

3-29-1990

## Washington University Record, March 29, 1990

Follow this and additional works at: <http://digitalcommons.wustl.edu/record>

---

### Recommended Citation

"Washington University Record, March 29, 1990" (1990). *Washington University Record*. Book 510.  
<http://digitalcommons.wustl.edu/record/510>

This Article is brought to you for free and open access by the Washington University Publications at Digital Commons@Becker. It has been accepted for inclusion in Washington University Record by an authorized administrator of Digital Commons@Becker. For more information, please contact [engeszer@wustl.edu](mailto:engeszer@wustl.edu).



Biologist Karel Schubert, Ph.D., recently returned from a Costa Rican rain forest, where he is looking for tropical plants that naturally repel insects.

## Rich environment

### Costa Rican rain forest is site of tropical plant study by Schubert

Deep in winter, while armchair botanists order seed for their spring gardens, a Washington University biologist searches the wild, lush rain forests of Costa Rica for plants of antiquity that will bear seeds of the future.

Karel Schubert, Ph.D., assistant director of the Center for Plant Sciences and Biotechnology at the University, is one of a handful of scientists in the world looking for tropical plants that naturally repel insects. He collects specimens from the Organization for Tropical Studies Biological Station at La Selva, a multi-institutional preserve established by a group of international universities and Costa Rican scientists. The 90,000-acre area, starting at 200 feet above sea level and rising to more than 6,000 feet, comprises approximately one-fourth of the virgin forest in the country, which elsewhere is badly deforested.

Schubert and his collaborators plan to incorporate beneficial genes from these plants into agricultural crops such as corn, soybeans, wheat and cotton, to make more self-sufficient plants that will not require costly and environmentally damaging insecticides. His efforts are part of a biotechnological trend that seeks to reshape global agriculture, restore and protect dwindling tropical plant species and refurbish depressed Third World countries. The search may even yield important chemicals that could be developed into drugs to treat diseases such as AIDS and cancer.

"Costa Rica is one of the richest environments for plants and animals in the world, with a wealth of diversity," says Schubert. "We're using this diversity to seek out proteins that we can engineer into plants to develop better plants — for both American and Third World agriculture. These genetic resources, which are disappearing rapidly in many parts of the world, must be preserved and used scientifically to their best benefits before time runs out. Tropical forests contain half of all the plant and animal species in the world. Yet in Costa Rica alone, 120,000 acres of forest are disappearing each year."

Species extinction in tropical countries, spurred by massive deforestation, is occurring at break-neck

speed, says Peter Raven, Ph.D., Engelmann Professor of Botany at Washington University and director of the Missouri Botanical Garden.

"Each year an area nearly the size of West Virginia, some 20,000 square miles of forests, is being harvested for timber in tropical forests," says Raven. "If this rate of clear-cutting continues, the world's tropical forests may be gone in 60 years. Lost with this habitat will be countless species of organisms that can aid humanity in many different ways."

#### Nature's insecticides

Schubert's work is funded with a grant from the newly formed Midwest Plant Biotechnology Consortium at Purdue University, the nation's first biotechnology consortium involving government, universities and industry. The primary emphasis in his research is on agricultural applications for tropical plant species. He is working in cooperation with entomologists at the University of Missouri-Columbia, the U.S. Department of Agriculture Biocontrol Laboratory and Costa Rican scientists. He also will draw upon the resources at the Missouri Botanical Garden, which contains 3.5 million specimens of plant life.

"Tropical plants are a storehouse of naturally occurring insecticidal compounds," says Schubert. "We plan to study these plants to identify and isolate proteins with selective activities — that is, activities detrimental to targeted insects only — against insects that damage economically important plants."

Worldwide, about 15 percent of agricultural crops are lost each year to damage caused by the nearly 100,000 known insect species. To protect crops and increase yields, growers throughout the world invest billions of dollars in pesticides, fertilizers, herbicides, fungicides and growth regulators. The World Health Organization estimates that 500,000 human poisonings and 20,000 deaths occur worldwide each year from the use of these chemicals, which seep into groundwater, soil and the food supply itself.

#### Fieldwork

In his Costa Rican wanderings, Schubert keeps a wary eye out for the

eyelash viper, a poisonous snake that lounges in trees and strikes humans, without warning, often at eyelash-level; the 2-inch-long bolla (bullet) ant that bites with the strength of a scorpion; and the bushmaster, an 8-foot-long snake that lurks on the forest floor and is capable of biting through the toughest of leather boots.

He looks for plants already described in scientific literature that exhibit insecticidal properties, such as certain legumes related to red buds and locusts, some of which rise 200 feet above the forest bed. He also observes which plants are being ravaged by insects, which are not.

"In observing tropical plants, you'll see scores of them devastated by insects, but others in the same area that are not affected," Schubert says. "In previous trips, for instance, I've noticed that certain seeds of the *Mimosoideae* family appear to be untouched. Most plant seeds don't have a chance to hit the ground because the many species of birds, monkeys, squirrels and insects eat them while they're still on the tree. Some of these seeds are the size of silver dollars and have a very hard shell, but most animals can crack a pretty hard seed. Survival of these seeds suggests they may contain proteins that are repellants."

He collects seeds, leaves, bark and sap. Capping an 18-hour day, he runs chemical assays at night in the La Selva laboratory to identify possible inhibitors of insect digestive enzymes, called proteinases. These proteinase inhibitors have been proven to kill certain insects outright or make them sick or retard their growth.

"The proteinase inhibitors are one group of proteins we would like to introduce into crops, and we think the variety of these proteins is abundant in an ecologically diverse ecosystem such as Costa Rica's," Schubert says. "The genetic material in the many plants is valuable agriculturally because the insects here haven't seen it before."

Cornell University Professor of Neurobiology Thomas Eisner, Ph.D., says species are being lost throughout the world faster than rates of evolu-

*Continued on p. 3*

## African influence is focus of King symposium events

Ivan Van Sertima, professor of African studies at Rutgers University, will deliver the keynote address for Washington University's 20th annual Martin Luther King Jr. Symposium to be held on campus April 2-6. All events are free and open to the public.

The Martin Luther King Jr. Symposium, which commemorates the anniversary of King's assassination on April 4, 1968, focuses on the political, economic and cultural concerns of African-American students at Washington. This year's theme, "Relations Between Africans and African-Americans," examines how the media influences the way Africans and African-Americans perceive one another.

Other symposium events include informal discussions on current South African events and the bonds between African and African-American college students, a gospel concert, and a performance titled "A Walk Through Ancient African History," where students will portray members of African royalty.

An informal discussion on current events in South Africa kicks off the symposium beginning at 5 p.m. Monday, April 2, in Friedman Lounge, Wohl Center. Raymond F. Staples, a sophomore at Washington, will lead the discussion and solicit audience participation. Topics to be addressed during the program include the status of apartheid in South Africa after Nelson Mandela's release. After the one-hour discussion, part one of the African film "Shaka Zulu" will be shown.

Beginning at 5 p.m. Tuesday, April 3, Staples will moderate another informal discussion at the same location. Among the subjects to be addressed are the cultural links between African and African-American college students, how African students are viewed in their American college communities and whether wearing African attire is a means of self-expression or a fashion trend for African-Americans. Part two of the film "Shaka Zulu" will be shown after the one-hour discussion.

Sertima's talk, titled "Blacks in Science: Ancient and Modern," will be held at 11 a.m. Wednesday, April 4, in Graham Chapel. The lecture, part of the Assembly Series, is based on a 1983 book of the same title that Sertima edited. A reception for Sertima will be held from 1:30 to 4 p.m. in the Women's Building Lounge.

Born in Guyana, South America, Sertima is an anthropologist, literary critic and linguist who also serves as visiting professor at Princeton University. He is the editor of the *Journal of African Civilizations* and author of *They Came Before Columbus: The African Presence in Ancient America*, which was published by Random House in 1977 and is in its 11th printing.

In 1981 Sertima was awarded the Clarence L. Holte Prize for *They Came Before Columbus*. He also is the

*Continued on p. 2*

#### Inside: **MEDICAL RECORD**

- Coping with disaster is focus of study. Page 4
- Posttraumatic stress disorder is prevalent among Vietnam vets. Page 5
- Washing cats may relieve owners' allergies. Page 6



Trevena B. Moore, a sophomore majoring in chemistry, will portray Nandi (1778-1826), queen mother of the Zulu Nation, during "A Walk Through Ancient African History." The performance, in which students will depict members of African royalty, will be held from 5:30 to 7 p.m. Friday, April 6, in Friedman Lounge, Wohl Center.

## King symposium — *continued from p. 1*

author of *Caribbean Writers*, a collection of critical essays on the Caribbean novel.

On Thursday, April 5, an African and soul food dinner will be held from 6 to 9 p.m. in the Brown Hall Lounge for members of the Washington community with current identification cards. On Friday, April 6, "A Walk Through Ancient African History" will be held from 5:30 to 7 p.m. in Friedman Lounge. A gospel concert by Visions, a Washington student choir group, will be held from 8 to 9:30 p.m. in the Steinberg Hall Auditorium.

The concert also will feature performances by the University's Black Repertory Gospel Choir and the Youth and Young Adult Departments of the St. Louis/East St. Louis chapter of the Gospel Music Workshop of America.

The symposium is sponsored by the Association of Black Students, African and Afro-American Studies, Student Educational Service, Assembly Series and Student Union.

For more information on the events, call Julius Williams at 889-5970; for more information on Sertima's lecture, call 889-4620.

## Cardinal night will benefit Campus Y

By attending a Cardinal baseball game, you can help support one of the most socially committed and racially diverse organizations on campus, the Washington University Campus YMCA-YWCA.

The Campus Y is sponsoring a group trip to the opening day Cardinal baseball game against the Montreal Expos on April 9. For \$50 per person, participants will receive a 5:30 p.m. pre-game dinner at Fandos Restaurant at 312 Market St., free parking at Pet Inc. downtown, and a ticket for the baseball game. Thirty dollars of the contribution is tax exempt.

The benefit's proceeds will help fund the many activities the Campus Y offers. Such student-led programs as Action Against Child Abuse, Alliance for Constructive Social Change, Friendship International, People Organized for Community Action and Project Friendship, to name a few, depend on benefit dollars.

The Campus Y St. Louis Cardinal opening home game benefit is limited to 125 people.

For more information or to register, contact the Campus Y at 889-5010.

## California-based architect to talk

California-based architect Peter Pfau will give a free lecture titled "Buildings, Words, Machines" at 8 p.m. April 2 in Steinberg Hall auditorium.

Pfau is a principal in the award-winning architectural firm of Holt Hinshaw Pfau Jones. Among its many accomplishments, the firm has won the prestigious Progressive Architecture (P/A) Award for three consecutive years. The firm received its most recent P/A award last year for the Astronauts Memorial at the Kennedy Space Center on Merritt Island, Fla.

The lecture is part of the School of Architecture's Monday Night Lecture Series and is co-sponsored by the Assembly Series.

For information, call 889-6200.

## Women's basketball team finishes best season with 25-3 record

A nightmarish conclusion notwithstanding, the Washington University women's basketball team enjoyed a dream-like season in 1989-90.

Sparked by an infusion of youth and steadied by solid senior leadership, the Bears roared to a best-ever 25-3 record. Along the way, the Red and Green claimed their third-consecutive University Athletic Association championship. Owners of an unblemished 14-0 record in the highly competitive league, the Bears became the first basketball team in UAA history — male or female — to finish with an undefeated conference mark.

After completing the regular season at 25-1, the Bears were ranked third in the final National Collegiate Athletic Association Division III national poll, and achieved number-one status in the NCAA Central Region.

The Red and Green earned a ticket to the NCAA Championship tournament by virtue of their UAA crown. It was the first season that the three-year-old league was awarded an automatic bid. Not only did the Bears get into the tournament for the second time in three years, but Washington was selected as host site and top-seed for the NCAA Central Regionals.

Carrying a school-record 18-game winning streak into postseason play, the Bears also boasted a four-year, 40-game home winning streak against Division III competition. Both streaks now sit at zero as the Bears were upset by fourth-seeded Buena Vista College 78-71 in the opening round, and stung 54-52 by third-seeded Augustana College in the consolation game. Buena Vista advanced to the national quarterfinals by defeating second-seeded Wartburg College.

The Buena Vista-Washington game was reminiscent of a classic heavyweight boxing match. After both sides sparred for the first seven minutes, the Bears held a slight 14-12 advantage. From that point on, the two teams traded off landing big blows. Buena Vista struck first going on a 20-7 run, which was followed by a 21-8 Washington blitz. The Beavers then outscored the Bears 14-4, only to have the Red and Green counterpunch with a 12-4 run. Buena Vista took off on an 11-2 tear, only to watch the Bears pick themselves off

the mat one last time with a 9-2 stretch. The Beavers had one last answer, though, reeling off a 7-2 streak in the game's final two minutes.

The Bears returned the next night for a rather spiritless consolation game against Augustana. After coming strong out of the blocks, the Red and Green held a 24-13 lead with 3:30 left in the first half. However, Augustana outscored the Bears 35-13 over the next 18 minutes to take a 48-37 lead with just five minutes remaining. The Bears finally snapped out of their doldrums, but a desperate 15-6 run fell two points short.

In the days that have followed the two losses, a number of accolades have poured in, helping to salve the Bears' wounds. Senior Rochelle Meyers, Valparaiso, Ind., junior Karen Hermann, Worthington, Ohio, and sophomore Michele Lewis, Fresno, Calif., were named to the UAA's All-Association first team. Additionally, Hermann and Meyers are candidates for All-Central Region honors, and Hermann earned second-team GTE Academic All-America honors. For the second time in three seasons, head coach Nancy Fahey and assistant coach Bill Shapiro were voted by their peers as UAA coaching staff of the year. Fahey, 81-19 after four seasons as the Bears' mentor, also was named NCAA Division III Central Region coach of the year.

Sights will be aimed high again next year as the Bears graduate just two seniors. However, the contributions of Meyers and fellow co-captain Jill Steinhauer, Danville, Ky., will not be forgotten soon. Meyers concludes her career as Washington's all-time leading rebounder after gathering 591 caroms, and third-leading scorer with 888 points. Steinhauer wore the Red and Green 100 times — the most appearances in school history — and finished first in the career books with 101 blocked shots, second with 581 rebounds, and 10th with 601 points scored.

Among the key returnees next year is Hermann, who led the Bears in scoring for the second consecutive season and is on pace to become the school's all-time leader in points and rebounds. Also returning are Lewis, who established single-season records with a .543 field goal percentage and an .815 free throw percentage, and freshman point guard Jennifer Gibbs, Orlando, Fla., who came off the bench to dish 156 assists — shattering the single-season record.

## New historicism is lecture topic

Stephen Greenblatt, The Class of 1932 Professor of English Literature at the University of California — Berkeley, will speak at 4:15 p.m. on Thursday, April 5, in Room 110 January Hall.

Greenblatt's free and public lecture, titled "Resonance and Wonder: The New Historicism in the Representation of Cultures," is part of the Assembly Series.

Greenblatt is the leading figure in a new approach to the humanities called "New Historicism," which is a critical method that synthesizes recent work in literary theory, cultural anthropology, social history and textual analysis. A Shakespearean scholar, he has written three books, including the 1980 book *Renaissance Self-Fashioning: From More to Shakespeare*.

For information, call 889-4620.

# RECORD

**Editor:** Susan Killenberg, 889-5254, Campus Box 1070; P72245SS at WUVMC  
**Assistant editor:** Andrew Cox, 889-5235, Campus Box 1070; P72245AC at WUVMC  
**Editor, Medical Record:** Joni Westerhouse, 362-8257, Medical School Campus Box 8065; C72245JW at WUVMC

**Contributing writers:** Debby Aronson, Debra Bernardo, Joyce Bono, Gerry Everding, Tony Fitzpatrick, Fran Hooker, Steve Kohler and Carolyn Sanford

**Photographers:** Joe Angeles, Tom Heine, David Kilper and Herb Weitman  
**Record** (USPS 600-430; ISSN 1043-0520), Volume 14, Number 25/March 29, 1990. Published weekly during the school year, except school holidays, monthly during June, July and August, by News and Information, Washington University, Box 1070, One Brookings Drive, St. Louis Mo. 63130. Second-class postage paid at St. Louis, Mo.

### Address changes and corrections:

**Postmaster and non-employees:** Send address changes to: Record, Washington University, Box 1070, One Brookings Drive, St. Louis, Mo. 63130.

**Hilltop Campus employees:** Send to: Personnel Office, Washington University, Box 1184, One Brookings Drive, St. Louis, Mo. 63130.

**Medical Campus employees:** Send to: Payroll Office, Washington University, Box 8017, 660 S. Euclid, St. Louis, Mo. 63110.

# NOTABLES

**Michael Beckerman**, Ph.D., associate professor of music, gave two presentations at the College Music Society meeting held in St. Louis. He delivered a keynote lecture titled "Does St. Louis Have a Musical Culture?" and presented "Canons Everywhere" as part of a panel discussion. Beckerman also gave a lecture titled "The Changing Denizens of Arcady" at the American Musicological Society's national meeting held in Austin, Texas. He has been named a member of the program board of the International Research and Exchanges Board. In addition, Beckerman was selected to be the academic adviser for a Smithsonian Institute study tour of Prague, Czechoslovakia, where he gave lectures on Czech history and culture, and met with members of a civic forum. Beckerman also is giving a series of lectures on Martinu and Brahms in association with this year's Chamber Music St. Louis Concerts.

**Mario A. Blanc**, Ph.D., assistant professor of Spanish, published a book titled *Las Rimas de Becquer: su modernidad*. Blanc also had the following articles published: "Una lectura en perspectiva de dos poemas de Angel Gonzalez" in *Discurso literario*; "La funcion de los elementos en prosa de las Rimas de Becquer" in *Plural*, Mexico; and "Ecos becquerianos en las poesias de Jimenez y Machado" in *Codice*, revista de poeticas.

**William Clark**, Ph.D., research associate in otolaryngology and associate research scientist at the Central Institute for the Deaf (CID), participated in the Consensus Development Conference on Noise and Hearing Loss at the National Institutes of Health in Bethesda, Md. Also participating in the conference were **Ira J.**

**Hirsh**, Ph.D., Edward Mallinckrodt Distinguished University Professor of psychology and audiology and senior research scientist at CID, and **Gerald R. Popelka**, Ph.D., professor and head of audiology at CID. The meeting is part of the consensus development program that brings together biomedical investigators, practicing physicians, consumers and others to evaluate and review the scientific soundness of a given health or health-related technology. In addition, a primary objective of the program is to provide physicians and consumers with information regarding the safety and effectiveness of drugs, devices and procedures.

**Ralph V. Clayman**, M.D., professor of urologic surgery, received the 29th Ferdinand C. Valentine Award March 21 at the New York Academy of Medicine in recognition of his work in endourology.

**Samir K. El-Mofty**, D.M.D., Ph.D., professor and chair of the Department of Oral Pathology, presented a lecture titled "Oral Manifestations and Diagnosis of HIV Infection and AIDS" at the Cairo University General Hospital. The lecture was given during an AIDS awareness week in Egypt.

## Have you done something noteworthy?

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

## Memorial service set for William Gordon; professor emeritus of social work

A memorial service will be held May 4 in Brown Hall Lounge for William E. Gordon, Ph.D., professor emeritus at the George Warren Brown School of Social Work.

Gordon died Saturday, March 10, 1990, at his home in Lawrence, Kan., of chronic obstructive pulmonary disease. He was 78.

Trained as a biological scientist with an emphasis on ecology, he moved into public welfare in the early 1940s and then into social work education, becoming one of the leaders in social work research. He was among the first scholars to



William E. Gordon

introduce the ecological framework into social work thinking, believing that the central focus of social work should be the interaction between the person and the environment.

After serving as the regional research consultant for the Social Security Administration in Minneapolis, Minn., he joined the Nashville School of Social Work, Vanderbilt University, as a professor of research.

In 1951 he was appointed professor of research and head of one of the nation's first doctoral programs in social work at Washington University. He retired from the University's social work school in 1978. Since 1980 he had been an adjunct professor at the School of Social Welfare at the University of Kansas.

For his contributions to social

work practice, research and teaching, he received several honors, including a Resolution of Appreciation from the National Association of Social Workers, a Distinguished Faculty Award from Washington University, and the establishment of a fellowship for doctoral study in his name at the George Warren Brown School of Social Work. He also was the first recipient of the Richard Lodge Prize of the Aldephi University School of Social Work in 1987 for his intellectual and theoretical contributions to the social work profession.

Gordon received his bachelor's degree in plant ecology and his doctorate in quantitative biology, both from the University of Minnesota. He was a member of Sigma Xi, Phi Beta Kappa, a Fellow of the American Association for the Advancement of Science and an officer of the National Association of Social Workers and the Council on Social Work Education.

Gordon is survived by his wife, Margaret Schutz Gordon, of Lawrence, Kan.; three sons, Brian G. Gordon, University City, Mo., Alan L. Gordon, Sudbury, Mass., and Harley A. Gordon, Elk River, Minn.; one daughter, Helen Kathleen Cook, St. Louis, a doctoral student in anthropology at Washington University; and five grandchildren. His first wife, Eleanor Lawrence Gordon, died in 1979.

Memorial contributions may be made to the William E. Gordon Scholarship Fund, George Warren Brown School of Social Work, Washington University, Campus Box 1196, One Brookings Dr., St. Louis, MO 63130.

## Medical school among nation's best, business is most promising, survey says

U.S. News & World Report's annual special report on "America's Best Graduate and Professional Schools" ranked the School of Medicine among the nation's best medical schools and ranked the John M. Olin School of Business as the nation's most promising business school.

The magazine's ranking system combines a subjective survey of academic reputation with objective data that relate to an institution's student selectivity, its instructional and other resources, and its graduation patterns.

According to U.S. News survey results, the top 10 of America's 127 medical schools, in order, are: Harvard, Johns Hopkins, Duke, University of California-San Francisco, Yale, Washington University, Cornell, Columbia, University of Washington and the University of Pennsylvania.

"St. Louis can be proud of the first-rate students, faculty and facilities at the School of Medicine," said William A. Peck, M.D., vice chancellor for medical affairs and dean of the School of Medicine. "We strive to be a leader in research, teaching and health care, and are pleased to see these efforts recognized."

In two particular criteria — academic reputation and research activity — the School of Medicine ranked fifth overall. In a third category — NIH research funding — Washington University's medical school was ranked seventh by U.S. News & World Report. However, the figures used in the NIH research funding category did not include the nearly \$10 million in funding to Jewish Hospital, a teaching affiliate and member of the University's medical center. Inclusion of the Jewish Hospital NIH funds increases the school's total to \$96 million and moves it into sixth place nationally.

The John M. Olin School of Business is the top "up-and-coming" business school in the nation, according to the magazine's survey of business school deans and heads of

M.B.A. programs across the country.

"We are delighted by this recognition of the progress being made by the Olin School," said Dean Robert L. Virgil, D.B.A. "I'm especially pleased for our students, faculty, staff, alumni and friends, who will be proud that the school has been singled out."

Stanford University claimed the magazine's top ranking for business schools, followed in order by Harvard, the University of Pennsylvania, Northwestern University and the Massachusetts Institute of Technology.

Survey respondents named Olin most often as a school considered to be an "up-and-comer" because of recent innovations and improvements. The four other business schools receiving "up-and-comer" mentions in rank order behind Olin were Emory University, University of Minnesota, Georgetown University and Southern Methodist University.

Washington University moved its business school into a new \$13.5 million building in 1986. In recent years it has vastly restructured its faculty, drawing away professors from such top schools as Dartmouth, Chicago and Yale. The school has started a new Executive M.B.A. program and increased the size and quality of its undergraduate, M.B.A. and Ph.D. student bodies. Its endowment now ranks among the top 10 business school funds in the country. Inquiries about the M.B.A. program have more than doubled in the last five years.

"Our progress has been made possible by the support, encouragement and understanding of the St. Louis business community and our thousands of alumni and friends here," Virgil said. "In a real sense, this recognition is a recognition of St. Louis."

The U.S. News special report, which includes rankings of law, business, medical and engineering schools, is published in the magazine's March 19 issue.

## Tropical plant study — *continued from p. 1*

evolutionary replacement. This decline, which has been called "the death of birth," is, the scientist says, "the silent crisis of our time." Aside from their aesthetic value, species have chemical value, he asserts.

"Biotic impoverishment is tantamount to chemical impoverishment," says Eisner, who, with his collaborators, has discovered many compounds in plants that have beneficial characteristics.

"Extinction is forever. Loss of a species is the same thing as loss of chemicals that may well be unique in nature, not likely to be made independently at the chemist's bench. Chemical prospecting, such as Schubert's research, is vital to the world's well-being and, properly orchestrated, can build tropical countries into viable economic entities."

In addition to plants, microorganisms and vast numbers of invertebrate species have yet to be analyzed chemically, Eisner says. He says that five percent of the approximately 250,000 flowering plant species known to exist in the world have been screened for chemical metabolites, called alkaloids, found in many plants. These chemicals are active ingredients in anesthetics, narcotics, analgesics, vasoconstrictors and dilators, muscle relaxants and insecticides, among many other products.

Scientists searching the ecological

diversity of the tropics also could very well discover chemicals that can be used in new drugs. In the United States today, it is estimated that nearly one-fourth of all medical prescriptions are for drugs based on plant or microbial products or for synthetic derivatives. Examples of recently discovered drugs are the anticancer drug vincristine, derived from the Madagascar periwinkle; ivermectin, a drug that destroys intestinal worms; and cyclosporin, an immunosuppressant derived from a Norwegian fungus. And Schubert cites the discovery of compounds in the Pacific yew, a tree found in pristine areas of California and Oregon, and *Castanospermum*, an Australian legume, which scientists are using in AIDS and cancer research.

"The pendulum is swinging back," says Schubert, who plans several more collecting trips to Costa Rica in 1990. "Many years ago, pharmaceutical companies were going into the tropics to look for plants. Then for about 20 years there was the era of synthesizing chemical compounds in the laboratory. Now, we're going back to rain forests in areas such as Costa Rica, the Amazon and Madagascar, primarily because we haven't got much of a choice. We have to do it now, or much of it will be gone."

Tony Fitzpatrick

# MEDICAL RECORD

## Study examines how we cope with catastrophe

Out at the edge of traumatic human experience, where mass murders and poison-gas leaks, earthquakes and hurricanes occur, the ability to cope often is challenged. What can be learned by studying people's reactions to catastrophe? Can the psychological effects on survivors be predicted and treated? And how is the extreme stress they undergo related to the everyday variety?

Those questions and others are addressed by three recent studies conducted at the School of Medicine. Patterns are emerging, according to Elizabeth Smith, Ph.D., who interviews subjects at the sites of both natural and man-made (or technological) disasters. "The evolving picture will help guide care-givers when future disasters occur," says Smith, a research associate professor of psychiatry. "Eventually it may help us understand the mechanisms we use to cope with stress."

In studies of three disasters, data show that people with previous psychiatric problems are the ones most likely to need help in coping with calamity.

"Nothing we've found is perfectly predictive of psychiatric disorder after a disaster," warns Smith's collaborator, psychiatrist Carol North, M.D. But statistically, those with a previous diagnosis are most likely to have new psychiatric difficulty. "Resources are often severely strained in the wake of a disaster, so it is vital to identify the people most seriously in need of help and direct efforts to them," North says. She cites Hurricane Hugo and the San Francisco earthquake as recent cases in point.

Because samples at individual disasters tend to be small, the researchers are reluctant to generalize too broadly from their preliminary results. However, beyond showing previous psychiatric illness as a predictor, early analyses seem to indicate that an individual's perception of disaster is crucial to his ability to cope. Those who see rebuilding and carrying on as a challenge may remain healthier than those who perceive only suffering and destruction, Smith explains. Logically enough, the more direct and damaging the effects of a disaster, the more likely respondents are to suffer psychiatric upset, adds North, an assistant professor of psychiatry.

The researchers also theorize a difference between responses to natural disasters and reactions to man-made events. "We may expect a certain unpredictability in nature, but when man or his devices go awry, the psychological effects are more severe because such things are not 'supposed' to happen," Smith says. That, however, remains speculation until more data can be assembled and analyzed.

Smith and North examined survivors from a destructive Florida tornado; an accident in which a jet-fighter crashed into an Indiana hotel, killing ten; and the Arkansas site at which a mass murderer shot and killed 16 people, leaving four wounded. At each disaster scene, the investigators collected data from the largest possible number of witnesses and survivors within six weeks of the event.

They used a 90-minute interview called the Disaster Supplement to the Diagnostic Interview Schedule (DIS), a highly regarded instrument for assessing mental disorder. Smith worked with Washington University professor Lee N. Robins, Ph.D., to develop the Disaster Supplement to

the DIS. Sample questions: "Do you think the disaster was just an act of God or nature, or do you think the people who were involved were in part to blame?" "Have you developed any philosophy or perspective to help you resolve this experience in your mind?"

### At the scene

In the wake of the disasters, the research team found evidence of four mental disorders: major depression, alcohol abuse/dependence, generalized anxiety disorder, and post-traumatic stress disorder (PTSD).

In psychiatry, a diagnosis can be made only in the presence of a specific cluster of symptoms over time. While scattered symptoms may be problematic for victims, even causing them to seek professional help, no diagnosis of disorder can be made unless all the symptoms associated with a disorder are present. The Smith and North studies are the first to note a variety of disorders and also the first to record individual symptoms not classed as disorders among survivors of catastrophes.

### 'Horror' and 'terror' key

Individual symptoms associated with post-traumatic stress disorder were most frequently reported, although PTSD was not always the most commonly diagnosed disorder. After the 1987 Indianapolis plane crash, marked by extreme levels of terror (fear of death) and horror (exposure to the grotesque), 54 percent of the 46 subjects interviewed met criteria for diagnosis. Twenty-two percent suffered from PTSD, with symptoms such as recurring recollections of the event, sleep disturbances, distressing dreams, inability to recall an important aspect of trauma, and an exaggerated startle response, among others.

Depression was the most common post-disaster diagnosis at the Indiana hotel calamity, with more than 40 percent of the affected subjects meeting the criteria. Those criteria include, among others, loss of interest in usual activities, poor appetite and prominent mood disturbances for at least two weeks.

Twenty of the Indiana subjects had been diagnosed with psychiatric illnesses prior to the disaster, and 90 percent of those re-experienced psychiatric disorders afterward. Overall, Smith and North report, "more than two-thirds of the post-disaster psychiatric disorders occurred in individuals who had prior psychiatric diagnoses."

After the northern Florida tornado of April 1988, rates of disorder were substantially lower, perhaps because horror was not a factor and many subjects reported that the event was over before they knew what was happening. Of 42 subjects interviewed, 17 had their homes demolished, but just two were injured badly enough to require hospitalization. Only five subjects met the strict criteria for a psychiatric diagnosis, but individual symptoms associated with PTSD were common, with more than a third of the total subjects suffering at least one symptom.

Two of the five subjects diagnosed had previous histories of psychiatric disorder. The authors urge further study of such a relatively well-adjusted group to "increase our understanding of effective coping strategies in the face of extreme stress and allow us to identify the most helpful community responses."

In northwestern Arkansas, late in 1987, a mass murderer who had killed



Elizabeth Smith, Ph.D., (right) and Carol North, M.D., travel to the sites of disasters to assess how survivors are coping.

14 family members later sought out employees at four businesses and shot those against whom he held "grudges." North and Smith found 18 employees of those businesses willing to talk about their experiences, and four met the criteria for psychiatric diagnosis. Two of them had a previous history of disorder. Of those subjects who directly witnessed the shooting, four-fifths reported having at least one symptom of PTSD, Smith and North report.

But the Arkansas study contrasts with the other two in that nine of the 18 subjects had pre-disaster histories of psychopathology, and most of them did not suffer a recurrence of their illnesses.

### Many variables

That sort of unpredictability in results is common in a field of study fraught with uncontrollable variables, the investigators note. "No two disasters are alike, no two perceptions of a disaster are alike, and no two communities are the same," Smith says.

Some questions even remain as to how "disaster" should be defined. The concept changes as man introduces new elements into his environment and discovers side effects to his technology: Events such as those at Bhopal, India, or Times Beach, Mo., would have been inconceivable just 50 years ago.

The principal psychopathology involved — PTSD — is controversial too, with some psychiatrists questioning its classification as a separate mental disorder. Both Smith and North, having approached the subject with scientists' skepticism, are convinced that PTSD is a very real disorder that can be observed and diagnosed. "But I'm not sure we have fully described it," says North. The investigators hope their work will further define the disorder.

Another problem has been identifying control groups for the studies, partly because communities differ so markedly. The investigators elected to employ a dose-response model, creating comparison groups among their subjects by classing them according to the extent of their exposure to the disaster. For example, in the Indiana airplane crash, the subjects were divided into an "on-site" group who were at work and survived the disaster, and an "off-site" group who were not scheduled to be at

work, escaped exposure because they were late for work, or avoided involvement because a meeting had been cancelled.

Identifying disasters to study has been particularly difficult. Without the luxury of setting their own pace for the research, the scientists have had to make quick evaluations of news reports, decide on an event's appropriateness, then work around the clock to collect data. For example, North notes they've learned that most airplane crashes are not suitable, because victims often come from scattered locations and head home quickly, making data collection difficult.

### The promise

Despite such difficulties, the work holds great promise for psychiatry, according to Susan Solomon, Ph.D., of the National Institutes of Mental Health in Rockville, Md. Says Solomon, "Smith's work is the first to apply standardized evaluation to not just a single event, but to many of the powerful events that affect lives. This lets us look for common patterns and symptomology. They (Smith and North) are forerunners in a very important area of research."

The investigators say they have only just begun what will be a long course of study. They want a larger data pool from new disasters as they occur, and they plan to follow-up on the subjects they have already interviewed. Asks North, "What, if anything, that we saw four weeks after the disaster was predictive of long-term psychiatric problems?"

Future studies will consider whether psychiatric treatment is of measurable value in cases of extreme stress, and then which of several treatments is most effective. "Right now, we're still defining risk factors and delineating the disorders," says North.

In the long term, Smith hopes the work will lead to a "more general understanding of the mechanisms we use to cope with stressful life events. How do we perceive them and how do we deal with them? We'd like to understand the process of coping," she says.

Steve Kohler

Note: The studies quoted were funded by the National Science Foundation and the National Institutes of Mental Health through the Natural Hazards Research and Applications Information Center, University of Colorado-Boulder.

## Repercussions of war

# Posttraumatic stress disorder still prevalent in Vietnam vets

It's been nearly 15 years since the Vietnam War ended, but a new study shows that some veterans still have symptoms of posttraumatic stress disorder — recurring nightmares, mentally re-living the terror of combat, and the need to avoid situations that may trigger war memories.

The study, published March 2 in the *Journal of the American Medical Association* provides solid evidence that Vietnam veterans have substantially increased chances of experiencing symptoms of the disorder compared to veterans who didn't serve in Southeast Asia. Results also indicate that prevalence of the symptoms increases correspondingly with the extent of combat exposure.

Study authors include Seth Eisen M.D., clinical assistant professor of medicine at the School of Medicine, and William True, Ph.D., associate professor of health services, education and research at St. Louis University Medical Center. Eisen and True are affiliated with the St. Louis Veterans Affairs Medical Center. They conducted the study with Jack Goldberg, Ph.D., and William G. Henderson, Ph.D., of the VA Cooperative Studies Program in Hines, Ill.

Earlier efforts to link the development of posttraumatic stress disorder (PTSD) conclusively with military service in Vietnam have been criticized, the investigators say, largely due to the difficulty in finding an adequate comparison group.

Their solution? A study of identical twins who had served in the military during the Vietnam era, 1965-75. The twins were grouped into three categories: both brothers served in the war; only one served in Vietnam; neither served in Vietnam.

"With identical twins, genetic makeup and upbringing are the same," Eisen explains. "This allowed us to attribute any differences with regard to development of posttraumatic stress disorder to the type of

military service."

The researchers used telephone and mail surveys to collect information on the physical and psychological health of 2,092 male identical twins who served in the military during the Vietnam era. Each veteran was asked whether he had engaged in specific combat activities, and then levels of combat exposure were grouped as high, medium, low or no combat.

Results indicated that those who had high combat exposure were nine times more likely to have developed PTSD than those with low or no combat exposure.

When only one of a twin pair served in Vietnam, the one who did was six times as likely to have nightmares compared as the one who didn't and five times more likely to experience painful memories of military service. Of those who served in high combat, approximately 33 percent developed PTSD.

Even those who served in the war with low or no exposure to combat were two to three times more likely to have PTSD than those who did not serve in Vietnam.

"This study proves that traumatic events in Vietnam are responsible for the development of PTSD in the more than 450,000 veterans who are estimated to currently have this disorder," says Eisen. "It is a real disease, and the Department of Veterans Affairs does offer programs to help. We just need to encourage the veterans with PTSD to come forward and get it."

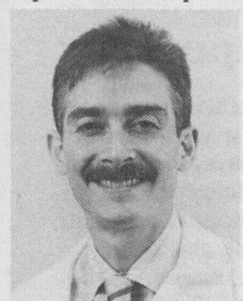
Ongoing analyses, using additional data obtained from fraternal Vietnam era veteran twin pairs, will permit the contribution of inheritance to the development of PTSD to be estimated. That work is being done in conjunction with Department of Psychiatry researchers John Rice, Ph.D., Rosalind Neuman, Ph.D., and Andrew Heath, Ph.D.

## Lefkowitz named pharmacology scholar

James B. Lefkowitz, M.D., assistant professor of medicine and pharmacology at the School of Medicine, has been named a 1990 Clinical Pharmacology Scholar by The Burroughs Wellcome Fund.

As a pharmacology scholar, Lefkowitz will receive \$300,000 over the next five years to conduct research on the molecular mechanisms involved in certain immunologic diseases.

The Burroughs Wellcome Fund, a private, non-profit foundation



James B. Lefkowitz

supported by Burroughs Wellcome Co. Pharmaceutical Firm, established the scholar awards program in 1960 to support the career development of clinical pharmacologists and to stimulate teaching, training and research in clinical pharmacology. Clinical pharmacologists play a vital role in understanding how drugs work in the human body, investigating new and better therapeutic agents and teaching physicians how to prescribe drugs safely.

Lefkowitz's research involves the study of fatty acid deprivation and its effect on the inflammatory response.

About 10 years ago, it was found that essential fatty acid deprivation exerts a strikingly beneficial effect in an animal model of a human disease called systemic lupus erythematosus. This simple dietary manipulation prevents the lethal kidney disease that occurs in this disorder. Lefkowitz's research is focused on understanding this phenomenon at a molecular level.

Over the past several years his laboratory has established that manipulation of dietary fatty acid can cause beneficial effects in several models of autoimmune disease and tissue transplantation. Alterations in both inflammatory cell migration and the generation of lipid mediators of inflammation appear to be critical to this beneficial effect. Current research is focused on understanding the specific molecular mechanisms involved in this effect and how they can be pharmacologically manipulated.

An eventual goal is to develop new strategies to deal with immunologic disease in patients, such as systemic lupus erythematosus, juvenile-onset diabetes and tissue rejection.



Elaine Riegle, M.D., examines a patient during her first trip to Liberia in 1982.

## Riegle spends month teaching in primitive West African hospital

Once a year pediatric anesthesiologist Elaine Riegle leaves the medical center's sophisticated technology behind and travels to a small hospital in West Africa where the beating of a patient's heart is measured by sound and touch.

She takes with her any medical texts she can spare, in addition to such items as outdated or open suture packets, catheters, IV tubing and sterile cloths. Though disposable materials here, they're items that Liberia's Phebe Hospital can't afford and does without, says Riegle, an instructor in the department of anesthesiology at the School of Medicine and a physician at St. Louis Children's Hospital.

Since 1982, she has made three trips to Phebe Hospital, a primitive 180-bed facility located in central Liberia, as a volunteer with Lutheran Global Missions. Her most recent trip was in January.

She hopes the missions will become annual ventures.

On Riegle's first trip to Phebe, she served in pediatrics and worked with patients. She prefers teaching anesthesiology, which she has done on her last two trips, because she says the hospital's health care workers seem to benefit more from education than observation.

"Now they have texts they can read and use to look up information in," says Riegle, who last year donated her entire anesthesia library to the hospital. "They're fun to work with, especially when I see the growth in their knowledge."

There are five people in the hospital's anesthesia training program, which Riegle instructed. Among them is Carman Gwinegale, the only Certified Registered Nurse Anesthetist and wife of Walter Gwinegale, Phebe Hospital's medical director. Both Gwinegales received their medical education in the United States.

Riegle is at the sides of trainees during surgery and may spend up to three hours a day lecturing to the medical staff. Phebe has from seven to nine Liberia-trained physicians on staff, as well as long-term missionaries and other church volunteers.

Though numerous small hospitals are scattered throughout Liberia, Phebe and American-built John F. Kennedy Hospital in Monrovia, Liberia's capital, attract the most patients. JFK Hospital is a modern facility, much like hospitals found in the United States, Riegle says. However, she adds, it intimidates Liberia's tribal people, so they avoid it when

seeking medical help.

In contrast, Phebe Hospital has two operating rooms and surgically treats 10 to 15 patients a day. In addition, it has X-ray, laboratory and EKG services.

Disease in its most severe form runs rampant in the country. Malaria, malnutrition, parasites, AIDS, measles, whooping cough, polio, tetanus and dehydration are among some of the prevalent illnesses.

Treatment is oftentimes crude, according to Riegle. For example, the hospital has only one monitor, a Nellcor Pulse Oximeter, donated about one year ago. To her disappointment a medical equipment corporation recently refused her request to donate a blood pressure monitor to the hospital.

"In the operating room, you go by the color of the patient and hand blood pressures," Riegle said of monitoring methods available. "What you can hear and feel are it."

Despite these limitations, she is enthusiastic about the strides the hospital has made in the last eight years. Riegle says she has always felt safe with the people of Liberia, but this trip offered another glimpse of the normally peaceful country when the government announced a coup on New Year's Day. That same day, Riegle's plane landed in Monrovia.

"My timing was really terrible," she says. "I'd heard rumblings in the U.S. that things weren't very good. Liberia is normally a peaceful country. The only fear is from the soldiers."

A 6 p.m. curfew was imposed and military check points were set up throughout the tiny shoreline country, which is roughly the size of the state of Ohio. Though Riegle was 20 miles from the war zone at the compound, she was aware that all around her innocent children and adults were being brutally murdered by military soldiers.

"As an American, there's no way you can understand what's going on there with the government," she comments. "I intend to keep going back and serving one place, because that's the way to accomplish the most."

"There are two million people in that country who are important to me because I've spent six months of my life with them."

Riegle is one of several anesthesiologists from the School of Medicine who make such trips to undeveloped countries. Ellis Taylor, M.D., and Robert Feinstein, M.D., have also served in Honduras, Peru and Ecuador.

Kleila Carlson

# MEDICAL RECORD

## Cat baths may relieve owners' allergies

Legions of cat owners who are allergic to their pets, but refuse to part with them, may find relief from allergic reactions by giving their felines a monthly bath, researchers from the School of Medicine announced Monday.

The simple, inexpensive method for reducing cat allergenicity was presented at the annual meeting of The American Academy of Allergy and Immunology.

A monthly 10-minute washing in distilled water markedly reduced the production of Fel D1, the major allergen in cats, the researchers reported. In a study of 10 cats, they noted a consistent decrease in Fel D1 production beginning in one cat after three washes and in all 10 cats after seven washes. The amount of Fel D1 each cat produced varied, but the average decreased from 3031 milliunits per cat at wash 1 to 400 milliunits per cat at wash 9.

There was a marked variability in Fel D1 recovered among the group of cats, and also a month-to-month variability in Fel D1 recovered from individual cats. However, cats with initially high levels tended to remain relatively high, and those with initially low levels remained relatively low.

"The ideal treatment for the cat-sensitive patient who experiences symptoms of allergic rhinoconjunctivitis, asthma or dermatologic reactions is to remove cats from their environment," says allergist H. James Wedner, M.D., associate professor of medicine at the School of Medicine. "Unfortunately, many patients suffer continual symptoms either because they are unwilling or unable to eliminate cats from their homes." These patients can receive pharmacotherapy or immunotherapy, Wedner adds, but cats in the home compromise the effectiveness of both forms of treatment.

"This procedure may provide a simple method to reduce the allergenicity of cats for people who can't or won't remove cats from their environment," he says. Cats, particularly kittens, can be trained to accept routine bathing, Wedner notes. It is not harmful to them, and in fact is required frequently for some exotic breeds.

Fel D1, a protein produced by the salivary and sebaceous glands, is deposited on the skin and hair either as the hair passes through the sebaceous gland or as the cat preens. It is a major component of cat dander, which is generally found throughout a cat owner's house.

Wedner and his colleagues are unable to explain why monthly washing decreases production of the allergen. Washing might alter skin production of Fel D1, but wouldn't be expected to affect salivary production, they say. Because the washing procedure is so effective, it may be that the skin contributes more to Fel D1 production than was previously believed, they speculate.

The Washington University team did not set out to study the effects of bathing on cats. Rather, the study began as an evaluation of two drugs, Accutane and Etretnate, for their ability to decrease the production of cat allergen. Neither of the two retinoic acid derivatives helped. However, in analyzing the bath water for Fel D1 values, the researchers noticed a significant decrease associated with the washing procedure itself.

In addition to Wedner, members of the research team include Robert Glinert, M.D., Patricia Wilson, Dianne Levison, M.D., and Lynn Cornelius, M.D. They represent the Division of Allergy and Immunology and the Division of Dermatology at the School of Medicine.

## Kenneth Ludmerer elected AAAS fellow

Kenneth M. Ludmerer, M.D., an authority on the development of American medical education, has been elected a fellow of the American Association for the Advancement of Science (AAAS).

Ludmerer is one of 310 new fellows, members of the association who have made scientifically or socially distinguished efforts to advance science. The AAAS, formed in 1848, publishes the weekly journal *Science* and is considered the country's leading general scientific organization.

Ludmerer, an associate professor of medicine, is currently researching and writing his third book, which will trace developments in medical education since 1925. The book will address such topics as the financing of medical education and the erosion of the traditional patient base, looking at changes over time not only in the

system of medical education, but also in the mission of American schools and teaching hospitals.

His studies are funded through a three-year, \$225,000 grant from the Josiah Macy, Jr., Foundation. The book is a sequel to Ludmerer's 1985 book, "Learning to Heal: the Development of American Medical Education," which detailed the history of medical education in the United States from the mid-19th century to 1925.

Ludmerer also is the author of "Genetics and Medicine," selected in 1972 by *Saturday Review* as one of the year's 10 outstanding books on scientific subjects.

In addition to his medical school appointment, Ludmerer is an associate professor of history at Washington University. He serves on the editorial boards of the *American Journal of Medicine*, the *Journal of the History of Medicine and Allied Sciences*, and *The Pharos*. He is a visiting professor and keynote speaker at many universities, and this spring will take part in the centennial celebration at the Johns Hopkins School of Medicine.

## Dental patients are needed during exams

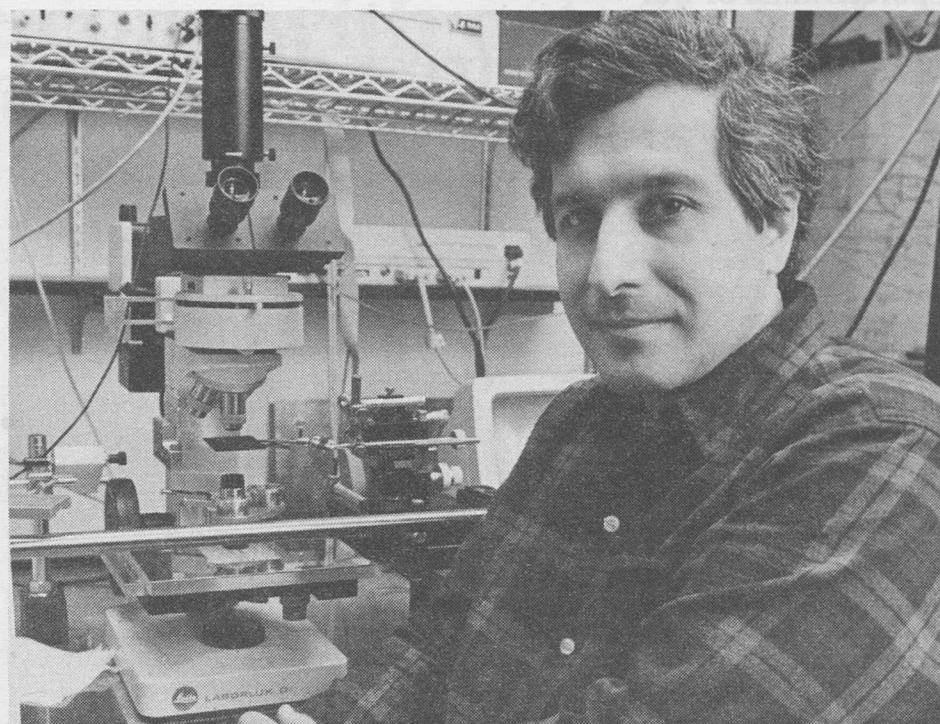
The School of Dental Medicine is seeking volunteers to serve as patients when senior students take licensing examinations this spring.

Volunteers must be at least 18 years old. Those who are selected as patients will receive free dental treatment during the licensing examinations, scheduled for May 14-27.

To identify suitable patients, free screenings will be held April 2-6 at

the dental school, located at 4559 Scott Ave. near the intersection of Euclid and Barnes Hospital Plaza. The screenings will include a medical history, X-rays, oral examination and diagnosis of dental work that is needed, but no treatment.

For more information or to make an appointment, call the School of Dental Medicine weekdays between 9 a.m. and 5 p.m. at 454-0300.



Jeff Lichtman, M.D., says his invention was a bi-product of research.

## Lichtman named inventor of the year

As a neurobiologist with the School of Medicine, Jeff W. Lichtman, M.D., Ph.D., works in a field where inventions occur everyday as aids to researchers in the lab.

It's not everyday, however, that a biologist is recognized for one of his own inventions. That is exactly what happened to Lichtman, an associate professor in the Department of Anatomy and Neurobiology, when he was named Missouri Inventor of the Year by the Inventors Association of St. Louis and the Patent, Trademark and Copyright section of the Bar Association of Metropolitan St. Louis.

Lichtman received the award in February for devising modifications and improvements for fluorescence microscopes, work he began in order to improve image clarity of specimens he studies. The modifications produce confocal fluorescence images of fixed and living biological material. Confocal scanning microscopy allows for very thin optical sections and also three-dimensional views of tissues.

Lichtman downplays his achievement by saying that the invention was literally a bi-product of research.

"It's sort of a bonus," he says of his development. "In this field of biology, inventing is something we do everyday and take for granted."

"It's part of the job," he continues. "Developing techniques that are useful requires changing things. Occasionally, you do something useful that can be applied in other laboratories. It's a little unusual as a biologist to come up with something that may have more general use."

Lichtman's modifications will have applications in biology, ophthalmology, clinical pathology and

quality-control methods used in manufacturing products such as semiconductors.

Last December, Lichtman and former colleague William Sunderland, who created the computer software for the microscope, were awarded two patents on their work. Several other patents on the device are pending.

Newport Corp., a precision laser and optics products company that is branching out into biological research, will manufacture the device, which Lichtman says will be available as a kit and can be affixed to existing microscopes. Washington University holds title to the invention and is working with the Fountain Valley, Calif.-based Newport Corp., on final licensing specifications.

The kit should be ready for purchase this fall, according to Lichtman. He expects Newport to sell about 300 kits the first year and about 1,000 every year after that. The kits are expected to cost between \$10,000 and \$15,000, significantly less than existing confocal microscopes, which can cost up to \$150,000.

"Confocal microscopy is usually tremendously expensive," Lichtman explains. "What we have created is an inexpensive alternative."

He and Lewis Thomas, M.D., who is director of the biomedical computer laboratory and was instrumental in designing the scanning disk for the device, are presently helping Newport Corp. on design of the disk.

Of the recognition he has received, Lichtman says, "It's so out of the realm of what I'm used to. But it's been fun, I've enjoyed it."

## Personnel moves off campus temporarily

The School of Medicine Personnel Office has moved temporarily from the medical campus to offices at 1130 Hampton Ave. The personnel staff will move back to new offices on the medical campus in early 1991.

Personnel administration will be in Room 210 at the Hampton location and benefits and recruitment will be in Room 145. Personnel's campus box number (8002) will remain the same. The office will be open from 8:30 a.m. to 5 p.m. Monday-Friday.

To accommodate medical school employees and applicants during this relocation, a shuttle service between the medical school and Hampton is running from 8:45 a.m. to 4:30 p.m. on a half-hour schedule.

In addition, two personnel

associates will have office hours at the medical school twice a week. On Tuesdays and Thursdays, Jane Schindler, personnel associate for benefits, and Betsy Slosar, personnel associate for recruitment, will be at 4550 McKinley. Schindler's number at the medical school is 362-7204; Slosar's is 362-7197.

The main telephone numbers at the Hampton office are: administration (personnel policies and procedures, employee relations, garnishments, wage and salary administration and unemployment compensation) and shuttle service information, 726-7510; recruitment (applications and interviews), 726-7500; and benefits, 726-7503.

# PERSONNEL NEWS

## Bond market, social choice accounts available

In March 1990, the new CREF Bond Market and Social Choice accounts "opened for business" — another major step toward the goals set forth in The Future Agenda, TIAA-CREF's blueprint for innovation in this new decade. Both new accounts are now available in all Washington University retirement plans and Supplemental Retirement Annuities (SPAs).

This brings you up to five TIAA-CREF accumulation options: TIAA, a traditional annuity; and the four CREF accounts: the Stock, Money Market, Bond Market and Social Choice accounts.

### Bond Market Account

The CREF Bond Market Account lets you diversify through its investments in the bond market. The Bond Market Account's goal is favorable long-term returns through high current income and capital preservation.

The account will invest primarily in high and medium quality fixed-income securities, including:

- Securities issued or guaranteed by the U.S. government or its agencies;
- Publicly traded corporate bonds;
- and Mortgage-related or other asset-backed securities.

It also will invest in the money market to take advantage of attractive short-term opportunities and to preserve liquidity.

The Bond Market Account is an accumulation-only account. You can

use it while you are saving for retirement, but to receive income, you will need to transfer accumulations to one or more income-paying options — TIAA, the CREF Stock Account or the CREF Money Market Account.

(The CREF Bond Market Account is very different from the TIAA annuity. Because the account actively trades bonds, its value increases or decreases with the changing prices in the market. Your accumulation in this variable account follows its changing value, up or down. TIAA is a traditional annuity; it assures you against loss of your principal and guarantees a specific interest rate so that your accumulation can only go up, never down. One way TIAA backs up its commitments to you is to hold bonds, but it does not actively trade them.)

### Social Choice Account

The CREF Social Choice Account takes a more explicit approach to socially responsible investing than the other CREF accounts or TIAA. Employees who want to invest according to social criteria may do so with this account, which invests in stocks, bonds and money market securities. It is a balanced account, so you can participate in just this one account and still be diversified. Like the other CREF accounts, it is a variable account. Its value can go up or down.

The Social Choice Account seeks returns that parallel the performance of the financial markets broadly while giving special consideration to certain social concerns. It invests in compa-

nies that follow commonly accepted standards for social responsibility. Initially, it will not invest in companies that:

- Have economic ties to South Africa;
- Have operations in Northern Ireland and (1) have not adopted the MacBride Principles or (2) have not conducted business consistent with these principles and in compliance with the Fair Employment (Northern Ireland) Act of 1989;
- Produce nuclear energy;
- Have a significant portion of business involved in the manufacture of weapons; and
- Produce and market alcoholic beverages or tobacco.

In addition, environmental concerns will be considered when appropriate guidelines are developed. In managing the Social Choice Account, CREF investment professionals use information provided by monitoring organizations, such as the Investor Responsibility Research Center Inc.

Although the Social Choice Account is now an accumulation-only account, it also will be an income-paying annuity in the near future.

### To use the accounts

You can start using the new accounts immediately in your retirement plan and Supplemental Retirement Annuities. To allocate premiums or to transfer accumulations, call the Automated Telephone Service toll free, 1-800-842-2252.

## Professional job searches under way

Washington University is conducting searches to fill professional positions on the Hilltop Campus. For complete job descriptions and qualifications required for these positions, call the Personnel Office at 889-5990.

### Director of Student Health Service

Washington University is seeking a physician/administrator with a strong clinical focus coupled with interest and experience in the issues of young adult health care.

Qualifications: Medical degree, five years of full-time clinical practice beyond medical residency, direct experience in professional staff supervision and health care management, board certification in family practice or internal medicine, and experience in college health or community health education.

Application information: The position is available July 1, 1990. Salary commensurate with education, training and experience.

Submit a letter of application, resume, three current letters of recommendation, and a one-page statement of personal philosophy on college health to: Justin X. Carroll, Associate Dean of Students, Washington University, Campus Box 1136, One Brookings Drive, St. Louis, MO 63130.

### Departmental Library Services Head

The Olin Library System is seeking a talented and dynamic individual to serve as head of Departmental Library Services.

Qualifications: Candidates must have an MLS from an ALA accredited library school, second master's preferred. At least three years of supervisory experience, preferably in a research library environment.

Applicants should send a resume and the names of three references by April 1, 1990, to: Virginia F. Toliver, Director of Administration and Planning, Olin Library, Campus Box 1061, One Brookings Drive, St. Louis, MO 63130-4899.

### Administrative officer Department of Chemistry

Responsibilities include: Assist chair with budget planning, oversight of financial expenditures, space utilization and building renovations, and occasional grant proposal. Provide administrative support for undergraduate and graduate teaching and research programs. Directly and indirectly manage departmental support staff of 26.

Requirements: Advanced degree in chemistry or related area (Doctorate preferred). Administrative skills, financial experience and academic experience helpful.

Completed applications preferred by April 15. Submit resume with three letters of reference to: Joseph J.H. Ackerman, Department of Chemistry, Washington University, Campus Box 1134, One Brookings Drive, St. Louis, MO 63130-4899.

### Director of the Career Center

Qualifications: a M.A. or Ph.D. in counseling or related field. Broad areas of responsibility: Responsible for the on-going development, management, and evaluation of a comprehensive program of career services for students and alumni in the College of Arts and Sciences, and the Schools of Fine Arts and Architecture.

Submit a letter of application; a resume; and the names, addresses and phone numbers of three references to Karen Levin Coburn, Associate Dean of Students, Washington University, Campus Box 1136, One Brookings Drive, St. Louis, MO 63130.

## New dividend rates apply to TIAA accumulating annuities

On Feb. 21, 1990, the TIAA Board of Trustees voted new dividend rates for TIAA accumulating annuities. These rates are effective March 1, 1990, through Feb. 28, 1991, for premiums paid, dividends credited and CREF accumulations transferred to TIAA during the periods shown in the chart.

Separate interest rates are credited to different segments or "vintages" of an individual's total accumulation to reflect TIAA's financial experience on investments made during different periods.

A total interest rate of 8.5 percent will be credited on accumulations arising from premiums remitted and dividends credited to TIAA Retirement Annuities during 1990. For funds applied during earlier periods, the interest rates will vary between 8.75 percent and 10 percent as indicated in the table to the right.

The rates being credited on some of the older vintages have declined as principal repayments and investment income from older, higher-yielding assets are reinvested at the lower interest rates available today. This trend has been exacerbated by an increased volume of unscheduled redemptions, as borrowers have refinanced their borrowings at the lower rates available in recent years.

These factors had a similar impact on the 1990 pay-out annuity dividend interest rates. For more information, see the article titled "1990 Annuity Income" on page 4 in the December issue of the Benefit Plan Counselor.

For TIAA Supplemental Retirement Annuity (SRA) accumulations arising from premiums remitted and dividends applied on or after Jan. 1, 1988, a total interest rate 0.25 percent lower than the corresponding rate for TIAA Retirement Annuities will be credited to meet the extra costs associated with the cashability feature of SRA contracts. SRA premiums remitted prior to 1988 were subject to

a premium loading charge to meet these costs.

TIAA's \$43 billion investment portfolio is diversified among mort-

gages, direct placement loans, publicly traded bonds and real estate equity.

Total (Guaranteed plus Dividend) Interest Rates on TIAA Accumulating Annuities (effective 3/1/90-2/28/91)						
Periods during which funds were applied	on or after 1/1/90	1/1/88-12/31/89	1/1/86-12/31/87	1/1/82-12/31/85	1/1/79-12/31/81	Prior to 1/1/79
TIAA Retirement Annuities and Group Retirement Annuities	8.50%	9.25%	8.75%	10.00%	9.25%	8.75%
Supplemental Retirement Annuities	8.25%	9.00%	8.75%	10.00%	9.25%	8.75%

These rates apply to all TIAA accumulating annuities issued on or after July 1, 1941, except for TIAA contracts issued between 1972 and 1978 inclusive under Canadian Registered Retirement Savings Plans and Canadian Registered Pension Plans. Dividends are declared for a year at a time and are not guaranteed for future years.

## Premium expense charge is eliminated

Today your Supplemental Retirement Annuities cost less — plus, you have more investment choices.

If you made a \$100 contribution to your CREF SRA last month, \$99.50 actually was invested. This month, \$100 will be invested. The difference: The 0.5 percent premium expense charge has been eliminated.

Now there is no difference between how much your contributions will grow in your CREF SRA or in your CREF Retirement Annuity. Neither has a premium expense charge now. However, differences still exist between your TIAA SRA and TIAA Retirement Annuity — the TIAA dividend credited to SRA contributions after Jan. 1, 1988, is lower, currently by 0.25 percent.

(The reason for the differential is that cashability has an effect on TIAA's investments. Because of SRA cashability, TIAA must hold more liquid investments for them. In general, the more liquid investments are, the less they earn. So, TIAA SRAs are credited with a lower interest rate than noncashable TIAA Retirement Annuities.)

## Personnel News

Personnel News appears monthly in the Record and is prepared by Gloria W. White, vice chancellor for personnel and affirmative action, and other members of the Personnel Office. Personnel News is designed to keep Washington University employees and their families informed of the benefits and opportunities available at the University.



# CALENDAR

March 29-April 7

## LECTURES

### Thursday, March 29

**Noon. Dept. of Genetics Seminar**, "Probing Mechanisms of Transcription Activation," John Majors, WU asst. prof. in the Dept. of Biochemistry and Molecular Biophysics. Room 816 McDonnell Medical Sciences Bldg.

**Noon. Dept. of Pharmacology Seminar**, "Bordetella pertussis Tracheal Cytoxin," William E. Goldman, WU asst. prof. of molecular microbiology. Room 3916 South Bldg.

**2:30 p.m. Dept. of Mechanical Engineering Colloquium**, "Boundary-layer Receptivity to External Disturbances," R. W. Wlezien, McDonnell Douglas Research Laboratories. Room 100 Cupples II.

**3:45 p.m. Dept. of Chemistry Seminar** with Larry Miller, Dept. of Chemistry, U. of Minnesota. Room 311 McMillan Lab.

**3:45 p.m. Dept. of Anthropology Colloquium**, "Dietary Patterns of Prehistoric Populations in the Mississippi Valley," Jane Buikstra, Dept. of Anthropology, U. of Chicago. Room 101 McMillan Hall.

**4 p.m. Neural Science Seminar**, "Can Stress Damage the Brain," Robert Sapolsky, Dept. of Biological Sciences, Stanford U. Cori Aud., McDonnell Medical Sciences Bldg.

**4 p.m. Dept. of Pathology Seminar**, "Construction of Human Genetics Linkage Map and Its Application to Inherited Disorders," Helen Donis-Keller, WU prof. of genetics. 3rd floor Aud., Children's Hospital.

**4 p.m. Assembly Series John and Penelope Biggs Residency in the Classics Lecture**, "Warfare in Antiquity," Emily Vermeule, Samuel E. Zemmurray and Doris Zemmurray Stone — Radcliffe Professor, Harvard U. May Aud., Simon Hall. For more info., call 889-4620.

### Friday, March 30

**Noon. Dept. of Cell Biology and Physiology Seminar**, "Sexual Signal Transduction in Chlamydomonas," Ursula Goodenough, WU prof. of biology. Cell Biology Library, Room 4914, South Bldg.

**4 p.m. Dept. of Medicine Hematology/Oncology Seminar**, "Post-Synthetic Modifications of Sialic Acids in Development and Malignancy," Ajit Varki, Dept. of Medicine, U. of Calif., San Diego. Room 8841 Clinical Sciences Research Bldg.

**4 p.m. Assembly Series Language and Culture Lecture**, "Explorations in Ethnography of Speaking," Richard Bauman, Dept. of Folklore and Anthropology, Indiana U. Women's Bldg. Lounge. For more info., call 889-4620.

### Saturday, March 31

**9 a.m. Saturday Morning Neural Science Seminar**, "Use of Transgenic Mice to Study Geographic Differentiation of the Gut Epithelium," Jeffery Gordon, WU prof. of medicine and biochemistry and molecular biophysics. Erlanger Aud., McDonnell Medical Sciences Bldg.

**9 a.m.-noon. University College Symposium**, "Education in a Pluralistic World: Challenges and Opportunities," moderated by James Hall, vice president of external affairs, City University of New York. Co-sponsored by Harris-Stowe State College. Main Aud., Harris-Stowe State College, 3026 Laclede Ave. Cost: \$5 for general public; \$3 for education students. For more info. or to register, call 889-6727.

### Monday, April 2

**2 p.m. Dept. of Chemical Engineering Seminar**, "Periodic Separating Reactors: Pressure Swing Absorption With Reaction," Garo G. Vaporciyan, reaction engineering group leader, Shell Development Co. Room 100 Cupples II.

**4 p.m. Dept. of Psychology Colloquium**, "The Prepared Mind: Studies of Spreading Activation, Mental Incubation and Reminding," David Meyer, U. of Michigan. Room 110 January.

**4 p.m. Dept. of Biology Seminar**, "Identification of Auxin Receptors by Photoaffinity Techniques," Terri Lomax, Dept. of Botany and Plant Physiology, Oregon State U. Room 322 Rebstock.

**4 p.m. Dept. of Medicine Immunology Seminar**, "Ontogeny of Intaepithelial Lymphocytes," Leo Lefrancoise, Upjohn Co. 3rd Floor Aud., Children's Hospital.

**8 p.m. School of Architecture Monday Night Lecture Series**, "Buildings, Words, Machines," Peter W. Pfau, principal, Holt, Hinshaw, Pfau & Jones, award-winning architectural firm. Steinberg Hall Aud. For more info., call 889-6200.

### Tuesday, April 3

**4 p.m. Assembly Series Lecture**, "The Role of Student Movement in the November Revolution in Czechoslovakia," Peter Mathern, founding member, Czech Student Movement. Women's Bldg. Lounge. For more info., call 889-4620.

### Wednesday, April 4

**11 a.m. Assembly Series Martin Luther King Jr. Symposium**, "Blacks in Science: Ancient and Modern," Ivan Van Sertima, prof. of Africana studies, Rutgers U., and author, *They Came Before Columbus: The African Presence in Ancient America*. Co-sponsored by Assoc. of Black Students, Student Educational Services and Student Union. Graham Chapel. For more info., call 889-4620.

**Noon. Neuroscience Luncheon Seminar**. Speaker and subject to be announced. Room 928 McDonnell Medical Sciences Bldg. For more info., call 362-6945.

**4 p.m. Dept. of Physics Colloquium**, "Physics of Non-neutral Plasmas in Traps," Leaf Turner, Los Alamos National Laboratory, N.M. Room 204 Crow Hall.

**8 p.m. Dept. of English Fiction Reading** by R. V. Cassill, prof. emeritus, Brown U. Hurst Lounge, Duncker Hall.

### Thursday, April 5

**4 p.m. Assembly Series Lewin Lecture**, "Are We Moving Towards a World Legal Order," Alice Erh-Soon Tay, Challis Professor of Jurisprudence, The U. of Sydney, Australia. Women's Bldg. Lounge. For more info., call 889-4620.

**4 p.m. Women's Studies Program Colloquium**, "Women and Ordination: A Greek Orthodox Feminist View," Jacqueline Pastis, WU instr. in the Women's Studies and Religious Studies programs. Brown Hall Lounge.

**4:15 p.m. Assembly Series Lecture**, "Resonance and Wonder: The New Historicism in the Representation of Cultures," Stephen Greenblatt, The Class of 1932 Professor of English Literature, U. of Calif., Berkeley. Room 110 January Hall. For more info., call 889-4620.

**6 p.m. Dept. of Germanic Languages and Literatures Lecture**, "Terreur und Anarchie gustav Landauer und die Franzosische Revolution," Norbert Altenhofer, prof. of German, U. of Frankfurt, Germany. Hurst Lounge, Duncker.

### Friday, April 6

**Noon. Dept. of Cell Biology and Physiology Seminar**, "Maintenance and Elimination of Neuromuscular Synapses," Jeff Lichtman, WU assoc. prof. of anatomy. Cell Biology Library, Room 4914, South Bldg.

**2 p.m. Dept. of Education Lecture**, "The Education of Blacks in St. Louis: A Historical Perspective," James D. Anderson, Prof. of the History of Education, U. of Illinois, Urbana-Champaign. Co-sponsored by African and Afro-American Studies and the Missouri Historical Society. Steinberg Hall Aud.

**4 p.m. Dept. of Molecular Microbiology Seminar**, "Molecular and Cellular Biology of an Intracellular Parasite (Listeria) of Macrophages," Daniel Portnoy, Dept. of Microbiology, U. of Pennsylvania. Room 775 McDonnell Medical Sciences Bldg.

**6 and 8:30 p.m. Washington University Association Travel Lecture Series**, "Great Cities of Europe," Doug Jones, producer and lecturer. Graham Chapel. For ticket info., call 889-5122.

### Saturday, April 7

**9 a.m. Saturday Morning Neural Science Seminar**, "Movement, Growth Factors and the Gradients in the Early Development of Amphibian Embryos," David Kirk, WU prof. of biology. Erlanger Aud., McDonnell Medical Sciences Bldg.

## PERFORMANCES

### Friday, March 30

**8 p.m. Edison Theatre Presents** "Lady Windermere's Fan," a play by Oscar Wilde, performed by the WU Performing Arts Dept. and directed by Ann Marie Costa, WU artist-in-residence. (Also Sat., March 31, and April 6-7, same time, and April 1 at 2 p.m.) Edison Theatre. Cost: \$7 for general public; \$5 for students, senior citizens and WU faculty and staff. For more info., call 889-6543.

## MUSIC

### Thursday, March 29

**8 p.m. Dept. of Music Presents a Piano Recital** by Michael Campbell featuring the work of contemporary American composer Roger Sessions. Steinberg Hall Aud. For more info., call 889-5574.

### Sunday, April 1

**7:30 p.m. Dept. of Music Presents a Piano and Flute Recital**. Kathleen Donahue, piano, and Rachele Brandt, flute. Graham Chapel. For more info., call 889-5574.

### Thursday, April 5

**8 p.m. Dept. of Music Presents a Concert by the WU Collegium Musicum**, Bruce Carvell, director. Graham Chapel.

## EXHIBITIONS

**"Childry Art Exhibit by Ellie Redke, St. Paul, Minn. Artist.**" A traveling exhibit that examines child abuse and its effects by combining visual arts and text. April 2-4. Campus Y, East Basement, Umrath Hall. For more info., call 889-5010.

**"Prints by Johannes Lebek (1901-1985), a German Master of Woodcut."** Olin Library, Special Collections exhibit. Through April 20. Olin Library, level 5. 8:30 a.m.-5 p.m. weekdays.

**"Washington University Fine Arts Collection."** Collection includes European and American art from the post-World War II era, as well as ancient Greek vases. Through end of semester. Gallery of Art, upper and lower galleries, Steinberg Hall. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 889-4523.

## FILMS

### Thursday, March 29

**7 p.m. Dept. of Romance Languages and Literatures French Film Series**, "Le Rayon vert." Free. Language Lab, Room 210 Ridgley.

**7 and 9 p.m. Filmboard Series**, "Lancelot of the Lake." \$2. Brown Hall.

### Friday, March 30

**7 p.m. Filmboard Series**, "Raiders of the Lost Ark." (Also Sat., March 31, same time, and Sun., April 1, at 7:30 p.m.) \$2. Brown Hall.

**9:30 p.m. Filmboard Series**, "Indiana Jones and the Temple of Doom." (Also Sat., March 31, same time, and Sun., April 1, at 10 p.m.) \$2. Brown Hall.

**Midnight. Filmboard Series**, "Indiana Jones and the Last Crusade." (Also Sat., March 31, same time, and Sun., April 1, at 5 p.m.) On Fri. and Sat., both the 9:30 p.m. and midnight films can be seen for a double feature price of \$3; all three Sun. films can be seen for \$3. Brown Hall.

### Sunday, April 1

**2 p.m. WU Gallery of Art and Dept. of Architecture Film**, "Beyond Utopia: Changing Attitudes in American Architecture." Free. Steinberg Hall Aud. For more info., call 889-5490.

### Monday, April 2

**7 and 9:30 p.m. Filmboard Series**, "Psycho." (Also Tues., April 3, same times.) \$2. Brown Hall.

### Tuesday, April 3

**5:30 p.m. WU Performing Arts Dept. Presents The Filmed Stage Play Series**, "Fool For Love." Co-sponsored by St. Louis Art Museum. Cost \$3 for general public; \$2 for students, senior citizens and WU faculty and staff. St. Louis Art Museum Aud. For more info., call 721-0067.

### Wednesday, April 4

**7 and 9 p.m. Filmboard Series**, "Ivan the Terrible, Part One." (Also Thurs., April 5, same times.) \$2. Brown Hall.

### Thursday, April 5

**7 p.m. Dept. of Romance Languages and Literatures French Film Series**, "La Symphonie pastorale." Free. Language Lab, Room 210 Ridgley Hall.

### Friday, April 6

**7 and 9:30 p.m. Filmboard Series**, "Close Encounters of the Third Kind." (Also Sat., April 7, same times, and Sun., April 8, at 7 p.m.) \$2. Brown Hall.

**Midnight. Filmboard Series**, "The Shining." (Also Sat., April 7, same time, and Sun., April 8, at 9:30 p.m.) On Fri. and Sat., both the 9:30 p.m. and midnight films can be seen for a double feature price of \$3; both Sun. films can be seen for \$3. Brown Hall.

## SPORTS

### Friday, March 30

**2:30 p.m. Men's Baseball.** WU vs. Missouri Baptist College. Kelly Baseball Field.

**3 p.m. Men's and Women's Outdoor Track.** WU Twilight Invitational. Bushyhead Track.

**3 p.m. Men's Tennis.** WU vs. Greenville College. Tao Tennis Center.

### Saturday, March 31

**9 a.m. Men's Tennis.** WU vs. U. of Chicago. Tao Tennis Center.

**1 p.m. Men's Tennis.** WU vs. Illinois Wesleyan U. Tao Tennis Center.

### Sunday, April 1

**Noon. Men's Baseball.** WU vs. Quincy College. Kelly Baseball Field.

### Tuesday, April 3

**3 p.m. Men's Tennis.** WU vs. SIU-Edwardsville. Tao Tennis Center.

### Friday, April 6

**3:30 p.m. Women's Tennis.** WU vs. U. of Chicago. Tao Tennis Center.

### Saturday, April 7

**1 p.m. Men's Baseball.** WU vs. Central Methodist College. Kelly Baseball Field.

## MISCELLANY

### Thursday, March 29

**10 p.m. Thurtene Night at Schmiezing's,** Millbrook and Big Bend.

**Noon-1:30 p.m. Hillel House at WU Brunch/Lecture**, "Cambodia Today: A Holocaust Survivor's View," Hedy Epstein, member of prosecution staff at Nuremberg war crimes trial. Cost \$3. Hillel Foundation B'nai B'rith, 6300 Forsyth Blvd. For more info., call 726-6177.

### Friday, April 6

**Noon. Woman's Club of Washington University Luncheon**, "House and Heart: The American Women's World in the 1880s," Joyce K. Schiller, St. Louis Art Museum. Cost: \$3 for members and \$4 for guests. Women's Bldg. Lounge. For more info., call 725-8254 or 721-3573.

### Saturday, April 7

**8 a.m.-noon. Thurtene Road Race.** Forest Park. For more info., call 367-7027

## Calendar Deadline

The deadline to submit items for April 12-21 calendar of the Washington University Record is April 6. Items must be typed and state time, date, place, nature of event, sponsor and admission cost. Incomplete items will not be printed. If available, include speaker's name and identification and the title of the event; also include your name and telephone number. Send items to Andrew Cox, calendar editor, Box 1070, or by electronic mail to p72245ac at WUVMC.

## Gaining edge in global marketplace is conference aim

Helping operations and manufacturing professionals gain a competitive edge in the global marketplace is the aim of a two-day conference to be held at Washington University on Friday, March 30, and Saturday, March 31. The conference is open to the public.

Speakers include Ulf Hoeglund, chief executive of GKN, a \$1.5 billion worldwide manufacturer of auto parts; Ike Evans, senior vice president of manufacturing, Emerson Electric; Bob Horner, chief executive of Citicorp Mortgage; Randy Heffner, vice president of manufacturing, Next Computers; and Sara Beckman, manager, planning and organizational design, Hewlett-Packard.

Dean H. Kropp, Ph.D., the Dan Broida Professor of Operations and Manufacturing Management at the John M. Olin School of Business, will discuss how participants can use the advice of these experts to develop a competitive business plan. Participants will have an opportunity to interact with the speakers and pose individual questions.

The event, sponsored by the business school's Operations and Manufacturing Management Club, includes a wine-and-cheese reception on Friday afternoon and a continental breakfast and lunch on Saturday. Registration fees are \$5 for students, faculty and staff; \$15 for Washington University alumni; and \$30 for all others. For more information, call 726-4220.