J.D. degree from Harvard, and Gerald P. Johnston, professor at the College of Law, University of Kentucky, and former partner in the Washington, D.C., law firm of Jones, Day, Reavis, and Pogue.

Guest Lecturers during 1982-83

Guest lecturers at the School this past year included; Griffin Bell, former U.S. Court of Appeals judge and later Attorney General of the United States, who delivered the Tyrrell Williams Memorial Lecture; Harvard law professor Arthur Miller; Chaim Pearlman, the distinguished legal philosopher; the Honorable Clyde Cahill of the U.S. District Court for the Eastern District of Missouri; consumer activist Ralph Nader; and, for the second year in a row, a three-judge panel of the U.S. Court of Appeals, which heard oral arguments in the School of Law.

Alumni Activities

In order to reflect more accurately the national character of the School of Law and its alumni, the Law Alumni Association increased the size of its Executive Committee for the 1982-83 academic year to include representatives of areas of major alumni concentration outside the St. Louis area. Formerly the membership of the Alumni Association's governing structure was recruited almost exclusively from the St. Louis area. The appointment of eleven representatives from other areas reflects an effort by the association to increase participation by and share responsibility with alumni in such cities as Chicago, Washington, D.C., New York, and San Francisco.

A number of law alumni are helping the School place its graduates or recruit students from colleges in their localities. This kind of involvement and support is becoming increasingly important to the School as it assumes greater national prominence.

The 1982-83 recipients of the Distinguished Alumni Awards were Israel Trieman, class of 1924, and G. Duncan Bauman, class of 1948. All of us in the School of Law salute these two graduates on this recognition of their ability and achievements.

Support of the School by friends and alumni has been magnificent. Unrestricted giving by alumni during 1982-83 exceeded $190,000, as compared to $165,000 the previous year. Twenty-six new law members joined the Eliot Society; four, the Dean's Committee; eighteen, the Fellows; and eighty-two, the Century Club. First-time donors to the School during the first ten months of the 1982-83 year totaled 64, with 1,173 alumni making contributions.

Many law alumni may find additional incentive to give during the ALLIANCE FOR WASHINGTON UNIVERSITY campaign. Because of the Danforth Foundation Challenge Grant, every three dollars contributed to the School of Law will be matched with one dollar from the Foundation for programs of other University schools and departments. The School of Law benefits from any support that strengthens the University or enhances the quality of programs in any of its other divisions.

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The past year was a fine and productive one for the libraries for many reasons, but primarily because part of Washington University's library collection received national recognition and financial support for its distinctiveness as a major research resource of national and international quality. It was also a pleasant and productive year because the library staff succeeded in using technology to improve the libraries' services to the students and faculty as well as the world of research and scholarship in general.

**Improvements in Services, Collections**

On June 29, 1983, staff members of the University Libraries and Computing Facilities watched former Provost Merle Kling become the first user of Washington University's computerized on-line catalog. The inauguration of this automated library user information system (LUIS) represented a significant improvement in access to the University's rich library collections, and it is the first module of a total library information system which will evolve during this decade. While we will continue to use the card catalog for some time into the future, the implementation of the computerized on-line catalog is the beginning of a new era for gaining access to the library collections, and the fulfillment of the University's commitment to provide its students and faculty with library services of the highest quality.

The subject strengths of the library collections continued to improve and reflect the major research specialties in the University. As of June 30, 1983, the holdings of the libraries totaled 1,953,097 volumes of books and bound periodicals. New additions during the year amounted to 35,174 volumes. The libraries also contain 1,259,184 microform units, 76,745 maps, 25,030 disc and tape recordings, 2,950 films, filmstrips and slides, and 7,443,631 manuscripts. Over 15,000 serials publications are received currently, and the University maintains its status as an excellently managed depository for federal government publications.

The fine quality of the collections also continues to improve. There is unusual depth and breadth in English history, Germanic languages and literatures, Latin Americana, Romance languages and literatures, and East Asian languages and literatures. There is also considerable depth and breadth in fine arts, architecture, music, sciences, and engineering. Relying primarily on materials in these collections, 358 members of the faculty of Washington University published more than 1,083 books, technical reports, and scholarly articles during the year.

**Collection Recognized**

One of the strongest and most remarkable of the library's collections continues to be its American and English modern literature component, which consists of more than 100 different manuscripts and related works. Five of the authors collected are members of the English department of Washington University; their works, as well as many others in the collection, have received many major literary awards, including the Nobel Prize, the National Medal of Literature, the Bollingen Prize in Poetry, Pulitzer Prizes in Fiction and Poetry, National Book Critics Circle Awards, the Booker Prize, and the Loines Award for Poetry. The authors have been honored with membership in the prestigious National Academy and Institute of Arts and Letters and the Academy of American Poets.

The Modern Literature Collection at Washington University is indeed one of the most distinguished of its kind in existence, and this year it was officially recognized as such by the U.S. Department of Education. The department granted Washington University Libraries an award of $205,166 to acquire, process, and make available equally important manuscripts to further strengthen this unique research resource for the benefit of students and scholars not only at Washington University but those nationally and internationally as well. This important award is made by the Office of Educational Research and Improvement in the U.S. Department of Education as part of the national program to strengthen research library resources under the Higher Education Act of 1965, Title II-C. Only institutions with major research library collections are eligible to participate in this program.
Use of the Libraries

Throughout the year the University libraries and staff satisfied the informational needs of an increasing number of students and faculty of Washington University; they also continued to make a significant contribution toward satisfying the informational needs of many individuals unassociated with the University, especially in metropolitan St. Louis. More than 900,000 persons entered Olin library and almost 450,000 volumes were borrowed from Olin and its departmental and school libraries. Additionally, thousands of volumes were consulted within the libraries but not charged out for outside use. The libraries of Washington University continued to lend almost twice as many volumes (6,252) to other institutions than were borrowed (3,209) from them for our students and faculty to use. The heavy use of Washington University libraries by students and faculty from local colleges and universities continued unabated, while the University's students and faculty still made only minimal demands on other local libraries. The business, cultural, and corporate institutions likewise continued to make heavy use of the libraries. Of the more than 17,000 registered library borrowers, about 360 were unaffiliated with Washington University. However, the extensive reference and research services provided by the library staff to students and scholars everywhere continued to be an important part of the library's reciprocity program. It is this sharing of its unique collections with the world of research and scholarship that gives the Washington University Libraries their distinctiveness as major research collections of national and international stature.

Proposed Facility Improvements

The steady growth in the size and quality of the library collections and improvements in services are straining the physical facilities available to house the collections and provide services effectively. While the need for more money to buy the necessary sources of information that are required by a prominent teaching and research university is still pressing, the most acute need of the libraries at this time is space to house and preserve the library's increasingly rich and, in many cases, unique collections. Olin Library, after 20 years of heavy use, is still a splendid facility; with two major modifications it will be able to serve the University's library needs an additional 15 years.

Renovation of Level 5 of Olin Library will provide the closed bookstack area with proper atmospheric controls and safety for preservation and service of the University's special and rare collections. Many of these are now housed in locations less than adequate for their protection and preservation. This renovation will cost an estimated $900,000, a small part of what a new building would cost with the same space and protective environment.

The other major modification would be the installation of compact shelves on Level 1 of Olin. Compact shelves are space savers because they consist of a number of rows of shelves called "ranges" mounted on parallel rails so that they can easily be moved—either manually or electrically—to create an access aisle to required material. The ability to "create an aisle" eliminates the need to have a permanent aisle between each two ranges of shelves. Level 1 of Olin has a volume capacity of about 261,000 using conventional shelves; the use of compact shelves will increase this to about 625,000, at an estimated cost of $1,600,000.

Funding for these two library projects and an endowment for acquisitions and computerization are included in the ALLIANCE FOR WASHINGTON UNIVERSITY, its program to raise $300 million in gift support. The significance of the ALLIANCE FOR WASHINGTON UNIVERSITY has already been eloquently stated by Chancellor Danforth and campaign chairman George H. Capps. The outstanding services which Washington University has provided during the past year is characteristic of the very fine services which the University has been rendering since 1853. The library staff and I are grateful to the many friends, alumni, and supporters who have helped to make the libraries an asset to both the University and nation, and with your continued support we pledge ourselves to another year of fine library services to Washington University and the world of research and scholarship.
The School of Medicine has not felt the effects of the 15 percent national decrease in applicants to medical schools—the first such decline since 1974. Nationally there were fewer first-year students, but we have maintained our entering class at 121, chosen from an applicant pool of fewer than 6,000. The average grade-point of our entering class was 3.62 on the four-point scale. Our total enrollment of 533 medical students includes: 78 in the Medical Scientist Training Program working for the combined M.D./Ph.D. degrees; 126 women and 407 men; 47 black students, one American Indian, one Alaskan Native, and one Mexican American. Our student body represents 38 states and eight countries.

Additionally, there are 134 Ph.D. candidates in the Division of Biology and Biomedical Sciences; 309 in our seven allied-health programs, and 806 postdoctoral students (156 “interns,” or first-year postgraduate physicians, plus 472 residents and 178 postdoctoral fellows and trainees).

Graduation

In May 1983, the School awarded 118 Doctor of Medicine degrees, and nine M.D./Ph.D. degrees. Five of these M.D./Ph.D. graduates will do their postgraduate work at Washington University Medical Center institutions. A total of 85 percent of our graduates received internship contracts with one of their top three hospital choices. Half of the class will take their postgraduate training at their first-choice hospitals.

Our commencement speaker, Allen S. Noonan, M.D., chief of the Genetic Diseases Branch of the Division of Health Care Delivery and Assistance in the Department of Health and Human Services, analyzed the career opportunity for physicians in the next decade and relayed government statistics projecting a surplus in many specialties, but a shortage in psychiatry, preventive medicine, and public health.

Faculty Recognition

The quality of our faculty is the principal reason for the quality of our student body and the success of our graduates. Seven faculty members are members of the National Academy of Sciences (NAS), election to which constitutes the highest honor for American scientists and engineers. Paul Lacy, M.D., Ph.D., Edward Mallinckrodt Professor and head of the pathology department, was one of only 60 newly elected to the NAS this year. Lacy is internationally prominent for his continuing success in research involving transplanting pancreatic cells which produce insulin. Lacy’s work has developed new knowledge in immunology and organ rejection processes and in surgical techniques in the continuing search for better treatment of insulin-dependent diabetics.

Virginia V. Weldon, M.D., professor of pediatrics, was elected to the Institute of Medicine of the NAS, the ninth faculty member so honored. She was also named Deputy Vice Chancellor for Medical Affairs, reflecting her increased responsibilities in administration and government relations.

Transitions

With regret, I report the death of Joseph Ogura, M.D., at the age of 67. Dr. Ogura had been on our faculty since 1945 and was head of otolaryngology for 16 years. He was internationally respected for his research to develop an artificial larynx, for his pioneering surgical procedure enabling throat-cancer patients to retain part of one of the vocal chords, and for his research in nasal and larynx physiology. I also sadly report the deaths of our devoted alumni leader Guy Magness, M.D. ’28, and of Donald Strominger, M.D. ’53, clinical professor of pediatrics.

John M. Fredrickson, M.D., was named professor and head of the Department of Otolaryngology. Formerly with the University of Toronto, he directed the clinical sciences division and was professor of otolaryngology. He is recognized around the world for his vestibular research, his 1973 development of an implantable hearing aid, and his 1981 development of a voice box for laryngeal cancer patients.

Paul Manske, M.D. ’64, is the new chief of the division of orthopedic surgery. He specialized in hand surgery, and his research focuses on age- and disease-related changes to tendons. His many publications have dealt with hand tendon development and healing processes, tendon grafts, and artificial tendons. Other faculty changes include the retirement of Robert Shank, M.D., who had been head of the Department...
of Preventive Medicine and Public Health since 1948. Gustav Schonfeld, M.D., director of the Lipid Research center, will serve as acting head of the department. Mary Ann Boyle has been named the Elias Michael Director of the Program in Occupational Therapy.

Major Gifts

With the signing of an agreement creating the A. Ernest and Jane G. Stein Professorship in urology in the Department of Surgery, the school now has 31 named, endowed professorships. The newest chair is held by William E. Fair, M.D., who came to us from Stanford University and has been professor of surgery and chief of the urology division since 1975. A. Ernest Stein, a 1926 graduate of Washington University, was a retired certified public accountant who founded and operated his own firm in St. Louis, and one of four St. Louis area people to be honorary lifetime members of the American Institute of Certified Public Accountants. His death in August 1983 saddened us all.

Creation of the new endowed Stein Professorship is one of several items of good news in 1983. The School has received the first payments from the Edward H. Luehrmann Trust, the principal amount of which is approximately $3.5 million. Terms of the trust direct that funds be used for research in diabetes, heart disease, and other degenerative diseases.

The McDonnell Foundation has made a gift of $5.5 million for a five-year period to establish a new Center for Molecular and Cellular Neurobiology—the second neuroscience center at the School to be funded by the McDonnell Foundation. Gerald D. Fischbach, Edison Professor of Neurobiology and head of the Department of Anatomy and Neurobiology, will be director of the center. Scientists in the new center will investigate the nature of individual cells in the nervous system and brain. In the McDonnell Center for Studies of Higher Brain Function, directed by Sidney Goldring, M.D., professor and co-head of the Department of Neurology and Neurological Surgery, research focuses on the anatomy and functions of large groups of nerve cells, and multicellular processes such as neural circuits, memory, behavior, sensory integration, and learning.

Research Contracts and Grants

Continuing our search for new and innovative financial support of research, the School has entered a research contract with McDonnell Douglas Corporation for studies of electropheresis in space, separating Beta cells from the Islets of Langerhans in the pancreas. Research in protein and peptide regulation in partnership with Monsanto Corporation, and in hybridoma monoclonal antibodies in partnership with Mallinckrodt Corporation, continues.

The faculty continues to compete successfully for federal research funding. The 26 program, project, and center grants conducted by the School received nearly $16,700,000 for projects ranging from biomedical computing and biomedical mass spectrometry to research into such diseases as diabetes, arthritis, ischemic heart disease, epilepsy, alcoholism, lupus, and substance abuse. Under the direction of Michel Ter-Pogossian, Ph.D., development of positron-emission transaxial tomography (PETT) scanning, was supported by a new $4,700,000 five-year grant.

Facilities Update

Construction and renovations to the physical plant continue on schedule. The structure and exterior walls of the 10-story Clinical Sciences Research Building are completed; installation of utilities and interior finishes is progressing. When completed in 1984, the 375,000-square-foot building will house research activities of seven departments.

Research and administration in the psychiatry department is now accommodated in the renovated Renard Hospital. Psychiatric patients are treated in the Barnes West Pavilion. The third floors of both Wohl and Barnard Hospitals have been renovated, and the new Ambulatory Cancer Treatment Center has opened. The renovated fourth floor of Barnard will house a new bed service for the Clinical Research Center. A fifth floor was added to the Mallinckrodt Institute of Radiology to house the new Nuclear Magnetic Resonance facility. NMR is a noninvasive diagnostic imaging system using powerful magnets to align atomic nuclei within a magnetic field. Radio-waves, pulsed across the magnetic field, are absorbed by the nuclei and subsequently re-emitted as energy which can be detected by the device and transformed into an image.

Upon completion of the Clinical Sciences Research Building and the new Children's Hospital, the medical center and school will have a physical plant second to none and worthy of the quality of students, faculty, and work housed here.

Priorities for the coming year include maintaining our tuition near the middle-to-lower-third for private medical schools, and increasing our ability to provide need-based financial aid to our students. The ALLIANCE FOR WASHINGTON UNIVERSITY will play an important role in meeting these priorities. With increasing involvement and support from our alumni and alumnae, our innovations in industry-university research partnerships, our improved physical plant, and our outstanding faculty and student body, we look forward to the future with confidence and enthusiasm.

(This report was prepared with the special assistance of Casey Croy, Senior Editor of Medical Publications.)
The quest for excellence in social work education remained the driving force at the George Warren Brown School of Social Work in 1982-83. It shaped activity in student selection and advisement, curriculum planning, faculty research, and plans for the future.

During the year, 150 students were awarded the Master of Social Work degree. The quality and background of students, both full- and part-time, were very impressive.

Curriculum and Lectures

The curriculum committee voted to introduce new courses on information management, voluntarism, and personnel administration; a specialization in occupational/industrial social work was added. The rich curricular offerings were complemented by the Thursday Lecture Series in which faculty, invited outside speakers, and advanced students presented colloquia on such topics as income maintenance for minority children, private philanthropy and social services, client problems and worker treatment plans, economic development as a new direction in social work, issues in achieving quality field learning, child abuse, cable television and social services, the new age settlements, organized volunteers in disasters, problems of handicapped individuals, changes in Social Security legislation, stresses of the new manager, trends and challenges for social work in the 1980s, the changing decade in China, and social realities and social work response in the third world.

Two new grants from the Office of Human Development Services of the U.S. Department of Health and Human Services provided additional reinforcement to the robust learning environment of the School. The Child Welfare Demonstration Training Institute, with Jo Mink as director, offers technical assistance and training resources in critical child welfare practice areas to social services personnel in Missouri, Iowa, Nebraska, and Kansas. The Center for Adolescent Mental Health, under the directorship of Professor Ronald A. Feldman, is engaged in systematic dissemination of scientific knowledge and information concerning adolescent mental health to social work practitioners, researchers, legislators, policymakers, and the lay public.

Alumni Award

The Alumni Association held several receptions for prospective and current students as well as for the alumni. Its Distinguished Alumni Award was given to Margo Schutz Gordon, GWB '44, a nationally recognized authority on field education in social work. The continuing education program again received enthusiastic community response. Its 11 workshops and institutes attracted over 1,000 professional human services personnel. The Morris Wortman Institute sponsored a two-day program on Family Therapy and Physical Illness by Donald A. Bloch, M.D., director of the Ackerman Institute for Family Therapy, New York City.

Plans have now been completed to open in fall 1983 a social work computing unit in Brown Hall. This facility will be a fine addition to the School's comprehensive Learning Resources Center that includes the Social Work Library, the video center, and the Journal of Social Service Research.

Faculty and Administrative Changes

Retirements, resignations, and administrative reorganization resulted in several personnel changes. After serving the School for 17 years with unusual commitment and sensitivity, Mrs. Elizabeth R. Williamson, director of admissions and student resources, retired last June. Dr. Helen V. Graber was named assistant dean for student affairs. Continuing education was added to Dr. David L. Cronin's responsibilities making him assistant dean for administration and continuing education. Dr. David F. Gillespie was appointed chairperson of the Ph.D. program in social work to succeed Dr. William H. Butterfield who is returning to full-time teaching and research.

Like other schools of social work, the George Warren Brown School also experienced the interactive effects of the massive and abrupt changes in public social policy of recent years. Tuition income and grant support declined, as did applications and enrollment. Expenses had to be curtailed, drastically in some areas, so that the
School could operate within a balanced budget. The faculty and staff cooperated magnificently in meeting this daunting challenge.

**Meeting the Challenges**

The coming years will not only be characterized by uncertainty and competition, they will also be full of additional changes and challenges. To the extent one can anticipate these, student support will remain the most crucial part of our strategy to remain a leading school of social work in the nation. Although the School has had a record of enrolling a diversified body of highly qualified students from all over the country and many parts of the world, it is becoming clearer every year that additional efforts, especially toward the availability of financial assistance, will be needed to recruit talented young men and women to the George Warren Brown School. For private university-based educational programs in relatively nonlucrative professions, it will be extremely difficult to attract top quality students without substantial financial aid.

Providing that aid, therefore, is the most pressing priority of this School and is a key to preserving the excellence in education for which GWB has become known over the years. It is our hope that when we celebrate in two years the sixtieth anniversary of the founding of social work education at Washington University, we will be in a position to announce the availability of many new scholarships for qualified students.

**New Fellowships**

The groundwork has already been laid. Building on previous efforts, the School established five new fellowships last year. The William E. Gordon Research Fellowship, the Dorriece Pirtle Fellowship, and the Elizabeth R. Williamson Fellowship are endowed fellowships. The Alfred V. Taylor Scholarship is a two-year term scholarship for a student interested in social policy and social action. A Faculty Fellowship, resulting from the inspiring decision of the GWB faculty to donate each year an amount to the School that will enable it to give at least $1,000 to a social work student annually, was also established last year.

Despite the accentuated financial challenges of recent years, the School of Social Work finds itself in a happy circumstance. It is among a handful of social work schools that have their own endowments. It enjoys rare financial autonomy. With this autonomy comes an obligation: it is responsible for crafting a budget that preserves both the integrity of its educational program and the soundness of its financial base. So far, we have been able to accomplish these objectives. I believe we will continue to do so in the years ahead.

The School's purposes and programs are highly consonant with the University's overall goals for the 1980s: it is a school of international stature, attracting more students from abroad than any other school of social work in the country; the quality of its faculty and educational program is considered first-rate by its peers in social work education. Furthermore, it is an integral part of this community and the region, with hundreds of its graduates playing crucial roles in the human services sector in the metropolitan area. It is, thus, in a propitious position to participate fruitfully in the ALLIANCE FOR WASHINGTON UNIVERSITY. The George Warren Brown School of Social Work looks forward to that opportunity with anticipation and excitement.
The University ended fiscal year 1983 with income in excess of expenditures and transfers. The income increased 8.9 percent over the preceding year, with the largest percentage increases being from private gifts, sales and services of educational activities, patient and laboratory fees, and organized patient care activities.

Below is a brief analysis of total income and expenditures, operations of separate fiscal units, and University assets and investments.

**Total Income and Expenditures**

**Income**

The University has four major sources of support for activities represented by its expenditures. These are:

- **Operating Revenue**
  
  Total operating income, primarily from payments by those who benefited directly from the University's operation, amounted to $173,899,000. Student tuition and fees accounted for $56,033,000. Patient and laboratory fees for medical services provided by faculty and staff amounted to $43,331,000. Income from organized patient-care activities, such as the Edward Mallinckrodt Institute of Radiology, was $33,801,000. The auxiliary enterprises, including residence halls, food service, and bookstores, had income of $14,560,000. Sales and services of educational activities amounted to $12,981,000.

- **Current Funds Investment Income**
  
  Current funds investment income was $6,508,000.

- **Other Miscellaneous Operating Income**
  
  Other miscellaneous operating income totaled $6,685,000.

- **Government Grants and Contracts**
  
  A large portion of the research done by the University is sponsored by grants from governmental agencies, mostly federal, for specific sponsored projects. Total income from governmental sources expended in fiscal year 1983 was $65,161,000. Included in this total is $5,263,000 for scholarships and traineeships. Because of an accounting change for Pell Grants in fiscal year 1983, $685,000 is included in the above figures. Excluding Pell Grants for 1983, there was actually a $343,000 decrease in other governmental sources, with $79,000 of the decrease attributable to scholarships and traineeships and $264,000 for government-sponsored projects. In addition, 90 percent of the total $2,399,000 student loan funds issued under the National Direct and Health Professions Loan Programs was funded by the federal government.

- **Private Gifts, Grants, and Contracts**
  
  Washington University received a total of $41,751,000 in gifts and grants from private sources for various purposes. Major sources include alumni, individuals, business corporations, and foundations. The graphs below present a breakdown of the total gifts, grants, and bequests received by source and purpose. The total $41,751,000 was divided as follows: $16,397,000 for operating purposes, which includes $3,094,000 in unrestricted gifts and $13,303,000 for sponsored research, other sponsored programs, and scholarships; $19,562,000 for endowment; $5,651,000 for plant; and $141,000 for student loans. In the graph, $476,000 in scholarships is combined with $141,000 in loans for total "Student Aid" of $617,000.

In addition to these private gift sources, the University also receives...
funds through private contracts for sponsored projects. In fiscal year 1983 these contracts amounted to $5,296,000, which, when added to the $13,303,000 referred to above, brings the total for sponsored programs to $18,599,000. Of this total, $2,534,000 is being held for future expenses on sponsored programs. The remaining $16,065,000 was expended for current operations in fiscal year 1983 and, combined with the $3,094,000 in unrestricted gifts, brings the total private gift, grant, and contract income utilized for operating purposes to $19,159,000. The ten-year chart below reflects large unrestricted grant support from the Danforth Foundation for the years 1974 through 1977 and a large bequest in 1981.

• Endowment
  The investment of endowed funds resulted in $19,026,000 of income used to support operating expenditures.

Expenditures
  The total operating expenditures of Washington University in fiscal year 1983 amounted to $260,595,000. In 1982 this figure was $232,298,000. Approximately 47 percent of the increased expenditures was attributable to instruction and student aid. Research, primarily supported by outside agencies, accounted for another 11 percent of the increase; 17 percent of the increase was in academic support, and 8 percent of the increase was in organized patient care.

  Included in operating expenses is student aid (scholarships, fellowships, and stipends), amounting to $19,622,000 from University income and from governmental and private sources, but excluding College Work Study and the State of Missouri Student Grant Program. The summary on the next page reflects undergraduate financial aid for the past three years.

  Student loans and capital expenditures for buildings are not expended from current funds—their sources are separate fund categories. All student loans issued during fiscal year 1983 totaled $3,083,000, compared with $3,091,000 in the prior year. Net capital expenditures for buildings were $42,692,000. Investments in all physical facilities, including buildings, land, equipment, and library acquisitions, increased $57,877,000.
Summary of Undergraduate Financial Aid
(Excluding Loan Funds)
Thousands of Dollars

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Tuition Remission</th>
<th>Restricted Scholarships</th>
<th>College Work Study</th>
<th>Pell Grants</th>
<th>State of Missouri Grants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>$4,254</td>
<td>$1,782</td>
<td>$1,250</td>
<td>$868</td>
<td>$839</td>
<td>$8,993</td>
</tr>
<tr>
<td>1982</td>
<td>5,645</td>
<td>1,827</td>
<td>1,106</td>
<td>754</td>
<td>822</td>
<td>10,154</td>
</tr>
<tr>
<td>1983</td>
<td>6,442</td>
<td>2,212</td>
<td>1,100</td>
<td>685</td>
<td>822</td>
<td>11,261</td>
</tr>
</tbody>
</table>

Operation of Separate Fiscal Units

The University follows a policy of encouraging its schools to operate as independent fiscal units wherever possible. Each of the independent units is responsible for supporting its operating expenditures with its income, and each maintains an individual reserve of funds.

The Schools of Dental Medicine, Engineering, Law, Medicine, and Social Work have been independent units for a number of years, and the School of Business Administration has been an independent fiscal unit for four years. The Faculty of Arts and Sciences and the Schools of Architecture and Fine Arts, plus general University services and activities such as Olin Library, are grouped in one fiscal entity presently referred to as the Central Fiscal Unit. The Central Fiscal Unit is reimbursed for services rendered to the independent units.

All of the separate fiscal units except the Schools of Business and Engineering ended the year with income in excess of expenditures. The Schools of Law, Social Work, and Medicine completed the year with an increase in their general reserves, while transfers to endowment, plant, and other reserves resulted in decreases in general reserves of the Central Fiscal Unit, the Computer Systems Laboratory, and the School of Dental Medicine.

A Summary of Current Funds Revenues, Expenditures, Transfers, and Changes in General Reserves follows.

University Assets

Institutions of higher education and other not-for-profit organizations keep their financial resources in the form of funds to comply with the wishes of donors and to account properly for government grants and contracts. A separate fund is established for each project or purpose. The thousands of funds for which Washington University is accountable are handled in four major groupings: current funds, student loan funds, endowment funds, and plant funds. With the exception of income from the investment of endowment funds, the ongoing operating expenditures of current funds may not be offset by resources of the other three fund groupings. The Summary of Assets, Liabilities, and Fund Balances as of June 30, 1983, presents the assets and any claims against them for the four fund groupings.

Current funds must be separated between unrestricted and restricted funds. The unrestricted current funds consist of revenues from the various income-producing operations of the University, plus unrestricted gifts and unrestricted earnings from endowment. Expenditure of these unrestricted funds is left to the discretion of the University. Other funds available for current operations restrict expenditures to a given department or school, or for special, designated purposes such as research in a specified field or by a specified person. Unrestricted and restricted funds are combined in the overview of current operations of the separate fiscal units presented previously. They are kept distinct in the accompanying Summary of Assets, Liabilities, and Fund Balances.

As of June 30, 1983, the total assets of the current funds were $105,770,000, including restricted current funds of $23,799,000 and unrestricted current funds of $81,971,000. Accounts payable and other such liabilities against unrestricted current funds amounted to $25,970,000. Another $38,592,000 of the unrestricted current fund assets
### Summary of Current Funds Revenues, Expenditures, Transfers, and Changes in General Reserves for Separate Fiscal Units of the University for Fiscal Year 1983

<table>
<thead>
<tr>
<th>Revenues:</th>
<th>Central Fiscal Unit</th>
<th>School of Business</th>
<th>School of Engineering</th>
<th>School of Social Work</th>
<th>School of Dental Medicine &amp; Related Activities</th>
<th>School of Computer Systems Laboratory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition and fees</strong></td>
<td>$27,628</td>
<td>$4,891</td>
<td>$8,671</td>
<td>$4,390</td>
<td>$1,188</td>
<td>$3,762</td>
<td>$56,033</td>
</tr>
<tr>
<td><strong>Government grants &amp; contracts</strong></td>
<td>9,998</td>
<td>38</td>
<td>3,680</td>
<td>91</td>
<td>591</td>
<td>354</td>
<td>$871</td>
</tr>
<tr>
<td><strong>Private gifts</strong></td>
<td>6,525</td>
<td>692</td>
<td>1,225</td>
<td>170</td>
<td>26</td>
<td>402</td>
<td>19,159</td>
</tr>
<tr>
<td><strong>Endowment income (a)</strong></td>
<td>9,263</td>
<td>144</td>
<td>927</td>
<td>437</td>
<td>419</td>
<td>28</td>
<td>19,026</td>
</tr>
<tr>
<td><strong>Current funds investment income</strong></td>
<td>2,549</td>
<td>56</td>
<td>172</td>
<td>62</td>
<td>41</td>
<td>93</td>
<td>6,508</td>
</tr>
<tr>
<td><strong>Sales and services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- educational activities</td>
<td>2,218</td>
<td>82</td>
<td>350</td>
<td>19</td>
<td>85</td>
<td>42</td>
<td>12,981</td>
</tr>
<tr>
<td><strong>Sales and services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- auxiliary enterprises</td>
<td>12,518</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient and laboratory fees</strong></td>
<td>1,464</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>43,331</td>
</tr>
<tr>
<td><strong>Organized patient-care activities</strong></td>
<td>1,234</td>
<td>44</td>
<td>173</td>
<td>43</td>
<td>17</td>
<td>121</td>
<td>6,685</td>
</tr>
<tr>
<td><strong>Total revenues</strong></td>
<td>$71,933</td>
<td>$5,947</td>
<td>$15,198</td>
<td>$5,212</td>
<td>$2,367</td>
<td>$6,266</td>
<td>$277,245</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenditures and mandatory transfers:</th>
<th>Central Fiscal Unit</th>
<th>School of Business</th>
<th>School of Engineering</th>
<th>School of Social Work</th>
<th>School of Dental Medicine &amp; Related Activities</th>
<th>School of Computer Systems Laboratory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instruction</strong></td>
<td>$21,350</td>
<td>$2,885</td>
<td>$6,863</td>
<td>$1,805</td>
<td>$877</td>
<td>$3,611</td>
<td>$97,394</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>5,569</td>
<td>1</td>
<td>2,740</td>
<td>4</td>
<td>164</td>
<td>226</td>
<td>46,848</td>
</tr>
<tr>
<td><strong>Academic support</strong></td>
<td>7,222</td>
<td>1,434</td>
<td>1,210</td>
<td>1,732</td>
<td>522</td>
<td>986</td>
<td>24,606</td>
</tr>
<tr>
<td><strong>Student services</strong></td>
<td>3,317</td>
<td>386</td>
<td>911</td>
<td>284</td>
<td>233</td>
<td>219</td>
<td>6,649</td>
</tr>
<tr>
<td><strong>Institutional support</strong></td>
<td>4,033</td>
<td>235</td>
<td>534</td>
<td>240</td>
<td>178</td>
<td>246</td>
<td>9,599</td>
</tr>
<tr>
<td><strong>Operation and maintenance of physical plant</strong></td>
<td>3,457</td>
<td>464</td>
<td>1,257</td>
<td>480</td>
<td>212</td>
<td>620</td>
<td>18,100</td>
</tr>
<tr>
<td><strong>Scholarships and fellowships</strong></td>
<td>10,019</td>
<td>1,003</td>
<td>1,648</td>
<td>490</td>
<td>129</td>
<td>52</td>
<td>14,742</td>
</tr>
<tr>
<td><strong>Organized patient-care activities</strong></td>
<td>1,933</td>
<td>11</td>
<td>298</td>
<td>18</td>
<td>6</td>
<td>388</td>
<td>2,636</td>
</tr>
<tr>
<td><strong>Total expenditures and mandatory transfers</strong></td>
<td>67,880</td>
<td>6,419</td>
<td>15,461</td>
<td>5,035</td>
<td>2,315</td>
<td>6,159</td>
<td>260,595</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transfers and changes in general reserves:</th>
<th>Central Fiscal Unit</th>
<th>School of Business</th>
<th>School of Engineering</th>
<th>School of Social Work</th>
<th>School of Dental Medicine &amp; Related Activities</th>
<th>School of Computer Systems Laboratory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transfers to:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Student loan funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Endowment funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Plant funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Other reserves</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Changes in general reserves</strong></td>
<td>(1,830)</td>
<td>(356)</td>
<td>(115)</td>
<td>(175)</td>
<td>(14)</td>
<td>(163)</td>
<td>1,189</td>
</tr>
<tr>
<td><strong>Total transfers and changes in general reserves</strong></td>
<td>4,053</td>
<td>(472)</td>
<td>(263)</td>
<td>177</td>
<td>52</td>
<td>107</td>
<td>(28)</td>
</tr>
<tr>
<td><strong>Total expenditures, transfers and changes in general reserves</strong></td>
<td>$71,933</td>
<td>$5,947</td>
<td>$15,198</td>
<td>$5,212</td>
<td>$2,367</td>
<td>$6,266</td>
<td>$277,245</td>
</tr>
</tbody>
</table>

(a) Endowment at market value with income for:

- Support of current operations: $196,035 $2,443 $18,254 $10,079 $8,510 $1,863 $212,112 $449,296
- Other purposes: $12,299 $101 $3,472 $367 $22 $120 $4,991 $21,372
- Total endowment: $208,334 $2,544 $21,726 $10,446 $8,532 $1,983 $217,103 $470,668

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### Summary of Assets, Liabilities, and Fund Balances as of June 30, 1983

 Thousands of Dollars

<table>
<thead>
<tr>
<th></th>
<th>Current Funds</th>
<th>Student Loan Funds</th>
<th>Endowment Funds</th>
<th>Plant Funds</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unrestricted</td>
<td>Restricted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assets:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and securities</td>
<td>$12,165</td>
<td>$5,584</td>
<td>$1,534</td>
<td>$20,160</td>
<td>$20,345</td>
</tr>
<tr>
<td>maturing within thirty days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$59,788</td>
</tr>
<tr>
<td>Investments at book value</td>
<td>$27,940</td>
<td>$12,825</td>
<td>$2,343</td>
<td>$361,945</td>
<td>$37,274</td>
</tr>
<tr>
<td>Receivables</td>
<td>$37,032</td>
<td>$4,847</td>
<td>$21,423</td>
<td>$5,294</td>
<td>$349,493</td>
</tr>
<tr>
<td>Plant facilities</td>
<td>$349,493</td>
<td></td>
<td>$349,493</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>$4,834</td>
<td>$543</td>
<td>$447</td>
<td>$23,812</td>
<td>$885</td>
</tr>
<tr>
<td></td>
<td>$81,971</td>
<td>$23,799</td>
<td>$25,747</td>
<td>$411,211</td>
<td>$409,939</td>
</tr>
<tr>
<td>Total assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$952,667</td>
</tr>
<tr>
<td>Liabilities and fund balances:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liabilities</td>
<td>$25,970</td>
<td>$556</td>
<td>$418</td>
<td>$28,604</td>
<td>$94,976</td>
</tr>
<tr>
<td>Deferred undistributed investment income</td>
<td></td>
<td></td>
<td>$27</td>
<td></td>
<td>$150,524</td>
</tr>
<tr>
<td>Encumbered and committed reserves</td>
<td>$38,592</td>
<td></td>
<td>$38,592</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General reserves</td>
<td>$17,409</td>
<td></td>
<td>$17,409</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance of funds</td>
<td>$23,216</td>
<td>$25,329</td>
<td>$362,607</td>
<td>$314,963</td>
<td>$746,115</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>$81,971</td>
<td>$23,799</td>
<td>$25,747</td>
<td>$411,211</td>
<td>$409,939</td>
</tr>
<tr>
<td>and fund balances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$952,667</td>
</tr>
</tbody>
</table>

was encumbered or otherwise administratively committed for specific future purposes. The net uncommitted general reserves was $17,409,000.

Student loan funds totaled $25,747,000. The total student loan fund receivables were $21,423,000, of which notes receivable from current and former students amounted to $21,213,000. Outstanding loans to students included $17,967,000 under the National Direct and Health Professions Loan Programs, which were 90 percent funded by the federal government.

The total assets of the endowment fund were $411,211,000, including $387,399,000 in cash and investments. The market value of endowment investments associated with each of the separate fiscal units is presented along with the summary of expenditures and income for each unit.

Plant funds totaled $409,939,000. Of that amount, $349,493,000 was invested in land, buildings, books, and equipment. Total borrowings for physical plant facilities as of June 30, 1983, was $92,731,000, of which $8,546,000 represents Housing and Urban Development bonds for student housing and dining facilities; $20,010,000 represents bonds issued by the Health and Educational Facilities Authority of the State of Missouri to partially finance the construction and improvement of certain educational facilities; and $59,189,000 represents notes issued by the Health and Educational Facilities Authority of the State of Missouri also to finance construction and improvement of educational facilities.

### Investments

Income (interest, dividends, rents, etc.) from all investments for the year ended June 30, 1983, totaled $43,354,000 compared to $46,110,000 for last year, a decrease of $2,756,000 or 6.0 percent. Endowment income for the same period was $27,773,000 com-
pared to $25,712,000 for last year, an increase of 8.0 percent.

The market value of all investments (endowment, current, plant, student loans, etc.) including interfund advances (loans) and those securities maturing within 30 days totaled $601,378,000 compared with $461,866,000 for the preceding year.

The market value of endowment investments was $470,668,000 on June 30, 1983, compared to $310,991,000 the preceding year. A comparison of endowment investments over the past ten years is presented in the accompanying chart.

The increase in market value of endowment investments of $159,677,000 is the net result of gifts, grants, and net transfers of $41,781,000, realized market gains of $16,664,000, and unrealized gains on the portfolio as of June 30, 1983, of $101,232,000.

On June 30, 1983, the total investment portfolio was diversified as follows:

| Cash and Short Term Securities | 19.4% |
| Fixed Income                  | 29.8% |
| Equities                      | 49.2% |
| Real Estate and Other         | 1.6% |

100.0%

Net income from securities lending was $237,000 compared to last year's $342,000.
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All addresses are St. Louis unless otherwise indicated.
Nine
STUDENTS:
yesterday & today
times change and so do people. Fifteen years ago, in 1968, the late Frank O'Brien, former editor of the Washington University Magazine, asked nine students some intriguing questions. Those students' responses were equally intriguing. So intriguing, in fact, that we decided to see how our students in 1983 would respond to those same questions.

Frank O'Brien began that article in 1968 by asking, "Who is today's college student? How does he look? What is he thinking? These questions are being asked and answered in many ways. A generalization, which tends to ring false, pictures today's college student as an unkempt, chronic protestor in constant rebellion..."

Generalizations about today's students "ring false" now as well. Students are pictured as conservative, after the dollar, and not as idealistic as those students in years past. We present here, as the article 15 years ago said, "a tiny sampling of Washington University students in their natural habitat—dressed in their regular campus attire and expressing their everyday opinions."

We also provide pictures and comments from their counterparts of 15 years ago. No comparison is intended, and "these are just nine undergraduates picked at random. Another nine might be quite different."
Do college students trust anyone over 30?

Certainly I do. Trust is based on understanding, not age. I've found that people over 30 are the same as people under 30 except sometimes they may become trapped into their jobs or situations in life. Because of this, they may separate themselves more from the younger generation. But you have to look deeper than this. I believe, therefore, that by looking deeper you'll find we all have the same needs and the same dreams.

Louisa Guralnik
Sophomore in Fine Arts
Cornwall, New York

"I think this is a myth. Trust has nothing to do with age alone. Trust is something you feel in someone. If you prove yourself to someone, you've hopefully earned his trust. Personally, I trust almost nobody."

Paula Rubovits
Sophomore
Chicago, Illinois
What makes you laugh?

People. I don’t think people are very realistic about themselves. They have a lot of hang ups, which I think are silly. They don’t see the world as it is and often look at the world as they want it to be. Everybody has an interpretation of the world. However, I think their interpretation is rather off. I have no qualms with some people wanting to change the world. But some people try to impose their morality on other people, and they have no right to do so. It’s these types of people who make me laugh.

Joe Oliva
Senior in Engineering
Chicago, Illinois

“I laugh at extremist politicians because they are all very similar. They like to blame their problems on some outside conspiracy or force. The far right blames its trouble on a Communist-liberal-socialist conspiracy out to get them, the Constitution, and free enterprise. The far left is looking for a reactionary-fascist-conservative conspiracy. Both of them feel they are out to save humanity and institute the noblest, best form of society. This makes me laugh.”

Alan Howes
Freshman
Shoreham, New York
Will you be able to fit into society ten years from now?

Yes. You have to fit in no matter what age you are living in. There are people who live in the past and others who think they live in the future. It's good to have both types of people because they are the historians, who remind us of our past, and the dreamers, who make tomorrow what it's going to be. But I think most people keep a firm grip on the present.

Kathy Bradley
Sophomore in Arts and Sciences
Little Rock, Arkansas

“A lot of my teachers say my work is too idealistic and I'm living in a dream world. Idealism may be dead for a lot of people but I want it to be alive so it's alive for me. It's in my work and it's quite noticeable. I want it to be there. I don't want it to be dead.”

Chris Bartholome
Sophomore
Terre Haute, Indiana
What makes you laugh?

The hypocrisy I see today, especially from politicians. It's hard for me to understand how the politicians can ask the elderly, the poor, the young to make sacrifices when they have nothing to sacrifice to begin with. They tell us to "pull yourself up by your bootstraps" when we don't have any boots at all. They try to persuade others that our country doesn't need social benefits for people who have to do without. This is what makes me laugh?

Clarence Roby, Jr.
Senior in Arts and Sciences
North Little Rock, Arkansas

"Anybody who's pompous. I think my generation does that. We laugh at Everett Dirksen because he's SO pompous. And Johnson because he is also. Kennedy could make speeches about the country, patriotism and things, and they would ring true. Johnson does it but he just doesn't quite come across. We laugh at anyone who can poke fun at pomposity. Bill Cosby's great at that."

Beth Thomas
Sophomore
Dallas, Texas
Will you be able to fit into society ten years from now?

**Yes, I will.** If I can adapt as well as I do now to everyday situations, I can certainly adapt to any future changes whether beneficial or detrimental. Society ten years from now will be a much more advanced, a much faster, and much more technological society than it is today. I will learn more and continue to learn more and incorporate what I learn at Washington to adapt to these changes in society ten years from now. After all, anyone who is going to adapt and survive in this future society will have to continue to learn. Therefore, becoming lifelong learners is more important today than ever before.

Rebecca Berving  
*Freshman in Arts and Sciences  
St. Louis, Missouri*

"I don't think I'll be able to fit in any better in ten years than I do now. I think society now, or ten years from now, can only be improved if our basic assumptions are reanalyzed radically in terms of more human values. I don't think I fit in today. I adapt. I survive."

David Glanz  
*Senior  
Cleveland, Ohio*
Who are your heroes?

I would say Mark Twain simply because he offered some very perceptive looks into human nature. I can apply the incidents from Huckleberry Finn to my own life and, I believe, to the whole concept of heroes. For example, I don't really have a hero who is alive today. A lot of our heroes have been deflated simply because we look harder at them today. And we tend to recognize their human faults much as Mark Twain did in his time. If I had heroes today, they would have to have strong moral and ethical characteristics as well as having achieved something significant for humanity.

Carl Swisher
Junior in Arts and Sciences
Arlington, Virginia
If you had it to do over again, how would your educational career be different?

I spent two years at a state educational institution. I would have liked to have spent all four years at a private university like Washington University because I felt that a state university was very impersonal. I like to be on a one-to-one basis with all my professors rather than be a Social Security number. By studying abroad, I would like to get to know new and different people and learn something about a new culture.

Lisa Marcus
Senior in Business
Haworth, New Jersey

“I probably would have studied a little harder in high school, and then been better prepared for college and the requirements it puts upon the individual. I'd like to see undergraduate education extended to about five or six years rather than four because I haven't been able to take all I've wanted to in four years. It might get boring after a while but it would develop a better-rounded individual.”

Fritz Edelstein
Senior
Woodmere, New York
Is idealism still alive?

Things have been rough, but I still believe that idealism is alive.
All it takes to keep it alive, though, is for people to have positive attitudes, to stand up and say that the world is a good place. As an artist, I try to help people realize that we have a good world. I show that through my faith and through my art. I find that if people have a positive attitude then it becomes contagious and others will pick it up too.

Andrew Cross
Sophomore in Fine Arts
St. Louis, Missouri

“I would like to live in a slower society, perhaps one like America was quite a few years ago. One that isn’t dirty and crowded. One where I would feel like any talents and gifts I may have would be more appreciated than they are here.”

Fred Krughoff
Senior
St. Louis
What are your hopes for the future?

Generally, I would like to see things like the nuclear question regarding armaments and nuclear energy come to a stable solution. More effort and energy needs to be put into improving our social institutions and solving our social problems rather than dwelling on things that are not positive for society such as military arms buildups. The same amount of energy could be put into more important things that could add more stability to our society.

Diana Horvat
Senior in Architecture
Cleveland, Ohio

"I hope to get my master's degree in Paris and work for a few years there translating. Then I want to come back to the states and settle down to be a teacher. What I'm doing now is learning about people and I hope that this will help me in the future."

Linda Fassero
Senior
Benld, Illinois
Some people will do anything to quit smoking. Millions of people each year pay to have themselves hypnotized, punctured with needles, shocked with electricity, or forced to smoke to the point of illness in order to kick the cigarette habit.

In reality, says one Washington University faculty member, they end up getting burned.

According to Edwin B. Fisher Jr., an associate professor of psychology at Washington University in St. Louis and a member of the board of directors of the American Lung Association (ALA), consumers should generally avoid stop-smoking programs that offer "magical" quitting methods or that advertise high success rates. These two clues may indicate the programs are more hype than help.

"When a commercial venture claims success rates of 60, 70, or even 90 percent," says Fisher, "that indicates they are more interested in deceiving the public than serving them."

Fisher adds that the best, professionally-run cessation programs usually achieve success rates of about 25 to 30 percent.

As director of the Department of Psychology's Behavior Therapy Clinic at Washington University, Fisher has been guiding people through smoking cessation programs for five years. Some 600 smokers have participated in more than a dozen clinics he has organized, cosponsored by the American Lung Association of Eastern Missouri.

Fisher also heads the lung association's Smoking Or Health Committee, and he is currently conducting a three-year experiment to reduce smoking in the workplace.

There are two basic approaches to quitting smoking that individuals should take into consideration before joining a group or signing a contract at a local smoking cessation clinic. One way is the self-help approach. Ninety-two percent of the smokers who quit do so on their own or with self-help aids, according to the ALA. The second approach is to join a group, which is essential to some smokers to maintain both motivation and the commitment to quitting.

The decision to quit, says Fisher, is a personal one; therefore, the method of quitting should be tailored to each individual.

"Someone who has a very strong sense of privacy, who doesn't like sharing his or her feelings with a group, will feel uncomfortable in a group program," says Fisher. "If they are the do-it-yourself kind of person, who likes to build things from scratch, then they are likely to do well with a self-help program. The question should be what sort of situation does a person work best in?"

Smokers who want to quit on their own can contact their local American Lung Association for two free self-help manuals that will help them to "kick" and to stay kicked. But for those smokers who need to be guided by a professional or a group, the choices can be overwhelming and confusing.

There are ways of smoking out the seasoned professionals from the cessation charlatans, Fisher says. Success rates, based on the number of people who have "successfully quit" following treatment, are a good way of distinguishing between those programs aimed at serving the public and those that are self-serving.

Exaggerated success rates as high as 90 percent are advertised by some commercial programs. These rates are misleading, Fisher says, because they are often based on the number of participants who quit immediately after the treatments, or on unscientific follow-up studies conducted a few days or weeks later. Many of the programs tend to inflate their success rates by contacting only a small group of participants at follow-up time without accounting for the people they have not reached or those who did not complete the program.

Credible success rates, Fisher says, should be based on the percentage of all the participants who joined the program and who have successfully quit six months to a year later.

"Programs that have a real success rate of 25
to 30 percent are reasonable programs," Fisher says. "As a rule of thumb, I would suggest that if the advertised success rate is substantially over 35 percent the consumer should be very wary. You may well be dealing with somebody who has got more in common with a snake oil salesman than with a responsible professional."

In addition, smoking cessation programs that offer unusual therapies—such as hypnosis, rapid smoking, acupuncture, or electric shock therapy—often have a higher success rate because participants believe they have received "real" treatment. The effects of these beliefs, however, are short.

"It's like the old studies of placebo drugs," says Fisher. "One study found that the placebo effects were stronger with bigger pills. Big sugar pills worked better than little sugar pills. Green pills worked better than other colors. The individual tends to associate certain kinds of treatment with 'real' treatment.

"The kind of program we run, where people come in and are taught ways to understand their habit, has no intrigue or mystique. The level of mystique or programs with a high mystique quotient may show a somewhat better short-term effect, but the more solid programs usually have a better long-term effect."

Programs that offer magical, effortless cures to smoking are not only unpredictable, but may be dangerous as well. Rapid smoking, for example, where the participants inhale smoke every six seconds until nauseated, may have serious physiological side effects, especially among older people, people with heart or lung disease, diabetics, and pregnant women. Smokers should be cautious about programs that use rapid smoking without screening their participants for pre-existing diseases, or that do not have appropriate medical back-up available for emergencies.

Electric shock therapy may give the participants more than they bargained for if a well-trained professional does not conduct the therapy.

This therapy should not be confused with the electric shock therapy used in psychiatry, where convulsion-producing shocks are administered to the brain. Shock therapy for smoking is a mild, pain-producing jolt of electricity delivered to the skin while the participant is lighting a cigarette or smoking one. Most people find the therapy more annoying than painful, Fisher says.

"Therapists who use this procedure should be familiar with the hazards of hooking people up to electric currents," says Fisher. "The shock equipment needs safety features to avoid the possibility of the individual getting a seriously high jolt of electricity."

There is little evidence that programs that use electric shock therapy are more effective than programs that don't use them, according to Fisher. Hypnotism may work in some cases, Fisher says, but one-shot group sessions are usually ineffective. Many of the mass hypnosis programs are conducted by lay hypnotists who are not bound by the same ethical and professional constraints which apply to licensed health professionals. Also, they are untrained to deal with the serious psychological complications which are infrequent but may arise during treatment. In general, only licensed psychologists, psychiatrists, or social workers accredited by the American Council for Social Work (ACSW) should be consulted for hypnosis.

Checking the credentials of both the program and its staff is an important part of choosing a smoking cessation program. Programs sponsored by a recognized educational, public health, medical, or civic organization are far more likely to be regulated and supervised. The American Lung Association and a number of other agencies subscribe to the Code of Practice for Group Smoking Cessation Programs. Although the code is one of self-regulation, subscribers agree to maintain confidential records, provide trained professionals to lead groups, furnish counseling and referral programs, and to submit their annual evaluations to a peer review. A copy of the code is available from the ALA.

Reputable programs and professionals are also willing to acknowledge their limits.

"The attitude of the leaders toward the program may be the best guide to whether a program exists to help people or to make money," Fisher says. Real professionals acknowledge that no program is right for everyone and are willing to offer a referral to other sources for those who ask.

Even after following the suggestions, the consumers may find they've enrolled in a program that doesn't work for them. In most cases, says Fisher, the people will find themselves out of luck and a little lighter in the pocket. Consumers who are unsatisfied with the results of a commercial program that touts a high success rate or a magical quitting method, or who feel they have been treated unfairly, should contact the Better Business Bureau.
Choosing a smoking cessation program as carefully as one chooses a new car can increase the chances of success. The American Lung Association has recently published *A Guide To Smoking Cessation Programs* which gives additional suggestions on how to choose a program. The guide can be obtained by calling a local office of the lung association or by writing to the national headquarters in New York City.

"Quitting smoking is the most important thing, and possibly the hardest thing, an individual will do in a given year," says Fisher. "You shouldn't get into it if you're not prepared to give it the attention it deserves and requires.

"But don't be discouraged if you're not successful the first time around," he adds. "Research shows the average ex-smoker failed to quit two-and-a-half times before succeeding. Maybe one needs to learn to stay off, just like riding a bicycle."

For the average smoker, dousing the desire to light up another cigarette takes more than a jolt of electricity, a session of smoke-induced nausea, or a trip to a traveling hypnotist: it requires the smoker to learn not to smoke. Choosing a reputable program is part of that learning process.
Viewpoint

Visual Pollution
By David and Young-Hie Nahm Kromm, B. Arch. ’69

While driving along Watson Road looking for our favorite hamburger joint, we were hit by so many flashing lights and different signs that we missed our destination. As architects, we’re probably more bothered by tasteless suburban shopping strips and corporate monochromatic buildings than most anyone. The more we see these eyesores, the more we appreciate the wisdom of past masters who created rich and ordered environments.

The above example of visual pollution is the most obvious one. The visual pollution of the ’60s can be related to sensory overload, monotony, and deprivation in the ’80s. When we drive along our main streets, too many different types of signs and billboards bombard us, and our senses overload. We also suffer from sensory overload when mirrored glass buildings reflect and re-reflect rusted dumpsters, broken headlights, parking meters, or the colorful signs of fast food places.

Likewise, large executive office parks leave us dizzy and confused. They’re made with too many different building materials such as bricks, concrete, stucco, glass with glass spandrels, precast concrete, wood siding, metal panels, Cor-ten steel, and fluted concrete blocks. It’s as if the builders couldn’t make up their minds which building material to use. This sensory overload results in conflict, chaos, and discomfort.

Environmental sameness can be just as bad as sensory overload. Instead of too many visual impulses vying for our attention, sensory monotony paints a bland world where rhythms and textures as well as colors are identical. One example is row upon row of glass-box office buildings with Muzak piped into the elevators. Although the glass box freed a building’s outer wall from its structure and is considered this century’s great technological breakthrough, it has also created some boring buildings. Single-textured buildings such as glass without the relief of shadows are doomed to monotony.

Similarly, monochromatic buildings, where dark brown brick and dark brown glass are used on the exterior, with brown carpet, brown signs, and brown door frames inside, produce monotony. Walking through one of these buildings is like trying to find your way through a house of mirrors at an amusement park. These single color buildings have become popular with some architectural designers who claim to create an ordered environment and who wave the banner of consistency. (We sometimes like to respond to these people with Ralph Waldo Emerson’s quip that “A foolish consistency is the hobgoblin of little minds…”)

This foolish consistency also appears in identical rows of subdivision houses and repetitious shopping centers with identical signs and acres of asphalt parking lots. Anything becomes monotonous when it is repeated too often without relief. This monotony causes another dehumanizing effect. We can’t gauge distance or size and after traveling down a monotonous street we ask ourselves: “Have we traveled one mile or five?”

The worst of all possible architectural horrors is a combination of monotony and overload. This is the case when you walk through an airport and you’re hit with multi-colored carpet fighting with repetitious signs and lights along with stainless steel ducts, people, and noise. You can’t even find your car. It’s like you’re a zombie in a bad episode of the “Twilight Zone,” another dimension of bad taste and sensory deprivation.

How can we create order amidst all this chaos? Good architecture is like good music. Conductors modulate rhythm and create variations on a theme and relate each element to its musical structure. In buildings, the structural columns produce rhythmic frameworks. The windows and ornament become a form of modulation. Entrances and grand spaces are climactic. Leading up to the climax is the most exciting aspect of both music and architecture. Good architecture creates a sense of anticipation. Constant climax creates overload while constant rhythm causes monotony.

Where are examples of good taste? Two places are the Kansas City Airport and Michigan Avenue in Chicago.

The new Kansas City Airport is clear and straightforward. It is decentralized so that ticketing, departure, arrival, and baggage pick-up take place within small areas—a system which is efficient for passenger movement. Parking, too, is decentralized so that you’re out of the “Twilight Zone” and into your car. The clear, simple airport layout is only one aspect of this good design. Inside, warm wood flooring offsets the cool concrete, and the lighting reinforces the overall building’s structure.

Our favorite urban setting is Chicago’s Michigan Avenue, Both South Michigan Avenue and the newer North Michigan Avenue display variety and avoid deprivation in the environment. The Chicago Tribune and Wrigley buildings serve as beacons over a wide area of Chicago. Up close, the lower stories differ from the buildings’ shafts and the rhythm of their structure establishes human scale and order. The ornament and shadows within the framework create diversity while the entrances are climactic.

North Michigan Avenue along the stretch near Water Tower Place gives a similar feeling through structural rhythms, rich detail coming from behind the glass, exciting entrances, and spectacular interior spaces.

Neither the Kansas City Airport nor Michigan Avenue assault our senses, and, in fact, we come away exhilarated.

Of course, a great deal of the visual pollution of 15 years ago has literally been legislated from our lives. Sign ordinances have cleaned up much of
the confusion and competition that once existed along our major roadways. In this case, the public's outcry was effective in improving our environment's visual quality. However, it is difficult to outlaw overload and monotony in the same way. There have been law suits over the reflective glass buildings in Texas cities because their reflection increases the temperature. But this is an exceptional case.

We can still try other methods to clean up our towns. For example, zoning can punctuate commercial strips' length with landmarks and thus eliminate the boredom and confusion of competing fast food signs. And we can require setbacks and trees along these strips to prevent an endless sea of cars.

The best ordinances are ones that encourage variety, inventiveness, and the creation of landmarks such as Water Tower Place in Chicago. City leaders and developers are once again realizing that good design is a good investment.

At the beginning of this century, the railroad station was the gateway to the city and the biggest source of civic pride. Today, the airport serves the same purpose and should present a favorable image of the city.

Maybe someday the battle against sensory overload, monotony, and deprivation can be won. And maybe someday we can find our favorite hamburger joint without passing it by.

David and Young-Hie Nahm Kromm both graduated from the School of Architecture with bachelor's and master's degrees in 1969 and 1971 respectively. They are now partners in the firm of Kromm Rikimaru Johansen in St. Louis. Kromm's father, Walter B. Kromm, wrote an article on visual pollution for this magazine in 1968.