

9-14-1989

# Washington University Record, September 14, 1989

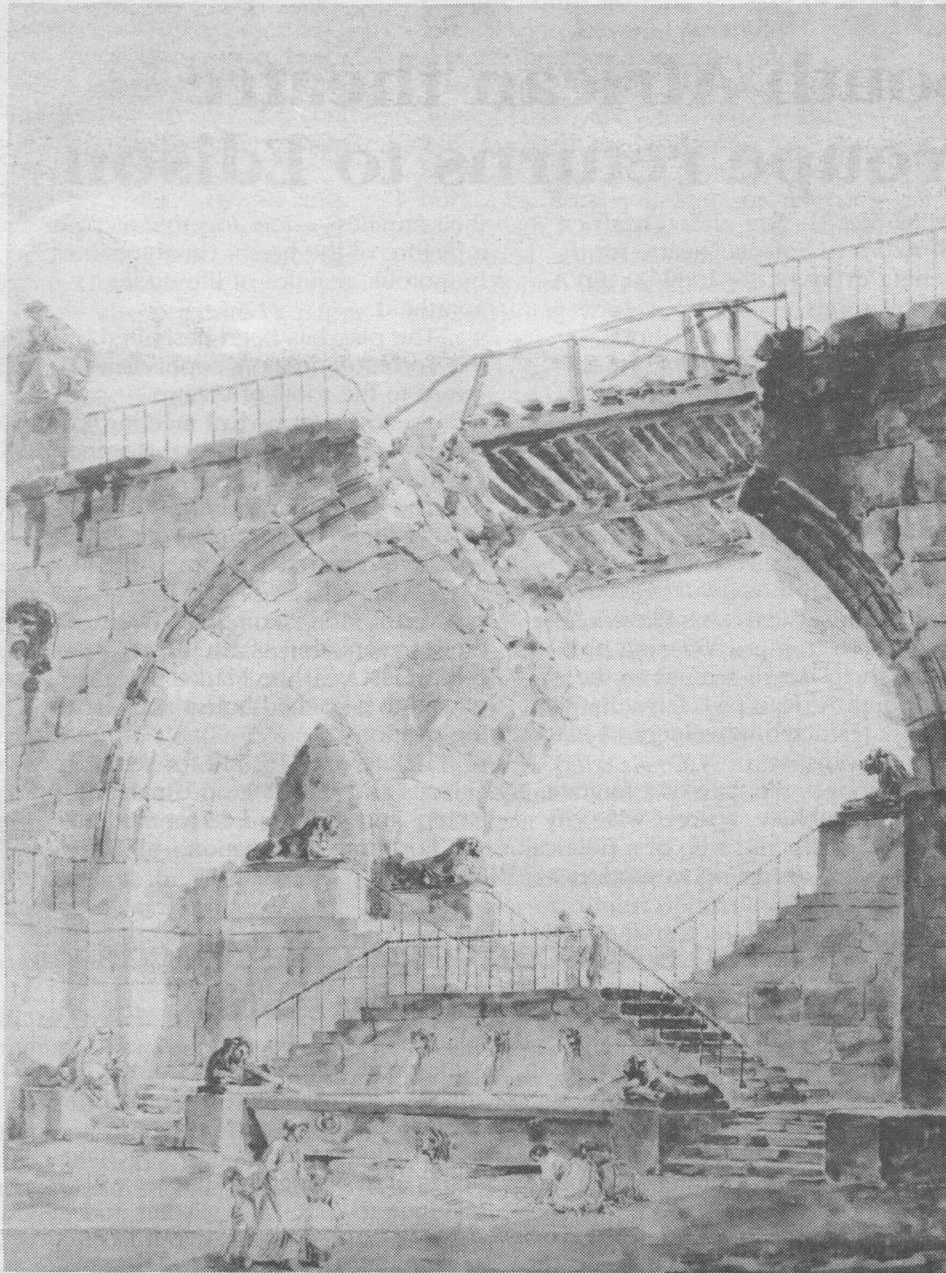
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French artist Hubert Robert (1733-1808) used brown ink with brown and grey wash to create "The Ruined Bridge," one of 60 works in the "Master Drawings From the Nelson-Atkins Museum of Art" exhibition that will run from Sept. 22-Dec. 3 in the Gallery of Art in Steinberg Hall. The exhibition comprises the largest group of drawings and watercolors ever lent by the Kansas City museum on a single occasion.

## The masters

### European drawings from Kansas City collection make exhibition debut here

An important, yet unsung, collection of European drawings and watercolors will have its first comprehensive exhibition at Washington University. The exhibit, featuring 60 of the finest drawings from the collection of the Nelson-Atkins Museum in Kansas City, Mo., will include works by Rembrandt, Degas, Boucher, Durer, Gainsborough and others. The drawings date from the 14th through the 20th centuries.

The exhibition, titled "Master Drawings From the Nelson-Atkins Museum of Art," will run in the Gallery of Art in Steinberg Hall from Sept. 22-Dec. 3. Never before published or shown as a group outside of Kansas City, the collection has long been recognized by experts for its quality, though it is not well known to the general public.

Curators for the exhibition are Roger B. Ward, Ph.D., curator of European Art at the Nelson-Atkins Museum of Art, and Mark S. Weil, Ph.D., professor of art history at Washington University.

Three lectures will be given in conjunction with the exhibit. Ward will speak on the history of the drawings on exhibit in an opening lecture at 8 p.m. Sept. 22, at the Gallery of Art. A reception will follow.

At noon on Oct. 11, Weil will give a talk in the gallery about the exhibit. A third lecture will be given at 8 p.m. Nov. 1 by William E. Wallace, Ph.D., assistant professor of art and archaeology at the University and an expert on Michelangelo. The talk, titled "Mich-

elangelo, Master Draftsman," will be given in Steinberg Hall auditorium.

All lectures are free and open to the public.

Knowing that the Nelson-Atkins Museum had an extensive drawings collection, Weil initially hoped to use some of its drawings for a connoisseurship class he teaches at Washington. In the course of his research, he became so impressed with the quality and size of the museum's collection that he suggested mounting an exhibit at the University comprising a selection of some of the finest drawings from the Nelson-Atkins — an exhibit that would be instructive and inspirational, not only to his students but to the general public as well.

By gathering a large number of drawings into one exhibit, viewers will be able to see for themselves the wide range of styles and media that are included in the art form known as "drawing."

The display will present a wide range of artistic media and styles that were carefully selected to illustrate the development of technique and style in European drawings.

"These are some of the most beautiful drawings in the United States," says Weil. "We are delighted to be able to join with the Nelson-Atkins Museum in making them available to a broad audience. I hope the catalog accompanying the exhibit will further stimulate interest in this wonderful collection."

The early drawings include a

*Continued on p. 3*

### Cosmic collaboration

## Space research spawns device to improve cancer treatment

Astrophysicists who study cosmic rays from the Milky Way Galaxy have joined forces with their colleagues in medical physics to create a new instrument that is improving radiation treatments for cancer patients.

Since February, radiotherapists at Washington University's School of Medicine have treated 20 patients using a new on-line fiber optic imaging device, which allows physicians to verify — in real time — that an external radiation therapy beam is reaching a tumor accurately. The imaging device uses optical fiber technology developed by scientists in the Department of Physics for their study of charged particles in outer space.

"We have developed a device that allows a physician to verify within seconds that radiation treatment is deposited where it should be, namely in the tumor," says W. Robert Binns, Ph.D., research professor of physics at the University. Binns and his colleagues, Joseph Klarmann, Ph.D., professor of physics; Martin H. Israel, Ph.D., professor of physics and dean of the Faculty of Arts and Sciences; and experiment manager John W. Epstein, developed the new instrument in collaboration with John W. Wong, Ph.D., assistant professor of radiation physics at the University's Mallinckrodt Institute of Radiology.

Currently, radiotherapists must verify treatment by using radiographic film placed under the patient. This process is awkward, as the film must be removed, exposed and developed. According to Wong, the process is so time-consuming and costly that it is impractical for physicians to verify treatment more than once a week.

"Because you only see the image once a week, you assume that you've hit the tumor," Wong says. "As a consequence, if you did not give enough dose to the tumor, you did not meet your objective of achieving local control of the tumor. If you missed the tumor, then you must be hitting normal tissue and that may increase complications."

"Radiation therapy is always a balance between complications and

cure," Wong continues. "You want to pump as much dose in the tumor as possible, while not going over the tolerance limit of the normal tissue. With this device, you reduce the chance of geometric misses, because you can see what you're doing when you treat."

The "geometric misses" to which Wong refers occur for a variety of reasons, he says. Because radiation therapy is usually given daily over a period of several weeks, there is always the risk that the patient will not be put back into exactly the same position each day. Patient movement during treatment can also cause poor radiation targeting. This is particularly a problem with children.

According to Carlos A. Perez, M.D., the on-line verification device will allow the radiotherapist to carefully scrutinize the accuracy of treatment and correct any positioning variations that may occur during daily treatment. "A higher dose of irradiation, precisely delivered, will enhance the probability of eradicating the tumor and improving the survival of the patient while minimizing deleterious effects in surrounding sensitive normal tissues," says Perez, who is director of the Radiation Oncology Center at the Mallinckrodt Institute.

The new imaging device allows physicians to monitor cancer treatments as they are being given, making subtle, yet critical, adjustments as needed. The instrument consists of a matrix of 65,000 proprietary plastic optical fibers, bundled together and covered by a fluorescent screen that is placed under the patient. When the x-ray beam interacts with the screen, the screen glows. So far, so good. But the tricky part is in getting the image from underneath the patient to the eyes of the radiotherapist. Since there is only a very limited space under the patient, a very compact device was needed to carry the image to video cameras and computer workstations. Enter the special optical fibers, which were developed by University astrophysicists for cosmic ray research.

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### Prize-winning author on Vietnam to talk

Neil Sheehan, who won a 1988 Pulitzer Prize for his book *A Bright Shining Lie: John Paul Vann and America in Vietnam*, will speak at 11 a.m. Wednesday, Sept. 20, in Graham Chapel.

Sheehan's speech, part of the University's Assembly Series, is titled "Vietnam: How Could This War Have Happened?" The lecture is free and open to the public.

Sheehan is a former Vietnam bureau chief for United Press Interna-

tional and also spent one year in Vietnam for The New York Times. He was the Times reporter who obtained the Pentagon Papers from Daniel Ellsberg and wrote the stories about the origins of the Vietnam War. The Pentagon Papers earned The New York Times a Pulitzer Prize for public service in 1972. Sheehan also received the National Book Award for *A Bright Shining Lie*, which he researched for 16 years.

For information, call 889-4620.

### Religion in schools will be discussed

The separation of church and state in the public schools will be examined during a constitutional conference sponsored by the School of Law and the local chapter of the American Jewish Congress from 1 to 4:30 p.m. Sunday, Sept. 17, in Room 316, at the law school. The 12th annual conference is free and open to the public.

Dorsey D. Ellis Jr., J.D., dean of the law school, will welcome the group, along with Joel K. Goldstein, president of the American Jewish Congress, St. Louis chapter. Richard H. Fallon, a law professor at Harvard, will deliver the Jerome W. Sidel Memorial Lecture at the conference.

The conference will feature a panel exchange and audience discussion with speakers David T. Konig, Ph.D., chair and professor of the history department; Daniel P. Liston, Ph.D., assistant professor of education; and Warren Solomon, a curriculum consultant for the Missouri Department of Education.

Among the questions the speakers will explore are: Should values be taught in public schools? If so, whose values? and Can public school educators teach religion and values and abide by the Constitution?

Advance reservations are requested by calling 993-5505.



Richard Stoker, director of the Central Institute for the Deaf (CID) at the Washington University Medical Center, visits Megan O'Neill's classroom at CID. Stoker has special insight into the concerns of the school's students: He has been profoundly deaf since birth and received private instruction as a child from a teacher trained at CID, a United Way supported institution.

## University's United Way campaign is under way

This winter most people will wear heavy coats to keep warm. Others will brave the cold in a T-shirt.

This Sunday many grandmothers will spend the day with family. Others will spend the day roaming the streets, looking for food.

This afternoon most kids will run around in their backyards. Others will watch from a wheelchair.

Tonight most kids will get a goodnight kiss before bed. Others will get a beating.

But Washington University employees can make a difference in the lives of thousands of those "other" people in the St. Louis area by contributing to the annual United Way fund-raising campaign, which began Sept. 13.

Money raised in this year's campaign will provide support to 135 St. Louis area health and human service organizations, including the University's Campus Y and Central Institute for the Deaf. These organizations provide assistance to one out of every three people in the community — feeding the hungry, finding homes for the homeless, helping those who are fighting disease and disability, furnishing employment training, preventing child abuse and neglect, offering family counseling, fighting drug and alcohol abuse and providing a wide range of other services and programs for the disadvantaged.

Washington University has a particularly close relationship with the United Way campaign this year. Clarence C. Barksdale, newly appointed vice chair of the University's Board of Trustees, is also chair of the United Way board. In addition, Richard J. Mahoney, a University trustee, is the United Way's 1989 general campaign chair.

The 1989 goal for the United Way of Greater St. Louis campaign is \$46,730,000. "This is the highest goal we've ever set," Barksdale said. "It represents an increase of 7 percent over the gifts and pledges we received last year." The 1988 campaign raised \$43,671,527.

Robert L. Franklin, the University's campaign chairman, said the 1989 goal for Washington is \$230,000, a 10 percent increase in the \$209,498 raised last year. "The United Way provides tremendous advantage to the St. Louis area, and it is appropriate that

we here at Washington University participate actively in this effort," said Franklin, who is manager of accounts payable. "Our support is needed to help meet everyday challenges, provide for the future and to enhance the general well-being of this community."

Some 250 employees from both campuses are serving as solicitors for the campaign, which ends Oct. 31, and will be distributing pledge cards throughout the University. Pledge cards are requested to be returned by Oct. 24.

Nine new health and human service agencies have been admitted for program funding in 1990: Emergency Children's Home (ECHO), which provides emergency residential care for adolescents; Good Samaritan Service Center for the Homeless, which provides transitional and follow-up services for homeless individuals and families; Joint Neighborhood Ministry, a Cherokee neighborhood self-help group that provides day care, food and GED courses; Lincoln County Council on Aging, which offers a wide variety of health, nutritional and other services for senior and disabled residents of Lincoln County;

Literacy Council of St. Louis, which provides classes in reading and writing for adults; Paraquad, which offers services to assist disabled people in living independently; St. Louis Crisis Nursery, which provides emergency short-term residential care for children; St. Louis Easter Seal Society for Crippled Children and Adults, with services for the disabled ranging from an early learning center to a post-polio adult support group; and Volunteers of Illinois, which provides counseling for victims of sexual abuse and rape, foster placement and adoption assistance.

In addition, the United Way has identified three priority areas for additional attention and financial support through 1990: counseling and support services for food and housing assistance, services for abused persons and teenage pregnancy-support services and prevention.

All gift information is confidential. Contributions to the United Way are tax deductible and may be designated as payroll deductions beginning January 1990.

### Opening event

## South African theatre troupe returns to Edison

The Market Theatre of South Africa will return to Edison Theatre for the opening event of the 1989/90 "OVATIONS!" series.

The company, in collaboration with the Vusisizwe Players of Cape Town, will present "You Strike the Woman, You Strike the Rock" at 8 p.m. Friday and Saturday, Sept. 22 and 23, in Edison Theatre.

"You Strike the Woman, You Strike the Rock" is based on the real lives of Poppy Tsira, Thobeka Maqhutyana and Nomvula Qosha, who comprise Vusisizwe Players. The title is taken from a 1956 song protesting the inclusion of women in the strict South African pass laws that severely restricted movement of black South Africans.

Mampopo, the wife of a migrant laborer; Mambhele, a street-wise city girl; and Sdudla, the wife of a political activist — all struggling to support

their families — join together to paint a picture of the harsh, yet sometimes humorous, realities of life under apartheid.

The play has been described by the Toronto Sun as "a sophisticated return to the roots of theatre — part folk theatre, part revival meeting, part morality play — all stitched together with the very rhythms of Africa."

The group has toured internationally for three years to sold-out houses and rave reviews. Their performances have been called "electrifying," "powerful" and "haunting." During their presentation of "BOPHA!" at Edison last year the Market Theatre played to a packed house and standing ovations.

Tickets are \$16; \$12 for senior citizens and Washington University faculty and staff; and \$8 for students.

For more information, call 889-6543.

## New women's soccer coach is named; program elevated to varsity status

Douglas Hippler, former head women's soccer coach at Missouri Baptist College and current coach at Parkway Central High School in St. Louis, has joined the athletics' department as head women's soccer coach.

This summer the women's soccer program was elevated to varsity status after being classified as a club sport for the past decade. A nine-game schedule will be played this fall, with a full slate of games planned for 1990.

"We are delighted to add Doug to our staff," said John Schael, director of athletics. "His extensive coaching background and success working with student/athletes prepares him well for the challenges of developing Washington University's program."

Last year at Missouri Baptist, Hippler took the Spartans to the district playoffs and a national ranking as high as number 11 in the National Association of Intercollegiate Athletics.

Additionally, the members of the team amassed a cumulative grade point average of 3.3 on a 4.0 scale.

In addition to his new coaching duties at Washington, Hippler will continue to serve as a teacher and coach in the Parkway School District. A year ago, Hippler led Parkway Central to a second-place finish in the Missouri State tournament, with the team members earning a combined GPA of 3.75 out of 4.00.

Prior to joining Parkway Central in 1985, Hippler taught and coached a total of eight years in the Wentzville School District, the Special School District of St. Louis County and the School District of Riverview Gardens.

Hippler earned his bachelor's degree in education from Central Missouri State University in 1976 and his master's degree from the University of Northern Colorado in 1985.

### 1989 WOMEN'S SOCCER SCHEDULE

DATE	OPPONENT	TIME	SITE
Sun., Sept. 10	CREIGHTON UNIVERSITY	1 p.m.	HOME
Sun., Sept. 17	Rhodes College	1:30 p.m.	Memphis
Thu., Sept. 21	PRINCIPIA COLLEGE	7:30 p.m.	HOME
Tue., Sept. 26	Missouri Baptist College	4 p.m.	St. Louis
Sun., Oct. 1	Maryville College	1 p.m.	St. Louis
Sat., Oct. 14	Westminster College	1:30 p.m.	Fulton
Tue., Oct. 17	MARYVILLE COLLEGE	4 p.m.	HOME
Sat., Oct. 21	*University of Chicago	1 p.m.	Chicago
Sat., Oct. 28	*EMORY UNIVERSITY	1 p.m.	HOME

\* University Athletic Association game

## Fulbright application deadline is near

The 1990-91 competition for grants for graduate study abroad offered under the Fulbright Program and by foreign governments, universities and private donors will close soon. The campus deadline for filing an application for one of the 700 awards to more than 100 countries is Friday, Sept. 29.

Most of the grants offered provide round-trip transportation, tuition and maintenance for one academic year; a few provide international travel only, or a stipend intended as a partial grant-in-aid.

Applicants must be U.S. citizens at the time of application, and must generally hold a bachelor's degree or its equivalent before the beginning

date of the grant, and, in most cases, should be proficient in the language of the host country. Except for certain specific awards, candidates may not hold a doctorate at the time of application.

Creative and performing artists are not required to have a bachelor's degree, but must have four years of professional study or equivalent experience. Candidates in medicine must have an M.D. or equivalent at time of application.

For application forms or more information, call Sara Epstein, Fulbright program adviser, at 889-6355. Epstein's office is in 210 S. Brookings.

# NOTABLES

**Gregory Claeys**, Ph.D., associate professor of history, presented a paper, titled "Natural Jurisprudence and Modern Republicanism in Thomas Paine and John Thelwall," at a conference on "Unsocial Sociability: Eighteenth Century Natural Law and Discourses on Politics, History and Society." The conference was sponsored by the Max-Planck-Institut für Geschichte, Gottingen, West Germany. Claeys also presented a paper on "William Godwin and Revolution" at a conference on "Romanticism and Revolution," sponsored by the Wordworth Centre of Lancaster University, Great Britain.

**John W. Clark**, Ph.D., professor of physics, was invited by the Academy of Sciences of the USSR to visit and lecture at the Institute for Physical Problems, Moscow, the Joffe Institute, Leningrad, and the Physics Institute of the Georgian Academy of Sciences, Tbilisi, from May 28-June 11. He then participated in the Conference on Models of Brain Function in Lyngby, Denmark, June 12-16, as a member of the organizing committee and an invited speaker. He also was an invited speaker at the 13th International Workshop on Condensed Matter Theories, held Aug. 6-12 in Campos do Jordao, Brazil.

**F. William Orrick**, director of telecommunications services, was named executive vice president of the Association of College and University Telecommunications Administrators (ACUTA) at the organization's annual conference, held this summer in Philadelphia. ACUTA's members, who represent more than 600 institutions of higher education, conduct four national seminars annually, providing advanced educational opportunities on various subject matters relating to telecommunications. The more than 1,000 members also support numerous regional workshops and meetings throughout the United States and Canada. Next summer Orrick will assume the office of president of ACUTA for a one-year term.

**Mark R. Rank**, Ph.D., assistant professor of social work and adjunct assistant professor of sociology, along with Donald Cox of Boston College, has received a \$122,537 grant from the National Institute of Child Health and Human Development and the National Institute on Aging. The title of the grant is "An Empirical Study of Intergenerational-Transfer Motives."

## RECORD

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**Gruia-Catalin Roman**, Ph.D., associate professor of computer science, presented a paper, titled "Declarative Visualization in the Shared Dataspace Paradigm," at the 11th International Conference on Software Engineering, held in Pittsburgh, Pa. Roman co-authored the paper with **K.C. Cox**, who is pursuing a doctoral degree in computer science. Roman also attended the 5th International Workshop on Software Specification and Design, where he was involved in the planning and coordination of a session on concurrency, coordination and distribution.

**Donald C. Shreffler**, Ph.D., professor of genetics, is one of five recipients this year of the California Institute of Technology's highest honor — the Distinguished Alumni Award. Presented annually at Seminar Day in the spring, the award is given to former Caltech graduate or undergraduate students for high achievement in science, engineering, business, industry or public service. Shreffler received his doctorate in biology from Caltech in 1962.

**H. Phillip Venable**, M.D., assistant professor of clinical ophthalmology, recently was honored at the Missouri State Medical Association's annual meeting for his 50 years of outstanding service to the medical community. Outgoing President T.J. Cooper presented Venable with a gold key for his many significant contributions, which include authoring the "Good Samaritan Law" that was written into law by former Gov. James E. Teasdale on June 5, 1979, and serving as president and founder of the Katie and Howard Phillip Venable Student Research Fund at Washington University. Venable, an international authority on pseudo-tumor-cerebri, also was one of the first ophthalmologists in the country to report that the AIDS virus (HIV) may involve ocular tissues several years before other organs are involved.

**Murray L. Weidenbaum**, Ph.D., director of the Center for the Study of American Business and Edward Mallinckrodt Distinguished University Professor, spoke on "The United States and the Changing World Economy" at the Johns Hopkins Foreign Policy Institute in Washington, D.C.

### Have you done something noteworthy?

Have you: Presented a paper? Won an award? Been named to a committee or elected an officer of a professional organization? The Washington University Record will help spread the good news. Contributions regarding faculty and staff scholarly or professional activities are gladly accepted and encouraged. Send a brief note with your full name, highest-earned degree, current title and department along with a description of your noteworthy activity to Notables, Campus Box 1070, or by electronic mail to p72245SS at WUVMC. Please include a phone number.

## Football home opener to air

For Bears' football fans who can't make the opening home game against Rose-Hulman Institute at 1:30 p.m. on Saturday, Sept. 16, the game will be televised twice on a tape-delay basis on St. Louis Cablevision's Channel 35.

The first airing will be at 1 p.m. on Sunday, Sept. 17, and the second airing will be at 6 p.m. Monday, Sept. 18. Double Helix Productions is televising the game.

## Cancer treatment — *continued from p. 1*

The marriage of cosmic ray research and medical treatment was "absolutely serendipitous," says physicist Klarmann. The collaboration began five years ago, when Wong read an article in the *Record* about the astrophysicists and their fibers.

"I saw a picture of this bunch of fibers and I thought, 'Wow, I could use that,'" Wong recalls. "So I called the physics department and set up a meeting. This collaboration has been absolutely amazing. Their interest is in looking at cosmic rays, but what they are measuring is radiation dose. And that has a direct application to radiation therapy."

Cosmic rays are charged particles that enter Earth's upper atmosphere at nearly the speed of light. By studying these direct samples of material from outside our solar system, the scientists hope to answer fundamental questions about the origins and evolution of matter in our galaxy.

Washington University has been involved in cosmic ray research for more than 40 years. Several years ago, in an effort to build a better cosmic ray detector, experiment manager Epstein developed a new kind of optical fibers made of scintillating plastic — material that gives out a flash of light when excited by charged particles. The scientists fused about 100,000 of these special fibers together into meter-long bundles and attached one end to a small camera.

"When a charged particle goes through one of these tiny scintillating fibers, the fiber gives out a little burst of light," explains Binns. "Part of that light is piped down to the end of the fiber, and you can look at it with a very sensitive video camera."

Since developing a prototype cosmic ray detector in the early 80s, the physicists have been working to refine and improve the fibers, creating instruments capable of extremely precise measurements and characterizations of particles.

Binns, Klarmann and Israel are co-investigators on one of 14 projects selected earlier this month to fly on the first U.S. space station, tentatively scheduled for launch in 1996.

Their experiment is called the Large Isotope Spectrometer for Astromag (LISA). Astromag is an enormous superconducting magnet, to be mounted on the space station, that will bend the paths of incoming cosmic rays. By observing the paths of atomic nuclei as they pass through this magnetic field, the scientists will be able to determine a particle's charge, mass and energy — because it's these factors that determine exactly how a particle bends in a magnetic field.

When a particle enters LISA, it will pass through several layers of fibers, creating a burst of light in each fiber it traverses. The light will be piped to a sophisticated video camera and a computer, and the digitized images — along with data from other detectors in LISA — will then be transmitted to the scientists back on Earth. Over a two-year period, LISA will measure with unprecedented precision the abundances of nuclear isotopes that originate in deep reaches of the galaxy. It also will perform the most sensitive search for antimatter yet undertaken.

The same advances in fiber technology critical to developing the experiment for Astromag was used in designing the real-time verification device for cancer treatments.

During therapy, radiation passes through and excites the fluorescent screen placed beneath the patient. Particles in the screen emit bursts of

light as the radiation travels through them. A layer of plastic optical fibers in contact with the screen reduces the images and then pipes the light to a video camera, where the image is encoded and sent to a computer. After being corrected for distortion and background light, the data can be viewed on a video display terminal. The radiotherapist can thus monitor treatment, making critical adjustments as needed. And, the images can be stored on computer disks, eliminating the need for special storage facilities for the bulky sheets of 14 x 17-inch radiographic film currently in use.

The device may also encourage more innovative techniques in cancer treatment, says Wong, such as conformational therapy, where the machines and the patient positions are changed and the radiotherapist uses many beams to try to come up with the optimal treatment. Such treatments are difficult to do with conventional verification techniques because they are quite complicated, and the chance of error is much greater.

According to Perez, physicists at Mallinckrodt and several other radiation oncology centers across the nation have developed sophisticated computerized three-dimensional treatment planning programs to improve the radiation dose distribution given to a tumor.

"More complex and powerful radiation beams are available to treat patients with cancer," says Perez. "Modern accelerators, with appropriate computer capabilities, can be programmed to dynamically shape the distribution of the doses of irradiation and more precise repositioning and immobilization devices are under development. The optical fiber verification device born from the ingenuity of our physics staff will be an integral component of this futuristic, more effective approach which will raise our expectations in the treatment of patients with malignant tumors," he adds.

For the astrophysicist, the imaging device underscores the value of space research.

"Basic scientific research is often seen as something that's done to satisfy intellectual curiosity but doesn't seem to have any real bottom-line meaning," says Klarmann. "This is saving people's lives. We were very delighted when we found that our research had this practical application."

*Fran Hooker*

## Drawings —

*continued from p. 1*

manuscript illumination by Don Silvestro Gherarducci (died 1399) and a silverpoint drawing by Pietro Perugino (c. 1454-1523). Later drawings include works in pencil, chalk, and pen and ink. The exhibit also will include several watercolors and gouaches, as well as a Degas pastel.

An illustrated catalog, which will mark the first publication for most of the works in the exhibition, will accompany the show. The catalog will include two essays: one by Weil discussing the variety of objects in the exhibition, and one by Ward discussing the scope and history of the drawing collection at the Nelson-Atkins Museum. In addition, a documentary checklist and illustrations of all the works exhibited will be included in the catalog.

The catalog and exhibit were made possible by the Hortense Lewin Art Fund.

For information, call 889-5490.

