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Some 25 Washington University students paired up with Clay School fourth- and fifth-graders and Holy Trinity School seventh- and eighth-graders for "Graffiti Paint-Out '94" last weekend. University students involved with Adequate Housing for America, a Campus Y program, won an \$870 grant from Youth As Resources to paint over graffiti in the Hyde Park neighborhood. Above, first-year engineering students Quentin Krue and Marchette Thurston help cleanup efforts.

Popular physics

Course reaches nonscience students with everyday life applications

One week, part of the homework assignment is for the students to keep track of how much electricity they typically consume in a day, from turning on their VCRs to doing a load of wash.

Another week, the students are asked to thoroughly research a paranormal claim, such as the one linking extraterrestrials to those strange crop circles showing up in farmers' fields in England.

Yet another assignment is to determine how many trees one person would have to plant to make up for the carbon dioxide he or she produces in a day.

At first glance, it would be difficult to guess that their assignments are for a physics course.

But "Physics and Society" is not a typical physics course. There is no discussion of piezoelectric properties of isotropic and anisotropic solids or of the harmonic oscillator and plane waves. And that is what makes the course so appealing to a wide range of nonscience students. It's a

physics class that makes sense to them and can be applied in their everyday lives.

Each fall for the past three years some 60 undergraduates have signed up for the course offered by the Department of Phys-

**"Some of us
would call it an
evangelical mission."**

— Michael W. Friedlander

ics. Taught by a team of four faculty members, the course uses energy as a unifying theme and applies basic physics principles to important contemporary issues. These issues range from global energy demands and environmental problems to the role of science in society.

"All of us are concerned about trying to reach the nonscience students," said Michael W. Friedlander, Ph.D., professor of physics, who teaches the course along with Carl M. Bender, Ph.D., Willem H. Dickhoff, Ph.D., and Michael C. Ogilvie, Ph.D. "Some of us would call it an evangelical mission. Most students don't take physics courses. Physics has the reputation of being very difficult. And the general feeling is if you don't need it, don't do it. We just feel that there are important things that we can talk about that would be good for them to hear.

"And by connecting the basic concepts of physics to everyday life and contemporary issues, the course is giving students a basis for the scientific perspective in general, as well as an understanding of physics in relation to society."

Class topics include society's future energy needs; nuclear energy as both a source of energy and a weapon; radioactive waste disposal; the effects of radiation on

Continued on page 8

Streamlined enrollment process tops service improvement scorecard

In today's rapidly changing academic environment, one almost needs a scorecard to keep track of all the different groups, teams, committees, task forces, clusters and focus groups that have sprouted around campus. These groups, most of which are offshoots of the University Management Team, have formed as Washington University prepares for the immediate future, when competition for good students is expected to increase while revenue from tuition, government grants, healthcare and other sources decreases.

Although their names, members and methods differ, most of these groups share two common goals: to improve Washington University and to reduce costs. Some groups, particularly those involved in student services, have achieved marked success over the past year, in part after hearing student concerns voiced in focus groups conducted by the Student Experience Cluster.

Examples of these improvements, like the extensive streamlining (or process mapping) of the student registration process, have been detailed in previous Record articles. But there are many other, less visible improvements under way in a wide variety of student services.

One example is a reorganization effort in Brookings Hall and the subsequent creation of a new area, called Student Enrollment Services, that encompasses the newly named Student Financial Services (formerly the Financial Aid Office) and the Registrar's Office, with close linkages to the Office of Undergraduate Admission and Student Accounting. Grouping these services under one umbrella has streamlined processes, saved money and improved communication and cooperation among related student services.

Before the reorganization, for example, students contacted the Financial Aid Office in Brookings Hall with questions about financial aid. However, frequent questions about parent financing programs, like the University's Cost Stabilization Plan (CSP) or Tuition Installment Plan (TIP), were referred to other areas in Accounting Services, either on campus or the offices on Hampton Avenue.

Now, all financial aid and financing questions, including those about the CSP or TIP, can be answered in Student Financial Services. Other changes have been made as part of the plan. A newly organized Student Accounting Services office in Room 121 North Brookings Hall will answer student questions about their accounts, bills and loans. And all bookkeeping has been centralized in the Office of Student Accounting on Hampton Avenue.

"This effort began in conjunction with discussions of the fiscal year 1995 budget and what we learned through the Student

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Losos receives five-year Packard fellowship for evolutionary research

Jonathan B. Losos, Ph.D., assistant professor of biology, has received a five-year \$500,000 fellowship in science and engineering from the David and Lucile Packard Foundation.

Losos is the third Washington University scientist to win a Packard fellowship since the program began in 1988. Joy M. Bergelson, Ph.D., now at the University of Chicago, won while she was an assistant professor at the University in 1993, and Michael E. Wysession, Ph.D., assistant professor of earth and planetary sciences, won in 1992.

Losos and 19 other promising science and engineering researchers at U.S. univer-



Jonathan B. Losos

sities were awarded fellowships this year. He will receive \$100,000 annually for the next five years. Each year, the Packard foundation grants support the work of 100 science and engineering faculty members (20 selected for each of five years) with annual payments of \$10 million.

Losos, an evolutionary biologist, uses a

variety of disciplines in a novel way to explore the mechanisms of evolutionary diversification. His integration of ecological and evolutionary processes in the study of Caribbean lizards is drawing wide recognition as a means to understand the adaptive basis for species diversification as well as for its detailed contributions to herpetology, a branch of zoology dealing with reptiles and amphibians.

In addition to the Packard foundation fellowship, Losos also received two National Science Foundation grants in 1994 totaling \$500,000 for related research.

Losos earned a bachelor's degree in

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Research by Lee Ratner, M.D., Ph.D., on how HIV replicates leads to potential AIDS therapies

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Student Lynn Klein watched her microgravity experiment go up in space aboard the Endeavour shuttle

Medical Update

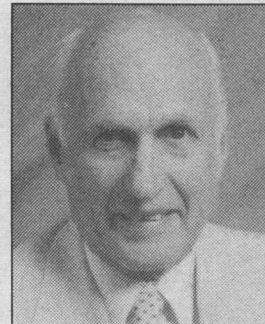


Vicki Gardner, occupational therapy student, measures the grip strength of volunteer David O'Donnell, medical research technician in the Department of Molecular Biology and Pharmacology. Gardner is participating in a research project at the School of Medicine's Program in Occupational Therapy to determine better guidelines of normal grip and pinch strength.

Hugh Berry named distinguished alumnus by dental association

Hugh G. Berry, D.M.D., professor emeritus of endodontics, has been awarded the 1994 Distinguished Alumnus Award from the University's Dental Alumni Association.

Berry, a 1952 graduate of the now closed School of Dental Medicine, joined the



Hugh G. Berry

faculty the year he graduated, serving in numerous capacities during his 35-year career at the University. He was the dental school's first chairman of the Department of Endodontics, and he also served as

assistant dean for academic affairs. In 1987, after serving 17 years as a full professor, he retired from academia but continued in private practice. He also became director of the General Dentistry Residency Program at St. John's Mercy Medical Center.

This year, Berry retired from private endodontic practice, though he continues as associate director of the dental residency program at St. John's Mercy Medical Center. During his 42 years in dentistry, Berry has taught many continuing education courses in the Midwest and has co-written numerous dental articles. He also has served as a visiting lecturer at the dental school of the Republic of Indonesia and as special consultant of the United Arab Emirates.

During his tenure on the dental school faculty, he became a diplomate of the American Board of Endodontics and also was a member of the board of directors of the Greater St. Louis Dental Society.

He is a member of numerous other professional organizations, including the American Association of Endodontists, the St. Louis Society of Endodontic Science, the American Dental Association and Omicron Kappa Upsilon, the honorary dental fraternity.

Correction

On Oct. 28, the CenterNet video conference will be held from 1-3 p.m. instead of 2-4 p.m. David Satcher, M.D., director of the Centers for Disease Control, will be the featured guest speaker.

Record

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Washington
 WASHINGTON UNIVERSITY IN ST. LOUIS

Animal welfare

Information center to present legal alternatives in animal research

Researchers will learn more about the responsible use of animals in research during a two-part workshop and seminar Nov. 7-8 in St. Louis. Representatives of the U.S. Department of Agriculture's Animal Welfare Information Center (AWIC) will present legal alternatives in animal research. These alternatives, or the "three R's," include reducing the number of animals used, refining experimental procedures to lessen pain and distress, and replacing animals with *in vitro* methods.

The seminars are sponsored by the St. Louis Consortium for Animal Welfare Education, which comprises institutions involved in animal research, including Washington University, St. Louis University, the University of Missouri-St. Louis, Monsanto Corp. and Mallinckrodt Medical Inc.

The first part of the workshop will take place from 9-11 a.m. Nov. 7 at Monsanto Corp., followed by a seminar from 1:30 to 2:30 p.m. in the School of Medicine's Philip Needleman Library, Room 3907 in the South Building. The second half of the workshop, a computer lab for data base search strategies, will be held from 8 a.m. to noon Nov. 8 at the School of Medicine Library in Room 601B.

According to Nicole Duffee, D.V.M., Ph.D., assistant director of educational services in the Division of Comparative Medicine, these alternatives promote good science and the efficient use of animals. Participants will be introduced to organizations and electronic media that will help them learn more about alternatives in animal research.

Duffee said a good example of reduction in animal use was demonstrated recently by the National Cancer Institute's (NCI) drug research and development program. A few years ago, the NCI reportedly was using as many as 4.5 million rodents a year to screen chemicals for anti-tumor activity. However, the standard animal model system was far from ideal. After much argument and debate, the NCI switched to the use of cell culture screening systems using human cancer cell lines. The program now uses between 500,000 and 1 million mice, an 80-

90 percent reduction in animal use. Duffee said it should be noted that the decision to switch was made for scientific reasons rather than animal welfare, illustrating the point that the pursuit of alternatives is not, in and of itself, anti-science.

The U.S. Congress established AWIC, which is housed at the National Agricultural Library in Washington, D.C., in 1985. AWIC serves as an information resource on the welfare of animals used in research. Scientists rely on AWIC to locate appropriate model systems and avoid duplicate studies. The center makes available current bibliographies on a range of research-related topics, such as embryo and gene transfers and animal models in biomedical research.

AWIC staff also can conduct customized data base searches and provide guidelines on how to search data bases for research alternatives related to animal studies. Duffee said an effective search for alternatives is not easy because of limitations in the coding of search terms used by scientific literature data bases.

Volunteers needed for hormone replacement study

Volunteers are needed for a multicenter study at the School of Medicine evaluating hormone replacement therapy regimens and doses in post-menopausal women.

The medical school will recruit 25 area women to participate in the study.

Previous studies have demonstrated the benefits of hormone replacement therapy in post-menopausal women, such as prevention of osteoporosis and protection against heart disease. But no large-scale study has evaluated and compared different hormone replacement therapy regimens and doses. This new study is designed to do that.

The Upjohn Co. is funding the one-year study, which will involve 480 women from 15 medical centers nationwide.

"I think the key is that all women who are post-menopausal should be on some form of hormone replacement therapy," said

The Animal Welfare Act, mandated by Congress, requires the consideration of alternatives for animal use in biomedical research. The law, administered by the U.S. Department of Agriculture (USDA), also sets standards for the humane care and proper use of animals in laboratory research. "The USDA and other government agencies increasingly are concerned that researchers are not meeting their responsibilities in considering the use of alternatives in animal research," Duffee said.

A Congressional defense committee recently ordered two research facilities in the Department of Defense (DOD) to terminate animal research programs until standards complied with the Animal Welfare Act and DOD regulations concerning the improper use of animals in research. Among the problems cited was a failure to ensure that the facilities had considered alternatives in the use of animals for research.

For more information about AWIC, call (301) 504-6212. To register for either the seminar or workshop, call Duffee at 362-4516.

Dan Williams, M.D., assistant professor of obstetrics and gynecology and the site's principal investigator. "In order to get more women to take the medication, there needs to be alternative ways of giving it because some patients will do well on one regimen and not on another."

Throughout the study, researchers will evaluate bone mineral density, growth of the uterine lining, serum lipid levels and monitor symptoms such as hot flashes.

The research may help physicians determine an optimal dosage of progestin that could help prevent pre-cancerous growth of the uterine lining and reduces side effects, such as headaches and dizziness, that some women experience after taking the drug, Williams said.

For more information, call study coordinator Carol Cholewa, R.N., at 362-4777.

Washington People

Virology expert targets HIV infection

Shortly after noted National Institutes of Health researcher Robert Gallo, M.D., co-discovered the human immunodeficiency virus (HIV) in 1984, he summoned the help of Lee Ratner, M.D., Ph.D., then a fellow in his lab. Gallo needed someone to "spell out" the molecular sequence of HIV, the virus that causes AIDS.

The project would play a critical role in understanding how HIV gradually destroys the immune system's ability to fight the infection and how future drug therapies might disarm the virus.

"Gallo came into the lab and told me, 'Here are the clones of the virus. Drop what you're doing and sequence them,'" Ratner recalled.

At the time, Ratner was in the middle of a project to study a different virus, called HTLV-1, which causes a form of leukemia in humans. "I told Gallo that I didn't think I had the time to devote to the AIDS project."

In retrospect, Ratner said he, like many scientists, did not fully understand how developments in AIDS research would lead to important advances in many areas of medicine, including molecular genetics, molecular biology and immunology. "Gallo told me, 'You better do this. You will never regret the decision,'" Ratner said. "He was absolutely right. He pushed me into the best decision of my career."

Ratner, now a professor of medicine and molecular microbiology at the School of Medicine, coordinated the National Institutes of Health (NIH) effort to sequence the AIDS virus. He was one of three NIH scientists who worked night and day for three months to determine the virus' molecular sequence.

The team, with Ratner as lead author, published its findings in January 1985 in the journal *Nature*. In all, 19 scientists contributed to the effort.

Ratner's research at the National Cancer Institute from 1983 to 1985 laid the foundation for his research projects at the School of Medicine. He is the only Washington University scientist studying the molecular control of HIV. His research focuses on how HIV infects human cells and how the virus replicates. Improved understanding of the molecular mechanism of infection and replication continues to lead to potential therapies for treating the disease.

In recent years, he also has resumed studying HTLV-1, which causes a significant proportion of leukemia cases in Africa, the Caribbean, parts of Asia, as well as cases in the United States.

Ratner's quiet nature belies the intensity with which he approaches research projects, his colleagues say. He is focused and productive, all the while overseeing a lab with some 15 to 20 students.

When Ratner is not working in the lab, seeing patients or spending time with his family (he and his wife, Andrea, have five school-age children), chances are he may be on the handball court.

"He approaches handball the same way he approaches his research program," said Gerald Medoff, M.D., professor of medicine and vice chair for clinical affairs. "He's extremely competitive and he strives to be the best he can be. He demonstrates that same commitment to everything he does."

In addition to his responsibilities at the School of Medicine, Ratner serves on the editorial boards of several journals, including *AIDS*, *Virology*, and *Journal of Virology*, and serves as chair of the NIH grant review study section on AIDS molecular biology and virology.

Ratner, who came to the School of Medicine in 1985, has spent years poring over molecular clones of HIV to dissect every gene in the virus. He and his co-workers are looking at how the virus assembles to pinpoint possible targets for interrupting its replication.

"Dr. Ratner's work in the lab will serve as a vital link to future therapies against the AIDS virus," said William Powderly, M.D., associate professor of medicine and co-director, with Ratner, of Washington University's AIDS Clinical Trials Unit. The unit is one of 50 nationwide established by the National Institutes of Health to evaluate new AIDS therapies.

Ratner's labors in the lab have led to the development of investigational drugs for treating AIDS. The Clinical Trials

network, including the site at Washington University, soon will begin testing a protease inhibitor based on research conducted by Ratner in a collaborative project led by Garland Marshall, Ph.D., professor of molecular biology and pharmacology. Protease inhibitors are considered by many AIDS experts to be one of the most promising classes of anti-HIV drugs under study. The enzyme protease is essential to the life cycle of HIV. Ratner and Marshall demonstrated that blocking the enzyme can strip the virus of its infectious properties.

The network recently began testing a glycosylation inhibitor as a potential AIDS therapy. Ratner published the

"I think treatment for the disease has turned out to be more difficult than even I anticipated because the virus is constantly mutating and resistance to therapeutic drugs is developing fairly quickly," Ratner said. "The virus replicates very well. I think that is one of the things we didn't initially understand very well."

An AIDS cure may be impossible, Ratner said. Instead, the best way to control the disease may be a combination of drugs with varying toxicities, similar to chemotherapy for the treatment of cancer.

"How many drugs it is going to take, I'm not sure," Ratner says. "I think we've learned so much about the virus by taking it apart and putting it back together in every possible way that I think we'll develop every possible drug to find a way to stop it."

Ratner, whose father is a physician, said he always had an interest in medicine. Rather than follow in his father's footsteps as an internist in private practice, Ratner says he was more interested in research. He was especially intrigued by cancer research because physicians had no rational approach for treating cancer.

Ratner received bachelor's and master's degrees in chemistry in 1973 from Harvard University and medical and doctoral degrees from Yale University in 1979. He completed an internal medicine internship and residency at Barnes Hospital before beginning a fellowship at the National Cancer Institute.

Even after HIV was first described in the scientific literature and in news reports, Ratner said he never planned to be an AIDS researcher. He became involved in AIDS research only because the disease is caused by a virus. Ratner had developed an expertise in virology as a Ph.D. student at

Yale. "AIDS is a fascinating clinical problem. But if the disease had nothing to do with viruses, I probably would not be studying it today."

In addition to better understanding the genetic control of HIV, Ratner also is studying what allows certain strains of HIV to infect macrophages. Macrophages are the predominant cells infected by HIV in the brain and spinal cord. The research may give scientists tools to direct therapy against certain strains of the virus that infect macrophages or to block targets, such as receptors, that play a role in infection.

Ratner and his co-workers also are studying a unique feature of HIV compared with other viruses that infect mammals and birds. HIV contains a number of small genes that other viruses do not. The researchers are trying to find out whether any of these genes, which orchestrate the production of proteins, control virus replication.

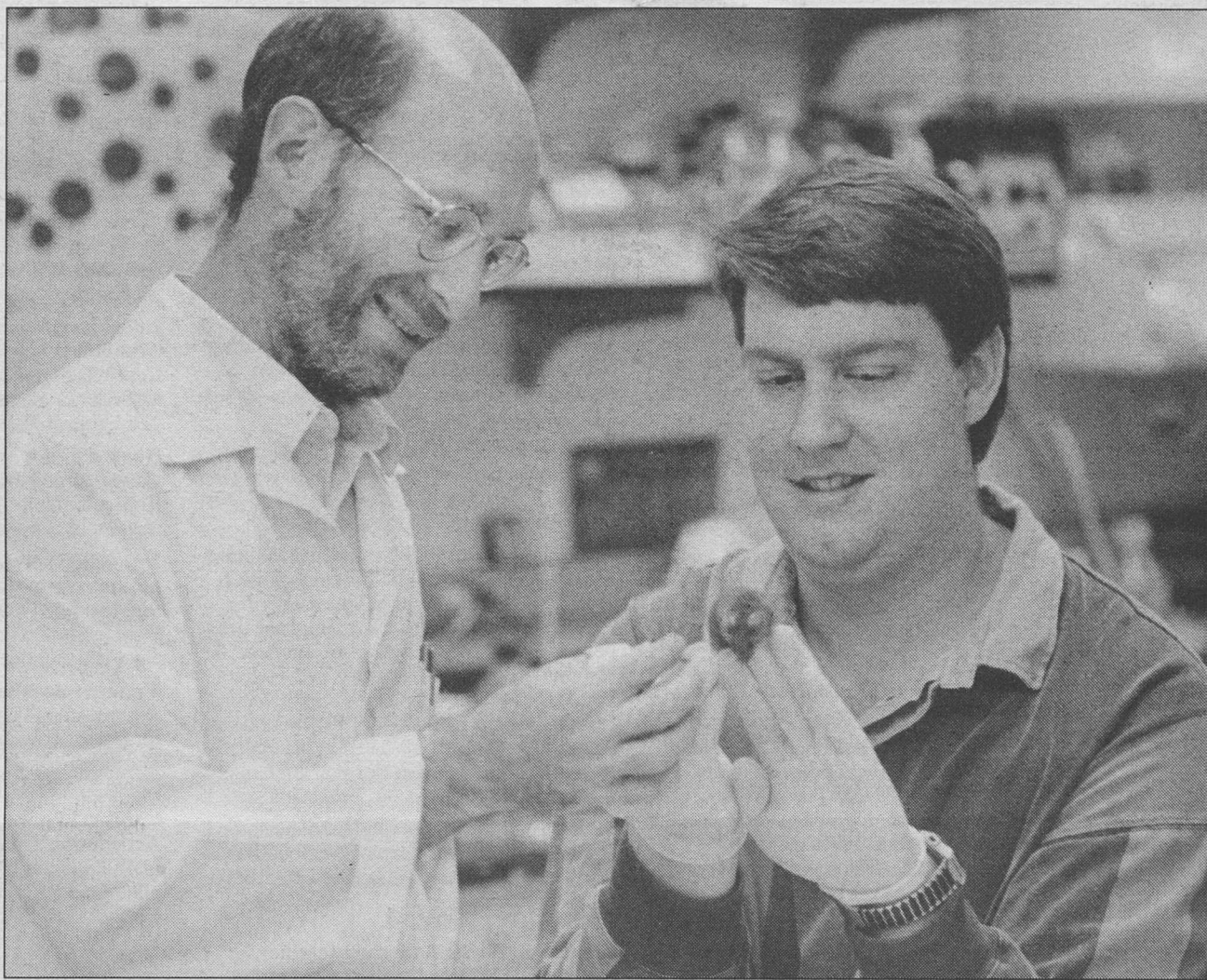
Initially, the researchers found they could delete these small proteins and the virus still replicated. But when they looked more closely, the researchers discovered that a protein called viral protein R is critical for virus replication. Ratner suspects the protein may be important to virus replication in living cells in the body. He and his co-workers are now studying how viral protein R is assimilated into the virus and how it regulates replication.

Ratner's work with the AIDS virus is setting the stage for his continuing research on HTLV-1. Ratner has developed the first infectious molecular clone of HTLV-1, which will help him dissect the virus and determine which gene in the virus is responsible for triggering the development of leukemia.

The researchers have zeroed in on several proteins that may play a role in initiating the proliferation of immune cells called T cells associated with this form of leukemia. They are now studying one HTLV-1 protein in particular, called the Tax protein, which appears to be intimately involved in the initiation of leukemia. Ratner's commitment to his work includes mentoring undergraduate, graduate, medical and postdoctoral students who conduct research projects in his lab. Working with students is one of the best part of his job, Ratner says. "I learn as much from them as they learn from me. I like to give them the time and freedom to explore their own projects, their own ideas."

Chia Hung, one of the students in Ratner's lab, said he appreciates the respect and trust Ratner shows his students. "He respects our ideas and allows us to work on our own projects. He trusts us with our work, but whenever we have questions, he is always there."

— Caroline Decker



Lee Ratner, M.D., Ph.D., and William Grossman, an M.D./Ph.D. student, examine leukemia tumors in mice transgenic for the HTLV-I Tax gene.

"Dr. Ratner's work in the lab will serve as a vital link to future therapies against the AIDS virus."

— William Powderly

first studies in 1990 demonstrating that inhibiting the enzyme glucosidase can disrupt production of HIV. The inhibitor prevents sugars on the outside of the virus from being modified by glucosidase, a crucial step in HIV replication.

While Ratner spends the bulk of his time in the laboratory, he sees AIDS patients with hematology or oncology-related complications on a regular basis. These patients are typically very sick and in the later stages of the disease.

They also are a constant reminder of the challenges scientists face to successfully control AIDS. Ratner said his work in the lab helps him better understand how research may lead to improved therapies for treating AIDS and the disease's life-threatening complications.

"We see first-hand from our patients how drastic the complications of the disease are," Ratner said. "They give us renewed interest for approaching problems in the lab."

For example, Ratner said many of his patients have very low blood platelet counts, a complication of HIV infection. Platelets play a crucial role in blood clotting. Some scientists have suggested that HIV infection of platelet-precursor cells, called megakaryocytes, may be responsible for the small number of platelets circulating in patients' blood. Ratner and his co-workers are just beginning a project to study how HIV gets into megakaryocytes. Their work may give scientists clues for ways to better treat this complication.

Over the past several years, AIDS research has led to better treatments for some opportunistic infections of the disease, such as pneumocystic pneumonia, lymphoma and Kaposi's sarcoma. But 10 years into the disease, an outright cure for AIDS still seems to be in the distant future.

Calendar

Oct. 27–Nov. 5



Exhibitions

Biannual Faculty Exhibition. Features works by School of Art faculty. Oct. 28 through Dec. 18. Opening reception: 5-7 p.m. Oct. 28. Gallery of Art, upper gallery, Steinberg Hall. Gallery hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. 935-5490.

"An Other Ballgame: Works on Paper."

Drawings by Ruth Hardinger, visiting artist, New York and Oaxaca, Mexico. Nov. 2-4. Bixby Gallery, Bixby Hall. Gallery hours: 10 a.m.-4 p.m. weekdays; 1-5 p.m. weekends. 935-6500.



Films

Thursday, Oct. 27

7 and 9 p.m. Filmboard Foreign Series. "Marianne & Julianne" (West Germany, 1982). Room 100 Brown Hall. Cost: \$3. **For 24-hour Filmboard hotline, call 935-5983.**

Friday, Oct. 28

7 and 9:30 p.m. Filmboard Feature Series. "The Cook, the Thief, His Wife and Her Lover" (1990). (Also Oct. 29, same times, and Oct. 30 at 7 p.m.) Room 100 Brown Hall. Cost: \$3.

Midnight. Filmboard Midnight Series.

"Psycho" (1960). (Also Oct. 29, same time, and Oct. 30 at 9:30 p.m.) Room 100 Brown Hall. Cost: \$3.

Monday, Oct. 31

7 p.m. Balkan Film Series. "Z," in Greek with English subtitles. Sponsored by Dept. of History. Room 100 Busch Hall. 935-5849.

Tuesday, Nov. 1

7 p.m. Chinese Film Series. "Old Well" (1987), with English subtitles. Sponsored by Dept. of Asian and Near Eastern Languages and Literatures. Room 219 Ridgley Hall. 935-5156.

Wednesday, Nov. 2

7 and 9 p.m. Filmboard Foreign Series. "Fellini's Roma" (Italy, 1930). (Also Nov. 3, same times.) Room 100 Brown Hall. Cost: \$3.

Friday, Nov. 4

7 and 9:30 p.m. Filmboard Feature Series. "Blade Runner: The Director's Cut" (1992). (Also Nov. 5, same times.) Room 100 Brown Hall. Cost: \$3.

Midnight. Filmboard Midnight Series.

"Shaft" (1971). (Also Nov. 5, same time.) Room 100 Brown Hall. Cost: \$3.

Calendar guidelines

Events sponsored by the University — its departments, schools, centers, organizations and its recognized student organizations — are published in the Calendar. All events are free and open to the public, unless otherwise noted.

Calendar submissions should state time, date, place, sponsor, title of event, name of speaker(s) and affiliation, and admission cost. Quality promotional photographs with descriptions are welcome. Send items to Judy Ruhland at Box 1070 (or via fax: 935-4259). Submission forms are available by calling 935-4926.

The deadline for all entries is noon Tuesday one week prior to publication. Late entries will not be printed. The Record is printed every Thursday during the school year, except holidays, and monthly during the summer. If you are uncertain about a deadline, holiday schedule, or any other information, please call 935-4926.



Lectures

Thursday, Oct. 27

10:30 a.m. Math seminar. "Navier-Stokes Equations," Marco Cannone, prof. of mathematics. Room 199 Cupples I Hall. 935-6726.

Noon. Genetics seminar. "Complex Mechanisms and Multiple Imprinted Genes Involved in Prader-Willi and Angelman Syndromes," Robert Nicholls, asst. prof., Dept. of Genetics, Case Western Reserve U., Cleveland. Cori Aud., 4565 McKinley Ave. 362-7076.

Noon. Pediatrics seminar. "Evidence of Ongoing Thymocyte Differentiation in Thymomas," Barbara Zehnauer, research assoc. prof. of pediatrics. Third Floor Aud., St. Louis Children's Hospital. 454-6050.

2 p.m. Physics seminar. "The Phase Diagram of the Landau-Ginsburg Model and the Electroweak Phase Transition," Jean Potvin, prof. of physics, St. Louis U. Room 241 Compton Hall. 935-6276.

2:30 p.m. Mechanical engineering seminar. "Theory and Applications of Modular Reconfigurable Robotic Systems," I-Ming Chen, research fellow, California Institute of Technology, Pasadena. Room 100 Cupples II Hall. 935-6055.

4 p.m. Chemistry seminar. "The Stereochemistry of Anionic Vinyl Polymerization," Thieo Hogen-Esch, prof. of chemistry, U. of Southern California, Los Angeles. Room 311 McMillen Lab.

4 p.m. Medicine and pathology seminar. "Molecular Engineering of the Antitumor Immune Response," Drew Pardoll, assoc. prof. of medicine and oncology, Dept. of Molecular Biology and Genetics, Johns Hopkins U. School of Medicine, Baltimore. Third Floor Aud., St. Louis Children's Hospital. 362-8060.

4:15 p.m. Philosophy lecture. "Models of Cognition," Tim Van Gelder, asst. prof., Dept. of Philosophy, Indiana U., Bloomington. Alumni House Living Room. 935-5119.

4:30 p.m. Math colloquium. "Topology and Geometry of Anosov Flows in Dimension 3," Sérgio Fenley, asst. prof. of mathematics. Room 199 Cupples I Hall.

7 p.m. Architecture lecture. "Can Edge Cities Be Made Less Peripheral?" Alex Kreiger, prof. of architecture and urban design, Harvard U., and principal, Chan Kreiger Associates Inc., Boston. Keynote address of the Mayor's Institute on City Design: Midwest. Steinberg Hall Aud. (A reception will be held at 6:15 p.m.) 935-6200.

Friday, Oct. 28

9:15 a.m. Pediatric Grand Rounds. "New Findings in Personality Development: The Case for Integrating Psychology Into Pediatric Care," Rebecca A. Eder, asst. prof. of psychology and director, Dept. of Psychology, St. Louis Children's Hospital. Clopton Aud., 4950 Children's Place. 454-2706.

Noon. Assembly Series lecture. "Why Broadway?" Rocco Landesman, Broadway producer of "Tommy," "Angels in America" and "The Piano Lesson." Edison Theatre. 935-5285.

Noon. Cell biology and physiology seminar. "Microtubule Dynamics and Chromosome Movement," J. Richard McIntosh, prof., Dept. of Molecular, Cellular and Developmental Biology, U. of Colorado, Boulder. Cori Aud., 4565 McKinley Ave. 362-6950.

Noon. Environmental engineering seminar. "Re-engineering RCRA for Recycling — Proposals by EPA: Definition of Solid Waste Task Force," Charles Merrill, Husch & Eppenger, St. Louis. Room 226 Urbauer Hall. 935-8590.

Noon. Physics seminar. "Circumstellar Grains in Meteorites," Thomas Bernatowicz, research assoc. prof., Dept. of Physics. Room 241 Compton Hall. 935-6276.

1 p.m. Molecular cell biology thesis defense. "Molecular Cloning and Functional Analysis of the Murine Interleukin-18 Converting Enzyme (ICE)," Michelle Nett Fiordalisi, graduate student, Dept. of Medicine. Room 10064 Clinical Sciences Research Bldg. 362-9038.

1 p.m. Geometry seminar. "Branching in

Anosov Foliations of Three-manifolds," Sérgio Fenley, asst. prof. of mathematics. Room 199 Cupples I Hall. 935-6726.

4 p.m. Hematology seminar. "Clathrin-coated Vesicle Assembly on the Golgi," Linton Traub, research assoc., Dept. of Medicine. Room 8841 Clinical Sciences and Research Bldg.

4 p.m. Surgery seminar. "Application of Genetics to the Management of Colon and Rectal Cancer," Eric Fearon, Yale U., New Haven, Conn. Steinberg Amphitheater, Jewish Hospital. 362-8106.

Saturday, Oct. 29

4 p.m. Surgery seminar. "The Search for Novel Targets for Chemotherapeutic Agents," Eric Fearon, Yale U., New Haven, Conn. Steinberg Amphitheater, Jewish Hospital.

Monday, Oct. 31

Noon. Molecular microbiology seminar. "The Game of Chess Between the Virus and Its Host," Michael Oldstone, prof. of neural pharmacology, The Scripps Research Institute, La Jolla, Calif. Cori Aud., 4565 McKinley Ave. 362-6950.

3:45 p.m. Physics seminar. "NMR Studies of Non-Newtonian Fluids Flow," Eiichi Fukushima, Lovelace Medical Center. Room 241 Compton Hall. 935-6276.

4 p.m. Biology seminar. "The Evolution of Community Structure in West Indian *Anolis* Lizards," Jonathan B. Losos, asst. prof., Dept. of Biology. Room 322 Rebstock Hall.

4 p.m. Fourth Annual Elvera and William Stuckenberg Lecture in Technology and Human Affairs. "Civilian Technology for Economic Growth: The Changing Face of Federal R&D," Arati Prabhakar, director, National Institute of Standards and Technology, U.S. Dept. of Commerce, Gaithersburg, Md. Sponsored by School of Engineering and Applied Science. Room 101 Lopata Hall. (Reception following in Lopata Hall Gallery.)

8 p.m. Architecture lecture. "Important Streets/Big Roads," Joseph Passonneau, civil engineer and former dean of the School of Architecture. Steinberg Hall Aud. 935-6200.

Tuesday, Nov. 1

12:10 p.m. Physical therapy seminar. "Discussion of Selected Musculoskeletal Measures in Healthy Children," Suzy Cornbleet and Nancy Woolsey, physical therapists and instructors, Program in Physical Therapy. Classroom C Forest Park Bldg., 4444 Forest Park Blvd. 286-1427.

4 p.m. Computational genomics seminar. "Paving the Biological Information Parkway at Washington University," Hugh Chou, staff scientist, Institute for Biomedical Computing, St. Louis. Room 100 Image Presentation and Quantification Lab, 700 S. Euclid. 362-2134.

4 p.m. Diabetes research group meeting. "IL-1 β -Induced iNOS and COX-2 Expression in Pancreatic β -cells," Guim Kwon, post-doctoral fellow, Dept. of Pathology. Pathology Library, Room 3723 West Bldg. 362-7435.

Wednesday, Nov. 2

8 a.m. Obstetrics and Gynecology Grand Rounds. "Complement Regulators in Human Reproduction," Theresa J. Oglesby, instructor, Division of Rheumatology. Clopton Aud., 4950 Children's Place. 362-3122.

11 a.m. Assembly Series Thomas Hall lecture. "Molecularizing the Neurosciences: The Case of Memory," Robert Olby, prof. of philosophy, U. of Pittsburgh, and author of *The Path to the Double Helix*. Room 215 Rebstock Hall. 935-5285.

4 p.m. Biochemistry and molecular biophysics seminar. "Allosteric Effectors of Hemoglobin: Tools to Understand Allosteric Mechanisms at the Molecular Level," Donald Abraham, prof. and chair, Dept. of Medicinal Chemistry, Virginia Commonwealth U., Richmond. Cori Aud., 4565 McKinley Ave.

4 p.m. Physics colloquium. "Gamma Ray Bursts," Jonathan Katz, prof. of physics. Room 204 Crow Hall. 935-6276.

7:30 p.m. School of Art slide lecture. "Thoughts on Progress — A Slide Lecture of the Artist's Work," Ruth Hardinger, visiting artist, New York and Oaxaca, Mexico. Steinberg Hall Aud. (Reception following in Bixby Gallery, Bixby Hall.) 935-6597.

Thursday, Nov. 3

10:30 a.m. Math wavelets seminar. "Navier-Stokes Equations (cont.)," Marco Cannone, prof. of mathematics. Room 100 Cupples I

Hall. 935-6726.

4 p.m. Genetics seminar. "Molecular Genetics of Human X Inactivation," Huntington F. Willard, Dept. of Genetics, Center for Human Genetics, Case Western U. School of Medicine, Cleveland. Erlanger Aud., McDonnell Medical Sciences Bldg. 362-7072.

4 p.m. History talk. "Japan: Old Problems — New Approaches," Elizabeth P. Tsunoda, asst. prof. of history. Cohen Lounge, Room 113 Busch Hall. 935-5450.

4 p.m. International Business Council lecture. "Economic and Social Developments in Eastern and Western Europe," Kurt Engleitner, management consultant specializing in human resources and former managing director of OIAG, the holding company for Austria's nationalized industries. May Aud., Simon Hall. 935-6398.

Friday, Nov. 4

Noon. Cell biology and physiology seminar. "Control of Differentiation and Proliferation in the Germline of *C. elegans*," Tim Schedl, asst. prof., Dept. of Genetics. Cori Aud., 4565 McKinley Ave. 362-6950.

Noon. Environmental engineering seminar. "The Role of Heterogeneous Catalysis in Improving the Environment," John T. Gleaves, assoc. prof. of chemical engineering. Room 226 Urbauer Hall. 935-8590.

Noon. Physics brown-bag lunch. "What We Have Learned From the Apollo Program," Robert Walker, McDonnell Professor of physics. Room 241 Compton Hall. 935-6276.

1 p.m. Solid state engineering and applied physics seminar. "Efficient Coupling of Single-mode Optical Fiber to Polymer Optical Waveguides," Tim Barry, graduate student in electrical engineering. Room 305 Bryan Hall.

4 p.m. Molecular microbiology seminar. "Filamentous Phage Assembly — A Paradigm for Bacterial Virulence Factor Export?" Marjorie Russel, Rockefeller U., New York. Room 775 McDonnell Medical Sciences Bldg.

6 and 8:30 p.m. Washington University Association Travel Lecture Series. "Nepal — In The Shadow of Everest," Dale Smith, photographer and video producer. Graham Chapel. Cost: \$4.50. 935-5212.



Music

Saturday, Nov. 5

8 p.m. Dept. of Music graduate voice recital. Soprano Elizabeth Peterson, graduate student in voice, and pianist Gail Hintz perform the music of Henry Purcell, Sergei Rachmaninoff, Modest Mussorgsky, Robert Schumann and Joaquin Nin. Graham Chapel. 935-5581.

Sunday, Nov. 6

8 p.m. New Music Circle concert. Pianist "Blue" Gene Tyranny. Steinberg Hall Aud. Cost: \$10 for the general public; and \$6 for students. 995-4963.



Performances

Thursday, Oct. 27

8 p.m. "The Black Swan," a play by Richard Selzer and directed by Henry Schvey, chair of drama. (Also Oct. 28 and 29, same time, and Oct. 30 at 2 p.m.) Part of Edison Theatre's "Stage Left" series. Edison Theatre. Cost: \$12 for the general public and WU faculty and staff; and \$10 for WU students. 935-6543.

Thursday, Nov. 3

7 p.m. Informal dance presentation. "Suzanne Costello: Dancing and Verbalizing the Non-verbal," Suzanne Costello, dancer-

choreographer and co-artistic director of Stuart Pimsler Dance and Theater, Columbus, Ohio. Dance Studio, Room 207 Mallinckrodt Center. 935-4475.



Miscellany Thursday, Oct. 27

8 a.m. Office of Continuing Medical Education seminar. "Interdisciplinary Symposium on Obstetrics and Gynecology." Ritz-Carlton Hotel, 100 Carondelet Plaza, St. Louis. (Continues Oct. 28 at 8:30 a.m.) To register or for cost info., call 362-6893.

Friday, Oct. 28

11:45 a.m. Office of Continuing Medical Education seminar. Rupert B. Turnbull Memorial Lectureship and Surgical Grand Rounds. Sponsored by the Section of Colon and Rectal Surgery at Jewish Hospital and the School of Medicine's Division of Human Molecular Genetics and Office of Continuing Medical Education. Continues Oct. 29 at 8 a.m. Brown Room and Steinberg Amphitheater, Jewish Hospital. To register or for more info., call 362-6893.

theater, Jewish Hospital. To register or for more info., call 362-6893.

3:15 p.m. International Student Resources Group tour. The bus will leave Stix International House for a tour of the Life Sciences Center, Monsanto Corp. 935-4787.

Saturday, Oct. 29

6:30 p.m. Annual Founders Day Banquet. Guest speaker is Paula Zahn, co-anchor of "CBS This Morning." Reservations required. Adams Mark Hotel, Fourth and Chestnut, St. Louis. 935-7378.

Sunday, Oct. 30

3:30 p.m. Tyson Research Center open house. Tyson Research Center celebrates its 30th anniversary. Open house includes a "Wolf Howl" with the Wolf Sanctuary, field experience, and a photographic display by David Kilper, asst. director of photographic services. Reservations required. Tyson Research Center, Exit 269 (Antire Road/Beaumont), off Interstate 44. Call Darlene at 727-2325.

Wednesday, Nov. 2

9:30 a.m.-1 p.m. Law school rummage sale. Proceeds benefit the United Way. Third Floor Courtroom, Mudd Law Bldg. 935-6483.

8 p.m. Poetry reading. Alfred Corn, author of "The West Door" and "Autobiographies," will read from his works. Hurst Lounge, Room 201 Duncker Hall. 935-5187.

Genetics philosopher gives Assembly Series talk

Historian and philosopher of genetics Robert Olby will give a lecture, titled "Molecularizing the Neurosciences: The Case of Memory," as part of the fall Assembly Series. His presentation, which serves as this year's Thomas Hall Lecture, will be held at 11 a.m. Wednesday, Nov. 2, in Room 215 Rebstock Hall. The talk is free and open to the public.

Olby has written extensively on the work of Charles Darwin and Gregor Mendel and on the moral and philosophical underpinnings of molecular genetics. He was the first to question whether Mendel, the Austrian monk and botanist who founded the modern classical school of genetics, would have agreed with the views promoted in his name during this century, namely that offspring inherit specific particles from their parents that determine adult traits.

More recently, Olby has turned his attention to the development of molecular biology and genetics. He wrote *The Path to*

the Double Helix as a counterpart to James Watson's account of Watson's co-discovery with Francis Crick of the double helix structure of DNA.

As a philosopher, Olby has scrutinized the ethical and legal implications arising from science's increasingly intimate knowledge of the molecular structure of the gene, and, in his most recent work, the molecular nature of neurological function, specifically memory.

Olby, professor of philosophy at the University of Pittsburgh, worked during the 1993-94 academic year at the Rockefeller University in New York with Professor Joshua Lederberg, nobel laureate for his work in molecular genetics. Prior to that, Olby taught in the Department of Philosophy at the University of Leeds in Great Britain for many years.

This lecture is co-sponsored by the Assembly Series, the Department of Biology and Student Union. For more information, call 935-5297.

Research and development focus of lecture

The director of the U.S. Department of Commerce's National Institute of Standards and Technology (NIST) will give the fourth Elvera and William Stuckenberg Lecture in Technology and Human Affairs at 4 p.m. Monday, Oct. 31, in Room 101 Lopata Hall.

Arati Prabhakar, Ph.D., will speak on "Civilian Technology for Economic Growth: The Changing Face of Federal R&D."

The Stuckenberg lecture honors the late William R. Stuckenberg, an electrical engineering graduate of Washington University, and his sister, the late Elvera Stuckenberg, who endowed a professorship in the School of Engineering and Applied Science. As part of the lecture's program, Chancellor William H. Danforth will present a remembrance of Elvera Stuckenberg, who died in March 1994.

In May 1993, Prabhakar became director of NIST, a rapidly growing agency that promotes economic growth by working with industry to develop and apply technology, measurements and standards.

President Clinton appointed Prabhakar to head NIST after she had served for two

years as director of the Microelectronics Technology Office in the Advanced Research Projects Agency of the U.S. Department of Defense.

Prabhakar was born in New Delhi, India, in 1959 and came to the United



Arati Prabhakar

States when she was 3. She received a bachelor's degree in electrical engineering from Texas Technological University in 1979, and a master's degree in electrical engineering from the California Institute of Technology in 1980. In 1984 she became the first woman to earn a Ph.D. in applied physics from that institution.

Prabhakar chairs a key government task force on how to make the "Information Superhighway" a reality.

For more information, call 935-5419 or 935-5474.

Fashion show to benefit Catholic student center

The annual brunch and fashion show to benefit the Catholic student center at Washington University will be held at noon Nov. 6 at the Frontenac Hilton Hotel, 1335 S. Lindbergh Blvd. The Most Rev. Justin Rigali, archbishop of St. Louis, will be guest of honor at the event, which is a vital source of support for the Newman Center and its activities.

The fashion show will feature fall fashions from Su-Ellen in Clayton. KMOX radio personality Charles Brennan will serve as master of ceremonies.

The Rev. Gary G. Braun directs the Newman Center, which provides religious programs, counseling services and social

activities for Washington University students of all denominations. The center, at 6352 Forsyth Blvd., also offers classes in Catholic theology and philosophy.

Braun, who recently was named director of all campus ministries in the St. Louis Archdiocese, said students associated with the center participate in many social service activities that aid the elderly, the poor, and needy children in St. Louis.

Individual tickets to the brunch and fashion show are \$40. A sponsor donation of \$250 includes two tickets; a Newman Knight and Newman Lady donation of \$500 includes four tickets.

For reservations, call 725-3358.

Anton Chekhov's bittersweet, comedic tale comes to Edison

"The Seagull," Anton Chekhov's bittersweet, comedic tale of tender young idealists who stake their lives on desperate romantic dreams and a gnawing fear of loneliness, opens Nov. 11 in Edison Theatre.

"Chekhov's characters cry through their laughter and laugh through their tears," said Annamaria Pileggi, artist-in-residence and director of the Performing Arts Department production of "The Seagull." "This is a play about the foibles of human nature."

"The Seagull" will be staged six times over two weekends with performances at 8 p.m. Nov. 11, 12, 18 and 19; and matinees at 2 p.m. Nov. 13 and 20.

Chekhov, a 19th-century Russian physician who gained lasting fame for his short stories and plays, is credited with bringing realism to a Russian theater movement then dominated by melodrama.

"Chekhov had a wonderful eye for the passion of common people," Pileggi said. "He shows not only the loneliness and despair of the common man, but also the incredible strength and optimism with which ordinary people face life and its trials."

Written in 1896, "The Seagull" is considered one of the first important works of modern comedy. It is the story of a young writer named Konstantine Treplev who is obsessed with a young actress named Nina. She initially returns Treplev's affections, but later becomes enamored with a famous writer named Trigorin, who coincidentally is having an affair with Treplev's mother.

Trigorin seduces Nina without leaving Treplev's mother and Nina has Trigorin's child. The once buoyant and optimistic Treplev becomes a hardened realist increasingly disillusioned by life.

The cast of "The Seagull" includes: seniors Paul Reilly as Treplev, Marion Oberle as Nina, David Baecker as Trigorin and Adam Dahlheim as the estate worker; sophomores Daniel Sullivan as Shamrayev, Katharine Powell as Masha and Johnny Kastl as Yakov; first-year student Jessica White as the cook; and graduate students Jason Radalin as Dorn and Sabine Heyne as the housemaid. Non-students in the cast are St. Louis County resident Juliet Karr as Arkadina; and Florissant Valley Community College English teacher Jack Hake as Sorin.

Two special events are being held in conjunction with the play. "The Good Doctor: The Life and Plays of Anton Chekhov," a lecture by Felicia Hardison Londre, curators' professor of theatre at the University of Missouri-Kansas City, is scheduled for 1 p.m. Thursday, Oct. 27, in Lambert Lounge, Rooms 303-304 Mallinckrodt Center.

"The Seagull: Behind the Scenes," a brown-bag lunch featuring a 15-minute sneak preview of the play and a presentation from Pileggi and cast members, will be held from noon to 1 p.m. Wednesday, Nov. 2, in Edison Theatre.

Tickets to "The Seagull" are \$8 for the general public and \$6 for senior citizens and University faculty, staff and students. For more information, call 935-6543.

Sports

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

Football

Last Week: Rochester 22, Washington 21

This Week: 1:30 p.m. Saturday, Oct. 29, Washington University vs. Case Western Reserve University, Francis Field

Season Record: 5-3 (2-1 UAA)

Washington's quest for an outright conference championship came to an end as the Bears lost to the University of Rochester. A pair of winning streaks were snapped with the loss — a six-game road streak and a three-game overall streak. The Bears can still claim a share of the UAA crown if they defeat Case Western Reserve University in their home finale this Saturday.

Senior tailback Todd Hannum, Maryville, Tenn., rushed for a season-high 163 yards against Rochester, and now ranks third all-time with 2,153 career yards.

Women's Volleyball

Last Week: Washington 3 (15, 15, 15), Colorado College 0 (4, 5, 7); Washington 3 (15, 15, 15), Illinois College 0 (8, 3, 0); Washington 3 (15, 15, 15), Nebraska Wesleyan 0 (6, 13, 8); Washington 3 (15, 15, 15), William Woods 0 (6, 6, 13)

This Week: Friday-Saturday, Oct. 28-29, UA A Championships, Field House.

Season Record: 30-2 (7-0 UAA)

The Bears extended their home winning streak to 64 consecutive matches by earning four victories and a championship at last weekend's Washington University National Invitational.

Three Bears landed on the all-tournament team, with Amy Albers, Washington, Mo., earning most valuable player honors after hitting 530. Joining Albers on the honor squad were senior Anne Quenette, Springfield, Ill., and junior Nikki Gitlin, Roslyn, N.Y. Over the weekend, Quenette became Washington University's career leader with 1,537 digs, surpassing the total of former NCAA Player of the Year Kathy Bersett.

Men's Soccer

Last Week: Washington 1, Emory 0; Washington 2, New York University 1

This Week: 1:30 p.m. Saturday, Oct. 29,

at Case Western Reserve University, (EDT), Cleveland.

Season Record: 13-3-2 (5-0-1 UAA)

Earning a pair of important UAA road victories, Washington captured a share of the UAA title — its fifth since the league's first year of competition in 1987. The Bears, who have won 10 consecutive games, can win the conference championship if they tie or beat Case Western Reserve University.

In a 1-0 win at Emory University, sophomore David Katz, Stony Brook, N.Y., tallied the game-winning goal in the game's first half.

Men and Women's Cross Country

Last Week: at UAA Championships — Women's Finish: 1st of 9; Men's Finish: 4th of 9

This Week: 11 a.m. Saturday, Oct. 29, University of Chicago Invitational, Chicago.

In just their second season as a revived varsity sport, the women's cross country upset nationally ranked Emory University to win a tight three-way chase for the UAA crown. Sophomore Jerylin Jordan, Kaneohe, Hawaii, placed second out of 70 finishers. Also earning All-UAA honors were junior Julie Pearman, Desloge, Mo., who finished sixth, and sophomore Ruby Hanna, Pittsburgh, who placed 10th.

On the men's side, the Bears jumped from eighth to fourth in the course of one year.

Women's Soccer

Last Week: Emory 3, Washington 1

This Week: 7 p.m. Oct. 26, Washington University vs. University of Missouri-Rolla, Francis Field; 11 a.m. Saturday, Oct. 29, at Case Western Reserve University, (EDT), Cleveland, Ohio; noon Sunday, Oct. 30, at Kalamazoo College, (EDT), Kalamazoo, Mich.

Season Record: 6-9-1 (0-5-0 UAA)

The Bears close out the 1994 campaign with a trio of matches this week and need three wins to avoid a second-straight losing season.

Engineering student's high school experiment finally rockets into space

"When our shuttle goes up, I think the feeling will be indescribable," said Washington University first-year mechanical engineering student Lynn Klein in May 1991.

Klein was referring to a NASA shuttle, scheduled for an early 1992 launch, that would be taking her microgravity experiment on a 10-day flight through space in a NASA component called a GAS (Get-away-special) can. The GAS can carries up to 200 pounds of experimental equipment.

Klein's experiment, which arose from her high school days when she attended NASA's famed Space Academy in Huntsville, Ala., entailed the study of microgravity on tomato seed germination in a nutrient solution. The goal was to see if the seeds would germinate and grow any differently in space than they would on Earth. The experiment, devised by Klein and two high school-aged Space Academy colleagues, David Brain, now a physics student at Rice University, and Ted Johnson, now working with Hewlett-Packard Co. in Boston, drew upon Klein's interest in plant sciences and engineering.

Three years later, the GAS can was still on Earth, a victim of agonizing shuttle flight delays and a backlog of NASA experiments created largely by the Challenger tragedy of 1986. But on Sept. 30,

1994, Klein, now in her fifth year as a Washington University M.B.A. 3/2 student, stood with Brain and Johnson and the astronauts' families along the Kennedy Space Center's Banana Creek as the shuttle Endeavour finally got their experiment off terra firma. There was a pandemonium of shouts, hugs, high-fives and back pats.

"It was just amazing, incredible," Klein said, describing the long-awaited moment. "The sound was so loud, the flames were so bright. I was thinking, 'It can't go up this quickly.' It was out of sight in three minutes, after we'd waited three years."

The experience was all the more exciting for Klein, who, the previous month, sat through a countdown for Endeavour that stopped with no time on the clock. Engine failure prevented a liftoff.

"Everybody was cheering in the cold and darkness," she recalled. "You could see the smoke coming out and then you heard this voice over the loudspeaker, 'No launch. No launch.' What a disappointment. I was beginning to think I'd never see it take off."

Now Klein and her collaborators will evaluate the results of their experiment later this fall by analyzing the germination rates and success and comparing them to control seeds that will germinate and grow for 10 days at the Space Academy. Klein will go back to Huntsville in mid-November to



Lynn Klein

evaluate the experiment and begin the control experiment.

Her experiment is one of the first to go up from the Alabama Space and Rocket Center, now called the U.S. Space and Rocket Center. On tap is a paper she plans to present at NASA's Goddard Symposium next October in Greenbelt, Md. By then, Klein will be a freshly minted Washington University M.B.A. graduate with a degree in mechanical engineering.

— Tony Fitzpatrick

Multicultural weekend draws 60 prospective students to campus

The first multicultural preview weekend of the academic year will take place Oct. 27-30 in conjunction with the University's Black Arts and Sciences Festival. The event has attracted about 60 prospective multicultural students, who will visit to get a taste of college life at Washington University.

Students will come from high schools in Memphis, Chicago, Milwaukee, Kansas City and Indianapolis, as well as St. Louis. The prospective students will be hosted by current students and will have the opportunity to sit in on classes, meet with administrators, tour the campus and St. Louis and get to know students on campus.

A tentative schedule of events includes a forum discussing "The Impact of Healthcare Reform on the Black Physician and the Black Community," as well as a Halloween bonfire and evening of jazz on Thursday, Oct. 27. Friday's activities focus on the academic experience at Washington University, featuring school and financial aid presentations, class visits, campus tours and a comedy night at Graham Chapel. On Oct. 29, the visiting students will have the chance to tour St. Louis, as well as meet with administrators and students from the schools and attend a semi-formal dance at the Marriott Pavilion as part of the Black Arts and Sciences Festival. A Jambalaya Jambo-ree — a bon voyage party — will be held in their honor.

The multicultural preview weekends were developed last year by a coalition of multicultural students and the Office of Undergraduate Admission to attract prospective multicultural students to Washington University and demonstrate the University's commitment to diversity. This weekend is the first in a series of three; the other two are scheduled for late February and early March.

Several multicultural organizations have worked together to plan the multicultural weekends, including the Association of Black Students, ASHOKA, Asian Students Organization, Association of Korean Students and the Association of Latin Students, as well as the Office of Undergraduate Admission and the Student Admission Committee.

Financial Aid Office reorganized, renamed — from page 1

Experience Cluster," said Dennis Martin, assistant provost and director of Student Financial Services. "It became clear that the process was not streamlined enough, that there was a lot of overlap and room for improvement. Our staff met to discuss ways to reduce the time a student spends with us and, in doing so, really became partners in shaping this new process."

Front-line employees helped identify redundant steps and areas where automation would be more efficient. The reorganization reduced the amount of time a student spends in these offices, as well as the frequency of referrals to other offices. "We have all become more familiar with the different financing and financial aid options and do more general counseling with families who have questions," said Sue Hosack, senior associate for operations in Student Financial Services. "Furthermore, my position now has a defined relationship with each of several offices, Information Systems, the Registrar's Office and Student Accounting."

The reorganization also saved money. As Student Financial Services took on more responsibilities for CSP and TIP, the office began sharing salaries and other resources with the Office of Student Accounting. Additionally, by collaborating more closely with Information Services, staff developed a more efficient automated system that, in conjunction with a greater reliance on part-time student employees, freed staff time and enabled some employees to reduce their hours. Normal attrition in the Registrar's

Office has decreased staff by 20 percent over two years.

This is just one example of recent improvements to student services. Other examples, some of which will be detailed in future Record articles, include:

- Deans from the College of Arts and Sciences are holding regular evening office hours in the Residential Life Office on the South Forty (in Wohl Center) from 4-7 p.m. Tuesday through Thursday.

- The college, in cooperation with the Career Center, has opened a student resource room on the South Forty across from the Residential Life Office that includes medical, law and other professional school bulletins, as well as graduate and career information. The new room is open 4-8 p.m. Monday through Thursday and is staffed by a pre-medicine student, a pre-law student, and Career Center employees.

- Nineteen new computer terminals set up around campus enable students to review their grades, see course listings with times and locations, update their addresses and view student billing information. The terminals are located in Mallinckrodt Center, South Brookings Hall, South Forty and other spots on campus.

- International students had a warm welcome to Washington University this fall thanks to combined efforts of the Housing Office, Office of Residential Life, Food Services, Transportation Department and International Office. Results of last fall's focus groups prompted the offices to work together to arrange food when the cafeterias were closed, linen packs for those who did

Front-line employees helped identify redundant steps and areas where automation would be more efficient.

Lifelong Learning Institute attracts older learners

University College will inaugurate the new Lifelong Learning Institute at 2 p.m. Monday, Oct. 31, at the West Campus, 7425 Forsyth Blvd. (the former Famous-Barr building in Clayton). The institute is designed to provide non-credit educational opportunities for older learners.

The Lifelong Learning Institute is modeled after more than 90 Institute for Learning and Retirement programs nationwide. These programs are affiliated with such universities as Brown, Harvard, Duke, Northwestern, Johns Hopkins, University of Miami, University of Michigan, the universities of California at Los Angeles and Berkeley, and the Five College Consortium in Amherst, Mass. Dartmouth College

also is opening an institute this year.

The central activity of these institutes is study groups, which normally meet once a week for 10-16 weeks. Topics, which are similar to typical academic college courses, are chosen by a curriculum committee composed of institute members, who also organize and moderate the courses and share in leading class discussions.

The inaugural event, which is free and open to the public, will feature the steering committee members of Washington University's Lifelong Learning Institute, who will provide information about the program's schedule, courses and membership fees. For reservations or more information, call 935-6700.

Campus Watch

The following criminal incidents were reported to the Hilltop Campus Police Department Oct. 17-23. 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.

Oct. 17

10:23 a.m. — Currency and receipts belonging to the Department of Psychology were reported stolen from Room 107 Eads Hall sometime between Oct. 14 and Oct. 17.

1:50 p.m. — A visitor's fanny pack containing currency, medication and a driver's license was reported stolen from a women's locker in the Athletic Complex sometime between 1 and 1:35 p.m. Oct. 17.

Oct. 18

10 a.m. — A video camera belonging to the psychology department was reported stolen from Room 114 Eads Hall sometime between 5 p.m. Oct. 17 and 9 a.m. Oct. 18.

10:45 a.m. — A microwave oven was reported stolen from Room 212A Lopata Hall sometime between 5:30 p.m. Oct. 17 and 9:30 a.m. Oct. 18.

12:43 p.m. — Two modems belonging to the John M. Olin School of Business were reported stolen sometime between 8:30 a.m. Oct. 14 and 11 a.m. Oct. 17.

Oct. 19

9:15 a.m. — A television and videocassette recorder belonging to University College were reported stolen from Room 20 January Hall sometime between 10 p.m. Oct. 17 and 8:30 a.m. Oct. 18.

11:50 a.m. — A student's bicycle and lock were reported stolen from the bike rack on the south side of Olin Library sometime after Sept. 24.

1:57 p.m. — A student's television was reported stolen from a Wydown East suite sometime between 8:45 a.m. and 1:40 p.m. Oct. 19.

2:57 p.m. — A faculty member's cap was reported stolen from Mudd Law Building sometime between 10 a.m. Oct. 10 and noon Oct. 13.

11:07 p.m. — A visitor's GMC van was reported stolen from Brookings Drive in the

westbound lane sometime between 7:30 and 11 p.m. Oct. 19.

Oct. 20

8:59 p.m. — Trespassing occurred at 12:30 p.m. at Shepley Residence Hall. A student entered her room and noticed a white male subject approximately 20-22 years old, 5'11" and 150 lbs., thin build with dark complexion and dark curly brown hair, wearing a dark T-shirt, blue jeans and white tennis shoes. He was going through her roommate's CDs. The subject then left the dorm in an unknown direction; nothing appeared to be missing.

Oct. 21

11:30 a.m. — A faculty member's wallet containing credit cards was reported stolen from Room 507 Jolley Hall sometime between 9:30 a.m. and 7 p.m. Oct. 20.

3:33 p.m. — A student's mountain bike was reported stolen from the bike rack on the east side of the Athletic Complex sometime between 1:30 and 3:30 p.m. Oct. 21.

4:36 p.m. — A student's backpack was reported stolen from the main level of the Campus Store in Mallinckrodt Center sometime between 11:15 a.m. and 11:20 a.m. Oct. 21.

5:07 p.m. — A student's mountain bike and lock were reported stolen from the bike rack on the north side of Givens Hall sometime between 2 and 5 p.m. Oct. 21.

Oct. 22

9:43 p.m. — A student's mountain bike and lock were reported stolen from the south side of Simon Hall sometime between noon and 5 p.m. Oct. 21.

Oct. 23

3:06 a.m. — A front license plate was reported stolen from a student's vehicle parked on the lower level of Wohl garage sometime between 10 p.m. Oct. 15 and 4 p.m. Oct. 18.

Introducing new faculty members

Medical Campus:

Jeffrey A. Lowell, M.D., assistant professor of general surgery, comes from the University of Nebraska Medical Center in Omaha, where he was a fellow in adult and pediatric transplantation. His research focuses on intestinal transplantation and living-donor liver transplantation. He received a bachelor's degree in psychology from Oberlin (Ohio) College in 1981 and a medical degree from the Yale University School of Medicine in 1985.

Helen Piwnica-Worms, Ph.D., associate professor of cell biology and physiology, comes from Harvard Medical School in Boston, where she was an associate professor of microbiology and molecular genetics. She has been appointed with tenure. She also is an associate investigator with the Howard Hughes Medical Institute. Her research focuses on cell cycle control. She received a bachelor's degree in biology in 1979 from St. Olaf College in Northfield, Minn., and a doctorate in microbiology and immunology in 1984 from Duke University in Durham, N.C.

For The Record

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

Of note

James A. Brink, M.D., assistant professor, Howard P. Forman, M.D., former resident, and **Jay P. Heiken, M.D.**, professor, all in radiology at the School of Medicine's Mallinckrodt Institute of Radiology, received the Contrast Award from the Society of Computed Body Tomography and Magnetic Resonance. Their winning paper was titled "Reduction of Intravenous Contrast Material Required for Hepatic Spiral Computed Tomography." ...

N. Mohan Kumar, Ph.D., professor of mathematics, received the Bhatnagar Award from the Council of Industrial and Scientific Research of India. He received the award for his contributions to commutative algebra and algebraic geometry. ...

David Schlessinger, Ph.D., professor of molecular microbiology and of medicine and of genetics, received an honorary degree from the University of Uppsala in Sweden for his work as one of the world's

leading molecular geneticists. Schlessinger directs the Center for Genetics in Medicine. His lab is involved in a major project to map the human X chromosome and to analyze several genes involved in X-linked diseases.

Speaking of

Carl Phillips, assistant professor of both African and Afro-American studies and English, will read his poetry before The Academy of American Poets in New York on Nov. 1. The program is titled "New Voices: Rafael Campo, Suzanne Gardinier and Carl Phillips."

On assignment

Several professors served as faculty members during the George Engelmann Mathematics and Science Institute's Scholar Research Program. The program gives high school seniors an opportunity to conduct research with faculty from Washington University, St. Louis University and the University of Missouri-St. Louis. Washington faculty who participated were: **Richard L. Axelbaum, Ph.D.**, assistant professor of mechanical engineering; **David A. Balota, Ph.D.**, associate professor of psychology; **D. Anne Cross, M.D.**, assistant professor of neurology and neurological surgery; **Helen Donis-Keller, Ph.D.**, professor of both genetics and surgery and director of the Division of Human Molecular Genetics in the Department of Surgery; **Jack R. Engsborg, M.D.**, research associate professor of neurological surgery; **Jeffrey M. Gidday, M.D.**, assistant professor of neurological surgery; **Stephen L. Gluck, M.D.**, associate professor of both cell biology and physiology and medicine; **Leonard S. Green, Ph.D.**, professor of

psychology; **Richard Grodsky, D.Sc.**, assistant professor of electrical engineering; **Ronald Indeck, Ph.D.**, associate professor of electrical engineering; **Irwin C. Jacobs, Ph.D.**, research associate in chemical engineering; **Bamin Khomami, Ph.D.**, associate professor of chemical engineering; **Stan C. Kwasny, Ph.D.**, senior research associate in computer science; **Ronald P. Loui, Ph.D.**, associate professor of computer science; **Jeremiah J. Morrissey, M.D.**, research professor of medicine; **John G. Neely, M.D.**, professor of otolaryngology; **Abbas Parsian, Ph.D.**, assistant professor of genetics in psychiatry; **Marshall A. Permutt, M.D.**, professor of medicine; **Joseph L. Price, M.D.**, professor of anatomy and neurobiology; **Timothy L. Ratliff, M.D., Ph.D.**, associate professor of urological surgery and director of urologic research; **William D. Richard, Ph.D.**, associate professor of electrical engineering; **Marc H. Schieber, M.D., Ph.D.**, assistant professor of both anatomy and neurobiology and neurology and neurological surgery; **Donald L. Snyder, Ph.D.**, Samuel C. Sachs Professor of electrical engineering; **Kapil Talwar, Ph.D.**, postdoctoral fellow in chemical engineering; **Clifford M. Will, Ph.D.**, professor and chair of physics, and **Michael E. Wyssession, Ph.D.**, assistant professor of earth and planetary sciences.

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 information, call Sanford at 935-5293.

Offices reorganize staff to streamline workload

The Chancellor's Office and the Office of Governmental Relations have reorganized their staff support to help streamline work assignments.

Two part-time positions have been eliminated and a new full-time executive assistant position has been created, according to Sara L. Johnson, special assistant to the chancellor. The executive assistant coordinates the daily operations of both offices and is primarily responsible for Chancellor William H. Danforth's schedule. Johnson said Virginia Withers has been

appointed executive assistant. She previously worked as a human resources manager at Bethesda Eye Institute, now called St. Louis University's Anheuser-Busch Eye Institute. She also held a variety of administrative positions at the University of Illinois in Chicago for 20 years.

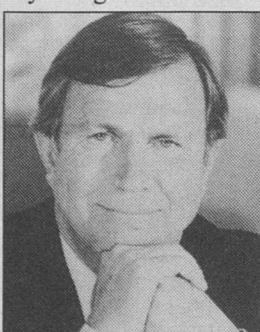
Withers received a bachelor's degree in psychology from the University of Illinois in Chicago in 1977 and a master's degree in human resources management from Washington University in 1993. She can be reached at 935-5164.

Alumni, Brookings awards to be presented during Founders Day

Washington University will honor seven alumni and two members of the University community at this year's Founders Day banquet on Saturday, Oct. 29, at the Adam's Mark Hotel in downtown St. Louis. The banquet, which commemorates the University's founding in 1853, will begin with cocktails at 6:30 p.m. CBS news anchor Paula Zahn will be the keynote speaker at the event, which is sponsored by the Washington University Alumni Association.

The Distinguished Alumni Award is given in recognition of outstanding professional achievement, contributions in areas of public service, exceptional service to the University or any combination of the three. The following alumni will be honored: Lattie F. Coor, president, Arizona State University; George Eberle Jr., president and chief executive officer, Grace Hill Neighborhood Services; Terry L. Lengfelder, central region managing partner, Arthur Andersen & Co.; Jerome T. Loeb, president, the May Department Stores Co.; Jack D. Minner, partner, the Todd Organization of St. Louis; Marie Prange Oetting, University and community volunteer; and Christian B. Peper, of the Peper, Martin, Jensen, Maichel and Hetlage law firm.

Coor first came to Washington University as a graduate student from Northern

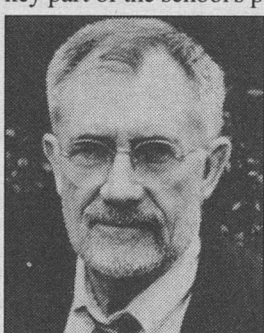


Lattie F. Coor

Arizona University in 1958. He joined the faculty in 1964 as a lecturer in the Department of Political Science. He served as assistant to the chancellor, assistant dean of the Graduate School of Arts and Sciences, director of international studies, vice chancellor and University vice chancellor. Coor received a master's degree and doctorate in political science from Washington in 1960 and 1964, respectively.

Eberle received a master's degree from the George Warren Brown School of Social Work in 1958. A founding member of the school's Century Club, Eberle has taught at

the school and incorporated Grace Hill as a key part of the school's practicum program.



George Eberle Jr.

including a bachelor's degree in business from Washington. His current position with the company is central region managing partner. He has volunteered for the Olin School and received the school's Distinguished Alumni Award in 1991.

Loeb received

a master's degree

in mathematics

from Washington

in 1964. He then

began his career at

the Famous-Barr division of the May Department Stores Co. He became May's chief

financial officer in 1981 and was named

president in 1993. He is chair of the board of

Junior Achievement of Mississippi Valley

Inc. and vice chair

of the St. Louis

Science Center's

board of commis-

sioners. An interest

in mathematics,

shared with his

wife, Carol, led

Loeb to establish

the Jerome T. Loeb

Colloquia in

Mathematics at the

University in 1991.

Minner graduated from Washington with

a bachelor's degree in business in 1950. In

1975, he and fellow alumnus Robert Scharff

established the Minner-Scharff Organiza-

Eberle's honors include the school's Outstanding Alumni Award. He also serves on the dean's Professional Advisory Committee.

Lengfelder joined Arthur Andersen & Co. in

1961 after receiving

a bachelor's degree in business from

Washington. His current position with the

company is central region managing partner.

He has volunteered for the Olin

School and received the

school's Distinguished Alumni

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established the Minner-Scharff Organiza-

tion merged with the John O. Todd Organization, at which point Minner became a

principal partner. The Todd Organization is a national

benefit consulting firm. Minner was president of the Olin School's

Alumni Association in 1988-89 and has served on

reunion committees, the Alumni

Award Selection

Committee and on the Alumni Board of

Governors. He is overall gift chair for his

upcoming 45th reunion.

Oetting has been an active volunteer at

Washington since her 1949 graduation from

the College of Arts and Sciences. She

has served as a volunteer for the Student Life Task

Force and the Arts and Sciences Eliot Society member-

ship committee and is a Campus Y and Women's

Society board member. She has

been overall program chair of the Undergraduate Reunion Program since 1988. Oetting

and her late husband, William Oetting, established an Arts and Sciences scholarship in

1988, which she continues to support.

Peper graduated from Harvard University

with a degree in classics and then enrolled at the School of Law, where he became editor in

chief of the Law Quarterly. Peper, who received a

law degree from Washington in 1935, taught at the

law school for nearly 20 years. In collaboration with

his aunt, Peper established the Christian Peper

Memorial Fund for

deserving law students in memory of his great-grandfather. Peper received the Washington University Alumni Association's Distinguished Law Alumni Award in 1984.

The two Robert S. Brookings Awards will be presented to William R. Orthwein Jr. and Alvin J. Siteman. The awards are given by the Board of Trustees to individuals "who exemplify the alliance between Washington University and its community."

Orthwein is a life patron of the William Greenleaf Eliot Society and recently endowed

a chair in the School of Law in memory of his father, who

graduated from the school in

1905. Orthwein's involvement with

Washington also includes his past membership on the John M. Olin

School of Business Task Force for the Commission on the Future

of Washington University.

Siteman is a former member of the Board of Trustees. A life patron of the Eliot Society,

he also served on the John M. Olin School of Business

Task Force and chaired the Olin Challenge Capital

Gifts Committee in 1980-81. He and his wife, Ruth,

established the Philip L. Siteman Professorship in

Marketing in 1985

in memory of his father. Siteman recently

established the Alvin J. Siteman Cerebrovascular Research Fund at the Center for the

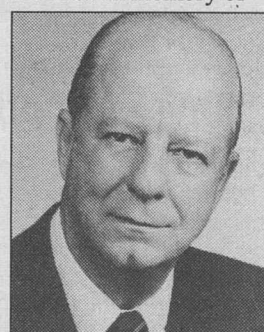
Study of Nervous System Injury in the Department of Neurology. He and his wife also

have supported a scholarship in Arts and Sciences for African-American students. In

1994 Siteman received the Dean's Medal, awarded to individuals whose service to the

John M. Olin School of Business is considered exceptional.

To make reservations, call 935-7378.



William R. Orthwein Jr.

of Washington University.

Siteman is a former member of the Board

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Opportunities & personnel news

Hilltop Campus

The following is a 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. Note: All positions require three letters of recommendation.

Nurse Assistant, Part time 950061.

Health Services. Requirements: High school graduate; ability to take temperature and blood pressure. Hours: 12:30 to 8:30 p.m. Mondays through Fridays. Duties: Answer door, telephone; greet students; pull and file charts; take vital signs; prepare meals, change bed linens; restock supplies; some clerical tasks. Application required.

Administrative Assistant 950077.

Board of Trustees. Requirements: High school graduate, some college preferred; efficiency in word processing and data processing; highly computer skilled with ability to creatively use computer to increase office efficiency; ability to coordinate numerous event preparation details; willingness to work outside of office hours to set up meetings/events; organizational skills; ability to maintain good office records for efficient retrieval; skill in proofing minutes and reports; appreciation of the need for accuracy, even in routine things; willingness to assist in a variety of tasks; pleasantness with fellow workers and external constituencies on phone; typing 50 wpm with accuracy. Clerical tests required.

Communications Technician II 950081.

Communications Services. Requirements: Certificate of training and/or equivalent experience in communications, including telephone and computer networking; ability to perform strenuous work and heavy lifting; willingness to work flexible hours and overtime; use of personal vehicle required with mileage reimbursement; ability to detect and differentiate the telephone color code. Resume required.

Assistant Publications Editor 950082.

Public Affairs. Requirements: Some college, bachelor's degree preferred; outstanding editing and writing abilities; minimum of one year experience in writing and editing preferred; familiarity

with typography and print production; skill and interest in proofreading; concern with detail and accuracy; ability to work well with wide range of people. Resume required.

Library Assistant, Part time 950088.

John M. Olin School of Business. Requirements: Some college, bachelor's degree preferred; good communication skills; strong service orientation; ability to understand, interpret and implement a wide variety of policies and procedures, especially on weekends and evenings when working alone for several hours; typing 35 wpm with accuracy. Summer work schedule will differ upon person's availability and library needs, but will be at least 20 hours per week. Normal hours are 11 a.m. to 3 p.m. Mondays and Tuesdays; 3 to 7 p.m. Fridays; 10 a.m. to 6 p.m. Saturdays; and noon to 6 p.m. Sundays. Clerical tests required.

Receptionist/Secretary 950092.

Department of English. Requirements: High school graduate; cheerful and courteous disposition; flexibility; attentiveness to detail; ability to set priorities and work on numerous tasks with constant interruption; working knowledge of University procedures preferred; general office experience; typing 50 wpm with accuracy. Clerical tests required.

Cashier, Part time 950094.

Accounting Services. Requirements: High school graduate; one year cashiering or comparable cash handling experience; ability to organize and account for a heavy, steady volume of checks and cash with a high degree of accuracy; demonstrated customer service skills, including the ability to be courteous under all circumstances; capable of learning two complex computer systems; flexibility to work additional hours as required; flexibility to work at Hilltop Campus or School of Medicine. Clerical tests required.

Assistant to the Dean 950095.

School of Architecture. Requirements: Bachelor's degree; typing 50 wpm with accuracy; strong written and verbal skills; proficiency in Microsoft Word, PageMaker and Excel to frequently prepare written reports and statistical reports; organizational skills for planning committee meetings, arranging for visiting faculty, coordinating symposia and accreditation visits; familiarity with SIS and FIS systems to assist

business manager with day-to-day transactions. Assistant will help the dean prepare written reports regarding accreditation, strategic planning, student recruitment and graduate job information. Clerical tests required.

Deputized Police Officer 950096.

University Police. Requirements: A total of 640 hours of approved academy training to be certified; ability to meet current police officer standards and training commission standards for certification as a peace officer in a first class county in Missouri; ability to qualify for deputization as a police officer by the St. Louis County Police Department; valid Missouri driver's license. Application required.

Technical Associate/Programmer, Part time 950097.

Student Educational Service. Requirements: Certificate or associate's degree. Duties: Manage personal computer data base; develop and maintain data base file systems; investigate student information to enter, edit and correct in data systems; generate statistical data and reports. Resume required.

Writing Skills Specialist, Part time 950098.

Student Educational Service. Requirements: Master's degree; teaching experience at the secondary or post-secondary level; knowledge of the problems of the academically underprepared student. Resume required.

Library Technical Assistant 950099.

Olin Library. Requirements: Two years of college-level study or equivalent experience; knowledge of accounting through experience or course work; experience with Washington University's Financial Information System preferred; ability to work with details in an organized way; valid driver's license and ability to obtain chauffeur's license; physical stamina; ability to move and lift heavy equipment, supply items and filled mail sacks, and to make delivery trips in bad weather; mail handling and/or shipping receiving experience helpful. Employment is contingent upon passing physical exam. Clerical tests required.

Dispatch Supervisor 950107.

University Police. Requirements: Some college, bachelor's degree preferred; three years recent experience as police or emergency services dispatcher with some supervi-

sory experience preferred; knowledge of electronic security, alarm and card access systems; experience with automated records information systems, preferably including computer-aided dispatch; some experience with training and staff evaluation preferred; REGIS certification or equivalent preferred. Application required.

Senior Project Leader 950110.

Computing and Communications. Requirements: Four years of college; five years data processing experience; ability to design, program and install major data processing systems; ability to lead others in data processing project development; ability to design, write and install MANTIS or FOCUS systems. Resume required.

Systems Analyst, Part time 950111.

Department of Biology. Requirements: Bachelor's degree in a computer-related field preferred; familiarity with Appletalk EtherTalk, TCP/IP Protocols, and network maintenance; experience with Internet usage and supporting Macintosh systems; knowledge of MACTCP and some public domain TCP/IP Macintosh software preferred; good interpersonal and organizational skills and ability to explain computer concepts to others; some background in biology, chemistry and/or atmospheric science desired. Resume 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 362-4920 to request an application. External candidates may call 362-7195 for information regarding application procedures or may submit a resume 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.

Programmer Analyst WUSBCS-JH

WUSBCS. Requirements: Bachelor's degree in computer sci-

ence with two to three years experience in application support; one year of programming experience; background in Mumps programming, IDX applications, program maintenance and user support.

Programmer Analyst WUSBCS-JH

WUSBCS. Requirements: Bachelor's degree in computer science with two to three years experience in application support and one year of programming; experience with HL7, RDB, C and development of specifications for application programs in a patient registration data base.

Programmer Analyst I 940898-R.

Psychiatry. Requirements: Bachelor's degree in computer science, statistics, mathematics or related scientific field; knowledge of quantitative and population genetics desired; proficiency in SAS and C. Job located at Boatmen's Bank Building.

Medical Secretary II 940975-R.

Neurological Surgery. Requirements: High school graduate or equivalent, some college preferred; related experience in medical environment preferred; CRT and dictaphone experience; typing 50 wpm.

Technical Writer/Editor 950089-R.

Surgery. Requirements: Bachelor's degree, master's degree or Ph.D. preferred; experience in National Institutes of Health grant writing in biomedical sciences. Project will last through January 1995.

Clerk Typist II 950120-R.

Risk Management. Schedule: Part time, 24 hours per week, 8 a.m.-5 p.m. Mondays, Wednesdays and Fridays. Requirements: High school graduate or equivalent with one year related experience, some college preferred; ability to transcribe with accuracy; knowledge of legal and medical terminology; typing 50 wpm; experience with WordPerfect 5.1.

Medical Secretary II 950149-R.

Metabolism. Requirements: High school graduate or equivalent, supervisory experience preferred; knowledge of IBM and Lotus/Excel preferred; background in purchasing or accounting helpful; typing 60 wpm.

Computer programmer I 950197-R.

Lipid Research. Requirements: Experienced DBASE IV programmer to develop new programs, personal computer software support, and conduct hardware troubleshooting;

Novell network experience and scientific background preferred.

Medical Secretary I 950204-R.

Surgery. Requirements: High school graduate or equivalent, medical secretary experience preferred; experience with grants application; typing 60 wpm. Will be dealing with patients and handling several projects at one time.

Medical Secretary II 950207-R.

Neurology. Requirements: Two years of college; two years related experience preferred; knowledge of WordPerfect; typing 60 wpm. Will have frequent contact with Alzheimer's disease patients and their families.

Data Assistant 950229-R.

Psychiatry. Schedule: Part-time, 20 hours per week, Mondays through Fridays, flexible hours. Requirements: High school graduate or equivalent, some college preferred; experience with DOS, WordPerfect and data management; research experience preferred; typing 50 wpm.

Departmental Accounting Assistant 950247-R.

Biochemistry. Requirements: High school graduate or equivalent; three years related experience; knowledge of general office procedures; typing 40 wpm; experience with Macintosh; knowledge of University procedures and usage of forms preferred.

Special Project Assistant 950254-R.

Finance Office. Requirements: Two years college or equivalent work experience; knowledge of accounting, finance or data processing preferred. Duties: Computer report production and distribution, quality control for three computer printers and support of department's procurement activities.

Division Administrator 950287-R.

Division of General Medicine. Requirements: Bachelor's degree; experience with on-line integrated accounting systems and spreadsheet programs preferred. Duties: Manage the administrative and support functions; financial operation, grant and human resource management.

Systems Operator 950312-R.

Psychiatry. Schedule: Part-time, 20 hours per week. Requirements: Ability to assist systems analyst in hardware/software installation, troubleshooting and minor programming; some college or technical school training preferred.

'Physics is not something we do in an Ivory Tower,' professor asserts — from page 1

humans; greenhouse gases and the possibility of global warming; ozone depletion and its consequences; and the difference between good and bad science.

As Dickhoff points out, "It's not a course where you say 'it's all so nice and lovely.' This is a difficult course to teach because there are a lot of distressing things to talk about — nuclear proliferation, global climate change, energy consumption. As an example, the number of people on the planet is a very important issue. If all countries worldwide consumed as much energy as we do in the United States, we'd run out of energy resources in no time. Students have never seen these issues put together like this; they've heard about all these concerns as single items, but not related to each other. This course can at least address the global picture."

Dickhoff, who initiated the course, says he did it out of a sense of responsibility. "Physics is not something we do in an Ivory Tower. Scientists should discuss the important issues with the community of students. It's a practical course trying to make people aware of what's going on and how physics fits in there." He and the three other faculty members teach "Physics and Society" on top of their normal course load.

Brian Hoffman, a first-year student from Lake Zurich, Ill., is taking the class this semester. He took both honors chemistry and physics in high school and found them boring. "They weren't applicable to my everyday life. But this class makes a connec-

tion between theoretical science and applicable science and technology; I find I can actually apply the physics and chemistry I learned in high school."

Hoffman, who plans to major in political science, said the course also is making him more aware of issues like nuclear power and giving him a strong foundation for dealing with these issues. "If I were to get into a debate, say about nuclear energy, I feel I have a better background now to discuss the issue. So many people act from a level of ignorance. They hear nuclear energy and they say, 'Oh, that's bad,' or 'Oh, that's good,' without really knowing why."

Bender said having students investigate how science *really* works is an important component throughout the course. Many of the assignments, he points out, require the students to address issues quantitatively. "I hope students come away from the course with an ability to look critically at what people are telling them and take to task those, especially politicians, who talk to us in nonquantitative terms."

James Kragenbring, a sophomore from St. Charles, Mo., took the class last fall. As a nonscience student majoring in finance, he said he found the course enlightening. "The best thing this course does is to create more intelligent voters. It educates people about the important energy and environmental issues that we commonly hear about and face. We can understand what the politicians are talking about when, for

example, they say we have a greenhouse problem."

Dickhoff said it's rewarding to hear students say the course has influenced their actions and way of thinking. He cites the homework assignment that asks students to keep track of their energy consumption. "When they look at how much energy they are using and then they link that amount of energy to how many pounds of coal it takes to run a refrigerator or air conditioner, then it becomes very tangible for them — especially when you also tell them that for so many pounds of coal burned, there is so much sulfur dioxide and carbon dioxide released in the atmosphere. It's very satisfying to hear students say that they're now looking into recycling or that they're more concerned about turning off the lights."

The professors keep the course current and will change a class discussion to accommodate something relevant in the news that day or week. The Star Wars initiative, for example, was a class topic the first two years, but as that program lost steam, so did its relevance for the students. Recent additions to class discussions include the development of nuclear weapons in North Korea and radiation experiments conducted during the Cold War that are just coming to light now.

"Physics and Society" isn't the only course the department offers the nonscience student. For instance, there's "Physics and Controversy: Galileo, Newton and Oppenheimer," which explores the contro-

versies surrounding these scientists and the social implications of their work. There is also "Awesome Ideas in Physics," which is an introduction to those ideas that have revolutionized our perceptions of the world. And a new course will be offered next year on "How Things Work," which will explain how it is that one can instantaneously send a message around the world via a computer or how TV characters appear in living rooms every night.

— Susan Killenberg

Packard — from page 1

biology from Harvard University in 1984, and a Ph.D. in biology in 1989 from the University of California, Berkeley. After a postdoctoral appointment at the University of California, Davis, he joined the Washington University Department of Biology in 1992.

The David and Lucile Packard Foundation was created in 1964 to support and encourage organizations dependent on private funding and volunteer leadership. The 1994 fellows were nominated by the presidents of their universities and recommended by a committee of nationally recognized scientists and engineers. The 11-member review panel includes former presidential science adviser Allen Bromley, Ph.D., of Yale University, and Thomas Cech, Ph.D., a Nobel Prize-winning chemist from the University of Colorado.