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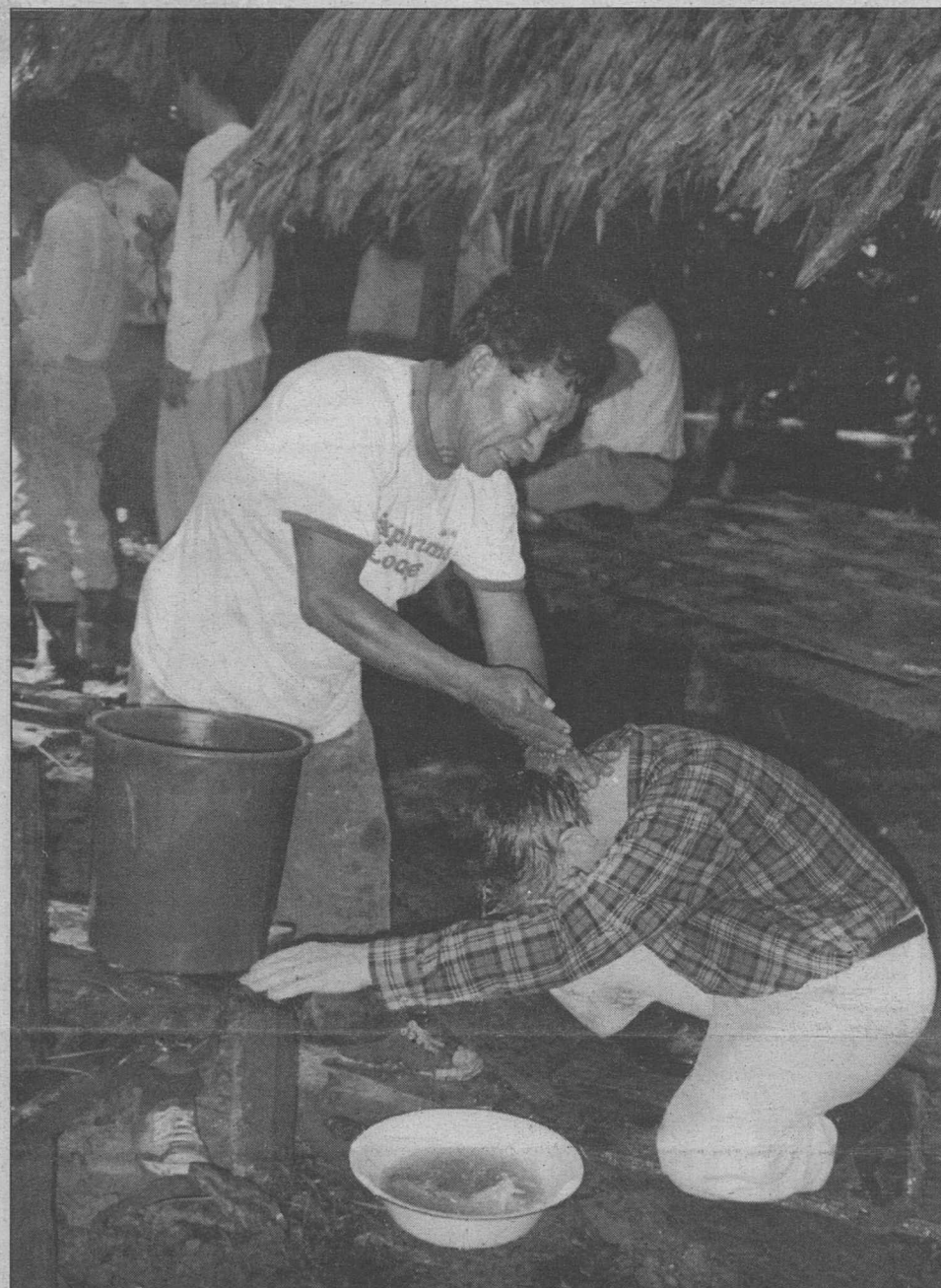
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WASHINGTON
UNIVERSITY
IN ST. LOUIS

Vol. 20 No. 29 April 25, 1996



A Peruvian mystic healer, called a brujo, gives Walter Lewis, Ph.D., a ritualistic lemongrass bath during a trip Lewis and his wife, Memory Elvin-Lewis, Ph.D., took this spring with 15 biology students to the Amazon River basin.

Call of the wild beckons students to Amazon basin

For many college students, spring ushers in the call of the beach, not the call of the wild.

But for 15 students in "Biology 3261" (medical plants), the week after spring break 1996 offered a rare chance to intimately examine one of Earth's richest ecosystems. The students, accompanied by the husband-wife botanical team of Walter Lewis and Memory Elvin-Lewis, spent eight days in the wilds of Peru's Amazon rain forest for a unit of credit, personal observation and a lifetime of memories.

From March 9-16, the Washington University students interacted with a similar undergraduate group from Atlanta's Emory University to explore the rain forest and develop the research instincts and skills of their mentors. Walter Lewis, Ph.D., professor of biology in Arts and Sciences, and Memory Elvin-Lewis, Ph.D., professor of microbiology in biomedicine, professor of ethnobotany in Arts and Sciences and adjunct professor of biology, have worked with Peru's Jivaro Indians in the Amazon River basin for 15 years, studying how the Indians use plants for medicinal purposes. The Lewises, both seasoned rain forest experts and tested explorers, are studying the bioreactivity of the plant compounds for a host of diseases and maladies.

The Washington University group spent from dawn to darkness observing the abundant flora and fauna of the rain forest and working on projects, based on their observations, that led to a better understanding of the ecosystem. They visited three different camps and lodged each night in comfortable dormitory-

style housing. International Expeditions Inc., a private, Alabama-based corporation that specializes in professional workshops and eco-tourism, arranged the trip.

Although isolated, the sojourners were not cut off. The parents of the students had a 24-hour telephone number they could call, and there was constant radio communication and planes on site to get anyone out in case of an emergency.

Walter Lewis hatched the idea for the trip a little more than a year ago on his first trip to the Amazon Center for Environmental Education and Research (ACEER), a private, non-profit reserve of 250,000 acres of rain forest that was a major part of the Washington University experience. There, he met Lawrence Wilson, Ph.D., an Emory biology professor whose specialty is herpetology, the study of reptiles and amphibians.

"Talking with Larry, I realized that we both approached the rain forest from different, though related, perspectives," Lewis said. "Larry studies the ecosystem and the reptiles' role in it; Memory and I look at it from the medicinal plant angle. I thought that this would be a wonderful place for undergraduates to study the rain forest from both perspectives in a relatively non-structured way. When we approached International Expeditions about the idea, they were enthused. Very little university instruction had been done there."

The company was not the only ones enthused. James McLeod, vice chancellor for students and dean of the College of Arts and Sciences, heartily recommended the experience, as did Barbara

Continued on back page

Two biomedical engineering degrees to be offered next fall

Next fall, the School of Engineering and Applied Science will welcome its first class of undergraduate students embarking on the pursuit of two new degrees offered at Washington University.

An estimated 50 freshmen will set their sights on either a bachelor's of science degree in biomedical engineering (BS-BME) or a bachelor's of science degree with a major in biomedical engineering science (BS-BMES). The first degree is an accredited professional degree in biomedical engineering, while the second has been designed primarily as a pre-medical option.

Biomedical engineering applies engineering concepts, methods and techniques to biology and medicine. It is

concerned with the analysis of biological systems, such as living cells, tissues and organs, as well as the organization of these systems into integrated organisms, such as the human body. Biomedical engineering deals with instrumentation; computers; biologically compatible materials; diagnostic and therapeutic devices; artificial organs and prostheses; and medical information systems for use in medical research and practice.

The new degrees will be offered initially by an interdepartmental program headed by Salvatore Suter, Ph.D., professor and chair of mechanical engineering. Depending on the identification of resources, the engineering school plans to open a Department of Biomedical Engineering within two years. This new

department would join the seven existing engineering departments — chemical; civil; computer science; electrical; engineering and policy; mechanical; and systems science and mathematics.

Christopher I. Byrnes, Ph.D., dean of the engineering school, said the new program joins two outstanding Washington University strengths — engineering and biomedicine — and provides an increasing number of interested students more options in engineering.

"Washington University has a 40-year history of collaboration among teachers and researchers in engineering and medicine as a strong basis for this program," Byrnes said. "Today, biomedical engineering is carried out in four of our seven engineering departments and 15 of

19 medical school departments. Modern engineering provides powerful computers, innovative instrumentation and mathematical models to study biological and medical problems and conditions. We're pleased to provide engineering students with degree options in a growing area, and we feel we have outstanding faculty and resources to offer students."

Byrnes said the interest in biomedical engineering is high among prospective University engineering students. He noted that of about 1,800 engineering school applicants for the fall of 1996, 389 indicated biomedical engineering as their choice of major.

"Interest in biomedical engineering

Continued on back page

University gives 'green light' to environmental program

Traditionally, a university's mission has been to shed light. But in a new program, Washington University has joined the Environmental Protection Agency in an effort to save light.

The EPA's Green Lights Program is a voluntary pollution-prevention program in which participating organizations agree to upgrade 90 percent of their facilities' square footage with energy-efficient lighting within five years. In turn, the EPA agrees to provide training programs and public recognition. To date, Green Lights partners have been featured in the Wall Street Journal and Fortune,

Forbes and Business Week magazines for their efforts to fight air pollution.

"It wasn't a difficult decision," said Ed McMullin, manager of technical operations in the Department of Facilities Planning and Management. "Lots of the older buildings are not energy-efficient. Washington University wants to be on the side of environmental issues."

When the EPA approached the University last fall, the University already had been looking for ways to reduce operating costs. Changing the lighting was one of the ideas that materialized, so the "Memorandum of Understanding"

the facilities department signed with the EPA gave a formal structure to a process already under way. Larry Downey, electrical engineer in the facilities department, is the campus coordinator of the Green Lights Program.

The first stage, which was completed recently, reduced the amount of electrical energy expended in the lighting systems and operating motors in five buildings — Bixby, Rebstock, Brown and Cupples II halls and Olin Library.

These buildings represent 16 percent of the University's 4 million square feet of space.

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A long-term study suggests that senility is not an inevitable part of growing older

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Patricia Cole, M.D., believes her patients will see better results if they are invested in their care

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The School of Art's annual fashion show hits the runway May 5 at the Saint Louis Galleria

Medical Update

Long-term study suggests senility not inevitable part of aging

Alzheimer's disease, which robs men and women of memory and personality, becomes increasingly common with age — with up to one in two people succumbing by age 85. So as Americans live increasingly longer, must everyone fear dementia? Or can the brain remain healthy in very old age?

A long-term School of Medicine study suggests that senility is not an inevitable part of aging. "Our findings support the idea that you can age successfully without the neuropathological changes associated with dementia," said John C. Morris, M.D., associate professor of neurology and assistant professor of pathology.

Alzheimer's disease is diagnosed after death by the presence in the brain of telltale flakes of a protein called beta-amyloid. Because amyloid plaques have been found in the brains of nondemented people, some experts believe they are deposited routinely with age, accumulating until a person develops the clinical disorder. The study by Morris and colleagues disputes this point of view.

In the March issue of the journal *Neurology*, the researchers reported that normal aging brains are not full of amyloid plaques and that seemingly healthy people with plaques may in fact have incipient dementia.

"We conclude that beta-amyloid is not deposited in normal aging but instead may be the initial pathological sign of Alzheimer's disease," Morris said.

Yearly assessments

The work was performed during a larger study funded by the National Institute on Aging. For the past 16 years, Washington University's Alzheimer's Disease Research Center has conducted annual clinical and cognitive assessments of healthy persons and persons with dementia to compare aging in the two populations. To date, more than 1,200 people have participated in the program, and the group has established an international reputation for detecting very early Alzheimer symptoms.

The current study involved 21 subjects in the "healthy aging" group who were in their 80s when they died. Every year, these apparently normal participants received a battery of tests to determine the presence or absence of dementia. The tests measured abilities such as memorization and word fluency. There also were clinical assessments by neurologists and relatives'

reports on the subjects' performance of everyday tasks, such as driving and social interactions. The results of all the tests were combined into a single score on the Clinical Dementia Rating Scale, which was developed at Washington University.

Plaques and tangles

When each participant died, pathologists examined sections from many different areas of the brain. They looked for beta-amyloid plaques and for another abnormality, tangled filaments inside neurons. With the aid of a computer-driven microscope, they determined the numbers and densities of the plaques and tangles in sample areas.

The autopsy results divided the participants into two groups. The brains of nine subjects had abundant plaques and tangles throughout the neocortex, which performs most cognitive functions. They also had these changes in the hippocampus, a structure involved in memory. The other 12 brains did not meet the histological criteria for Alzheimer's disease. Neurofibrillary tangles were present in the hippocampus but not in the remainder of the neocortex. Plaques, if present, were sparse.

Signs of dementia

Without knowing these histological results, Morris and colleagues reviewed the test scores of the participants. Judged on these criteria, the subjects also fell into two groups. One group consisted of 12 subjects who had always earned a zero on the Clinical Dementia Rating Scale at their yearly assessments. These turned out to be the same 12 who did not qualify for a diagnosis of Alzheimer's disease at autopsy.

"So we found a group of nondemented individuals whose brains were normal," Morris said.

The other group included seven subjects who had received at least one score of 0.5 on the Clinical Dementia Rating Scale, usually in the last year of life. This rating indicates a questionable diagnosis of dementia, usually due to reports from relatives. In the researchers' other studies, it has proved to reliably predict progression to full-blown dementia.

"We think the seven subjects with sufficient lesions for a diagnosis of Alzheimer's disease were not normal in terms of their intellectual abilities," Morris said. "They had cognitive changes that, in

retrospect, we would interpret as incipient dementia."

The remaining two subjects had died of acute head injuries after pedestrian-motor vehicle accidents. They did not have signs of dementia, but head trauma has been suggested to lead to plaques and tangles.

The clear distinction between the two groups at autopsy casts doubt on the idea

that plaques accumulate in normal brains, according to Morris. "In previous studies, the apparently normal people with plaques may have had incipient dementia," he said. "We believe that Alzheimer's disease is a process distinct from aging and that excessive damage to the brain from amyloid plaques does not occur in normal aging."

— Linda Sage



The Anatomy Awards

In the 1996 first-year class show, students David Dorr, left, and Matt Moore present one of a number of "anatomy awards." During the parody of Oscar night, some of the awards given were for Wackiest Metabolic Disorder, Best Male Pattern Baldness in the Field of Medical Education and Best Exam Question and Answer.

Kipnis elected to council of National Academy of Sciences

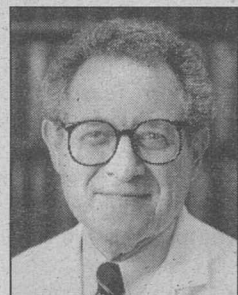
David M. Kipnis, M.D., Distinguished University Professor of Medicine and professor of molecular biology and pharmacology, has been elected to a three-year term on the council of the National Academy of Sciences.

Established in 1863, the National Academy of Sciences is a private organization of scientists and engineers dedicated to furthering science and its use to benefit the public. The council serves as its board of directors. Kipnis was elected to the National Academy of Sciences in 1984.

Kipnis is internationally renowned as a pioneer in diabetes research, focusing on the mechanisms of sugar and amino acid transport and regulation of insulin release by islet cells in the pancreas. His work has

been cited for many honors, including the Endocrine Society's Ernest Oppenheimer Award and the American Diabetes Association's Lilly Award.

Kipnis was head of the Department of Internal Medicine from 1973 to 1992. During that time, the department became recognized nationally and internationally as one of the foremost academic centers for research and clinical training. He also played a major role in establishing the Washington University/



David M. Kipnis

and internationally as one of the foremost academic centers for research and clinical training. He also played a major role in establishing the Washington University/

Monsanto Biomedical Research agreement — the largest research collaboration between an American company and an American university. He still directs the agreement.

Kipnis now devotes most of his time to research as well as work with foundations and corporations.

Kipnis came to Washington University in 1955 as an American College of Physicians Research Fellow to study under Nobel laureate Carl F. Cori, M.D.

Seminar highlights animals in space

The use of laboratory animals in space exploration will be the subject of a seminar at 5:30 p.m. Wednesday, May 1, in Moore Auditorium, on the first floor of the North Building, 4580 Scott Ave.

Gary Borkowski, Ph.D., D.V.M., director of laboratory animal medicine at the State University of New York Health Sciences Center, will give a lecture titled "Rats in Space: Life Sciences Research." Borkowski has been involved in National Aeronautics and Space Administration projects to conduct research on animals in space.

The seminar is sponsored by the Metro St. Louis branch of the American Association of Laboratory Animal Science. For more information, call 362-4516.

How nerve connects to muscle focus of studies

Joshua R. Sanes, Ph.D., professor of anatomy and neurobiology, has received a five-year \$4.1 million program project grant from the National Institute of Neurological Disorders and Stroke at the National Institutes of Health.

The funds will allow Sanes and collaborators to determine how nerve cells form and disband their connections with other nerve cells or muscle. The research should provide insights into disorders of nervous system development and may suggest ways to encourage injured nerves to regrow.

"These connections are key structures in the nervous system," Sanes said. "As well as linking nerve to muscle, they route information through the brain and play important roles in learning."

The four collaborators are: Sanes; Jeffery W. Lichtman, M.D., Ph.D., professor of anatomy and neurobiology; William D. Snider, M.D., Ph.D., associate professor of neurology and of anatomy and neurobiology; and Medha Gautam, Ph.D., research assistant professor in molecular biology and pharmacology.

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Washington
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Washington People

Cole goes beyond patient care — she nurtures

Patricia Cole, M.D., grew up wanting to be a hairdresser. "To me, it was the most glamorous job in the world," she said. "My mother used to go every Friday and would come home looking beautiful, feeling relaxed and in a good mood. I thought, 'This must be a great job.'" Instead, Cole is an associate professor of medicine at the School of Medicine and director of the Cardiac Catheterization Laboratory at Barnes-Jewish Hospital, North Campus.

Physicians in the cardiac cath lab treat patients who have various heart problems with interventions using minimally invasive therapies. "I love it. I do complex interventions — stents and rotobladders and atherectomy and balloon angioplasty," she said.

Cole has directed the cardiac cath lab for more than three years, and her enjoyment for the job is evident. "It is just a pleasure," she said. "I'm very tactile and very visual, and I love being able to find a problem and fix it. It's rewarding, and you often get beautiful results. The patients, for the most part, are extremely grateful. You actually help them, and they feel better when you're done."

Making people feel good is a career priority for Cole. However, medicine was not her first career choice after hairdressing. She originally studied psychology and was on her way to a graduate degree when she became disenchanted with the program and decided to go to medical school.

The decision was not an easy one. She remembers sitting down at the breakfast table one morning with her husband, Washington University neonatologist F. Sessions Cole, M.D. Sessions was an intern in pediatrics at the time. "He was post-call, and when I told him I wanted to go to medical school, he didn't even blink," she said. Although it meant an additional two years of science prerequisites for Pat, Sessions completely supported her decision.

After working as a seamstress for a year to save money and then taking science courses at Wellesley College in Massachusetts, she began medical school at Harvard University, receiving her medical degree in 1981. Cole got hooked on interventional cardiology during her third year at Harvard. She tried to register for popular cardiology courses but was told they were all filled. By consulting the school bulletin, she found a course called "Cardiac Cath Lab" and signed up for it instead.

Anxious to 'scrub in' on every case

Cole said it was one of the best things to happen to her. She was one of the first students in history to take the course. "The attending physicians couldn't believe there was a student there," she said. "I got lots of undivided attention." In addition, Cole was enthusiastic, wanting to participate and "scrub in" on every case.

"I thought it was the greatest thing in the world because you got to work a patient up, find the problem, find the answer and solve the problem. It was all in one little nutshell," she said.

After her medicine residency at Brigham and Women's Hospital at Harvard, she began a cardiology fellowship there. She completed two years in Boston and then moved to St. Louis with her husband. Cole finished her angioplasty training as an instructor at the School of Medicine.

Cole is on the clinical track and has been involved in many multicenter trials investigating drugs or protocols. Her primary area of interest is women and heart disease. She was co-chair of the American Heart Association's "Women and Heart Disease" committee. In addition, she has published and speaks about the topic often.

Cole is especially interested in high-risk pregnancies — cardiac patients who become pregnant. "I find the physiology extremely interesting," she said. "If you understand what happens to a normal heart during pregnancy, you can predict how an abnormal heart will respond."

She has treated several patients who have been taking blood thinners because they have metal valves in

their hearts. The blood thinners can cause malformations in developing babies. "When these women wanted to get pregnant, they were told by their physicians, 'No, you can't.' Now we work with them, put them on a heparin (a different blood thinner) pump through their pregnancies, and they have normal, wonderful babies," she said.

She also has treated a series of women with a condition called peripartum cardiomyopathy, a weakness of the heart muscle that develops during pregnancy. Women with this condition often are told never to get pregnant again. But with careful monitoring, they've been able to get pregnant and have had

the program. He said he would be happy to oblige, but out of 167 applicants, only three were women.

Elizabeth Nabel, M.D., professor of internal medicine and physiology and director of the Cardiovascular Research Center at the University of Michigan, Ann Arbor, was the other female fellow in the program. "I think there are very few women in cardiology because the demands are great," she said. "It is to Pat's credit that she has been able to continue to do it and do so well. To be able to direct a lab really speaks to her skills as a physician and (to her) personal aptitude."

Nabel said she remembers Cole not only as an excellent, knowledgeable physician but also as some-

one who delivered care in a very wise manner. "She not only cared for her patients, she got to know them and nurtured them," Nabel said.

Cole believes in making the patient a partner in the decision-making process. "I think patients need to know what I'm recommending, why I'm recommending it and the background information," she said. She recently saw a patient for an atrial septal aneurysm. Cole told the patient, "I think there might be some new information on this, and before I recommend anything, you need to let me go to the library and read up on it. Then you and I will talk about what I find and make a decision." The patient was delighted to be involved in the decision-making process. Cole believes the outcomes are better when patients are invested in their own care.

Her philosophy impresses students as well as patients. In 1989, she was voted "Teacher of the Year" at The Jewish Hospital of St. Louis. "I try to convey information in a meaningful way," she said. "That sort of teaching role is one that students respond well to, so I get a lot of gratification out of my ability to do that." She also believes in mentoring and serves as a mentor for an undergraduate science student and two medical students.

From 1990-93, Cole was associate dean for student affairs at the School of Medicine — a role she relished. Before accepting the job, she called her friend and mentor Carola Eisenberg, M.D., former dean of student affairs at Harvard Medical School. "I told her she would be superb in the position," recalled Eisenberg. "She has a way of relating to people that is warm and open. I knew she would give students good advice."

Cole's predecessor held the job for 25 years, and Cole came in with new ideas for change. She started the Program for Women in Medicine, designed for female students and faculty to grow, learn and network. In part because of the support of William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine, the program had an important impact, Cole said. "By promoting the program and getting women interested at the student level, we were able to increase the number of female admissions to nearly 50 percent of the entering class," she said.

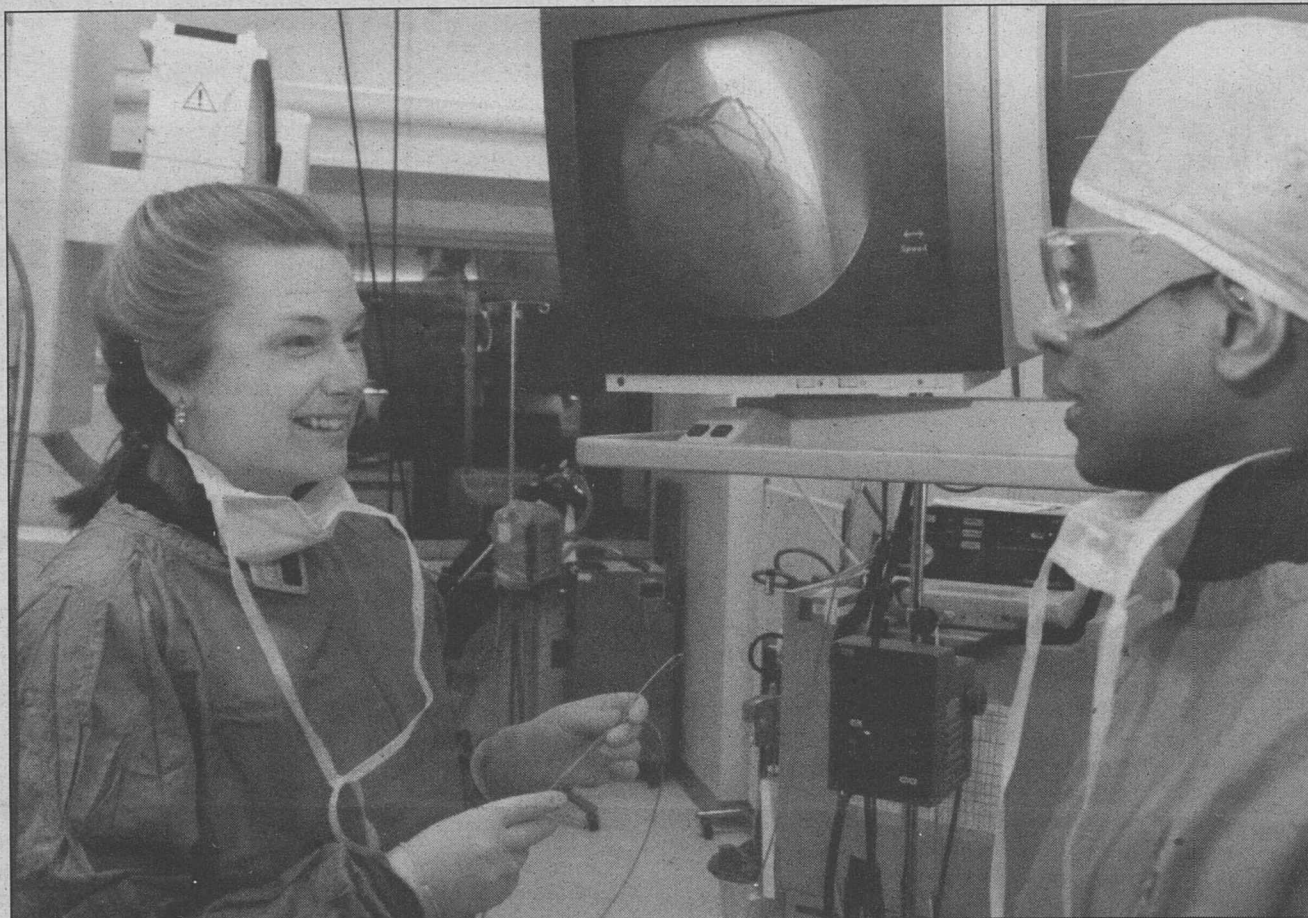
'She is truly amazing'

Peck said Cole seems to excel in everything she undertakes. "She is truly amazing," he said. "She is diligent, responsible, caring, sensitive and thoughtful as a person and skilled as a professional."

Cole relinquished the student affairs position to assume her cath lab responsibilities, but she said at some point she would like to return. There are other things she would like to return to, including sewing. "I used to sew everything we wore, from Sessions' suits to my bathing suits," she said. She also loves to cook and is famous for an annual party for which she makes more than 20 different chocolate desserts.

But most of her time away from the cath lab is devoted to her two daughters, Elisabeth, 12, and Emily, 10. Keeping their hectic schedules coordinated with her own and her husband's is a challenge. Cole thinks it's a matter of priorities. "I make a point of doing the things I enjoy," she said. "My personal opinion is that you're never going to excel at something unless you love to do it. I have fun every single day. I love what I do."

— Mary Carollo



Patricia Cole, M.D., explains the Judkins coronary catheter to cardiology fellow Errol Williams, M.D.

"My personal opinion is that you're never going to excel at something unless you love to do it. I have fun every single day. I love what I do."

successful pregnancies. Cole said there are very few cardiac conditions that are contraindications to pregnancy. "I've had women who had heart attacks at age 27 that have subsequently had healthy babies," she said.

Working with these patients is especially satisfying because of their gratitude, she said. "They send me pictures of these unbelievably cute babies who wouldn't be here otherwise. It's very rewarding," she added.

She sees a large population of female patients. "Being a female cardiologist almost gives you an instant practice," she said. "I think women like to go to other women (for care), and there aren't a lot of us out there practicing."

Sees a need for more women cardiologists

Female cardiologists, especially interventionalists, are few and far between. The Society of Cardiac Angiography and Intervention has less than 30 female members out of 1,100. Cole is one of the few women in the United States to run a cardiac catheterization program. She also serves on the executive council for the Cardiac Catheterization Committee of the American Heart Association.

When Cole was interviewing for a cardiology fellowship at Massachusetts General Hospital, group interviews were held in which dozens of candidates a day would be brought in and rotated through. The morning of her interview, she walked to the reception desk and was greeted by name. She asked how the receptionist knew who she was and was told she was the only woman being interviewed that day.

As one of two female fellows in cardiology at Brigham and Women's Hospital at Harvard, she went to her chief to make a plea to accept more women into

Calendar

April 25–May 4



Exhibitions

"Currents 66." Paintings and collages by Michael Byron, visiting artist in the School of Art. Through May 19. Gallery 337, Saint Louis Art Museum. 721-0072.

"M.F.A. Thesis Exhibition." Through May 5. Gallery of Art, Steinberg Hall. Works available for purchase. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. 935-4761.

"The Stanley Elkin Show." Through May 31. Special Collections, Olin Library, Level Five. Hours: 8:30 a.m.-5 p.m. weekdays. 935-5495.



Films

Thursday, April 25

7:30 p.m. French Film Series. "La Double Vie de Veronique" (1991), with English subtitles. Room 162 McDonnell Hall. 726-1565.



Lectures

Thursday, April 25

9:30 a.m. Pulmonary and critical-care medicine lecture. The 20th annual I. Jerome Flance Visiting Professor of Medicine. "Cystic Fibrosis: Airway Epithelial Biology and Therapy," Richard Charles Boucher, prof. of medicine, U. of North Carolina, Chapel Hill. Clopton Aud., 4950 Children's Place. 362-8983.

1:10 p.m. Social work lecture. "Health-care Reform: Impact on Local Access and Delivery," William A. Peck, executive vice chancellor for medical affairs and dean, School of Medicine. Brown Hall Lounge. 935-6600.

4 p.m. Biology and biomedical sciences seminar. "Receptor-mediated Endocytosis Requires a Coat With a Collar," Sandra L. Schmid, assoc. member, depts. of Cell Biology and Molecular Biology, Scripps Research Institute, La Jolla, Calif. Cori Aud., 4565 McKinley Ave. 362-3364.

4 p.m. Chemistry seminar. "Twisting Helices: On the Balance Between α - and 3-Helix in Model Peptides," Glenn L. Millhauser, assoc. prof. of chemistry, U. of California, Santa Cruz. Room 311 McMillen Lab. 935-6530.

4 p.m. Earth and planetary sciences colloquium. "Isotope Hydrology of the Interaction Between Groundwater and Magmatic CO₂ in the Cascadia Volcanoes of California," M. Lee Davisson, isotope hydrologist, Lawrence Livermore National Laboratory, Livermore, Calif. Room 362 McDonnell Hall. 935-5610.

4 p.m. Foreign languages and literatures lecture. "The New Subjectivity," Isabelle de Courtivron, chair, Dept. of Foreign Languages and Literatures, Massachusetts Institute of Technology. Hurst Lounge, Room 201 Duncker Hall. 935-5175.

4 p.m. Molecular biology and pharmacology seminar. The 19th Oliver Lowry Lecture. "Exploring Biological Catalysis," Steven J. Benkovic, the Evan Pugh Professor and holder of the Eberly Chair in Chemistry, Pennsylvania State U., Univer-

sity Park. Moore Aud., 660 S. Euclid Ave. 362-7051.

4 p.m. Political science honors lecture/convocation. Fifth annual Eliot Memorial Lecture and Honors Convocation. Speaker is Alan Abramowitz, prof. of American politics, Emory U., Atlanta. Eliot Lounge, Room 200 Eliot Hall. 935-5810.

4:15 p.m. Philosophy-neuroscience-psychology lecture. "Toward a Functional Anatomy of Mind: Maps and Metamaps of Brain Imagery Data," Dan Lloyd, assoc. prof. of philosophy, Trinity College, Hartford, Conn. Room 110 January Hall. 935-6670.

4:30 p.m. Math colloquium. Topic to be announced. Vakhtank Kokilashvili, prof. of mathematics, Rutgers U. Room 199 Cupples I Hall. 935-6726.

Friday, April 26

7:30 a.m. International affairs lecture. "Contemporary Issues: Continuity and Change," Peter Heath, assoc. prof. of Arabic language and literature and chair, Dept. of Asian and Near Eastern Languages and Literatures, will present a lecture on the Middle East. Alumni House living room. 935-6777.

9:15 a.m. Pediatric Grand Rounds. "Pediatric Heart Transplantation in 1996 — A Multi-institutional Perspective," Charles E. Canter, assoc. prof. of pediatrics. Clopton Aud., 4950 Children's Place. 454-6128.

10 a.m. Molecular genetics lecture. "Positional Cloning of the Multiple Endocrine Neoplasia Type 1 (MEN1) Candidate Region," Carissa Smith, graduate student in molecular genetics. Room 823 McDonnell Medical Sciences Bldg. 362-3365.

Noon. Cell biology and physiology seminar. "A Signaling Molecule Modulating Cell Fate Selection," Raphael Kopan, asst. prof. of medicine and of molecular biology and pharmacology. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

12:15 p.m. Medicine lecture. The 43rd annual Alpha Omega Alpha Lecture. "The Future of Academic Health Under Health-care Reform," James P. Crane, prof. of obstetrics and gynecology and of radiology; assoc. prof. of genetics; assoc. vice chancellor; and assoc. dean for clinical affairs. Clopton Aud., 4950 Children's Place.

1 p.m. Immunology lecture. "The Regulation of Src-family Kinases by CD45 and CD45AP in T Lymphocytes," Ellen Cahir McFarland, graduate student in immunology. Room 7738 Clinical Sciences Research Bldg. 362-3365.

2 p.m. Molecular microbiology and microbial pathogenesis lecture. "Transgenic and Gnotobiotic Mouse Models of Most Microbial Interactions in the Gastrointestinal Tract," Lynn Bry, graduate student in molecular microbiology and microbial pathogenesis. Room 3907 South Bldg. 362-3365.

3 p.m. East Asian studies lecture. Third annual Stanley Spector Lecture on East Asian History and Civilization. "Sou-shen Chi — Pursuing the Supernatural," James Crump, U. of Michigan, Ann Arbor. Room 162 McDonnell Hall. 935-4448.

4 p.m. Anatomy and neurobiology seminar. Topic to be announced. Michael Nonet, asst. prof. of anatomy and neurobiology. Room 928 McDonnell Medical Sciences Bldg. 362-7043.

4 p.m. Hematology lecture. "Phosphatidylinositol Transfer Proteins: A New Class of Intracellular Regulatory Molecules," Vytas A. Bankaitis, U. of Alabama, Birmingham. Room 8841 Clinical Sciences Research Bldg. 362-8800.

Monday, April 29

4 p.m. Biology seminar. "The New Challenge in Biology: The Analysis of Biological Complexity," Leroy Hood, chair, Dept. of Molecular Biotechnology, U. of Washington, Seattle. Room 162 McDonnell Hall. 935-6860.

4 p.m. Chemistry seminar. "Novel Peptidomimetics as Probes of Enzyme Mechanisms," Juris Germanas, asst. prof. of chemistry, U. of Houston. Room 311 McMillen Lab. 935-6530.

4 p.m. Immunology seminar. "Phagocytic Processing of Bacterial Antigens for MHC Restricted Presentation," John Pfeifer, asst. prof. of medicine, of molecular microbiol-

ogy and of pathology. Eric P. Newman Education Center Aud. 362-8740.

Tuesday, April 30

12:10 p.m. Physical therapy seminar. "The Influence of Muscle Lengths on Gravity Correction Peak Torque and Angle of Peak Torque for the Kin-com Dynamometer," Jan Ryberg, doctoral candidate in movement science. Classroom C Forest Park Bldg., 4444 Forest Park Blvd. 286-1406.

4 p.m. Molecular microbiology/microbial pathogenesis seminar. "Kaposi's Sarcoma-associated Herpes Virus (KSHV) and the Biology of Kaposi's Sarcoma," Don Ganem, prof. of microbiology and immunology and Howard Hughes Medical Institute investigator, U. of California, San Francisco. Room 775 McDonnell Medical Sciences Bldg. 362-2746.

7 p.m. Midlife Women's Fan Club seminar/discussion. "Memory and Aging," Emily LaBarge, research asst. prof. of neurology and neurological surgery. Private dining room, Barnes West County Hospital, 12634 Olive Blvd. 362-6667.

Wednesday, May 1

6:30 a.m. Anesthesiology Grand Rounds. Topic to be announced. John Olney, prof. of pathology and of psychiatry. Wohl Hospital Bldg. Aud., 4960 Children's Place. 362-6978.

8 a.m. Obstetrics and Gynecology Grand Rounds. "Cardiology for the Primary Care Ob/Gyn," Edward M. Geltman, prof. of medicine, asst. prof. of radiology and director, Heart Failure/Transplant Division. Clopton Aud., 4950 Children's Place. 454-7886.

2 p.m. Math talk. Topic to be announced. Dorota Jarosz, graduate student in mathematics. Room 199 Cupples I Hall. 935-6726.

4 p.m. Biochemistry and molecular biophysics seminar. "Probing Macromolecules of Transcription Initiation Complexes Using Protein Footprinting and Fluorescence Spectroscopy," Thomasz Heyduk, asst. prof. of biochemistry and molecular biology, Saint Louis U. School of Medicine. Cori Aud., 4565 McKinley Ave. 362-0261.

5:30 p.m. Life sciences lecture. "Rats in Space: Life Sciences Research," Gary Borkowski, director, laboratory animal medicine, SUNY Health Sciences Center, Syracuse, N.Y. Moore Aud., 660 S. Euclid Ave. (See story, page 2.) 362-4516.

7:30 p.m. Science lecture series for high school students. The George Engelmann Mathematics and Science Institute Pfizer Lecture Series. "The Frontiers of Imaging Science and the Brain," Michael I. Miller, the Newton R. and Sarah Louisa Glasgow Wilson Professor of Biomedical Engineering. Room 162 McDonnell Hall. 516-6226.

Thursday, May 2

11:15 a.m. Social work lecture. "Power Analysis: Steps in Calculating Power for a Research Proposal," Edward L. Spitznagle, prof. of mathematics. Room 353 West Campus Administrative Center. 935-5741.

4 p.m. Anatomy and neurobiology lecture. The 41st annual Robert J. Terry Lecture. Topic to be announced. Richard Axel, Dept. of Biochemistry and Molecular Biophysics, College of Physicians and Surgeons, New York. Moore Aud., 660 S. Euclid Ave. 362-7043.

4 p.m. Chemistry seminar. "Fundamentals and Applications of Au Colloid Self Assembly," Michael J. Natan, asst. prof. of chemistry, Pennsylvania State U., University Park. Room 311 McMillen Lab. 935-6530.

4:15 p.m. Philosophy lecture. "Free Will," Dennis Stampe, prof. of philosophy, U. of Wisconsin, Madison. Hurst Lounge, Room 201 Duncker Hall. 935-7148.

Friday, May 3

Noon. Cell biology and physiology seminar. "Possible Involvement of Phospholipase D in Intracellular Transport," Nicholas Ktistakis, instructor in biochemistry, Southwestern Medical Center, Dallas. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

6 and 8:30 p.m. WU Association Travel Lecture Series. "Scotland," Fran Reidelberger, former newspaper editor and

travel film producer. Graham Chapel. Cost: \$4.50. 935-5212.

Saturday, May 4

9 a.m. Surgery lecture. "Physician Workforce in an Evolving Health-care System," George F. Sheldon, the Carl A. Moyer Visiting Professor of Surgery, and prof. and chair, Dept. of Surgery, U. of North Carolina, Chapel Hill. Steinberg Hall Aud.



Music

Thursday, April 25

8 p.m. "C.P.E. Bach Choral and Organ Works." Features organists Max Yount, Scott Schoonover and William Partridge and the WU Chamber Choir, directed by John Stewart, assoc. prof. of music. Bethel Evangelical Lutheran Church, Big Bend and Forsyth blvds. 935-5581.

Friday, April 26

8 p.m. Student recital. Graham Chapel. 935-5581.

8 p.m. "C.P.E. Bach Music for Harpsichord." Performed by Maryse Carlin, applied music instructor, and Seth Carlin, prof. of music. Memorial Presbyterian Church, Skinker and Wydown blvds. 935-5581.

Sunday, April 28

2:30 p.m. Wind Ensemble concert. "A Concert of Festive English Wind Music." Saint Louis Art Museum Aud. 935-5581.

Tuesday, April 30

8 p.m. WU Chorus. "About Women-By Women-For Women." Graham Chapel. 935-5581.



Performances

Thursday, April 25

8 p.m. Student playwriting readings. The winners of the A.E. Hotchner Playwriting Competition will present staged readings of their works. (Continues April 27 at 2 and 8 p.m. and April 28 at 2 p.m.) Drama Studio, Room 208 Mallinckrodt Center. Cost: \$8 for the general public; \$6 for senior citizens, students, and WU faculty and staff. 935-5858.

Saturday, April 27

8 p.m. Edison Theatre's "OVATIONS!" series presents Camerata of the 18th Century. Edison Theatre. Cost: \$20 for the general public; \$16 for senior citizens and WU faculty and staff; and \$11 for WU students. 935-6543.



Miscellany

Thursday, April 25

National baroque music conference. "The Keyboard Music of C.P.E. Bach." Through April 27. For more info., call 935-5581.

Friday, April 26

7:30 a.m.-5 p.m. Continuing Medical Education conference. "Management of

Chronic Pain.” Eric P. Newman Education Center. To register, call 362-6891.

Saturday, April 27

10 a.m.-4 p.m. **Tyson Research Center Family Day.** Tyson Research Center. Cost: \$2 per car; free for WU faculty, staff and students with valid ID. 935-8430.

Monday, April 29

11 a.m. **Memorial tribute.** A memorial music program will be presented in memory of Robert Wallenborn, prof. emeritus of piano, who died last fall. Stix International House. (See story, page 6.) 935-5581.

Noon. **Brown-bag lunch with the chancellor.** Women’s Bldg. Lounge.

4 p.m. **Retirement reception.** On the occasion of the retirement of Burton M. Wheeler, prof. of English and of religious studies. Hurst Lounge, Room 201 Duncker Hall. 935-5190.

7-10 p.m. **Continuing Medical Education conference.** “Internal Medicine Review.” The topic is cardiology. Steinberg Amphi-

theater, The Jewish Hospital of St. Louis. To register, call 362-6891.

7:30 p.m. **Poetry readings.** In observance of the first National Poetry Month, poetry readings will be presented by the staffs of locally produced literary magazines. Left Bank Books, 399 N. Euclid Ave. (See story, this page.) 935-5576.

Thursday, May 2

7 p.m. **Sexual-assault presentation.** “Memory and Abuse: Surviving the Disputed Memory Controversy,” Charles L. Whitfield, physician, author and psychotherapist. Steinberg Hall Aud. 727-4152.

Friday, May 3

11 a.m. **Woman’s Club spring luncheon and annual meeting.** Cost: \$12. For location and reservations by April 24, call 862-6615 or 725-0372.

Continuing Medical Education conference registration deadline. “Alzheimer’s Disease and Driving.” Conference to be held at the Eric P. Newman Education Center on May 17-18. To register, call 362-6893.

University calendar accessible via cyberspace

Washington University now has a Universitywide calendar of events accessible through the World Wide Web.

The calendar contains all events coordinated through the Scheduling Office, said Stuart D. Yoak, Ph.D., University registrar. The on-line calendar also contains some information on events scheduled outside the office.

By the end of this semester, Yoak said, the calendar also will contain activities scheduled through the Department of Athletics and the Office of Residential Life. Staff members from those areas already have been trained to use the calendar’s computer software system, which is called Schedule 25E. Universal Algorithms of Portland, Ore., created the system.

The calendar eventually will serve as the centralized source for obtaining information on events for the Hilltop and Medical campuses. “Prior to this effort, we did not have a comprehensive, complete list of all the events in one place,” Yoak said. “There were a number of people in various departments sending out their own calendars. With the on-line calendar, we’re not replacing anything. We are creating something new.

“Anybody in the world can view the on-line calendar. It’s a way for people to

find out about what goes on here — whether they’re here or not. Students studying abroad can sit down and see what’s happening on campus — as well as alumni and prospective students. The audience is as big as the Internet. The calendar is a way for the University to reach out and communicate with people.”

Yoak said installing the on-line system has been a coordinated effort among individuals throughout the Hilltop Campus. The idea for the on-line calendar grew out of the University Management Team’s former Student Experience Cluster about five years ago. To improve the quality of administrative services to students, the cluster sought input, via focus groups, on how students thought services could be enhanced. One of the major issues students reported was their difficulty in finding out, from a centralized source, about both academic and non-academic events on campus.

To gain access to the on-line calendar, type: <http://www.wustl.edu>, which will bring up the Washington University home page. Click on the menu option titled “CALENDAR.” Individuals may use the search options to find information on events by topic and/or date.

For more information, call Yoak at 935-5933.

Poetry Month event honors literary magazines

In observance of the first National Poetry Month, the International Writers Center in Arts and Sciences and Left Bank Books will celebrate St. Louis-area literary magazines with an evening of poetry readings at 7:30 p.m. Tuesday, April 30, at Left Bank Books, 399 N. Euclid Ave., in the Central West End.

The featured magazines are Delmar, Drumvoices Revue, Eyeball, River Styx, The Rumor, Sagarin Review, Salamander and Sou’wester. The magazine staffs and contributors will read at the event, which is free and open to the public. A reception will accompany the program.

The locally produced magazines will

be displayed at Left Bank Books throughout April. The Academy of American Poets named this April the first National Poetry Month to celebrate poetry’s place in American culture.

The Academy of American Poets was founded in 1934 to support American poets and promote contemporary poetry, and it is the largest national organization dedicated solely to the art of poetry. The academy sponsors many programs and prizes, including the Walt Whitman Award and the Tanning Prize, the largest annual literary award in the United States.

For more information, call 935-5576.

Program aims to reduce pollution — from page 1

Specifically, the facilities department retrofitted T12 fluorescent lamps with T8 lamps and electronic ballasts and converted standard motors to energy-efficient motors. Sachs Electric Co. completed these conversions.

“There should be no noticeable difference in lighting levels,” McMullin said. “The new lighting should function just as well as the old but should save 10 to 15 percent in energy, depending on the building.

“We buy our electricity from Union Electric, which they generate using coal. By our using less electricity, they’re using less coal and thereby causing less pollution.”

McMullin explained that the EPA will transpose the lower energy usage back to the electric-generating source, then calculate how many fewer tons of pollutants are infiltrating the air. Formal tabulations to review the energy savings in the five buildings will be completed in about three months.

“If everything looks good,” McMullin

said, “we will probably do the rest of the buildings on campus, except for the new buildings; they’re already energy-efficient.”

McMullin said \$378,000 was spent to reduce energy usage in the first five buildings. “We’re already seeing the reduction of energy usage,” he said. “We expect to recoup our costs in three-and-a-half years.”

The pollution-prevention-at-a-profit program targets corporations as well as universities. Area participants recognized at a March 29 ceremony included Saint Louis University, the University of Missouri at Columbia, the University of Missouri-St. Louis, Southern Illinois University-Edwardsville, the St. Louis school system, Ralston Purina Co., Monsanto Co., Graybar Electric Co., Union Electric Co., Boatmen’s National Bank, BJC Health System and Children’s Hospital of St. Louis.

In addition, about 200 universities nationwide have joined the program.

— Cheryl Jarvis

Sports

Compiled by Mike Wolf, director, and David Moessner, assoc. director, sports information.

Track teams take third in UAA tourney

Five members of the Washington University track and field teams earned individual titles and both squads placed third at last weekend’s University Athletic Association (UAA) Outdoor Championships. The ninth annual event was held at Case Western Reserve University (Cleveland). All three WU women champions were freshmen: Claudine Rigaud (100- and 200-meter dashes), Monica Lewis (400) and Emily Richard (5,000). Titlists on the men’s side were junior Jason Hudnall (pole vault) and senior Asa Flanigan (10,000). Thirteen Bears — seven women and six men — earned all-UAA status by finishing in the top three of an event. Rigaud, Lewis and Flanigan each achieved all-UAA honors in a trio of events.

This week: 11 a.m. Saturday, April 27, at the Principia College Invitational (Elsah, Ill.)

String of losses dims baseball playoff hopes

A 4-3 loss to NCAA Division I Saint Louis University, coupled with a pair of twinbill defeats to Missouri Baptist College (St. Louis) and the Rose-Hulman Institute of Technology (Terre Haute, Ind.), have put a dent in WU’s bid for an NCAA postseason baseball playoff berth. The five losses, which represent the Bears’ longest winless skid this year, also have slowed WU’s run for a school-record victory total. The Bears must win their last six games to secure 26 victories, which would surpass the school record of 25 set in 1985. Despite the five losses, junior second baseman Brian Tatro continued his stellar season with a .471 week (8 of 17) at the plate. He hit safely in all five games as he increased his team-leading batting average to .430. Sophomore pitcher Thor Larsen lost a pair of one-run decisions — the 4-3 defeat to SLU and a 3-2 setback to Rose-Hulman. Larsen is 6-3 overall with 75 strikeouts and an ERA of 1.73.

Current record: 20-11

This week: 1 p.m. Wednesday, April 24, vs. Lincoln University (Jefferson City, Mo.) (2), Kelly Field; 5 p.m. Friday, April

26, at Maryville University (2); 1 p.m. Saturday, April 27, vs. McKendree College (Lebanon, Ill.) (2), Kelly Field

Women’s tennis nets second-place UAA finish

Hamstrung in its quest for a first-ever UAA crown, the women’s tennis team placed second in last weekend’s league championships held at the University of Rochester (N.Y.). The runner-up finish was the Bears’ seventh in the nine-year history of the UAA. After defeating the University of Chicago by a 5-1 score in the first round and fighting back to topple Brandeis University (Waltham, Mass.) 5-4 in the semifinals, the Bears were whitewashed 9-0 by powerful Emory University (Atlanta) in the finals. Junior Maria Loinaz, WU’s top player, was unable to compete in the finals, forcing each of the other Bears to make a difficult one-notch move up the singles ladder. In the semifinal win over Brandeis, the Bears gallantly overcame a 3-0 deficit after the doubles competition to win five of the six singles matches.

Current record: 10-6

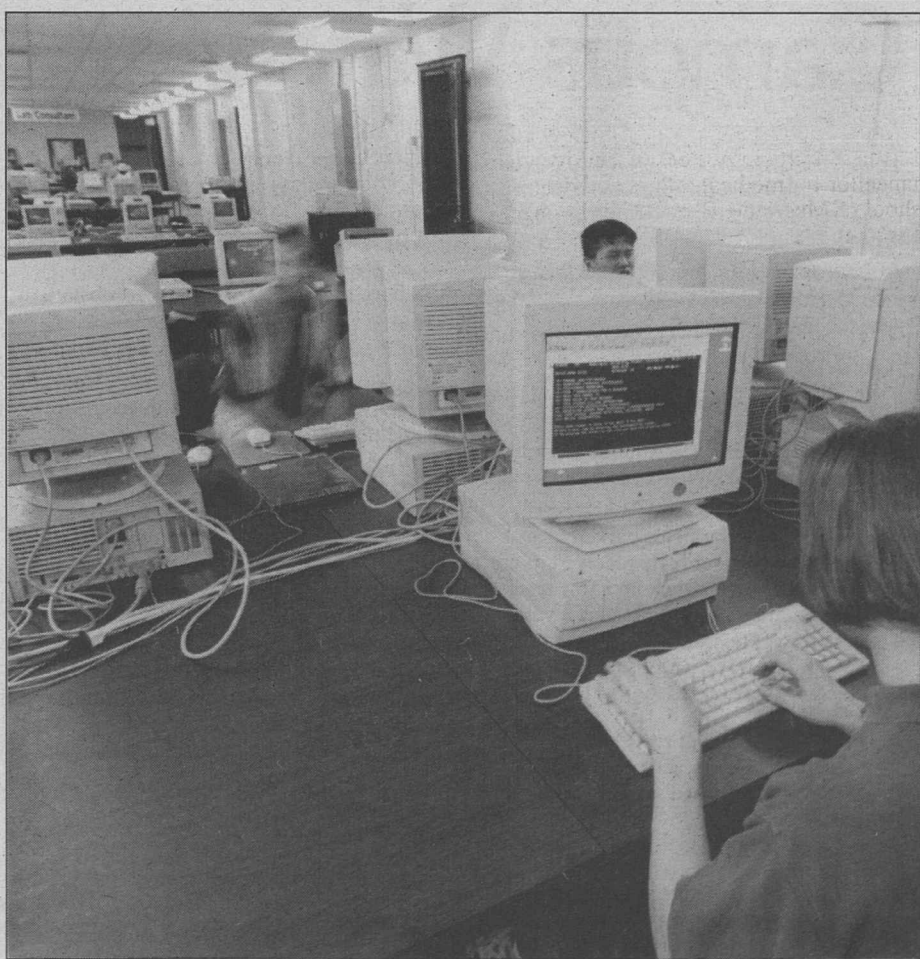
This week: Season complete, pending word of an NCAA bid

Men’s tennis places third in UAA tourney

Seeded third in the UAA Men’s Tennis Championships, WU lived up to its pre-tournament seeding by beating Case Western Reserve 4-3 in the tourney’s third-place match. The third-place showing marked the eighth-consecutive year the Bears have placed either second or third in the eight-team championship. Emory University captured the UAA title, its seventh-consecutive crown. In the Bears’ other two UAA matches, they defeated the University of Chicago 4-2 before falling to the host school, the University of Rochester, 4-0 in the semi-final round.

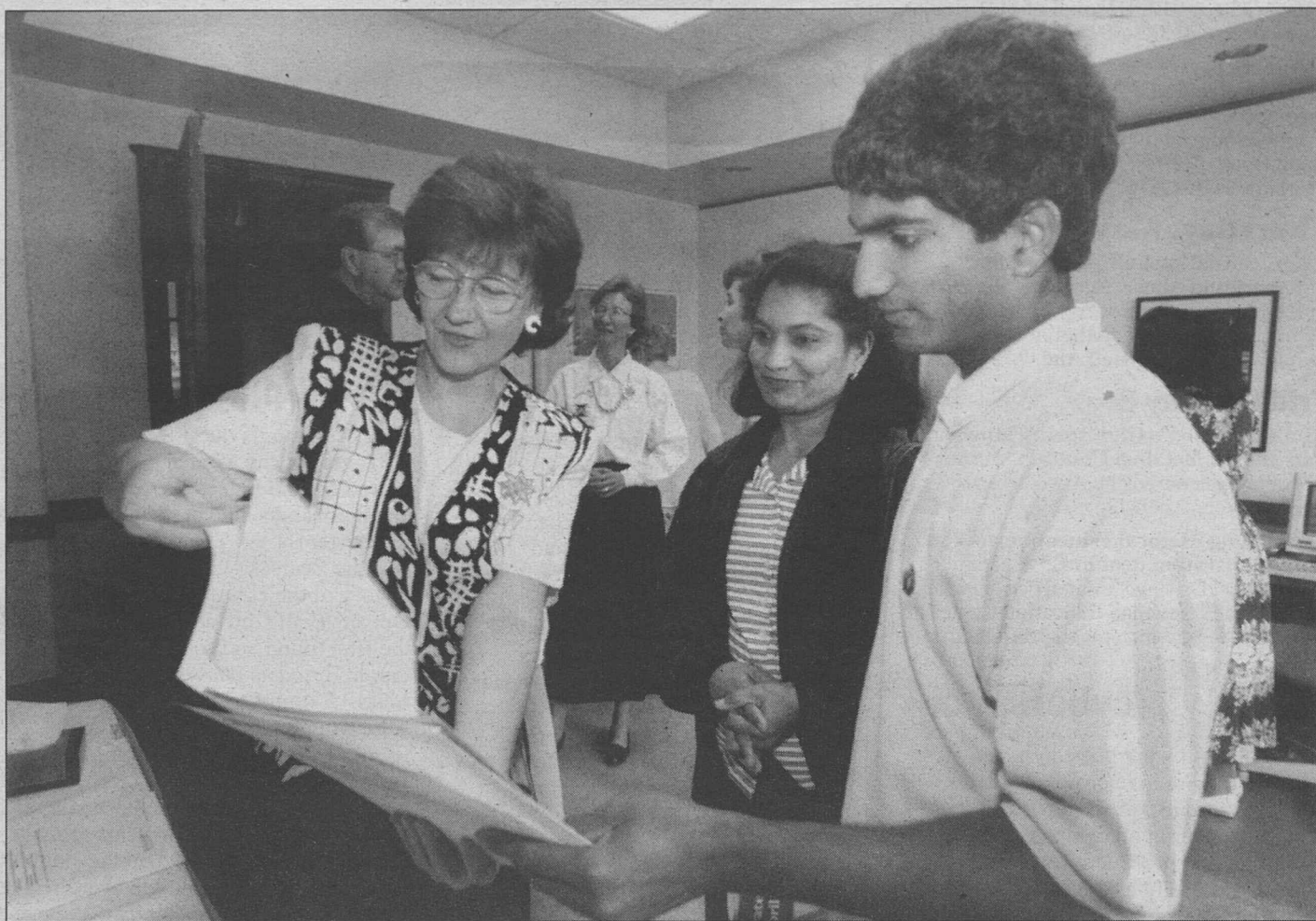
Current record: 6-5

This week: 3 p.m. Friday, April 26, vs. Calvin College (Grand Rapids, Mich.) at Greencastle, Ind.; 2 p.m. Saturday, April 27, at DePauw University (Greencastle, Ind.)



No waiting

A student uses one of the computers in the Arts and Sciences Computing Center in Cupples I Hall to register for next fall’s classes. Forty-eight of the nearly 70 computers in the center can be used by all students to register for classes. The availability of these computers should help cut the waiting time for students registering on line.



Preparing to tour the campus

Margie Wulfert, left, a guest relations staff member, gives a packet of information to 18-year-old Venkat Mangunta and his mother, Lakshmi Mangunta. Venkat Mangunta, a senior at Smith-Cotton High School in Sedalia, Mo., was visiting campus during April Welcome, the annual monthlong event in which about a thousand prospective students get a taste of life at Washington University.

Institute offers writers chance to hone techniques

Area writers who are committed to intensely exploring and advancing techniques in fiction, poetry or creative nonfiction need look no farther than their own back yard for skilled instruction by accomplished, award-winning authors.

The Washington University Summer Writers Institute, scheduled for June 17-28, brings together some of St. Louis' best writers who will instruct in various genres and critique participants' works, said Doreen Salli, director of both the institute and the University's Writing Center. Tuition for the two-week program is \$500. The Summer Writers Institute is a program of University College in Arts and Sciences.

Intensive workshops held every weekday from 9:30 a.m. to noon will be led by fiction writer Glenn Savan, a Webster

University writing instructor and author of two novels; Jane O. Wayne, author of two collections of poetry; and Rockwell Gray, adjunct professor at both Washington and Webster universities and author of three nonfiction books.

Students also will attend a variety of afternoon sessions featuring a diverse group of writers who will read from their works and talk about their craft.

The following will talk on the topic of fiction: William H. Gass, Ph.D., the David May Distinguished University Professor in the Humanities, director of the International Writers Center in Arts and Sciences and author of eight books; David Carkeet, professor of English at the University of Missouri-St. Louis and author of four novels; and Ethan Bumas, a Washington University doctoral candidate in comparative literature in Arts and

Sciences and author of a book of short stories.

Donald Finkel, professor emeritus of English in Arts and Sciences at Washington University and author of 14 books of poetry, and Allison Funk, assistant professor of English and creative writing at Southern Illinois University-Edwardsville and author of two poetry books, will discuss poetry.

Writers talking about nonfiction prose include Gerald Early, Ph.D., Washington University's Merle Kling Professor of Modern Letters, professor and director of the African and Afro-American Studies Program in Arts and Sciences and author of five books, and Catherine Rankovic, instructor in African and Afro-American studies and widely published in numerous literary magazines.

Special events include a panel of local editors, a pedagogy forum for teachers, an open-microphone reading and several social events.

"The Summer Writers Institute provides the perfect opportunity for local writers to find an audience and to become part of a community of writers," said Salli, an award-winning poet who will lead the pedagogy forum.

Students may arrange to earn one unit of undergraduate or graduate academic credit. Additional work will be assigned in this case, and grading will be done on a pass/fail basis. An additional tuition fee of \$50 is required for the credit.

All applicants to the institute must include a writing sample of 10 pages of prose or six poems and a \$15 non-refundable fee.

Application materials are available in the summer school office, Room 100 January Hall. The application deadline is May 15.

For more information, call 935-6720.

Concert pays tribute to late Robert Wallenborn

Friends and colleagues of the late Robert Wallenborn, professor emeritus of piano, are invited to gather at 11 a.m. Monday, April 29, in Stix International House for a memorial tribute to the pianist, who died last fall in Munich, Germany.

The tribute, free and open to the public, is presented by the Department of Music in Arts and Sciences, where Wallenborn taught from 1963 to 1974. Several former students and colleagues of Wallenborn will perform music, and others will share remembrances about his life and career.

Wallenborn was born in Chicago in

Students display fashion couture

Fashions inspired by the world's cultures will hit the runway at the School of Art's 67th annual student fashion show May 5 in the Saint Louis Galleria.

The gala event, known as The Fashion Show, kicks off with cocktails and hors d'oeuvres at 7:30 p.m. The fully choreographed, couture-style show begins at 8:30 p.m. All activities will take place in the Galleria's Garden Court. Tickets range from \$45 to \$150 per person.

This year's show features works by 10 seniors and 10 juniors in the art school's fashion design program. The Fashion Show offers the students a chance to show off their best works, said Jeigh Singleton, head of the fashion design program and associate professor of art.

"There is something for everyone," Singleton said of the clothes that span the gamut from couture to mass-merchandise. "There will be fashions from the truly outrageous and shocking to designs that'll make you say, 'Oh, my God! I've got to have that.' These are the best things they have designed all year."

Many of the pieces are reflective of fashions found in native cultures throughout the world. The students settled on this theme last year after attending the International Folk Festival at Queeny Park, where they were inspired by the multitude of designs and fabrics, Singleton said.

The clothes on display at the show are selected by a jury made up of University faculty, members of the St. Louis art community and leaders in the retail clothing industry. The show includes as many as five models for each junior in the fashion design program and as many as 12 for each senior.

The clothes are worn by a combination of professional models, students and fashionable members of the community, Singleton said. The Fashion Show is organized by a committee of community volunteers chaired by Susan Block, a 1976 graduate of the fashion design program. The student designers will be recognized with a variety of scholarships, cash prizes and awards.

The fashion show had its beginnings in the late 1920s when it was attended by design students, faculty and a few interested guests. It has grown in size and prominence over the years and has been held at various locations both on and off campus. In the 1950s and '60s, employers in the bustling St. Louis garment industry attended the show to recruit young talent, Singleton explained. "A lot of careers have been launched at the show," he said.

Last year, more than 700 people attended the fashion show, which was held for the first time at the Galleria. Singleton believes the venue is a perfect place for a fashion show. "Displaying fashions in a major retail clothing center gives the students a sense of promise for the future," he said. "It's a very big deal."

As well it is for Singleton, whose own designs have sold in such mass-merchandising chains as Sears, J.C. Penney and Wal-Mart and in exclusive boutiques throughout the country. He gets great pleasure watching his students succeed. "This is better than creating a garment," Singleton said of watching his students present their works. "We are creating creators."

For more information or to purchase tickets, call 935-6515.

Campus Watch

The following incidents were reported to the University Police Department from April 15-21. Readers with information that could assist the investigation of these incidents are urged to call 935-5555. This release is provided as a public service to promote safety-awareness on campus.

April 15

10:04 p.m. — A student reported that a windshield was broken on a vehicle parked near the tennis courts.

April 16

8:37 a.m. — A member of the University's crew team reported that a boat attached to a trailer parked near the Athletic Complex was struck by a vehicle that left the scene of the accident.

5:12 p.m. — Five vehicles parked near Givens and Steinberg halls received minor damage after being struck by a tow truck that was attempting to jump-start a vehicle. The tow truck apparently slipped out of gear. No injuries were reported.

April 17

9:31 p.m. — A student reported that a wallet containing \$15 and several credit cards was stolen from a suite in Wydown Residence Hall.

April 18

9:29 a.m. — A student contacted University Police regarding ongoing roommate problems in Eliot Residence Hall. After receiving statements from three suite mates, the offending student was charged with peace disturbance, failure to return borrowed property and destruction of property. The incident is being referred to the judicial administrator.

April 19

9:05 a.m. — A student reported leaving a backpack containing \$15 in a copy room in Harold D. Jolley Hall. The backpack was retrieved, but the money was reported missing.

12:34 p.m. — A student reported that a portable compact disc player, valued at \$100, was stolen from a suite in Rutledge Residence Hall.

5 p.m. — A faculty member reported being knocked to the ground by a dog near Mallinckrodt Center. No injuries were sustained, and the dog's owner was reminded of the University's leash policy. The incident is being referred to the Office of the General Counsel.

April 20

1:46 a.m. — A police dispatcher reported a trash-container fire in a parking lot near the fraternity houses. Police and maintenance personnel extinguished the fire. No damage was reported.

April 21

12:33 a.m. — University Police were dispatched to Mallinckrodt Center to investigate a peace-disturbance report. Upon arrival, it was determined that an allegedly intoxicated student damaged a restroom door. The student was arrested on charges of vandalism. The incident is being referred to the judicial administrator.

University Police also responded to a report of vandalism in Brookings Quadrangle and to a report of recovered property in which University Police found a pizza-delivery sign.

News Analysis

News Analysis contains excerpts from the For Expert Comment service. The service, which provides timely faculty comments to media across the country, is distributed by the Office of University Communications.

Violation of unwritten contract may be source of workplace violence

Judi McLean Parks, Ph.D., assistant professor of organizational behavior,



recently commented on new guidelines on workplace violence issued in March by the Occupational Safety and Health Administration. Her research focuses

on the psychological contract between employer and employee, as well as reactions to violations of these psychological contracts, such as violence and sabotage. She comments below on her current research into the psychology of revenge in the workplace.

McLean Parks defines "psychological contracts" in the workplace as the unwritten ground rules, assumptions and expectations that govern an employee's working relationship with the employer — an informal pact promising fair treatment for a fair day's work.

Workplace violence, she contends, can occur when workers feel that some unwritten but important psychological contract has been broken by management or co-workers. While physical violence is the most drastic and recognizable response, many workers react to perceived betrayals in less obvious ways.

Workers seeking revenge simply may slow production by working with less enthusiasm, said McLean Parks. Or they can be intentionally damaging, for example, by "badmouthing" a company or more seriously damaging the company's reputation by publicly discussing privileged information or illegal practices. Revenge may take the form of overt acts of sabotage, but more commonly, workers simply ignore or neglect problems that they know eventually will cause some problems in the workplace.

"I think it's wrong to characterize some minor acts of employee retaliation as necessarily deviant or malicious. Sometimes workers do these things as a response to problems in the workplace. They're raising flags and sending a signal to management that a problem exists, and in many cases, management is not blameless or innocent regarding the situation. If managers get the message and remedy the situation, it can have a very positive influence on productivity.

"It's important to remember that a significant portion of our time today is spent on the job, therefore much of our self-identity is associated with what we do at work. Anytime that self-identification is threatened, an employee may respond by denouncing the company," McLean Parks said.

Recent trends, such as downsizing, benefits cuts and outsourcing, are chipping away at the traditional bonds of loyalty and commitment between companies and employees.

"Workers are beginning to feel as though they are just another factor of production, and they don't like it. Retaliation is one way workers have of coping with what they see as an unfair situation in the workplace. It may be their way of getting even with management abuses, or it may simply be a way of retaining control, of saying, 'You can't do this to me.'"

For The Record

For The Record contains news about a wide variety of faculty, staff and student scholarly and professional activities.

Of note

Louis V. Avioli, M.D., the Sydney M. and Stella H. Shoenberg Professor of Medicine and director of the Division of Bone and Mineral Diseases, was chosen to receive the U.S. National Osteoporosis Foundation Pioneer Award for his contributions to osteoporosis research. He will receive the award June 24 during a reception in Washington, D.C. ...

Randall Johnson, an M.D./Ph.D. student in the laboratory of **Andreas Burkhalter**, Ph.D., associate professor of neurobiology, received the 1996 Krieg Cortical Scholar Award from the Cajal Club for his doctoral thesis titled "Microcircuitry of Forward and Feedback Corticocortical Connections Between Primary and Secondary Visual Cortex in the Rat." The club awards the prize to acknowledge outstanding contributions in systems neuroscience. ...

Mark E. Lowe, M.D., Ph.D., assistant professor of pediatrics and of molecular biology and pharmacology, won the 1996 Mead Johnson Award from the American Institute of Nutrition. The award recognizes his seminal work on the molecular mechanisms by which pancreatic enzymes mediate fat digestion. He received the award during the institute's recent annual meeting. ...

Garland R. Marshall, Ph.D., professor of biochemistry and molecular biophysics, of molecular biology and pharmacology and of biomedical computing and director of the Center for Molecular Design, received a \$646,887 three-year grant from the National Institute of General Medical Sciences for a project on "Reverse-turn Recognition and Mimetic Propensity." ...

David Schlessinger, Ph.D., professor of genetics, of medicine and of molecular microbiology, received a \$649,007 three-year grant from the National Institute of Child Health and Human Development for a project titled "Two X-linked Genes That Regulate Mineral Homeostasis."

Speaking of

Wendy Hyman-Fite, director of the English as a Second Language (ESL) Program, was one of five panelists who discussed ethics in ESL program administration during the 1996 convention of Teachers of English to Speakers of Other Languages in Chicago. ...

Introducing new faculty members

Hilltop Campus:

Mary Bly, Ph.D., assistant professor of English in Arts and Sciences, comes from Yale University, where she received a doctorate in Renaissance studies in 1995. Her research interests include the role of puns in the rhetoric of female characters in English romantic comedies written between 1595 and 1610. She received a bachelor's degree in English literature in 1985 from Harvard University and a master's of philosophy degree in Renaissance drama in 1989 from Oxford University in England.

Sabina Ott, associate professor of art, comes from California State University in Los Angeles, where she was an associate professor of art, and from the Art Center College of Design in Pasadena, Calif., where she was on the graduate faculty. She is known for her paintings on wood panels with encaustic, a thick, wax-like substance that is often heavily layered. She received a bachelor's degree in fine arts in 1979 from the San Francisco Art Institute and a master's degree in fine arts in 1981 from the same institution.

Stephen H. Legomsky, J.D., D.Phil., the Charles F. Nagel Professor of International and Comparative Law, delivered the annual Hiram Lesar Distinguished Lecture at the Southern Illinois University School of Law in Carbondale. His topic was "E pluribus unum: Casual Slogan or Enduring Value?" ...

Carter Revard, Ph.D., professor of English in Arts and Sciences, delivered a lecture titled "'I Didn't Mean to Poison Him': 'The Outlaw's Song' and Some Ladies of Richard's Castle, 1304-1349." In addition, he read his poetry at Haskell Indian Nations University in Lawrence, Kan. His poems titled "Skins as Old Testament" and "Firewater" were published in ASAIL Notes, a newsletter published by the Association for the Study of American Indian Literature. ...

Barbara Abraham Shrauner, Ph.D., professor of electrical engineering, spoke on "Modeling of Plasma Etching of Semiconductor Wafers" at Wichita State University in Kansas. She also delivered a presentation on "Modeling of Plasma Etching in Integrated Circuit Fabrication" at Bethel College in North Newton, Kan., and at Northeast Missouri State University in Kirksville. ...

Leila Sadat Wexler, LL.M., associate professor of law, spoke on "Prosecuting International Crimes" at Cornell University's law school. The Berger International Legal Studies Program and the Briggs International Law Society co-sponsored her presentation, which is scheduled to be published in Cornell's Journal of International Law.

Making the news

Mary-Jean Cowell, Ph.D., associate professor and coordinator of the dance program in Arts and Sciences, was quoted in an article titled "Retracing Lost Steps: Japanese Dancers' Pioneering Works Are Revived" that was published in The Washington Post. Cowell commented on the late Michio Ito, a modern dance pioneer.

On assignment

Paul Michael Lützelzer, Ph.D., the Rosa May Distinguished University Professor in the Humanities and director of the European Studies Program in Arts and Sciences, was elected a corresponding member of the Northrhine-Westfalian Academy of Sciences in Düsseldorf, Germany. In addition, he lectured on various aspects of multiculturalism and European identity at the University of Montreal as well as McGill and Concordia universities in Montreal. ...

On behalf of the National Academy of Sciences Commission, **Richard Mahoney**, distinguished executive-in-residence at the Center for the Study of American Business, testified before the U.S. House of Representatives' Science Committee in Washington, D.C. He spoke in favor of emphasizing university research vs. federal labs, citing the Monsanto/Washington University agreement as a model for collaboration. Mahoney served on the commission for a year. ...

Scott D. Minor, Ph.D., assistant professor of physical therapy, was appointed to the American Physical Therapy Association's Advisory Panel on Research. Among other duties, the panel counsels the association's board of directors on programs that affect the future of research relevant to physical therapy.

To press

Elizabeth Childs, Ph.D., assistant professor of art history and archaeology in Arts and Sciences, was scheduled to publish an article on "Time's Profile: John Wesley Powell, Art and Geology at the Grand Canyon, 1869-1882" in a recent issue of American Art, a Smithsonian Institution journal. In addition, she reviewed a new monograph on Paul Gauguin that was scheduled to be published in The New York Times Book Review. David Sweetman is the author of the monograph. ...

Kathleen Clark, J.D., assistant professor of law, wrote an article titled "Do We Have Enough Ethics in Government Yet? An Answer From Fiduciary Theory" that was published in the University of Illinois Law Review. In addition, her article titled "Is Discipline Different? An Essay on Choice of Law and Lawyer Conduct" was published in a symposium issue of the South Texas Law Review. ...

Daniel M. Goodenberger, M.D., associate professor of medicine, was named editor of Careers, the publication of the Association of Program Directors of Internal Medicine. ...

An essay written by **Daniel L. Keating, J.D.**, associate dean and professor of law, is scheduled to be published this fall in the University of Illinois Law Review. His article is titled "Bankruptcy, Tithing and the Pocket-picking Paradigm of Free Exercise."

Guidelines for submitting copy:

Send your full name, complete title, department, phone number, and highest-earned degree, along with a typed description of your noteworthy activity, to For The Record, c/o Carolyn Sanford, Campus Box 1070, or p72245cs@wuvmd.wustl.edu. Items must not exceed 75 words. For more information, call Sanford at 935-5293.

Obituaries

Kurt E. Landberg, architecture instructor

Kurt E. Landberg, a former architecture instructor in University College in Arts and Sciences, died Thursday, April 11, 1996, of cancer at Surrey Place nursing home in Chesterfield. He was 73. Landberg, president of Kurt Landberg Architects Inc. until his death, taught architecture courses here from 1947-49 and from 1954 to 1964. He received a master's degree in architecture from Washington University in 1949.

Campus Authors

The following is a recent release available at the Campus Bookstore in Mallinckrodt Center on the Hilltop Campus or at the Washington University Medical Bookstore in the Olin Residence Hall. For more information, call 935-5500 (Hilltop Campus) or 362-3240 (School of Medicine).

"Framing A Novelist: Arno Schmidt Criticism, 1970-1994" is the title of a book by **Robert Weninger, Ph.D.**, associate professor of German and of comparative literature in Arts and Sciences. Considered by scholars as one of postwar Germany's most idiosyncratic novelists, Arno Schmidt (1914-1979) was recognized as both an eccentric literary innovator and a rancorous literary historian. Weninger's book is the only study in either English or German to comprehensively chart the field of Schmidt criticism as it has evolved since 1970. Focusing on the ways scholars and critics have attempted to frame their subject, Weninger provides a thematic outline of Schmidt criticism and its interpretive rationale, as well as critical analyses of the scholarship on selected works. (Camden House, Columbia, S.C.)



Opportunities & personnel news

Hilltop Campus

The following is a partial list of positions available on the Hilltop Campus. Information regarding these and other positions may be obtained in the Office of Human Resources, Room 126 North Brookings Hall, or by calling 935-5990.

Secretary 960218. *Electrical Engineering.* Requirements: high school graduate; some college preferred; ability to learn technical typing; ability to learn computer software, such as Latex. Application required.

Purchasing Assistant 960220. *Department of Physics.* Requirements: high school graduate; some college preferred; Macintosh or PC experience; good organizational skills; exceptional communicator; high degree of accuracy; Microsoft Word experience preferred. Application required.

Special Events Coordinator 960221. *Office of the Chancellor.* Requirements: bachelor's degree; three to five years experience in

event planning; knowledge of protocol and etiquette; three to five years supervisory experience; excellent interpersonal skills; excellent oral and written communication skills; computer skills necessary to produce invitations, name tags, etc.; word processing and budget-management skills; ability to meet deadlines and adapt to schedule changes; knowledge of Washington University and its policies is helpful; knowledge of University financial systems or ability to learn them quickly; legible handwriting; team player who can work independently when required; poised and able to relate well to all levels; capable of working evenings and weekends; well-organized and detail-oriented; discreet and nonjudgmental. Application required.

Collection Liaison 960222. *Accounting Services.* Requirements: bachelor's degree; five years experience in collection activities; three to five years experience in collection analysis; excellent interpersonal and communication skills; knowledge of Lotus, WordPerfect, Focus and e-mail; excellent written communication skills. Application required.

Accountant 960223. *Accounting Services.* Requirements: bachelor's degree; three to five years accounting experience in reconciliations and management reporting; excellent interpersonal and communication skills; related accounting experience, including computer processing of accounting data; excellent PC skills. Application required.

Lab Technician 960224. *Department of Biology.* Requirements: bachelor's degree; good sense; ability to carry out experiments independently. Position will start around May 15 and last one year. Application required.

Accounting/Purchasing Assistant 960225. *Computer Science.* Requirements: high school graduate; knowledge of FIS is helpful but not required. Application required.

Executive Secretary 960226. *Office of the General Counsel.* Requirements: high school graduate; some college preferred; one year experience in a law firm strongly desired; ability to perform duties with minimal supervision; basic understanding of contract terms desired. This is a floating position between the Hilltop and Medical campuses. Application required.

Manager, Administration and Recruiting 960228. *School of Business.* Requirements: high school graduate; some college preferred; seven-plus years secretarial and office-management experience; three-plus years supervisory experience; PC literacy; Microsoft Excel and PowerPoint experience preferred; ability to manage people and processes; interpersonal and oral communication skills; ability to work independently and effectively with diverse population; problem-solving skills; ability to organize, generate and implement ideas; ability to prioritize workload, delegate work among staff, handle multiple projects simultaneously and work with minimal supervision; ability to function in fast-paced environment and produce high-quality work with speed and accuracy. Application required.

Administrative Aide 960235. *Arts and Sciences.* Requirements: familiarity with computing; detail-oriented; team player; friendly, service-oriented and patient. The administrative aide supports the work of the Office of the Executive Vice Chancellor and Dean of Arts and Sciences. The administrative aide also supports the work of other

members of the office, including the associate deans, the director of business operations and the senior analyst. The office is highly team-oriented with the members working together to conduct the business of Arts and Sciences. The administrative aide will work closely with the administrative assistant II; each person is expected to fill in for the other when necessary. Application required.

Medical Campus

The following is a partial list of positions available at the School of Medicine. Employees who are interested in submitting a transfer request should contact the Human Resources Department of the medical school at 362-7197 to request an application. External candidates may call 362-7195 for information regarding application procedures or may submit a résumé to the human resources office located at 4480 Clayton Ave., Campus Box 8002, St. Louis, MO, 63110. Please note that the medical school does not disclose salary information for vacancies,

and the office strongly discourages inquiries to departments other than human resources.

Library Assistant 960799-R. *Library.* Requirements: high school graduate or equivalent; some college preferred; supervisory experience preferred. Responsibilities include daily operation of document delivery, interlibrary loan and photocopy services and supervising and coordinating personnel and work performance in the division.

Assistant Supervisor Lead IBC 960849-R, 960850-R. *Washington University Shared Billing and Collection Services.* Requirements: two years experience with billing, insurance or collection, preferably medical; working knowledge of IDX, BAR and PSC applications; understanding of computerized billing systems; supervisory capabilities; ability to communicate effectively; familiarity with ICD-9 and CPT-4 preferred. Responsibilities include assisting with supervision of insurance-collection staff; training staff to perform daily job functions; assisting staff with daily operational issues; and monitoring daily work flow.

New degree program to draw on expertise of several engineering departments — from page 1

has been very strong since at least the '60s, and it's never really slowed down," Sutura said. "The space program gave visibility to problems of long-range monitoring of humans, which spawned lots of research involving sensors and computerized data-acquisition systems for the human body. It also stimulated basic research on ergonomics and metabolic processes and so on, to name just a few areas. But it's not just the space program that gave impetus to biomedical engineering. There always has been a need for engineering technology in medical practice, and engineering students are naturally attracted to a field that promises directly to do good things for humans. So

the same motivations that attract doctors to medicine attract engineers to biomedical engineering.

"The way our program is set up, those who wish to pursue a medical degree can do so via the biomedical engineering science major. Those who opt for the BS-BME can start their professional career and earn a good living after graduation."

Sutura and 13 other engineering faculty members will be in charge of the interdepartmental undergraduate program. Julius M. Guccione, Ph.D., assistant professor of mechanical engineering, will serve as assistant director under Sutura. The other faculty members are: R. Martin Arthur,

Ph.D., professor of electrical engineering; Philip V. Bayly, Ph.D., assistant professor of mechanical engineering; Jerome R. Cox Jr., Sc.D., the Harold B. and Adelaide G. Welge Professor of Computer Science; Ron K. Cytron, Ph.D., associate professor of computer science; Will D. Gillett, Ph.D., associate professor of computer science; John L. Kardos, Ph.D., the Francis F. Ahmann Professor and chair of chemical engineering; Michael I. Miller, Ph.D., the Newton R. and Sarah Louisa Glasgow Wilson Professor of Biomedical Engineering; William F. Pickard, Ph.D., professor of electrical engineering; William D. Richard, Ph.D., associate professor of electrical engineering; Donald L. Snyder, Ph.D., the

Samuel C. Sachs Professor of electrical engineering; Curt Thies, Ph.D., professor of chemical engineering; and George I. Zahalak, Eng. Sc.D., professor of mechanical engineering.

The biomedical engineering undergraduate program complements the University's Institute of Biological and Medical Engineering, directed by Cox. The institute, scheduled to begin operation later this year, will award graduate degrees in biomedical engineering. It focuses on five basic research initiatives: biomedical and biological imaging; cardiovascular engineering; cell and tissue engineering; computational neuroscience; and genome analysis. — Tony Fitzpatrick

Rain forest trip yields 'lots of observations, lots of camaraderie, lots of science' — from page 1

Schaal, Ph.D., chair of the Department of Biology. Both thought the trip was an excellent way to provide personal research experience and promote camaraderie among students and faculty.

The ball got in motion late, by Lewis' own admission.

"It's recommended that you make reservations at least six months in advance, but we didn't get started until January," he said. "Nonetheless, they accepted us, and we went through quite a logistical process getting ready."

Lewis sent letters of permission to parents. Andrew Johnstone, business manager in the biology department, made sure all the students were adequately insured, which their basic University insurance plans took care of. The students were sent to University Health Service and the St. Louis County Health Service to get a battery of shots for tetanus, yellow fever and typhoid. They also were given prescriptions of anti-malarial pills to be taken several weeks in advance of departure. Prior to the trip, the Lewises regularly held info-sessions on health, clothing and research practices and provided background on both their rain forest work and Wilson's work.

"We made sure everyone packed insect repellent, took long pants, and we strongly suggested rubber boots," Lewis said. "You can't walk around the Amazon rain forest in cutoffs and sneakers, and if you take leather boots, they simply get too hot, wet and tight. The mode of dress is long pants tucked into rubber boots. We became known as the 'Washington University Rubber Boot Group,' but I think the students were quite pleased that they had the rubber boots."

The Washington University contingent rendezvoused in Miami and flew into Iquitos, Peru, about three hours from

the camps. The contingent took a two-and-a-half-hour ride on a motorboat across the wide (nearly two miles) Amazon River on the first leg of the journey.

March is mid-summer in Peru. The group encountered nearly 100 degree weather on the forest floor and well over 100 degrees in the forest canopy. Water was available all the time, provided in five-gallon containers throughout the reserve by International Expeditions. At ACEER, the group members observed the canopy and its vegetation from a quarter-mile-long walkway perched 100 feet above the forest floor. Throughout the backwaters and trails, always in the company of an experienced naturalist-guide, they observed the Giant Victoria Water Lily, up to six feet in circumference; bright ginger flowers; orchids; bromeliads (the pineapple family); and hosts of medical plants they identified with a guidebook.

The forest was flush with sloths; capybaras, which are the world's largest rodents; monkeys; toucans and parrots; and frogs, such as the poison dart frog with its brilliant green-orange, yellow and red coloration that's a warning to other species to leave it alone. The poison dart frog excretes poisons from its skin; the alkaloids are produced from the plant material it consumes. The frog evolved to have a brilliant, attractive color that actually serves as protection. The color sparks a warning jolt to predators' collective memories.

The Washington University students worked in groups of two to six — some mixed with Emory students. They went out day and night, and they encountered exotic noises and smells and dangerous poisonous snakes.

"The Amazon rain forest moves at night; it's alive," said Lewis. "There was

one incident where a group encountered a fare-de-lance, one of the most poisonous snakes in the world. It was lying between a couple of logs used to hike along the paths. Their venom is made of protease, which dissolves proteins. People who've been bitten have had much of their leg eaten away. The naturalist spied the snake, warned the students, then fashioned a forked stick with his machete, placed the forked part on the (snake's) neck, and it immediately attacked the stick. The students said they could see the one-inch-long fangs, and one or two took photographs. The snake was set free after it released its venom. A law of the reserve is to not destroy an animal.

"That was just one night's adventure, and the students came back and shared this with everyone. It was a tremendous illustration of not only what's out there but the caution you have to take in the rain forest, especially at night."

"It was amazing," said Minna Yoon, a junior biology major from Schererville, Ind., who was with the group that encountered the snake. "I'm certain if there hadn't been a naturalist with us, one of us would have gotten bit."

Yoon teamed with Ryan Watson, a Highland, Ill., junior in biology, to study the occurrence of fungi in the ecosystem. This was Yoon's first trip outside the United States, and it opened her eyes.

"I saw a marmoset, which is the world's smallest primate, or monkey. It was adorable. The vegetation is so brilliant and lush. I actually saw the plants the natives use for medical purposes, instead of seeing them in a textbook. I saw the tour guide take sap out of a tree and thatch a roof from palms. We actually learned things that were not from the classroom, and I think we all became good friends from this experience.

"The humidity is tremendous. Even after a shower, you're soaked again — if not from sweat then from insect repellent. In one sense, I think it helped me to appreciate the conveniences we have here. Out in the rain forest, you're always wet. But it was really great. I'd do it all over again."

The students performed no laboratory work during the week; they observed, made drawings and took photographs. Before dinner, there were informal lectures. At the end of the experience, groups gave oral presentations on projects they'd done during the week.

For instance, little is known about the ecosystem of the forest canopy. Several students studied species that thrive in the canopy and contrasted them to those that are abundant, such as various fungi, on the forest floor.

Others studied the epiphytic behavior of plants and animals in the rain forest. An epiphyte coexists with another species in a preferred, though not parasitic, relationship. For example, bromeliads and orchids are commonly found clinging to trees of the forest canopy and to lianas, the woody vines that Tarzan swung on. Some students attempted to find whether this epiphytic behavior is specific to certain trees or if all trees harbored epiphytes.

"There were lots of observations, lots of camaraderie, lots of science," said Lewis. "We'll try to do this again in the spring of 1998, the next year the class is offered. One of the students told me afterward that it was the best opportunity all year to really come to know his classmates and to learn about plants firsthand. The sense of camaraderie and the long-term impact of the experience are what most impressed us."

— Tony Fitzpatrick