## Washington University Magazine

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### Weathervanes, Windups, and Whirligigs
The toy collection of a connoisseur

### Habitat for Humanists
A report on the founding of a community of scholars

### Orient Expression
Avant-garde Japanese theatre premieres in St. Louis

### Dissecting the Double Helix
The prize-winning work of Nobel Laureate Daniel Nathans

### Microencapsulation
Wide-ranging applications of a new chemical packaging technology

### Centennial Gallery
Portraits of artists trained by the School of Fine Arts

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Photo Credits: Thanks to the artists in "Centennial Gallery" for providing photos of themselves and of their work. All other photos in this issue by Herb Weitman.

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Weathervanes, windups and whirligigs are the stuff of the antique toy and American folk art collection of alumnus Bernard Barenholtz. When Barenholtz retired from Creative Playthings, Inc., which he cofounded in 1950, he turned his attention to the building of this delightful private collection.

The question posed an alternative that would have changed not only his life but the lives of a generation of American children and their parents. It asked what if he had not taken the precise turn in his life that led to his cofounding of Creative Playthings, Inc., to his vocation as a revolutionary toy maker, and to his avocation as a collector of antique toys and American folk art.

An intriguing speculation, since the event which drew Barenholtz into the toy world seems to have come about by the sheerest of coincidences.

The son of a Polish immigrant family, Bernard Barenholtz grew up in South St. Louis where his family owned a small but successful tailor shop. A bright child to whom learning came easily, he was urged by friends and family to enter a profession. He considered medicine, the rabbinate, the law; but when he entered the University of Missouri at Columbia, he became fascinated with psychology. Even that freshman year, he sought special permission to take an advanced course which dealt primarily with children.

He later transferred to Washington University and continued to major in the psychology of children, earning the undergraduate degree in 1935 and the master's degree in 1937, with a thesis that correlated reading ability and grade point average.

In 1937, with $50 in his pocket, Barenholtz set out to study exceptional children at Columbia University. In New York, he enrolled as a Ph.D. degree candidate and found a job at Hebrew Orphan Asylum which paid $50 a month, plus room and board. The unexpected death at mid-semester of the noted educator under whom he was studying changed his career plans abruptly. Through his work, he had become interested in vocational education and he began to follow that course at Columbia. Meanwhile, he won a job with the Federation Employment Service, a division of the New York Federation of Jewish Charities.

While Barenholtz was in New York, Edith Stix Friedman (who later became Mrs. Barenholtz) opened a small basement toy shop in St. Louis. Her educational background was similar to his. She had taken a master's degree in nursery education at Columbia's Teachers College, but rather than begin a nursery school, she had ventured into the field of educational toys. Her small shop, called The Playroom, was one of the first five educational toy shops in the United States.

The Barenholtz family moved to New York in 1940 and lived for a year in New York while he served as a vocational counselor with the National Refugee Service, retraining political and religious refugees from Germany and Eastern Europe. When the couple returned to St. Louis the following year, he became assistant director of the St. Louis Federation of Jewish Charities. With the advent of U.S. entry into World War II, he joined the American Red Cross and spent two and a half years with that organization in Italy. At the war's end, he left the Red Cross to enter private industry.

In the decade following graduation from Washington University, Barenholtz had successfully pursued a career not very far from his educational interests. His wife had continued her small toy business almost as a dilettante interest. Their family was growing and they were firmly settled in the St. Louis community.

Then while waiting for her at the shop one afternoon, Barenholtz chanced to look at her account books. He was astonished to find there the names of many of the influential families of the city. His interest was piqued and he began to turn some of his attention to the toy business. She had specialized in simple, well-built toys of good design. She chose toys that would allow children...
and Whirligigs

By Dorothea Wolfram
to use their own imagination in play. Building on their pooled knowledge of child psychology and of children's learning patterns, the Barenholtzes soon expanded the business, moving to a larger shop on Forsyth Boulevard in Clayton and adding to the inventory toys they had commissioned from their design. In 1949, when Edith retired to care for their small children, her husband took over the business on a full-time basis. The following year the Barenholtzes sold The Playroom and in August 1950, with an associate, New Yorker Frank Caplan, Barenholtz founded and incorporated Creative Playthings. Shortly thereafter Edith and Bernard Barenholtz and their two young daughters moved east and in 1956 settled in Princeton, New Jersey, where Creative Playthings set up its headquarters.

Almost singlehandedly, Creative Playthings, Inc., revolutionized the American toy business. Within a decade, its imitators were legion. By then Barenholtz frequently referred to it as “half business, half crusade.” The company thrived on its institutional sales to nursery schools, kindergartens, early elementary schools, and special schools for handicapped children. Eventually, it designed, produced, and sold toys and learning aids, furniture, and playground equipment. Its unwaivering emphasis was on simple, functionally designed, high-quality products which would help children learn and develop. Gimmickry and mechanization were left to others. Barenholtz smiles at the memory of the purity of the playthings his own daughters grew up on. “Once, I remember, the only thing one of them wanted for Christmas was a wind-up toy.”

In 1966, Creative Playthings, Inc.—by then publicly held—was purchased by Columbia Broadcasting System, but Barenholtz remained as executive vice president. During the next few years, CBS changed the company’s marketing techniques, inexplicably dropping its direct sales to schools. That move disenfranchised the 45,000 institutional customers who had been a company mainstay.

The pioneering company had kept these customers and their needs at the core of their design and production expansion. In 1953, Creative Playthings, Inc., the Museum of Modern Art, and Parent’s Magazine had sponsored a design competition for playground sculpture. The result was hailed by critic Aline Saarinen as a good omen for the future and was well received by experts on child development and educators alike. The company had consistently been involved in conferences on children and early childhood education. Barenholtz himself regularly took part in a summer program given by the state of Illinois for parents of children suffering from retrolental fibroplasia. He would spend several days at Jacksonville School for the Blind in Illinois helping teach parents to aid their blind.

The eagle, probably made by a ship's carver, came from Kittery, Maine. The wooden Samuel Butler figure on the opposite page once decorated a tabacconist's shop in Pennsylvania.
children in learning. For the parents who could not afford to buy materials and equipment, classes were set up to teach them to make what was needed. He was also closely involved in developing learning aids for children who were deaf. These were a small part of the extracurricular commitments Creative Playthings made to its crusade.

After a few years with CBS, Barenholtz bowed out of the company. "I knew the time had come when one of the newly appointed presidents said, 'Barney, what you need to do is to learn to play golf.'"

He did not. In fact, in all of his life, Bernard Barenholtz, like the children he studied and served, has never learned to make a clear-cut distinction between work and play. Both are woven simultaneously into his life using the same colors, textures, and patterns. When he left Creative Playthings, he and his wife turned much of their attention to antique toys. They had begun collecting in 1956 and slowly, with their growing discrimination, had built a definitive collection of toys manufactured in America between 1830, when the industry began, and 1900.

In the late 1960s, they had commissioned Peter Eiseman, now a recognized urban designer but then a relatively unknown young architect, to design a gallery addition to their home in Princeton. By the time it was completed, it was already too small.

Barenholtz will not speak of his pieces in terms of dollar value. If pressed to discriminate, he speaks in terms of their rarity, yet, to him, even this is secondary—a guide useful for acquisition, sale, or trade. "Worth," he often reiterates with a smile, "is in the eye of the beholder." Rather, the search, the excitement of finding and later owning a thing you greatly admire, and the quest for information on your piece, the placing it in time-and place-of-manufacture frame, intrigue him.

"Edith was an ingenious, persistent researcher," he comments as he speaks of the collection and of the books which are a part of it or have been born of it. The toy sketchbook—probably an original from which toys were later designed and manufactured by the George Brown Company of Forestville, Connecticut, in 1870—which Barenholtz purchased for the collection, prompted his own entry into publishing. Reproduction of that sketchbook (which won a 1971 publishing award) was the first of seventy titles on Americana that he published under the imprint of Pyne Press. Although no longer publishing, he is currently working on a book on antique toys.

The search for early American toys seemed to wend its way naturally into the collecting of American folk art. Pieces of this collection originally came as toys or toy-like objects such as whirligigs. Later Barenholtz began to purchase them as a corollary collection. Like some of the early handmade toys, this art, he says, "is the product of an untutored hand, a naive artist,
Weathervanes, Windups and Whirligigs

A tin clockwork locomotive, patented in 1870. This one is unique in having an engineer.

The "Charles," a toy hose-reeler, is the only one of its kind known to collectors.

A ringing pull toy, made about 1878. The eagle was a popular motif for American toys.
No batteries needed. When the wind turns the cutout metal disc, the carpenter begins to saw.

A two-seated brake (carriage), a rare cast iron toy manufactured in Lancaster, Pa., in 1895.

Some handmade toys, like this man on horseback, are prized for their naive charm.

A visit to the circus may have inspired a folk artist to carve this acrobat on horseback. Late 1800s.
One-of-a-kind creations, these wooden whirligigs, or whimsies, were mounted on buildings or fence posts, where a breeze would cause their arms to spin.

Barenholtz amidst his treasures. The paintings, by Joseph Whiting Stock, show children holding the toys that now stand on the table below. The toys and portraits have been together since 1845.
perhaps, but I dislike calling it primitive. Like other ‘primitive art,’ some of it is very sophisticated.”

Barenholtz has a special fondness for American woodworking, so here in his collection are the cigar store Indian and the American eagle done by a ship’s carver, but there are also the cocky little frockcoated cigar shop Samuel Butler and the worn and weather-battered whirligigs “likely whittled out,” says Barenholtz, “by some carver as decoration for his fencepost or for the amusement of his grandchildren.”

There are also a large number of metal weathervanes, other metal and wooden decorations, and some paintings.

Together with the toys, these speak of a time of more simple taste, but they attest too to the fascination of the age with its growing mobilization and mechanization. Among the toys are coaches and brakes and surreys, railroads and steamers, firewagons and a dog cart, wagons, carriages and brakes, and some paintings.

S

HORTLY AFTER retirement from Creative Playthings, the Barenholtzes bought a small woodworking shop in Marlborough, New Hampshire. When the drive between Princeton and Marlborough became almost a commuter run, they decided to look for a home in New Hampshire and to build a new gallery adjacent to it. Mrs. Barenholtz died in 1975, before the move to Shaker Brook Farm, but in 1977 Barenholtz had seventy cases of books and 230 cases of toys crated for the trip to the 1795 farmhouse and the 1978 gallery (completed a year behind schedule).

“The original idea for the gallery was to do a round Shaker barn. This would have fit the farmhouse perfectly, both because of the name and because, in fact, there was a Shaker hand in building the house. However, the round shape would have made hanging things difficult, so I modified it,” he comments.

The hexagonal gallery, tall and open inside, adjoins the house through an enclosed breezeway. Stark white walls are offset by warm natural hardwood floors. Furniture is spare and modern. The open staircase that wraps itself around a cylindrical fireplace leads to a half-balcony. Here are more display space, hidden cupboards chock-full of toys, Barenholtz’s desk, and a storeroom. The display in the gallery is changed every six months. High windows protect the collection from direct sunlight, but give view to woods and the mountain beyond.

Below the balcony is Barenholtz’s bedroom suite, built into the gallery so that he can “live with the collection.”

That idea reflects his joy in these exquisite acquisitions and his own acquisitiveness. The gallery and the collections it was built to house, although private, are generously shared with friends, other collectors, school teachers and children, historical societies, all who are interested. In May, Barenholtz hosted 110 toy collectors who drove up from Portsmouth, N.H., for a Sunday brunch, in spite of a gas shortage scare. Guests were members of the Antique Toy Collectors Association of America that Edith Barenholtz had helped to found and that Bernard currently serves as president. It is the unpretentiousness and unstuffiness of this pretentious collection which must delight all who share it. “I think that I have had a tie on four times since I came to New Hampshire,’’ says Bernard Barenholtz, explaining the informality imposed by life in the country despite the impeccability of the surroundings. But it is more than the graciousness and the intelligence of the host which mellows the experience; it is the considerable charm of the collection and its idiosyncracies.

O

N THE BALCONY, in Barenholtz’s private corner is a papier-mâché sculpture of Nixon and Agnew, done in 1971 by a presentient magazine illustrator trying his hand at a different medium. Next to it is a sculpture of a pig by a Mexican-American Santa Fe folk artist. On a shelf nearby is a carving of Jonah and the whale with porthole window looking in on the prophet cosily at home in his rocking chair. “The artist is an upholsterer who likes to carve,’’ says Barenholtz. “He told me that the Jonah story was one of the few Bible stories he remembered from his youth and that this was the way he always pictured it.’’ Below Jonah are shelves full of robots and spaceships, circa 1950-1970.

Nixon, the pig, Jonah and similar pieces in the gallery are a portion of Barenholtz’s contemporary folk art collection. The robots and spaceship are there “because they are well designed and they appeal to me.”

N

OTICEABLY ABSENT are Creative Playthings. Barenholtz says he has none; in fact, he hardly has a catalogue left. That collection will be left for another to assemble. Should a different kind of Barenholtz toy collection be amassed in the future—one focusing on Bernard Barenholtz’s work—its collector will catalogue it in two parts: those pieces produced by Creative Playthings of Herndon, Pennsylvania, and those produced by Whitney Brothers of Marlborough, N.H. Whitney Brothers itself is perhaps the oldest existing woodworking toy factory in the country, having started in business in 1904.

Although distinctly different, these parts would both show the Barenholtz touch, for in the Marlborough shop, which as an employer of thirty persons is a mainstay of the Marlborough economy, Bernard Barenholtz is still manufacturing toys.

“They are much like the things we did earlier, clean in design and of high quality. I wouldn’t know how to design or produce them any other way.’’
Habitat for Humanists

Last year, Peter Riesenberg, Professor of History, was one of twenty-six inaugural fellows at the National Humanities Center. He likens that experience to life in a modern monastery: contemplative, stimulating by its associations, nurturing, free of worldly and academic worries, austere only through the demands of scholarship, yet directed toward the application of humanistic knowledge to worldly affairs.

MEDIEVALISTS usually get their thrills, and sometimes their insights, from visits to Gothic cathedrals or walled towns. Last year I was more fortunate. I lucked into a modern monastery; for nine months I experienced a special kind of community life as a Fellow of the National Humanities Center. Ideally, monasteries are established far from the world that the monks might achieve salvation undistracted, yet not so far removed that they cannot influence society both by moral example and the products of their endowed leisure. The new Center follows this model: its new building is set in a pine forest within North Carolina’s Research Triangle Park, near thousands of natural scientists whose activities creating and controlling things influence our lives.

The Park was established about twenty years ago in an effort to stop the brain drain from the three great local universities, and to attract talent, investment, and, it is said, white-collar payroll to North Carolina. Governor Luther Hodges was involved, as were university officials, public and private, and several highly imaginative members of the business community. Slowly government agencies (E.P.A., U.S. Public Health Service) and private organizations (IBM, Burroughs Wellcome, Monsanto) developed facilities in the 5500-acre area; today more than 13,000 persons work in the Triangle, as it is called, most in aspects of biological and environmental research. The 600 scientists and engineers in the Park, added to the thousands at Duke, the University of North Carolina at Chapel Hill, and North Carolina State in Raleigh, make the region first nationally in percentage of scientific Ph.D.s. “Pines, possums, and Ph.D.s” is the local half-brag. By the middle seventies, when the National Humanities Center began its search for a site, the Triangle had two decades of successful growth, a sophisticated entrepreneurial leadership, and close and easy relationships with many local universities.

The National Humanities Center developed out of a very different environment and set of concerns. About six years ago several leaders of the “humanist establishment” began to talk of a national center for humanities research. They envisioned an institution comparable to that at Palo Alto for advanced study in the behavioral sciences, and to the Institute for Advanced Study at Princeton, whose principal emphasis for almost fifty years has been in mathematics and physics. Gregory Vlastos (philosophy, Princeton), Morton Bloomfield (medieval literature, Harvard), and Meyer H. Abrams (English, Cornell) were the prime movers. Vlastos and Bloomfield had enjoyed a creative year together at Palo Alto. These men became the nucleus of a group that not only recognized the sad state into which the humanities had descended nationally, but also envisioned a new state of affairs in which humanists would put their learning, sensitivities, and vision in the national service. They knew that rarely in history have the humanities been “ivory-tower” disciplines, that they have always provided society with both leaders and goals. Without being simplistic they looked toward a revival of the humanities, and, if I am not mistaken, of traditional, if not conservative, values.

Soon the venture attracted, among others, Lionel Trilling and Charles Frankel of Columbia, and ex-university presidents Robert Goheen and Nathan Pusey, now foundation executives. Also, it won the sponsorship of the American Academy of Arts and Sciences, whose executive officer, John Voss, guided the Center’s sponsors in their approach to government agencies and the great foundations.

Once the Rockefeller, Carnegie, Ford, and Mellon Foundations contributed $250,000 for planning, a site selection committee began its travels. St. Louis put together a package to attract the institution, as did more than a dozen other academic regions, from San Francisco to Boston. The Triangle won because the three university libraries are so powerful; and also because the searchers were attracted by Carolina’s pleasant suburban life, the availability of excellent medical facilities, and the quick, positive approach of the Research Triangle executives. In thirty days they offered the necessary acreage, more than half the cost of the projected building, and the promise of all the support necessary to raise the rest. They also elicited support from U.N.C., Duke, and State in the form of $75,000 a year for five years from each, and the promise of library, athletic, and other facilities. Eventually the National Endowment for the Humanities awarded a $625,000 three-year challenge grant. For its creation and current operation, then, the Center depends upon public and private, local and national institutions for support.

With the financing assured, an architect was chosen and the building itself was begun. This matter-of-fact account doesn’t begin to describe the intricate politics and negotiations that ranged from Boston through New York and Washington to Chapel Hill. There were obstacles: for example, local university faculties
worried about loss of books and monies to the Center. But these concerns were overcome; today all three campuses are probably stronger for the presence of the visiting Fellows. Certainly they have already served a significant function in bringing together, sometimes for the first time, scholars in the same field who had eyed and sniffed at each other at the nearby campuses but had never met.

When I first entered the glass and white-brick building last September, the Friday before the official opening day, it wasn’t finished. I encountered a circus scene: hundreds of people scurrying in and out, some with furniture, others with telephone lines, still others with the tools of their special installers’ trade. The walls were up, but most of the roof wasn’t. On dedication day, seven months later, forty panes of the specially glazed glass were still to be delivered. At the end of May when I left, eight were still out, and wastepaper cans still were scattered around to catch water... as in the Bronx of his childhood, according to one of the Fellows.

However, the activity of workers all during the year must be counted a plus. It gave the twenty-six inaugural Fellows a special closeness to the institution. They were more than the creators of intellectual and social patterns. Eventually, through the warm association with the long-term workers and their occasional help carrying things here and there or holding ladders, some came to think of themselves as actual creators of the physical place. No future class would suffer through a roofless winter, stare helplessly at waterlogged carpeting, decide where to place rugs, plants, and furniture, or struggle with the establishment of Xerox secretarial procedures.

The building itself has been variously described as an aviary for rare birds and a hothouse for the cultivation of new ideas. It is glass and brick, sharply angled, in the form of an arrowhead. The point of the arrow is a large dining-meeting room, glass-walled so that especially in fall and spring the colors of the woods just outside enter the building. Fellows’ studies are on two floors; each is twelve by fifteen feet and is furnished simply but elegantly with desk, table, bookcase, and chairs—all donated by North Carolina furniture makers. The second-floor studies open through sliding glass doors onto a balcony that runs the length of the wing; those on the ground floor open onto an arcade. Terrace or arcade, one was able to pace, muse, snoop, or gaze into the woods. Generally, the prospect into the woods was soft, while that within the building was vivid and dramatic, especially when the sun, shining through the structural elements, made strong shadows and contrasts.

In this splendid isolation—about ten miles from Duke, fifteen miles from Chapel Hill, and twenty from North Carolina State in Raleigh—some twenty-six scholars worked away. Of the group about twenty worked there any day, and about the same number constituted throughout the year a community of Fellows who lunched and walked and, above all, talked with each other. The others, given the nature or stage of their research, worked in the libraries or archives of the nearby universities. At first I found the place disconcerting, for it was a working environment different from anything I’d known. In my life, I had always come to work on a campus, or driven downtown to a library in a city, say Florence and Rome. Coming to work at the Center was like driving to a specialized factory in a wood. In a sense, each of us punched in between 8:30 and 9 and moved directly to his or her study to produce. It was only the conviviality of the Fellows and the warmth of the staff that mitigated this regularity and made life very unmechanical, indeed, idiosyncratic.

Until his inexplicable murder in early May, Charles Frankel was the Center’s animating personality. Before he became president of the Center, Frankel had been at Columbia all his academic life except for a tour as Assistant Secretary of State for Cultural Affairs under President Johnson. (He resigned in protest against the Vietnam War.) But he was no quiet philosopher; he was, rather, an activist who sought involvements in which the humanist might serve. So, in addition to his work in the Columbia philosophy department, he taught jurisprudence in the Columbia Law School. He had at various times chaired an OECD commission to investigate higher education in France, and produced a television series in which he sought involvements in which the humanist might serve. His books were attempts to put the thinking of the professional philosopher at the service of the thinking citizen. He enjoyed food, wine, talk, people, life. And, he was a rarity for the humanities: an entrepreneur whose visions could inspire his colleagues and foundation executives; he was also an administrator who could create an institution and make it work.

At the Center he attended seminars, entertained visitors, and made it a grand salon as he presided over luncheon talk. With it as his base, he lectured all over the state, to university classes, and Rotary and ladies’ lunches, always asserting the importance of the humanistic disciplines for the full enjoyment of life. He had grace, wit, energy, and charm.

Assisting Frankel was a crew of talented and enthusiastic people who had thrown their whole lives into making the place work. As I write, what shines through, a month away from North Carolina, is the quality of support they gave us. They wanted us to be successful, to be happy and creative. The kitchen, the Xerox machine, the switchboard were managed out of a faith in our ability to produce. Of course, our production would justify their selection of us. But there was more to it this first year. We were the first class—the first team, in many ways. And with
Frankel’s death our existence became, I think, even more important to the staff. We were the only class he had known, the only realization of his vision, the only reason for their existence at the Center.

**T**he scholars who enjoyed these material and spiritual benefits came from all over the world—Sweden, Israel, England, as well as the United States. They were a bibliography come to life: the great authority on medieval art; the man on Aristotle’s Poetics; the Shakespeare scholar, the lady don whose dozen or more volumes were being reprinted; the historian of modern political ideology. And there were younger scholars whose first book had marked them. Rank didn’t count. To satisfy the demands of one foundation, a distinction formally was made between Senior and Junior Fellows. But in daily life what mattered was a person’s personality, range, and power; his total contribution to his colleagues’ intellectual life, at lunch, in an office conference, or on a walk. We were open to each others’ needs at all levels of sophistication. It was assumed that each of us was there for some good reason; therefore we could go to each other with the most basic questions—the kind one wouldn’t dare ask a faculty colleague at the club for fear of revealing unbelievable ignorance. At the Center we were all tourists on a long cruise; that the Center had only a few reference books for a library made us, like travelers, all excessively reliant upon each other. The result was a kind of collegiality that must be rare. It transcended the ordinary obstacles of age, nationality, discipline. Those nasty factors of discrimination with which the academic world is loaded mostly didn’t apply.

And there were almost no institutional politics to clutter up the mind or tabletalk. No budgets to worry over, no sullen anger at an administration, and no departmental rivalries. And only one massive bore, whom everyone chose early on to tolerate. The result was, without pretense, consistently the best talk I’ve ever heard. At the Center, everything flowed easily: movies, Aristotle, sports, Shakespeare, the future, the past.

The many visitors who joined us at lunch were always pulled into the discussion. We exploited them, and they, us. Frankel had, I believe, a vision of a High Table in North Carolina. He himself was one of those New Yorkers to whom good talk is everything. Eventually we learned thousands had been budgeted to support the table that out of congenial discourse wisdom might appear. Certainly on occasion it did; what is more, associations that will last for years were established.

Out of all the interaction at lunch, over coffee in the morning, on the walks that radiated out from the building, there developed a very complex set of relationships, which is what first led me to compare the Center with a medieval monastery. Both the Center and the monastery are removed from the world, their residents dedicated to contemplation, scholarship, some idealized pursuit. Both are closed, small-scale societies. As in a monastery there were juniors and seniors; patrons and clients, the pure and the less pure. As in any group, leaders appeared to lead intellectually and morally. The briefest history of any institution affords time for the display of character and talent. Friendships developed, naturally, but never to the hurt or exclusion of any Fellow. If there were celebrities—those whose world-wide reputation conferred instant sainthood—there was no pulling of age or rank. The place was truly democratic: what mattered was intellectual sociability, an openness to the sharing of ideas.

It was not all paradisiacal, naturally. Two tensions were very strong: that created by the sound of typewriters coming from behind every closed door—one wondered whether they were tapes—and that produced by the conflicting demands of personal research and seminar, group commitment. The former tension is obvious; the latter arose out of the basic philosophy of the Center’s creators: that in the effort to put humanist insight and research to use in the world Fellows were to participate in one or more seminars: focused collegiate efforts at scholarship.
One seminar was entitled "History and the History of Ideas"; another, "Ideals of Education."

I participated occasionally in these but gained the greatest satisfaction from membership in a group that collaborated with Frankel and his second, William Bennett, also a lawyer and philosopher, on a revision of the American Bar Association’s Code of Ethics. When asked to serve as consultant to a special ABA National Commission, Frankel had volunteered the services of his new Center. For several months, therefore, two moral philosophers, two historians, two political scientists, and several professors from Duke Law School worked on a partial text. This was presented to the Commission when it came to the Center in February to hold two days of meetings.

The seminar on education also drew its members away from their individual projects, perhaps to benefit society. Its leader was Thorsten Husén, a world-famous Swedish designer of secondary school systems. Husén was in the U.S.A. as chairman of an international OECD Commission to examine American education for the disadvantaged. Before meeting with Vice President Mondale and other authorities across the country, Husén met with several of the Fellows to discuss the subtleties of the term “disadvantaged” and also various aspects of “equality” as applied in education. Both seminars reflected Frankel’s desire that the Center not cater to “the leisure of the theoried class.”

This policy surely was reflected in the selection process. There were Fellows working on such traditional subjects as Newtonian science, eighteenth-century English literature, the Elizabethan playwright John Webster, and the five senses in post-Renaissance European painting. But there were several scholars working on citizenship and humanist education—in Plato and the modern world, and problems of legal and medical ethics. Which is to say that the Center surely has a selection policy in which “relevance” plays some part.

My guess is that this is how I won my year in paradise; the topic I presented was “A History of Citizenship from the Greeks to the Age of the French and American Revolutions.” A political scientist came to work on eighteenth-century aspects of citizenship, and William Bennett, who has succeeded Frankel, has written on contemporary American citizenship from both the legal and philosophical viewpoints. Of course I didn’t complete the general, if scholarly, book I envision, but at the Center I did get much reading and writing done. What the place offered was a special kind of time, or the appearance of time, in which to read widely and to sample disciplines hitherto unfamiliar. Because I had no real deadline, I was able to learn what political scientists had to say about participation and cultural anthropologists about rites of civic religion; and I even discovered what use semiotics might be to the institutionalist historian. Such reading, reinforced by the availability of scholars just down the hall, made entrance into new fields easy. (This is not to ignore the valuable recommendations of Professor Robert Salisbury and other Washington University colleagues. It is to emphasize the constant and immediate help only seconds away.)

The selection committee may have seen some relevance in my attempt to trace classical ideals of civic responsibility through the middle ages and Renaissance to their eventual incorporation in our American value system. As successive Western societies have attempted to define the Good Man and develop institutions to fashion him, they have created special educational devices and moral literatures. I hope my book will help clarify certain enduring values and the contribution they have made to American experience.

Over the past fifteen years my principal interest has been the history of the Italian medieval and Renaissance city/states. In these republics citizenship was defined as participation, civic virtue as a code of public morality and sense of responsibility. It was in Italy that the ancient ideal of the active life as the good life reappeared in Western Christian history. In such cities as Siena, Venice, and Florence, theologians and lawyers created a new set of values that endorsed activity in the service of one’s fellow man as well as monkish prayer and contemplation. Although I have studied the legal aspects of citizenship, I am more interested in the educational processes whereby these new ideals were taught, and in the creation of nets of mutual expectations that bound together citizen and community. Going backward and forward in time, the book extends my original interest in the middle ages. It also moves out from the Mediterranean city-state to the monarchies of Western Europe and their colonies.

The concern for relevance derived in part from the Center’s desire to do something special for North Carolina... in addition to its national focus and policies. Not only Frankel, but many of us as well, went about the state to lecture. By the end of its first year the Center had established itself as part of the cultural life of the three local universities and of colleges and communities from Davidson to Wilmington. Small denominational schools as well as major universities found they could call on the Center for a scholarly lecture or Phi Beta Kappa address. On these speaking trips, Fellows from establishment universities learned a lot about traditional small-scale America.

What I have already written answers in part the final questions one must ask about this new institution: will it work? and will it justify the money and effort devoted to it? In its impact upon the local cultural scene, the Center has already proved its worth. As
word of its existence and the availability of its faculty gets around, its presence will be felt even more extensively throughout the Southeast. About its eventual national importance one now can only guess. To judge from the history of the Palo Alto Center, Fellows will write, both the usual scholarly tomes and more popular works touching national issues. Perhaps they will be more thoughtful and more interdisciplinary in their research than they would otherwise have been. Besides books, the Center will surely inspire a lasting scholarly international network, members of which will keep in touch by letter, lecture tours, recommendations of students, and all kinds of programs. Some Fellows have already found intellectual comradeship that will influence all later work.

I don’t contemplate a Center “policy” for the humanities on a national scale, but through the choice of Fellows and the books produced there may emerge a Center “line” or “direction” which would emphasize certain values: intellect, civility, literacy, high public morality, as these inform all aspects of life. It cannot try to act as the guardian of such virtues, but self-consciously and without apology it can proclaim their enduring value. I imagine, from the Center, then, will emanate books on virtue as well as scholarly works, and perhaps, formal texts and position papers such as the one presented to the ABA. Finally, chance will help determine the ultimate influence of the Center: the more popular its scholars’ works the greater the chance they will be read widely in the world by politically powerful figures. Today, as always, creation in a library can change the world.

Happily, the Center will not grant all its awards to the applied humanities. Frankel knew and wrote that scholarship “must be free to follow crooked paths to unexpected conclusions.” If next year’s class includes an Italian specialist on violence, it also includes traditional scholars in literature and history. Its members by now are savoring their surroundings, anticipating the year’s pleasures.

But they will not have the great year we had. Always, there is but one brief heroic age, one class of founding fathers. We had our difficulties, but we had Alice and Lucy in the kitchen, and Libba and Madolene in the office, those soft Southern voices trying so hard to be understood; we had all that good will and loving support. And from each other we got wisdom, freedom to speculate and inquire, and, above all, the chance to review our lives and think our best thoughts.
Washington University's Edison Theatre was host this spring to the American premiere of The Little Elephant Is Dead: An Exhibition of Images by Abe Kōbō, Japan's leading novelist and avant-garde playwright. In the sometimes comical, sometimes surreal play, acrobatic and dancelike movement combines with light and music to create a dreamlike succession of images. The Abe visit was part of an ongoing program of cultural exchange and understanding fostered by the University's Department of Chinese and Japanese.

By Janet Kelley
A dream awakens from a rigid sleep as five chalk-faced men "color" her into life with pastel sticks.

Abe Kōbō, called by some "the Kafka of Japan," rehearses his troupe at Edison Theatre before the premiere performance of his play *The Little Elephant Is Dead.*

for the projection of life. Children grow as they play with sheets. Adults sweat to obtain cloth, then wipe away that sweat with the cloth they obtained, until finally they go to their deaths wrapped in white shrouds. As the play begins the cloth "becomes a curtain" and "dreams of the shadows cast by the many lives which have passed before it. It dreams of the various dreams which have been dreamt within the cloth."

According to the author, viewers should not worry about finding any "ultimate meaning" in the play, although it has symbolic elements. Abe is a shy, bushy-haired man whose mischievous wit comes as a surprise to those accustomed to the dark, satirical view prominent in his written works. This view has led some critics to label him (without his agreement) the "Kafka of Japan." He himself advocates a Rorschach approach to the play's images—the meaning should depend on each individual's personal reactions and associations.

DONALD KEENE, professor of Japanese literature at Columbia University, a critic, translator and good friend of Abe's, offered this comment in the introduction to an earlier play: "Abe's plays almost always contain allegorical elements that may make some spectators wonder exactly what is meant. He shares this ambiguity with the contemporary playwrights in other countries for whom he has the greatest admiration, men like Harold Pinter or Samuel Beckett.
but if the message is elusive, the moment-to-moment developments . . . are definitely not, and the spectator (or reader) will be engrossed throughout, whether or not he attempts to discover the ultimate meanings . . . Most spectators or readers . . . intuitively sense much of what Abe is indirectly expressing."

The final lines of The Little Elephant, "In the love of the weak, there is always the intent to kill," hint at "one possible interpretation of the play," Abe says. He has made these words the keystone of his new book, Secret Rendezvous, to be published in the United States this fall by Alfred A. Knopf, New York. Rendezvous, which has already sold more than 400,000 copies in Japan, uses the extended metaphor of a hospital's strange machinations to explore the destructive effects on the individual of too much governmental interference.

This theme threads its way through many of Abe's works. Other themes reoccurring in his novels and plays relate to problems of modern urban society—loneliness, the possibility of human freedom, the lack of meaning and direction in people's lives. In a note to the publisher of the American edition of his novel The Ruined Map, Abe wrote: "Here in this city we have a huge, drifting vessel. Let us call it the S.S. Labyrinth. Somewhere there must be a bridge, an engine room. But where? No one knows. Certainty that we have lost our myths—the good full earth, the secure home—gone."

The fifty-five-year-old Abe, who began writing fiction while a medical student in Tokyo in the war-scarred forties, says he will continue to write both novels and "action plays." "I have to write novels to make money," quipped the playwright, who is the sole support of his theatre troupe, a unique group in Japan, whose raison d'etre is to produce his plays and to develop his new dramatic techniques.

Abe's novels, which are best-sellers in Japan, have respectable sales in the United States, but have their greatest market in Russia—a phenomenon he can't explain except to observe that the human struggle is universal. He added with a wry smile, "excluding, perhaps, in the United States."

On a more serious note, Abe told Donald Keene in an interview earlier this year: "I write novels so I have means of expressing what can be expressed in novels. I want to express on the stage something which is at once original and can only be expressed on the stage . . . . The world is so complex that in order to express it adequately one needs not merely two but an infinite number of means."

Abe said he had these hopes for his second visit to the United States (his first was to receive an honorary doctor of letters degree from Columbia University in 1975): "That Americans take my play not just as something Japanese; that the play makes Americans find a message within themselves they were not aware of before'; and last, but not least, 'that it is a big success!'

The Abe premiere was the second contemporary Japanese play and playwright that the Department of Chinese and Japanese and Edison Theatre introduced to America. In 1976, playwright Mazakazu Yamazaki was the advisor for the American premiere performance of his award-winning drama Sanetomo Shuppan, held at Edison Theatre. The play was performed by University students, directed by Richard Palmer, and translated by Thomas Rimer.

In its continuing effort to enrich community and campus, the Department of Chinese and Japanese has also worked closely with the Asian Art Society of Washington University to sponsor visits by East Asian art lecturers and artists. Last year Hong Kong brush painter L. S. Shaw (or Hsiao Li-sheng) came to the University to demonstrate and exhibit his works. This spring, a week before the premiere of The Little Elephant, the department flexed its entrepreneurial muscle by hosting the 189th annual meeting of the American Oriental Society—a professional group devoted to Oriental scholarship. The convening of hundreds of scholars from this country and abroad in St. Louis for the first time underlined the national stature WU's department has achieved in its short seventeen-year history.

The department's successes as impresario are only the exclamation point to its academic and scholarly achievements. Its real reputation rests on its faculty. Its eight specialists in Chinese and Japanese language and literature have published four books during the past year (with as many in progress) and have won an award for a series of articles in the journal East-West Literature. The quality of their teaching and of the department's diversified academic programs is evidenced by the long list of graduates who occupy prominent positions around the globe. To name a few: Richard Blabey (MA '72), the agricultural attache at the American Embassy in Tokyo; Abraham Lin (MA '73), a translator at the United Nations; Ward Geddes (PhD '76), an assistant professor of Japanese literature at McGill University, Montreal; and Bryant Dorsch (MA '74), a foreign exchange broker for Lasser, Marshall, Inc., in New York.

The heart of the department's program is language study. "Knowledge of a language is essential to get beyond the secondary sources and in touch with the culture itself," said Rimer, a Japanese literature scholar who is fluent in French.
as well as Japanese. Juniors can participate in year-abroad programs at Waseda University in Tokyo or at various universities in Hong Kong, Taipei, and Singapore. Hopes are running high that a recent faculty-exchange agreement with Shanghai Jiatong University in China will eventually include a student-exchange program.

The Department offers bachelor's and master's degrees in Chinese or Japanese language and literature; the Ph.D. degree is given jointly with the Comparative Literature Department. This fall Chinese and Japanese hopes to make official a joint master's program with the School of Business.

Besides their involvement in their own department, faculty members make up almost half of the seventeen-member Committee on Asian Studies which grants bachelor's and master's degrees in Asian Studies to students who concentrate in disciplines other than language or literature. All committee members are Asian specialists, but many hold appointments in other departments—history, anthropology, sociology, art and archaeology, political science, comparative literature, economics—or in the School of Law or East Asian Library. The committee, chaired for the past seven years by history professor Eugene Soviak, can grant "ad hoc" doctoral degrees in Asian Studies, but the degree is usually given by a specific department, with a concentration in Chinese or Japanese studies.

Buttressing Asian Studies research and academic programs is the East Asian Library, headed by Librarian Ernest J. Tsai and now housed in the elegant space atop January Hall which formerly was the law library. The 91,000-volume collection in Chinese and Japanese, which also includes 600 periodical titles and 1288 reels of microfilm, contains primarily works in the humanities and social sciences. By all standards, it is the best Asian-language library in a four-state Midwestern region. (English-language books on Chinese and Japanese subjects are housed in Olin.)

Neither the department nor the library existed, however, when China scholar and enthusiast Stanley Spector—truly the father of both—joined the University in 1955. "Although some Chinese history courses were offered," Spector says, "the only non-Western language taught was Russian, and the only book in Chinese that the University owned was The Three Principles by Sun Yat-sen." Spector, who served as department chairman from 1962 to 1972 and now is professor of Chinese Studies and director of the Office of International Studies, took it upon himself to turn the University's view eastward.

For three years, he taught not-for-credit classical Chinese to history majors only. Spector's solo act finally became a duet in 1960 when Betty Yue, associate professor of Chinese language, joined the staff to teach modern Chinese. The following year she also helped Spector catalogue the first acquisitions for the budding East Asian Library. The Committee on Asian Studies—at the time largely devoted to supervising degrees in Russian—also began to expand in 1959 with the addition of John Bennett, professor of anthropology and an expert on Japanese culture.

The prodding, plotting, and maneuvering for recognition of their growing academic program came to fruition in 1962. That year, Chinese and Japanese was granted departmental status and it received a Ford Foundation grant and a Carnegie Corporation three-year grant to develop an Asian culture program for the St. Louis area. With these recognitions, the program and the library blossomed. Japanese literature and language were added to the regular curriculum. An Oriental cataloguer was hired for the library and other Asian specialists joined the department and committee. In 1963 came a faculty-exchange agreement with Waseda University and in the mid-sixties the University was recognized as a National Defense Education Act Center for East Asian Studies.

The 1962 Carnegie grant had supported the expansion of the program beyond the University's walls and had begun its tradition of wider community
Abe's images dissolve one into another, creating a kaleidoscope of shifting impressions: "From out of the darkness with a scream of anger comes a leaping green organism like a cave insect that has lost its wings"; "The cloth dreams... it rises... and dreams of the shadows cast by the many lives which have passed before it"; a man "like an insect entangled in a spider's web" is trapped in a dream-made maze.

service. Through the program, the University's Chinese and Japanese language courses were opened to students from area colleges and universities; Chinese was offered during the summer to secondary students through St. Louis's Mark Twain Institute; and Spector and Yue supplemented these community offerings with Saturday morning classes in calligraphy and language.

The years since have been good, but all of these may be only a prelude. The normalization of U.S.-China relations promises a new era for East Asian study and Washington University's faculty, alumni, and students may find themselves in the fore of the burgeoning ranks of new scholars. As a result of the University's new "sister" relationship with Shanghai Jiaotong University, a delegation of twenty-one faculty members, organized by Spector and led by Associate Provost James W. Davis, visited China in July.

Perhaps this avenue of exchange will begin to establish with the Chinese the kind of rapport University scholars now enjoy with their Japanese colleagues. Such open lines of communication benefit the University and its students and the community at large. The department's faculty hope that the Chinese overtures are only the first of many new encounters.
Dissecting the Double Helix

By Dorothy A. Brockhoff

Drs. Daniel Nathans, MD '54, and Hamilton Smith, both of Johns Hopkins University, shared with a Swiss scientist the 1978 Nobel Prize in Medicine or Physiology. Their work provides new insight into the science of genetics.

It was "altogether fitting and proper," to borrow a phrase from Lincoln, that the three Nobel Prize winners in medicine or physiology for 1978 should have learned of their award on October 12—the 486th anniversary of Columbus's discovery of America. Just as his achievement opened up a New World, so their investigations as molecular biologists have provided new insight into another kind of world teeming with life-sustaining molecules. Their work holds promise of unraveling the fundamental mysteries of life itself.

Two of these researchers have ties with the Washington University Medical Center. One of them, Dr. Daniel Nathans, graduated first in his class from the University's School of Medicine in 1954. The second, Dr. Hamilton O. Smith, now a colleague of Dr. Nathans at the Johns Hopkins University School of Medicine, served his internship at Barnes Hospital and in the summer of 1957 was beginning a residency when that appointment was interrupted by the "Doctors' Draft." He and his wife (the former Elizabeth Anne Bolton, who earned a diploma in 1956 from the Washington University School of Nursing), left St. Louis and did not return after his military service. The third Nobel Laureate was Dr. Werner Arber of the University of Basel in Switzerland.

Dr. Nathans, who earned his medical degree magna cum laude, was the second alumnus in ten years to receive the Nobel Prize in Medicine. The late Dr. Earl W. Sutherland, Jr., (MD '42) while on the faculty of Vanderbilt University School of Medicine, was given this award in 1971 for discoveries which provided insight into the mechanisms of hormone action. Appointed a student assistant in pharmacology while still in Medical School at Washington University, Dr. Sutherland was subsequently a member of its faculty until 1953. Six Nobel Laureates have received the prize for work they did wholly or in part at Washington University; eight others (including Drs. Nathans and Smith) spent some part of their career at this University's Medical Center.

Last spring, Dr. Nathans returned to St. Louis for his twenty-fifth medical school class reunion, and a few weeks later was back in town to receive the honorary Doctor of Science degree from the University. On that occasion he was the principal speaker at the Eliot Honors program in Graham Chapel. A cautious as well as a prudent man, he confided that Chancellor William H. Danforth had gently suggested that he "need not speak long," and, he added, "I do not intend to!" Nor did he waste any words last October when a journalist surprised him with the news that he had won a Nobel Prize. According to a story told at Hopkins which may be apocryphal, he is reported to have responded, "I'm very happy to hear it, but I'll need to get confirmation."

Dr. Smith was even briefer. "Holy cow!" he exclaimed.

The anecdote reveals important character differences between the two men. Dr. Nathans, the more reserved of the pair, is deliberate and punctilious. Dr. Smith is freewheeling and much less formal. Physically, they are also distinctly disparate. Dr. Smith, at 6-foot-5, towers over Dr. Nathans.

But in other ways, they complement each other. Writing in the Johns Hopkins Magazine, Elise Hancock observed that they often talk "contrapuntally, continuing a single train of thought. When I ask them a question, they glance at each other and come to instant agreement as to who shall answer. Both of them attribute much of their success to constant 'cross-pollination' between each other, and within the microbiology department in general.' They are both full professors in this department, which Dr. Nathans directs and in which he is Bourny Professor. Yet they work on separate floors and rarely collaborate on a paper.

In 1975, however, they broke with custom and jointly published an article in the Annual Review of Biochemistry concerned with the essence of the research which was to bring them the Nobel Prize. Its title, "Restriction Endonucleases in the Analysis and Restructuring of DNA Molecules," and its text are equally difficult for a layperson to comprehend. Its last paragraph, however, entitled "Biohazards," is clearly a warning to all. They wrote: "In regard to the construction and cloning of artificial recombinant DNA molecules, we call the reader's attention to possible biohazards in the creation of new replicating DNA molecules, some of which may be infectious and pathogenic."

A year earlier, Dr. Nathans had been one of eleven members of the Committee on Recombinant DNA Molecules, the Assembly of Life Sciences of the National Research Council, National Academy of Sciences, which recommended the voluntary deferment of certain types of experiments involving recombinant DNA.

Last spring brought happier news. Dr. Nathans told the Eliot Honors program audience that it now appears he and his colleagues were mistaken about the possible dangers of such research, although there remains some smoldering disagreement in the scientific community on this issue. Meanwhile, guidelines for research in this area which were established in 1976 by the National Institutes

...
Earl on, it is probably fair to say that a large segment of the public got the message. Whether they now realize that the stormy controversy has subsided is questionable. There is little doubt, however, that among their number were many who lacked a real understanding of the nature of the basic research which provoked the debate.

Aware of the general ignorance, some scientists and interpreters of science did their best to give the public a "crash course" in molecular biology. Millions of laypersons tuned them out, however, because even a primer on the subject is not easy to understand. In their book, *The Life Science*, Sir Peter and Lady Jean Medawar, who spoke on campus during the University's 125th anniversary celebration, wrote beautifully about it. But *The New Yorker* magazine warned that "the book is fairly technical . . . a long glossary at the end will enable most readers to follow along."

Those who did so learned that "molecular biology has been, and still is, the greatest success story in biology since the formulation of the theory of evolution." The Medawars explained: "A substantial fraction of molecular biology . . . has been devoted to working out the means by which the structure of a nucleic acid is eventually mapped into the structure of a protein." The nucleic acid to which they referred is DNA, or deoxyribonucleic acid.
Lewis Thomas, the biologist who writes like a poet, believes “the greatest single achievement of nature to date was surely the invention of the molecule of DNA.”

Author Michael Rogers wrote equally dramatically, “It (DNA) carries the design of every living creature on the planet, from the paramecium in the mud puddle to Albert Einstein, in one variation or another of its sinuous molecules.”

In 1953, James Dewey Watson, a 25-year-old American, and Francis Crick, a British physicist-turned-biologist (later knighted for his efforts), first suggested that the structure of DNA could explain its function as the carrier of genetic information. Together with another British scientist, Maurice H. F. Wilkins, they earned a Nobel Prize in 1962 for this research. They had found that spaced like beads on the linear DNA molecule are genes — specific, integral segments of the long, slithering strand. Each gene is distinguished by the order of its sinuous molecules. “It makes the methodology a major technical advance. In my opinion, it is likely to have at least as great an impact in biology and medicine, and on human welfare, as the development of cell culture methods, a technique that revolutionized the study and medical usefulness of cells and of viruses.”

Significantly, researchers in California have already employed the recombinant procedure to create a working “insulin farm.” Dr. Nathans foresees this technique being used in the near future to provide greater understanding of hereditary and infectious diseases and cancer, for the production of useful proteins, and for the development of new vaccines. Farther off, he speculated, may come the production of new hybrid plants and gene therapy for human beings.

Dr. Nathans, Smith and Arber won their Nobel Prize for research which showed that specific bacterial enzymes acting like chemical scissors can cut the long, twisted strands of DNA into precise and manageable fragments. Dr. Arber first postulated the existence of these restriction enzymes in the early sixties. In 1970, Dr. Smith discovered an enzyme produced by the bacterium Hemophilus influenzae, which had the characteristics that Dr. Arber had predicted. A year later Dr. Nathans showed that this precise enzyme could cleave the DNA gene cluster of a virus known as SV40 into eleven specific fragments; SV40 is scientific shorthand for simian virus 40 (the forthieth virus discovered with the capacity to infect the monkey family). It is known to cause cancer in animals but not in man.

In 1973, Dr. Nathans and his students split SV40 DNA with two other bacterial enzymes. Through one of nature’s ingenious arrangements, they were able to cut the foreign DNA without splitting the bacterium’s own DNA; that remained intact thanks to a specialized protective mechanism. By analyzing the fragments which all three of these enzymes produced, the researchers were able to map the SV40 genes. This classic demonstration of the usefulness of restriction enzymes enabled other scientists to map the DNA of more complex organisms. The Karolinska Institute in Stockholm, which awards the medical Nobel Prizes, also cited Dr. Nathans for his foresight in predicting other applications of these enzymes to genetics.

Summing up the efforts of the Arber-Smith-Nathans triad, Harold M. Schmeck, Jr., of The New York Times wrote: “The beauty and the power of the enzymes that figured in the Nobel awards is not simply that they cut, but that they do so in precisely defined and predictable places in the genetic material. With a battery of different enzymes of this type (one hundred have now been identified), each making its dissection in a different, specific part of the strand of DNA, scientists can take that master molecule of heredity apart bit by bit, study specific pieces, or study the effects of removing a given piece.”

Using this new DNA-splitting technique, other researchers have isolated genes from two different sources, or even different species, and combined their respective DNA’s into a single molecule. They have then grown copies of this recombinant DNA in bacterial or other host cells such as E. coli (Escherichia coli). This bacterium’s normal habitat is the colon of warmblooded animals, including man. This process of producing identical copies from a single molecule is called molecular cloning.

Of these recombinant DNA methods, Dr. Nathans himself has observed: “(They) open up new approaches to problems in fundamental and applied biology. Nearly everyone agrees that the methodology is a major technical advance. In my opinion, it is likely to have at least as great an impact in biology and medicine, and on human welfare, as
that his interest in science and mathematics, which led him to major in chemistry at the University of Delaware, "meant only one thing — medicine!"

Born in Wilmington, Delaware, in 1928, the youngest of nine children (eight of whom survived childhood), he came from a family which valued learning, but had little money to pay for it. Nevertheless, all but one of Dr. Nathans's siblings went to the University of Delaware. Of these six, only one left without graduating. Growing up during the great depression, he found his first job as a locker room attendant in the Wilmington Jewish Community Center while he was in the sixth grade.

The financial disaster in the thirties wiped out his father's grocery store. The senior Nathans, after a long period of unemployment, finally found work as a laborer in a leather factory. Dr. Nathans’s mother, a seamstress, had no time to work outside the home after her offspring were born. "I learned later," he said, "that she and my father often went hungry to provide enough for us children."

After earning the Bachelor of Science degree in 1950 at the University of Delaware and the M.D. at Washington University four years later, Dr. Nathans served as an intern at Columbia-Presbyterian, serving as a resident for two years. He then elected to pursue his research interests in Lipmann’s laboratory at Rockefeller University where he concentrated on the way cells make proteins. This investigation led to his work with bacteriophages ("phage" from the Greek word for eat), which are specialized viruses growing inside bacteria.

After serving as guest investigator at Rockefeller University for three years, Dr. Nathans went to Johns Hopkins as an assistant professor of microbiology in the School of Medicine. He was invited to join Hopkins by the late Dr. Barry Wood, under whom Dr. Nathans had studied while at Washington University. Except for a sabbatical leave in 1969 to work at the Weizmann Institute of Science in Rehovoth, Israel, as an American Cancer Society Scholar, Dr. Nathans has been at Hopkins ever since.

Eventually decided that SV40 was the most tractable virus to work with—for reasons which other people understood better than he at the time," he confided.

While there, he received a letter from Dr. Smith in which the latter described his research on the biochemical properties of an enzyme from Hemophilus influenzae which appeared to him to be a restriction enzyme. Dr. Nathans decided to determine if this enzyme would cut the SV40 DNA with which he was working. For this purpose, he personally carried some of the precious SV40 DNA with him on his way back to Baltimore from Israel via a circuitous European route. The Nobel Prize brought public recognition of his work in this field which was truly on the frontier of molecular biological research when he published his first paper on restriction enzymes in the early seventies.

Among the millions who read of Dr. Nathans’s award last year was a retired Philadelphia businessman, who had established a scholarship fund which supported Dr. Nathans’s studies as an undergraduate. Now 84 years old and still blessed with a sense of humor, this businessman wrote to Dr. Nathans to report that as "he was preparing to meet his maker" he wished to ascertain whether "you were the boy" who had won the scholarship so many years ago. "It meant so much," Dr. Nathans said, "to be able to write that I was."

The Nobel Prize is only the most recent honor for Dr. Nathans. In 1976, he received the National Academy of Sciences United States Steel Foundation Award in Molecular Biology for his application of new molecular and cell biological tools to the study of the SV40 chromosome. He became a Fellow of the American Academy of Arts and Sciences in 1977 and was elected this year to the National Academy of Sciences.

Dr. Nathans is married to the former Joanne Gomberg, a lawyer in Baltimore’s Department of Legislative Reference. They have three sons, Eli, 22, Jeremy, 21, and Ben, 16.

Perhaps he had his sons’ generation in mind when he concluded his Eliot Honors remarks with an eloquent appeal for a better balance in the schooling of scientists. He urged educators "to find a way to combine specialization in science during the college years with liberal studies at an advanced and rigorous level. . . . " This plea followed his suggestion that "continuous self-education be made the primary goal of formal education. Without it," he said, "one is unable to change and is, therefore, doomed to live in the past. Teachers have an additional stimulus to learning — the need to keep abreast of their students. I recommend this path to the fountain of youth to all of you."

Those present had but to look at Dr. Nathans for verification of this advice. At fifty, he is brimful of vitality, vigor, and zest "for continuous creativity and new discovery."
Microencapsulation

Microencapsulation is a relatively new packaging technology that offers a unique way to enclose solids, liquids, dispersions, and gases inside plastic or wax-like coatings. Microcapsules can range in size from well below one micron (a millionth of a meter) to more than 2000 microns. The amount of active material contained may vary from a small fraction of the capsule weight to more than ninety percent.

The potential for the application of this technology is immense, though the pioneer product, carbonless copy paper, is relatively humbled. The sensational success of this application prompted scientists and technologists to speculate about other possible uses for encapsulation. The list of suggested applications seems endless, with major potential uses in almost every branch of science and industry. Many of these uses have yet to be realized commercially. However, this will occur once a broader spectrum of people becomes familiar with the art of encapsulation. The technical know-how needed to prepare usable microcapsules has been restricted to comparatively few organizations. The expiration of a number of original encapsulation patents is encouraging much new work.

A discussion of capsule applications which are written about and used today, both commercially and at the development stage, yields a glimpse of future application. The potential ranges from long-term release of drugs to highly effective recovery and purification of industrial waste materials for improved efficiency and a cleaner environment.

Carbonless copy paper, the original application, is formed by coating the backside of a paper sheet with a layer of small capsules containing a solution of dye in a colorless form. The topside of subsequent paper layers is coated with a clay or phenolic resin. When writing or printing pressure is applied, the capsules on the backside break, releasing the dye. The dye reacts with the clay/phenolic coating on the topside of the next sheet to produce a color. Seven to ten copies can be made from a single impression.

The first carbonless papers were produced by using ten- to twenty-micron aggregates (grape-like clusters) of small capsules with gelatin-gum arabic walls. Through the years these papers have steadily improved in quality. Present encapsulation processes yield individual two- to five-micron-diameter capsules that give sharper reproduction. Premature rupture of the capsules during normal handling (which causes smudging) is minimized by incorporating starch granules into the coating. These are larger than the capsules and act as inert spacers between the dye capsules.

Use of microencapsulation in the pharmaceutical field is growing quickly. Encapsulated drug formulations are being developed for oral and injectable administration. Capsules administered orally provide sustained drug release, taste-masking, stability, and/or separation of incompatible materials. Time-release aspirin, sold for some time now, not only prolongs drug delivery, it is said also to alleviate some of the gastrointestinal upset caused by larger doses of raw aspirin. Similar benefits are attributed to other encapsulated drugs. Antibiotics widely prescribed for children have been encapsulated to reduce the bitter taste. Microencapsulated vitamin B complex and calcium pantothenate provide both taste-masking and separation of incompatibles.

Within the past two years there has been interest in encapsulation of a great variety of vitamin A derivatives needed for experimental cancer studies. The derivatives vary greatly in stability; some degrade significantly in a few hours at room temperature. In order to use these unstable derivatives for feeding studies involving rats, the substances need to be coated or encapsulated to protect them. The capsules also have to release the compounds once they are eaten by the rats. Microcapsules with a carbohydate (starch) coating appear to fill these requirements.

Drug encapsulation for topical application is another possibility. Consideration is being given to treatment of skin disorders by bandages which release their payload slowly, and to a time-release drug capsule which could be inserted in the eye as ointment to treat a number of ophthalmic disorders.

In the pharmaceutical field, an active area of research concerns the use of microcapsules in injectable drug formulations. Experimental animal studies have already established that a single injection of a microencapsulated drug can provide slow release for prolonged periods. The injectable capsules which have shown the greatest potential are fabricated from poly(lactic acid) or lactic acid/glycolic acid copolymers because these are biocompatible and biodegradable coating materials.

Although microencapsulation offers countless application possibilities for medications released...
over a very long period (an injectable contraceptive that is effective for six months is being tested by a research institute), it seems to me that such application is currently justified only if it promises dramatic, life-saving results. Despite careful research and testing, we have too frequently discovered that our medical interventions can result in unforeseen and dangerous side effects. Our current technology will soon make possible a number of long-term release applications, but at present we have no way to recover injected drug-filled capsules should that action be necessary. In the next few years, we will need to exercise extreme care. I believe that the best strategy is to focus first on capsules for relatively short-term (e.g., a week or so) applications before moving on to capsules for long-term applications. This principle of caution should extend beyond the biomedical field to encapsulation applications such as time-release pesticides and herbicides.

Intravenous interjection of small capsules is also being explored. Experimentally there has been some success with liposomes (small man-made drug-bearing packages that use lipids as wall materials). Improved cancer chemotherapy is one potential application for liposomes. The concept is to load liposomes with a chemotherapeutic agent, inject the liposomes intravenously, and have them home in on cancerous cells. Once they arrive at a cancer cell, they would be ingested and release their drug payload, thereby killing the cell. Although this is an intriguing concept, significant improvement in current homing mechanisms is needed.

**MICROENCAPSULATION** can be used to immobilize enzymes, the protein catalysts of biochemical reactions thereby offering the biomedical scientist new avenues of enzyme application. One major advantage of encapsulation is the large surface area of the microcapsule which maximizes enzyme/substrate contact. Another asset is the ability of the capsule wall to act as a screen that excludes large molecules while freely passing through smaller molecules. Of course, this also limits the activity of the encapsulated enzyme to molecules that can pass the capsule wall.

A number of different enzymes can be placed in the same capsule thereby allowing a series of reactions to proceed in the same capsule. It has been observed that encapsulated enzymes have not always retained the same properties they had before encapsulation, perhaps due to the change of the environment or to some form of enzyme/capsule-wall interaction.

Published literature indicates that biomedical use of microencapsulated enzymes has focused on applications such as tumor suppression, replacement of enzyme deficiencies (in such disorders as diabetes) or use in an artificial kidney. Rather than encapsulating enzymes, some workers are encapsulating intact cells. These continue to function after encapsulation and offer some interesting biomedical possibilities.

But there is another possible
use of encapsulated enzymes to treat wastewater. No microencapsulated enzymes for this purpose have yet been commercialized, but many are being researched.

Still another area of microencapsulation just beginning to come into its own is encapsulation of solid and/or liquid adsorbents. Encapsulated charcoal, for instance, is being used as an adsorbent to treat patients with chronic renal failure and acute drug or chemical intoxication. The patient’s blood is passed through a column packed with coated carbon particles. The polymer coating passes the toxic substance so that it is adsorbed by the charcoal, but the coating prevents charcoal from entering the blood and thereby prevents emboli formation.

A number of other biochemical applications of charcoal-packed columns are being examined. These involve the extraction of certain specific substances without adsorption of other components. The Japanese have been experimenting and using an application of this kind in the brewing industry. By this process a fermentation broth filtrate containing alkaline protease can be decolorized. The process also allows lysozyme to be purified from egg white. These examples illustrate that a broad range of separations using encapsulated charcoal have been made and more are possible.

Capsules with membranes are also being considered for water purification. Such capsules would be specifically formulated to remove one or more of a broad number of water contaminants. The developers of this technology believe the possibility of the economic effectiveness of such methods for use by industry to treat wastewater is very real. Preliminary studies indicate that it may be particularly useful where conventional techniques are not adequate.

These examples illustrate that application of encapsulation for adsorption and extraction has begun. It will be interesting to see how rapidly this use grows.

Agriculture represents another wide area of potential application of microencapsulation technology. The use of time-release pesticides has been known for some time, and some applications have been widely publicized. However, the number of present products using microcapsules is limited due to the complexity of biological systems. One spray concentrate on the market contains encapsulated methyl parathion. Encapsulated methyl parathion has reduced handling toxicity, increased persistence in the field, and less of it is needed for effective pest control. Recently, however, an unexpected problem surfaced. Because the capsules resemble pollen grains, farmers reported that foraging bees carried them to hives and many bees were killed. The problem, though now overcome, illustrates the complexity of development of a microencapsulated pesticide that does not generate new environmental problems.

Ideally, microencapsulated pesticides must release their payloads at a uniform rate under variable conditions of temperature, wind, humidity, and sunlight. Such data of release under field conditions need study. Another new, as yet unanswerable, question posed by entomologists is to what extent measurable but marginally lethal levels of pesticide released over prolonged periods affect the insects’ resistance to the pesticide. Could it be greatly increased, thereby reducing the number of generations of harder insects with greater insecticide tolerance? The impact of this possibility on the widespread use of any long-acting pesticide delivery devices (including microcapsules) undoubtedly requires extreme caution and careful study.

It may be that the microcapsule will make its greatest contribution to pest control by stabilizing relatively fragile pesticides we already know much about. Many of a group of so-called second- and third-generation pesticides known to have low mammalian and wildlife toxicities tend to be relatively unstable under field conditions. The encapsulation of such pesticides to greatly improve their field stability holds great potential.

A final category of widespread current usage of microencapsulation is in the food and cosmetic industries. These industries are engaged in active product development of encapsulated fragrances and flavors. The products used thus far fall into two categories: capsules with water-soluble walls containing flavors and fragrances used for consumer products and capsules with water-insoluble walls containing fragrances for advertising and promotional purposes.

Capsules in the first category, often made by spray drying or extrusion, produce a dry powder which remains stable for a prolonged period and protects flavors and fragrances from oxidation or volatilization. For instance, since lemon oil becomes rancid quickly, the food industry now often encapsulates it for use in products like drink mixes. The capsule protects the lemon oil and gives the product longer shelflife.

The advertising and children’s book publishing industries have utilized water-insoluble walled capsules for several years. The capsules are coated onto a paper or plastic film substrate which, when rubbed or scratched releases a fragrance. This can be considered a novelty product and may have a limited lifetime, but its educational potential is not to be overlooked. One instance illustrates the possibilities: as a public service, many gas companies have had their monthly bills coated with a fragrance strip which, when scratched, releases the unpleasant odor added to gas for detection purposes. Customers were instructed to scratch, smell, and remember: “If you smell this odor in your house, call the gas company immediately.”

Microencapsulation has already entered our homes and influenced our lives in ways of which we are little aware. The technology is relatively young, but is growing rapidly. It promises some sunrise and starbursts. We shall see.
Centennial Gallery

Washington University School of Fine Arts, the first art school to be established as a part of an American university, will celebrate its centennial this fall. The occasion will be observed by a series of events and exhibitions from October 10 through November, beginning with the Beaumont Lecture to be delivered by Lee Chesney, Distinguished Visiting Louis D. Beaumont Professor of Art and internationally renowned printmaker. Other important events of the one hundredth anniversary celebration will include the Centennial Alumni Exhibition opening on October 14 in Bixby Gallery and the Centennial Faculty Exhibition opening on November 11 in the Washington University Gallery of Art, Steinberg Hall.

A catalogue of the historical segment of the Centennial Faculty Exhibition will be included in a commemorative publication, Washington University School of Fine Arts: The First Hundred Years, 1879-1979, written by Sally Bixby Defty with a forward by Roger I. DesRosiers, Dean of the School of Fine Arts. Her work, commissioned especially for the one hundredth anniversary celebration, will be illustrated with rare photographs and other memorabilia.

From the beginning, the School has offered those who sought careers in the arts a program of rigorous academic training under the tutelage of practicing artists. The success of its educational focus over the span of 100 years can be measured in part by the achievement of alumni.

To capture a sense of that achievement, we asked some thirty graduates who are professional artists about their careers and their education. Their responses appear in the following pages. We have not attempted a definitive list of successful alumni artists; compilation of that catalogue is a task for the stouter of heart and fatter of purse. Yet our slim gallery reflects the impact that the Washington University School of Fine Arts has had on the American art scene.
Patricia Duncan
BFA '54

Patricia Duncan is a painter who in recent years has won fame as a photographer/historian of America's tallgrass prairie. Stewart Udall, former Secretary of the Interior, said, "Long ago America's mountains found their champion in John Muir. The sea too found its interpreter much later in Rachel Carson. And now, give thanks, what some have called the inland sea has at last acquired its own authentic voice in the person of Patricia Duncan." In 1976 her photographic exhibit "Tallgrass Prairie: An American Landscape" began touring as a major exhibition of the Smithsonian Institution and continues on tour. Duncan's book Tallgrass Prairie: The Inland Sea was published this year. Her photographic work has appeared in some fifty publications including Reader's Digest Books, Time/Life Nature Annual and the New York Times, and in twenty-five solo exhibitions, in addition to the Smithsonian travelling exhibition. Prior to four years of photographic study at the Kansas City Art Institute, her portrait and landscape painting and design won recognition throughout the U.S. and in Japan, where she studied and taught in the mid-1950s.

"I came to Washington University School of Fine Arts after three years at Webster Groves High School, but my real roots have to do with barefoot days in southern Arkansas. Fortunately there were teachers and friends at WU who taught me to stretch my abilities farther than I imagined possible. About ten years ago, I gravitated from painting and design to photography. The urge to paint again is growing and I am planning a series of large canvasses concerning people involved with landscape, specifically the prairie. I have no conclusions, no deep philosophy. Each day is new for learning and growing. I am pleased and proud to have been a small part of a great University."

Al Parker
BFA '27

Al Parker is the dean of American illustrators. In 1965 he was elected to the Hall of Fame of the Society of Illustrators in New York. Last spring the new Academy of Art in San Francisco mounted an Al Parker retrospective of more than 40 years of illustration and innovation. In January, California College of Arts and Crafts in Oakland sponsored a similar exhibition. Parker set himself up in partnership with a graphic artist in 1929, sold his first major magazine cover in 1930, followed shortly with other magazine illustrations, moved to New York in 1936, Connecticut the next year, and California in 1955. He continues to illustrate, recently doing a cover for C.A., but he also is art director for his younger son's company, Kit Parker Films, a nationwide 16mm film rental and sale library which now boasts elegant and famously illustrated catalogs, supplements, brochures, and flyers. Parker holds honorary doctorates from Rhode Island School of Design and California College of Arts and Crafts. He has received the most prestigious awards and medals granted here and abroad.

"At the time I was in school, I didn't realize the influence my teachers were having on me; I had always drawn and drummed (a lifetime avocation). But later their words of advice would come to me, and it did an awful lot of good. Among my instructors were Fred Conway, Gustav Getch, Harlan Frazier, who taught illustration. I always wanted to be an illustrator; I thought I could do something in that field in the way of communication."
Pinky Wolman and Dianne Beaudry
Both BFA '67

Pinky Wolman and Dianne Beaudry have their own design, manufacturing, and import firm to produce men's and women's clothes under the title of Pinky & Dianne Ltd. for Private Label. They began their partnership with a free-lance collection in 1968, just a year after arriving on Seventh Avenue as apprentices. That boutique sportswear gained recognition quickly and in 1972 the design team won the Coty Award for a menswear collection for Flo Toronto Ltd. The award cited the validity the team had given to "fashion from the streets." They comment that their collections are based on "design pared down to the basic values. We believe that pure fibers and perfect fit mean more today than a stereotyped, trendy look."

Pinky Wolman: "The competitiveness of the four-year Fine Arts-Fashion program really helped prepare me for the realities of the fashion industry. Open critiques of our work forced us to speak up and defend what we had created. I had to learn to fight for what I believed in and needed. This ability enabled me to survive when I came to New York."

Dianne Beaudry: "There is a certain objectivity about the fashion business that I feel I gained by being educated outside New York City. It gave me a perspective that has been very useful. Also, the added dimension of being in a fine arts school broadened my experience. Being away from the 'pulse' of the fashion world led me to seek inspiration in many different and varied areas."

Stephen Posen
BFA '62

Stephen Posen has won his place in American Realism. In 1975 in a Sunday edition article, New York Times critic John Canaday announced in headlines, "Posen's Two Paintings a Year Are Well Worth Waiting For." His work is cited in Radical Realism by Udo Kultermann, Germany, 1972; Neue Formen Des Realismus by Peter Sager, Germany, 1973; and Super Realism by Gregory Battcock, New York, 1975. Posen was the subject of a cover story in Arts last October. He has had four solo exhibits at O. K. Harris Gallery, New York, and a 1978 solo exhibit at Robert Miller Gallery. His work has been a part of group exhibitions including "Eight Contemporary American Realists," Philadelphia Academy of Fine Arts, 1977; "Malerie Und Photographie Im Dialog," Zurich, 1977; "Illusion and Reality," shown throughout Australia, 1977-78; "Seventy-first American Exhibition," Art Institute of Chicago, 1974; "Tokyo Biennale '74"; Documenta 5, Kassel, Germany, 1972; and "Whitney Museum Painting Annual," 1972. Posen was educated at Washington University, Yale, and in Florence. He is professor of painting and drawing at Cooper Union, NYC.

"The art school in the early '60s was a serious and quiet place, isolated from both the smile of Eisenhower politics and the angst of New York expressionism. I was fortunate to study with Arthur Osver in his first years at Washington University and Fred Conway in his more reflective years. Discipline reigned, basic groundwork prevailed, and my draw to the seat of the art world was shelved for a later time. In retrospect, the art school nurtured an appetite for work, an objectiveness toward art fashions, and a confidence for further development."
Mike Peters is an artist who practices his art and philosophy as a political cartoonist. His work appears in such magazines as *Time*, *Newsweek*, and the *New Republic*. He plies his craft daily for the *Dayton (Ohio) Daily News* and for 160 other newspapers in which he is syndicated. His work has also been compiled into two books, *The Nixon Chronicles* and *Clones, You Idiot...I Said Clones*. Peters's honors include the Overseas Press Award in 1974, and the National Sigma Delta Chi Distinguished Service Award for Cartooning in 1975.

"At Washington University, my teachers, Richard Brunell and others, recognized that my main interest—cartooning—did not fit exactly into the curriculum. Their tolerance and forbearance of my unorthodox view of life allowed me an important learning experience. They tolerated and taught me rather than sent me packing as many institutions would have. We also had lots of fun."

Anthony Goldschmidt is the head of a small Los Angeles graphic design firm which has "successfully resisted the pressures for enlargement. I believe that to keep the integrity of their art and the good faith of their clients, designers must make a full commitment to their projects, that they must strive for very high quality and must see each project through to its final form—to be there, if you will, when the presses run. This is a major reason that I've elected not to become a vast design studio." His studio does much work in motion picture graphics, including all of Mel Brooks's movies, *The Summer of '42* and *Turning Point*, to name a few. It also handles corporate identity programs, annual reports, interior space planning, landscape architecture and interior and exterior signage systems for national and international clients.

"My undergraduate education was an important part of my growth. I have always been thankful that the School was an integral part of a major university. I believe that is one of the problems of art education today: it is too insular, too limiting. The kinds of disciplines I was able to study at Washington University in concert with the kinds of disciplines I studied in the design program at Yale have been critical in my development. Today, there is a great need for students coming out of school to be prepared to commit themselves totally to that which they are going to do. I saw and still see graphic arts as an area offering opportunity to do things very well. That is important to me."

Jack Summerford is a Dallas graphic designer of national and international reputation. His work has won a place in six New York Art Directors Shows, earning a Distinctive Merit Award in the 56th Annual Exhibition. He has been cited as many times in *Graphis Annual*, *Zurich*, and since 1971 has annually been included in the American Institute of Graphic Arts' Communication Graphics Show. His work has also been seen in *Print Magazine*, *C.A. (Communications Arts)*, *C.A. Annual* and the first volume of *Trade Marks and Symbols*, published in Tokyo. He is an adjunct associate professor at the University of Texas at Arlington School of Fine Arts.

"Of my few achievements, graduating from Washington University is probably the one in which I take the most pride. The whole experience not only educated me, it dedicated me to my craft, and for this I am most grateful."
Saunders Schultz
BFA '50

Saunders Schultz successfully pursues architectural sculpture commissions throughout the United States in association with William Severson, his studio partner, and has received recognition in numerous art and architecture publications. Three photographs of sculpture by Saunders Schultz with William Severson will be included in Louis Redstone's book, *Public Art—the New Living Environment*, to be published in 1980 in twenty-five countries. Recently, Schultz with his associate Severson won first prize in a national invitational competition sponsored by the University of Wisconsin. His sculpture has been exhibited at the New York World's Fair, the Library of Congress, the Carnegie Institute, the New York National Academy of Design, the Moscow (USSR) College of Industrial and Applied Arts, museums in Philadelphia, Brooklyn, Seattle, Dallas, Omaha and St. Louis, and by the U.S. Information Agency in Europe. As a senior student in 1948, he was voted special commendation by the faculty in recognition of his development and promise.

"The University was a major influence on my life and career. In the latter '40s the school was a melting pot of ideas, talents and persons. All points of view were put forward. There were superb artists and teachers who urged me to think, to ask, 'what is important?' 'what needs to be said?' They taught me judgment and awareness of the world at large; to look beyond the fashionable establishment. Max Beckman once said to me, 'You have much talent, much talent.' And Fred Conway reminded me, 'You don't need another compliment before you die.' Through the school's teachers, I was given the foundation and knowledge to forge ahead, to pioneer and carve out a field on my terms: sculpture within the architectural context."

Jack Unruh
BFA '57

Jack Unruh is a Dallas freelance illustrator of national reputation. His clients include NBC, Kimberly Clark, Twentieth-Century Fox, Redbook, Seventeen, Oui, Boy's Life, American Airlines, and Champion Paper, to name a few. He has won recognition and awards consistently in annual exhibitions and competitions of the New York Society of Illustrators, New York Art Directors, and in *Graphis Annual*, *C.A. Annual*, *Print Casebook of Annual Reports*, *A.I.G.A.* and *200 Years of Illustration*. His work has been exhibited at several universities and with a U.S. Information Agency exhibition of Advertising Art in America, and has been the subject of articles in *Communications Arts*, 1964, and *Graphics Today*, 1978. He taught illustration at East Texas State University from 1969 to 1978.

"It was just damn pure great luck that I literally stumbled upon Washington University. It wasn't luck that Bill Fett, John McKay, Sigfried Reinhart, and Bob Cassell were some of my instructors—WU planned that. As important as the instruction was, the competition from other students was as compelling. It's great to have this opportunity to say thanks—the time and the money were well spent."
Larry Pfisterer  
BFA '63, MFA '75

Larry Pfisterer is Vice President and Executive Art Director of Gardner Advertising Company, St. Louis. He has been with Gardner for sixteen years. His work for such clients as Ralston Purina Company has received wide attention and Pfisterer has received many awards in his field. He lectures to WU and University of Missouri students and teaches part-time in the University's evening program. He also does freelance work as a graphic arts designer.

"My BFA experience at the School was a solid preparation for the advertising field. It was not technique-oriented, as are some professional schools, but directed itself to the process of creative problem solving. My MFA work gave me a chance to complete a number of projects that I had never quite gotten started. The School also gave me my first experience in teaching at the university level. I am grateful for all of this."

John Moore  
BFA '62

John Moore's stature as an American realist needs no documentation. He has had twelve East Coast one-man exhibitions including three at Fischbach Gallery, New York. He has participated in nearly fifty group exhibitions, most recently "350 Masterpieces of American Art," at the Pennsylvania Academy of Fine Art, 1978. His work is held in sixteen important public and private collections and has been reviewed numerous times in major art journals, as well as cited in seven books and catalogues including Super Realism: A Critical Anthology, Dutton, 1974; and New Realism, by Udo Kultermann, New York, 1972. He received a National Foundation on the Arts and Humanities grant in 1966 and a Milliken Fellowship in 1968. He earned the M.F.A. degree at Yale University, where he also taught. He is now associate professor at Tyler School of Art, Temple University.

"My class at the art school was a mix of recent high school graduates and a number of us who had attended evening school, held jobs, or had otherwise postponed entry into college. We came with a singular focus—to become artists—and from my present perspective, the School provided an excellent base. I specifically remember three courses having a tremendous impact: first a pictorial composition class my first year taught by Ed Boccia that was a rigorous and uncompromising introduction to the structure of painting space and, perhaps most importantly, included a thorough examination of the achievements of past artists; second, a tightly organized drawing course taught by Barry Schactman that indelibly stamped an awareness of three-dimensional form on our open minds; and third, a painting course taught by Arthur Osver that forced a group of reluctant juniors to confront the intricacies and subtleties of color.

"I believe, in addition, that the questions first posed to me by faculty at Washington University, questions of form, content, and subject matter, continue to be the most challenging and difficult questions for artists to confront."
Rudy Torrini
BFA '49

Rudy Torrini is a sculptor and educator whose base is St. Louis. For nearly two decades he was artist in residence and chairman of the art department at Webster College. He is now department chairman at Fontbonne College. In 1949 he won a Fulbright Fellowship to study in Italy, and later a teaching fellowship at Notre Dame. He has exhibited widely and his recent commissions include a figure for the National Park Service’s Museum of Westward Expansion, a monument to Italian immigrants, and a statue of Dr. Martin Luther King, Jr., for the city of St. Louis. In 1977 he was knighted to the Commendatore Al Merito Della Republica by the Republic of Italy.

“My experience at the School of Fine Arts changed my life! The faculty had a profound effect upon me at a crucial time (I entered college at 23 on the G.I. Bill); the sum of my experience under them led me to see. I remember a magic evening in Fred Conway’s drawing class when he talked to me about form. With his gentle wisdom and sense of humor, he led me to understand and it was as if a veil had risen and I saw for the first time.”

Gail Singer
BFA ’52

Gail Singer is a printmaker and painter who has made her home in Paris since she joined William S. Hayter’s Atelier 17 nearly thirty years ago. In 1975, Hayter wrote, “The work of Gail Singer is far from being reassuring; her violent abruptly contrasting structures mirror our present world. Her pieces at once both fierce and moving are direct emanations of intuition and instinct. Her sense of color is unique; it is an integral part of her work and not a means of enhancing or embellishing the image. Her singularly bewitching, haunting compositions are bound up with an element of psyche, perhaps unacknowledged, but absolutely authentic.” Her work has been shown in solo and group exhibits at Galerie Rive Gauche in Paris in 1966, 1967, and 1975, and in Rome in 1978. She has had solo exhibits in several European countries and her work is in several international collections.

“During my years at Washington University School of Fine Arts, I enjoyed knowing some of the professors, but I was most grateful for the wonderful year’s scholarship which was given me.”

Stephen Shank
BFA ’67

Stephen Shank’s work appeared last spring in a two-man exhibition at SoHo Center for Visual Artists, and has been a part of various group exhibitions in New York, St. Louis, and New Orleans in the past decade. In 1967 he won a scholarship to Skowhegan School of Painting and Sculpture and in 1969 he received the George D. Brown and Ponte del Art Fellowship. His work is held in many collections including Needham, Harper, and Steers, New York; Stone Oil Corporation, Cincinnati; and Chase Manhattan Bank, New York. He received the M.F.A. degree at Chicago Art Institute.

“I consider my years at the School of Fine Arts a transitional time for the School: painting influences were changing—Abstract Expressionism was on the wane and the newer attitudes were cooler, more conceptual. This environmental mix may have influenced my later focus on the significance of the object vis-a-vis spatial depiction. The drawing and painting experience provided a perceptual foundation to expand upon. I believe the art school generated the disciplinary perseverance needed to attain a professional outlook—one of self-confidence, self-doubt, and self-criticism.”

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Gary Tenenbaum
BFA '65

Gary Tenenbaum's work has appeared in group shows at the SoHo Center for Visual Artists, 1974; Xerox Corporation's "Art in Evolution," 1973; the Whitney Museum of American Art, 1973; the Aldrich Museum of Contemporary Art, Ridgefield, Connecticut, 1972; and Yale University Gallery, 1966. It is held by the St. Louis Art Museum and many private collectors. Tenenbaum was educated at Washington University, Yale University, and Skowhegan School of Painting and Sculpture. He lives and paints in New York and is an art instructor and coordinator of the Older Adults Program of the New York City Parks and Recreation Department.

"When I entered Washington University, I knew I wanted to be an artist. Studying with artists like Arthur Osver gave me the opportunity to realize that I am a fine artist — a painter — and helped me guide the direction I wanted to lead my life. Today I am in New York painting."

Leonel Góngora
BFA '56

Leonel Góngora has had forty-five one-man shows and has participated in more than 150 group exhibits throughout the world. His most recent museum one-man shows were in 1973 at the Palacio de Bellas Artes in Mexico City and in 1976 at the Museo de Arte Moderno in Bogotá, Colombia. He has participated in several biennales in Europe and the Americas, the most recent being in 1976 in Menton, France, with a room of 25 of his drawings. Góngora's work is represented in many private and public collections worldwide. His association in the early '60s with Mexican art made him a participant of the emerging Neo-Figurative movement, internationally influential in that decade. He is professor of art at the University of Massachusetts in Amherst.

"From the School of Fine Arts at Washington University, the most intense and rewarding experience that I had was what I learned from a very important artist, William Fett. His intellect and his overall cultural involvement with everything happening from the daily press to the criticism of a particular painting or art movement made the critical years that I spent in St. Louis some of the most trying and soul-searching in my life. Also, the inspirational climate of Beckman's period at the School made a lasting impression on me; especially as I, a newcomer to this country, saw the city through his paintings."

Sonya Berk
BFA '64

Sonya Berk is Vice President of Design with the London Fog Women's Division. She joined the firm in 1971 to form a sportswear division, but has been designing rainwear and outerwear. She is the company's first woman vice president. Berk began her career in Dallas and moved to New York in 1966. She has worked closely as a guest consultant with WU fashion students for the past several years and in 1977 received an award for fashion excellence from the University and Stix, Baer & Fuller. Recently she was nominated by buyers attending the Dallas market for the 1979 Flying Colors Fashion Award for outerwear.

"It was exciting being in my particular class because there were so many talented students who later became successful. There was healthy competition and, even more important, support for one another. We have remained in contact and this support continues. I think this was one of my biggest inspirations in school and now in New York City, as well."
John Dickson
MFA ’73

John Dickson is a young East Coast sculptor of growing reputation. His work and study were supported in 1974-75 by a grant from the National Endowment for the Arts and the Humanities and a fellowship in the Johnson Avenue Workshop in Washington, D.C. He recently won an NEAH Individual Artist grant. He participated in the 1974 Washington Project for the Arts exhibition, and in 1975 was nominated by Barbara Haskel for the Whitney Museum Biennial Exhibition, and by Walter Hopps, National Collection curator, as a candidate for the Paris Biennial. His work was a part of the 1978 Phillips Collection exhibition of recent acquisitions and the 1979 Corcoran Gallery of Art exhibition of recent acquisitions. He has taught as a visiting artist at the University of Virginia at Charlottesville, the University of Maryland, and Swarthmore College.

“No other school in the country has an area like Tyson Valley. In my day it was far less developed than today, yet to be in on the foundation excited me. Out there the experience was unique. The situation demanded a lot of me and of us all. There was a sense of drive and immediacy and, always, a challenge. Lucian Krukowski, Ralph Buckley, Peter Marcus were all there pushing for Tyson to take hold, but for the sculptors, Jim Sterritt provided the catalyst to make the situation happen. The most important thing is that it did, and that it built strong relationships that have lasted.”

Charles P. Reay
BFA ’59


“Werner Drewes said, ‘Reay, dats vunderful, how you do it!!!!, dats terrific. Dis time I gif you maybe a C.’ Peter Geist cared about how things fit—not so much how they looked—and talked of harmonies.

“Both of these men had a profound influence upon my development.”
Leila Daw
MFA '74

Leila Daw is a St. Louis-based printmaker whose reputation is growing steadily. She was cited in a July article in Art in America. In 1978 her work was featured in a solo exhibition at Denison University Art Gallery and in 1976 she did a one-woman show at Terry Moore Gallery in St. Louis. In the past two years she has had three more one-woman shows in the St. Louis area. This year she participated in the group show, "Works on Paper," at the Las Vegas Art Museum, and at other group exhibitions at Terry Moore Gallery, Henri Gallery in Washington, D.C., and the Just Above Midtown Gallery in New York. Recently her work has been supported by a Ford Foundation Fellowship to study performance for visual artists under Marcia Tucker of Mighty Oaks Theatre, New York, and by two funded projects for large-scale printmaking and for installation work. She is assistant professor of art at Southern Illinois University in Edwardsville.

"Much as I felt reluctant to admit it while still a student, there is a kind of stamp that Washington University put on all of us, not so much in aesthetics, as in attitudes; or perhaps, working in the continuity of the School, we stamped ourselves. I note it not only in the student colleagues I still see, but in my graduate students who have studied at WU. The stamp is hard to define: in part it is a confidence in the quality of our background (or in our own quality to have survived rigorous training), a perhaps irrational feeling of assurance that we are all destined for the top, and an urgency about the production of our latest body of work. It is more too, but I am still too close to it to see it completely objectively."

Aimee Schweig
BFA '30

Aimee Schweig's career as a portrait and still life painter has spanned four decades and she is recognized throughout the Midwest. But her nurturing influence as an artist and teacher of art during this period overlays the accomplishment of her own personal career. In the 1930s, she founded, organized, and operated a summer school of art in Ste. Genevieve, Mo., which served as a focal point for both established and budding talent. Her summer faculty was drawn from the school of Fine Arts and her students came from throughout the Midwest. She was the organizer and guiding light for St. Louis and regional groups of serious artists almost since her student days, when she organized Shikari at Washington University. She taught art for twenty-five years at Mary Institute and she established the photographic collection at the St. Louis Art Museum and a fine art collection at Mary Institute. Her daughter, Marty, a WU liberal arts graduate, is a well-known artist who lives in Chicago and her son, Martin, is a well-known St. Louis photographer. Aimee Schweig's own work has hung in an "Artist for Victory" exhibition at the Metropolitan Museum of Art, at Corcoran Gallery in Washington, Joslyn Memorial Museum in Omaha, the St. Louis Art Museum (where she won the Bixby prize), and throughout the Midwest.

"Washington University's School of Fine Arts and the St. Louis Art Museum almost singlehandedly kept art alive for us in the Midwest for many years. It has always been a very good school, but it was more than that, it was the influence which enriched our lives."
Although Dennis Masback originally trained as a printmaker, his artistic reputation is established as a painter. In March 1978, Artforum carried a feature on his work, which since 1976 has been reviewed twice in Arts Magazine, as well as in Art News and the New York Times. He had solo shows in 1976 and 1977 at Sachs Gallery, New York, and will have another in October. He has participated in group shows at the Edward Thorp Gallery, Sachs, Weather spoon Gallery of the University of North Carolina, Minnesota Museum of Art, Russel Sage College, and the Museum of the Rhode Island School of Design. His paintings are a part of the collections of the Museum of the Rhode Island School of Design, the American Telephone and Telegraph Company, and the Prudential Insurance Company, and in several private collections.

"From 1967 to 1973 I educated myself as a professional artist. Beginning as a printmaker under the watchful eye of Peter Marcus, I moved quickly toward painting. I commend Peter for the patience and understanding to let me find my own way. He always stressed originality and creativity and gave me constant support. Two of my favorite pastimes were poring over art publications and attending the weekly graduate seminar. Steinberg Art Library and Professor Lucian Krukowski made art school especially worthwhile for me. I remember Washington University as good years, developing years, for there I learned discipline and the need for a trained eye."

Michael Jantzen is an artist who works in multimedia "redefining various aspects of my personal environment to open new non-ordinary potentials to stimulate a general state of personal excitement. The redefining is accomplished by whatever means are necessary to facilitate the specific function. I work with any material or method which best communicates my observations." His work, which has primarily been materialized as energy-conscious dwellings, ceremonial structures, conceptual performances and conceptual displays, has been widely recognized in major architectural journals and books, as well as general publications. It has also been a part of numerous exhibitions. Next spring he will teach a design studio at Washington University School of Architecture.

"My present approach to art making and design was certainly influenced by my experience at Washington University. The primary effect the School had on me was to help direct personal creativity exploration without holding me down with the constraints of traditional thinking. The person most responsible for promoting my creative freedom was Howard Jones."

Bernie Fuchs lives and works among the quiet rolling hills of Connecticut, but from his studio come illustrations that travel the globe. For more than twenty years, his paintings have enhanced the pages of every major magazine from Sports Illustrated to Ladies' Home Journal. He has illustrated classical literature for Franklin Library, has painted portraits of Presidents Kennedy and Johnson, and has participated in the United States Graphics Exhibition in Russia. In 1962 he was named "Artist of the Year" by the Artist Guild of New York and in 1975 became the youngest artist ever elected to the Society of Illustrators Hall of Fame. Last September Jack O'Grady Galleries in Chicago showed Fuchs's paintings, sketches, and lithographs entitled "New Orleans and All That Jazz"; last spring the American Illustrators Gallery in Atlanta mounted a Fuchs exhibit. A meticulous researcher who frequently does studies for assignments and free-lance painting on location, Mr. Fuchs spent the summer abroad.
Ray Ciarrochi's work has been exhibited five times in solo exhibitions at Tibor de Nagy Gallery, New York, in the past decade, and will be shown again next year. His paintings have been included in dozens of group exhibitions including at Pratt Manhattan Center Gallery, 1979; Weatherspoon Art Gallery, Greensboro, North Carolina, 1978; SoHo Center for Visual Artists, 1977; The Brooklyn Museum, 1976; and the American Academy and Institute of Arts and Letters, 1975 and 1972. He won the Ingram Merrill Foundation Fellowship in 1977, the Louis Comfort Tiffany grant in 1967, a Fulbright grant in 1963, and MacDowell Colony scholarships in 1965 and 1962. His work is held in numerous collections including the Brooklyn Museum, Owens-Corning Fiberglass Corporation, and the University of Massachusetts at Amherst. He earned the M.F.A. degree from Boston University.

"The concentration of studio courses at the School of Fine Arts made for an intense environment where the creation of art was sought after and was indeed possible. For me it remains in memory a very alive and real time. The School was the best and no doubt still is."

Nade Haley is a sculptor who has quickly made a name for herself on the East Coast. In October she won a first-place award at Corcoran Gallery of Art’s 21st Area Exhibition in Washington, D.C., from juror Maurice Tuckman. Since establishing her studio in Washington, she has been invited to participate in numerous exhibitions in the area. Her reputation is already well established in Michigan, where she taught for two years, and in the St. Louis area. In 1974, for example, she took part in a juried group show in Kansas City and the St. Louis Art Museum, and in 1975 she was a part of the "First Invitational Exhibition of Sculpture Inside and Out," at the University of Michigan. She has taught at Washington University and Western Michigan University in Kalamazoo and is now a faculty member at Prince George’s Community College, Largo, Maryland.

"Having taught for several years, I’m acutely aware of the difficulties of balancing the process of instruction with the encouraging of individual expression. The developing of personal vision often seems to preclude camaraderie among visual artists. Credit must be given to the times in which we live and also to particular people who have questioned this previously accepted norm. James Sterritt believes that we can all coexist—be supportive of one another and still maintain a personal visual language, yet not polarize aesthetically. His faith in his students has strengthened the visual arts program at Washington University; his aspirations, sometimes difficult to accept and always difficult to act upon, have at the very least encouraged and supported many of his students."

Alan Neider is a sculptor/painter whose home base is Chicago but whose reputation has been won much wider afield. Art in America and the Washington Post both carried summer articles on his work; he was the subject of an article in Artform in 1977. He has had one-man shows at Jan Cicero Gallery, Chicago; Henri Gallery, Washington; Illinois Art Council Gallery, Chicago; and in Long Beach, California, and he has participated in a dozen group shows throughout the country. In 1973 he was accepted to the MacDowell Colony in New Hampshire. In 1972 his work was supported by a Robert Rauschenberg Change Inc. Grant. His work is also a part of several prestigious public and private collections.

"The most valuable results of my experience at Washington University as a graduate student were the friendships I made. These friends continue to be a source of stimulation, challenge, enjoyment, and love. The milieu at Tyson Valley was such that I was able to concentrate almost totally on my work. Almost everyone’s involvement was of a deep, personal nature. I was treated like a working artist, not like a student. I was not harangued by teachers giving me formula tidbits on art or other such nonsense. For all of this I am grateful."

Alan Neider MFA ’73

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Ray Ciarrochi BFA ’59

Nade Haley BFA ’74

Alan Neider MFA ’73
WHEN WE DECIDED to present the work of a group of alumni of the School of Fine Arts as a tribute to the School’s 100th anniversary, we approached the task with some hesitation. How could we select thirty to represent thousands? Fortunately, we learned that an alumni committee putting together the Centennial Alumni Exhibit had embarked on a similar task of nomination, research, and selection. We piggybacked on their work and wish to thank that committee, headed by Linda Dubinsky Skrianka, for its help. From their longer lists, we selected our few contributors. Nearly every artist we asked to participate did so, despite our tight deadline.

Once the material we requested began coming in, we realized that our consultants had done very well. We had some alumni with well-established reputations and other younger graduates whose names are just becoming widely known. All are working artists whose enthusiasm for their work and for the part Washington University played in their lives is great, real, and warmly expressed.

The first small shock waves set up by our selection were not long in coming, however. “Surely,” someone (an alum, a faculty member, an art buff, an artist friend) would say, “you’ve contacted so and so.” Back to the list to find that this new candidate was not on it. Was it too late to add and amend? No; but our space was limited—whom would we take off?

Within another week, the St. Louis Art Museum had hung a show of the work of St. Louisan Jerry Wilkerson, MFA ’68, (who was not on our list) and the attendant favorable reviews mentioned that O. K. Harris Gallery in SoHo would open a one-man Wilkerson exhibit in October. Two weeks later, Donald Shields, BFA ’73, won a Prix de Rome Fellowship for study at the American Academy of Rome. The jury for those coveted fellowships was headed by Robert Motherwell, who commented on the unusually high quality of the nominees.

Slowly we began to recognize that the task of selecting so few from so many was as impossible as we had originally feared, but that, in a way, that was all right. By then we knew that those we had included were fine representatives of the School’s success and diversity. Every new name and accolade that came up reinforced our premise that the School of Fine Arts of Washington University educates hundreds of persons who help make art in America.

Another fine arts note: We are justly proud of the Magazine’s graphic designer Stan Gellman, BFA ’60, whose work annually wins a place in the New York Art Directors show; his position as a part-time faculty member precludes his inclusion in our gallery. The whole magazine is an illustration of his work, but we particularly appreciate the talent he brings to a task such as the putting together of this article. He takes difficult, disparate material and ties it into a whole, perhaps remembering, as Chip Rhea notes, what their mentor (and the Magazine’s original designer) Peter Geist taught about harmonies.

SEVERAL TIMES this summer, University community members, families, and friends gathered at various places on campus for a series of concerts entitled “Night Music.” The campus setting lends grace to any such event, but this series of small concerts had a fresh and spontaneous charm. Early in the summer Engineering Professor David Elliott acted on his feeling that the campus needed another summer musical option. He asked Dan Presgrave, a young part-time instructor and a conductor in the music department, to aid in putting together some concerts. Elliott rounded up the necessary resources to plan and publicize the happenings and the music department rounded up volunteer musicians. The result was four delightful events which complemented the now traditional Little Symphony concerts on the Quadrangle in early summer and the Gateway Festival Orchestra concerts which follow in mid-summer. Elliott’s Night Music was not so large nor important as either of the others. It was another musical option—an unpretentious gathering of some of those who love to play and some of those who love to listen.

D. W.
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