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Record

Feb. 10, 2000

Volume 24 No. 19

★ ★ ★ Washington University in St. Louis ⚜ ⚜ ⚜

CAROL HOUSE

Year of the Dragon The Ribbon Dance, symbolizing luck and happiness, helps usher in the Year of the Dragon Saturday, Feb. 5, at Edison Theatre as part of Chinese New Year Festival 2000. The festival, produced by the Chinese Students Association and designed to highlight the beauty and grace of Chinese heritage, culminated a week of cultural exhibitions and events.

MLA program celebrates 20 years

Inquiring minds of all ages share joy of learning

By Christine Farmer

When John Clancy enrolled in the Master of Liberal Arts (MLA) Program in 1980, he had no idea it would lead him to a doctoral degree and a second career.

John J. Clancy, Ph.D., associate director of the American Culture Studies Program in Arts & Sciences and professor of engineering and technical management, is one of many students and faculty members who praise the program, which is celebrating its 20th anniversary this month.

"The program has outstanding faculty, very knowledgeable teachers, and I met a lot of interesting fellow students," he said. "There is also the great variety of topics available since it goes across academic disciplines. I took a lot of different types of courses and enjoyed all of them. I took a course on birds, one on the 'Divine Comedy' and others on everything in between."

Clancy, formerly an engineer with McDonnell Douglas Corp., was introduced to the program by former University College Dean Robert C. Williams, Ph.D., who helped to develop it.

"When Bob told me about it, I thought, 'I've always read a lot and been interested in many things,'" Clancy said. "It later got me thinking about pursuing my Ph.D., which was not my goal going into the MLA program."

Williams, who is now a professor of history at Davidson College, N.C., speaks proudly of the almost 400 students who have been or are currently enrolled in the University's program.

"The persistence and flowering of the MLA program shows that St. Louis is full of intelligent people who did not stop learning when they received their other educational degrees," he said. "Our greatest tribute is to the men and women of the MLA who care enough to embark on a voyage of learning after hours, in addition to meeting their responsibilities to family and career. These students encourage us all to consider the liberal arts a lifetime adventure."

The graduate program, the only one of its kind in the St. Louis area, provides motivated, college-educated adults an opportunity to further their intellectual growth through a part-time interdisciplinary course of study. Core seminars of the program are organized into four categories: Ideas and Inquiry, The Creative Imagination, Science and Human Values, and Historical Understanding. To earn the MLA degree, students must complete nine courses (four from the core seminars) and a final independent project for a total of 30 units of graduate study. The program is jointly sponsored by University College and the Graduate School of Arts & Sciences.

The class environment is conducive to inquiry and discussion, the courses are varied and wide-ranging and the students are diverse in age, background and livelihood, but they share a joy of learning.

"The students are fascinating individuals," said Anne W. Hetlage, associate dean of University College in Arts & Sciences. "They love to deal with ideas and the written word — either to read it, write it or both. They are broad thinkers. The program is not about just going in depth into one topic; it's how concepts in different disciplines relate to each other."

Students range in age from 25

See **MLA,** Page 2

Measuring pollution

Rural-area vehicles emit more particulates than city cousins

By Tony Fitzpatrick

On top of looming tougher pollution rules for sport utility vehicles and other popular vehicles, an environmental engineer here now has devised a new measurement that is likely to have a future impact on air pollution measures and standards nationwide.

It's called ppvm — pollutant per vehicle mile — and it measures the total particulate-matter emissions a vehicle makes per mile traveled.

Jay R. Turner, D.Sc., assistant professor of chemical engineering and civil engineering and director of the University's Air Quality Laboratory, has performed an ambitious study of vehicular emissions in the St. Louis region, measuring particles smaller than 2.5 micrometers in diameter.

Results from an urban interstate site and a nearby rural Illinois site that Turner surveyed indicate that an average urban vehicle, whether a motorcycle or diesel truck, emits between 30 and 40 milligrams of particulate matter per mile traveled; an average rural vehicle emits between 200 and 300 milligrams ppvm traveled.

Upper respiratory illnesses, cardiovascular disease and cancer increasingly are being linked to road dust.

So much for fresh country air.

"We think there is much more heavy diesel traffic outside the city, and there are greater road dust emissions in rural areas because of the proximity to open land, and those account for higher rural readings," Turner explained.

Road dust is more than the simple dirt a vehicle stirs up as it moves along the road. Besides dirt from soil, road dust also contains the suspended fine particulate matter created from tail pipe emissions. It is a major component of vehicular air pollution and a matter of serious concern to the U.S. Environmental Protection Agency (EPA) and the medical profession. Upper respiratory illnesses, cardiovascular diseases such as arrhythmia, and cancer increasingly are being linked to road dust and other vehicular particulate matter. The acidity of the matter, its heavy metal composition and the sheer volume of minuscule particles suspended in the air all make your automobile particulate-matter air pollution a potential public health threat.

Turner and his students used particulate matter samplers that pull air through filters, measuring the mass of the filters before and after the sampling. They concentrated on Interstate 40, which runs through the heart of St. Louis, and Interstate 55 in Madison County, Ill., some 30 miles northeast of St. Louis.

Periodically, from January to April 1998, the team painstakingly counted and classified vehicles at both sites during six- to eight-hour time spans, taking five-minute readings every 15 minutes while they collected the particulate-matter samples. They determined that the rural site averaged about 1,300 vehicles per hour; the urban location varied widely from 7,500 to 10,000 vehicles per hour.

The results of the study, which was funded in part by the EPA, were published in the Journal of Air and Waste Management Association. The data he has collected, plus his analysis of U.S. EPA mathematical models that predict air particulate-matter emission rates, will help environmental agencies and municipalities better sample their roads and address their particulate-matter air quality challenges.

"The numbers indicate that a single vehicle stirs up a considerable amount of particulate matter, more so than what people might think," Turner said. "When you then consider that you can multiply this daily value by the many thousands of miles vehicles travel on the roads each day, you get a clearer view of what role the automobile potentially plays in air pollution."

When elders' memory is better

Computer predicts cognitive quirk

By Gerry Everding

It's no secret that cognitive functions tend to diminish in old age, but a new study from Washington University has identified at least one mental task that older adults seem to perform as well, if not better, than their younger counterparts.

Ironically, it is the older adults' diminished ability to hold important contextual clues in working memory that seems to explain their superior performance on a simple test requiring them to quickly identify a specific sequence of letters on a computer screen.

"Our new findings are startling because researchers had previously found it nearly impossible to identify a task involving attention or memory that older adults perform as well as young people," said Todd S. Braver, Ph.D., an assistant professor of psychology in Arts & Sciences. "In this experiment, older adults not only completed the task with fewer errors, but amazingly, their reaction times were as fast as the younger adults, and that's pretty much unheard of."

Perhaps even more important to science's broader effort to unravel the mechanisms of human thought: A sophisticated new "context-driven" computer model of the human brain predicted the quirk and led researchers to test for it.

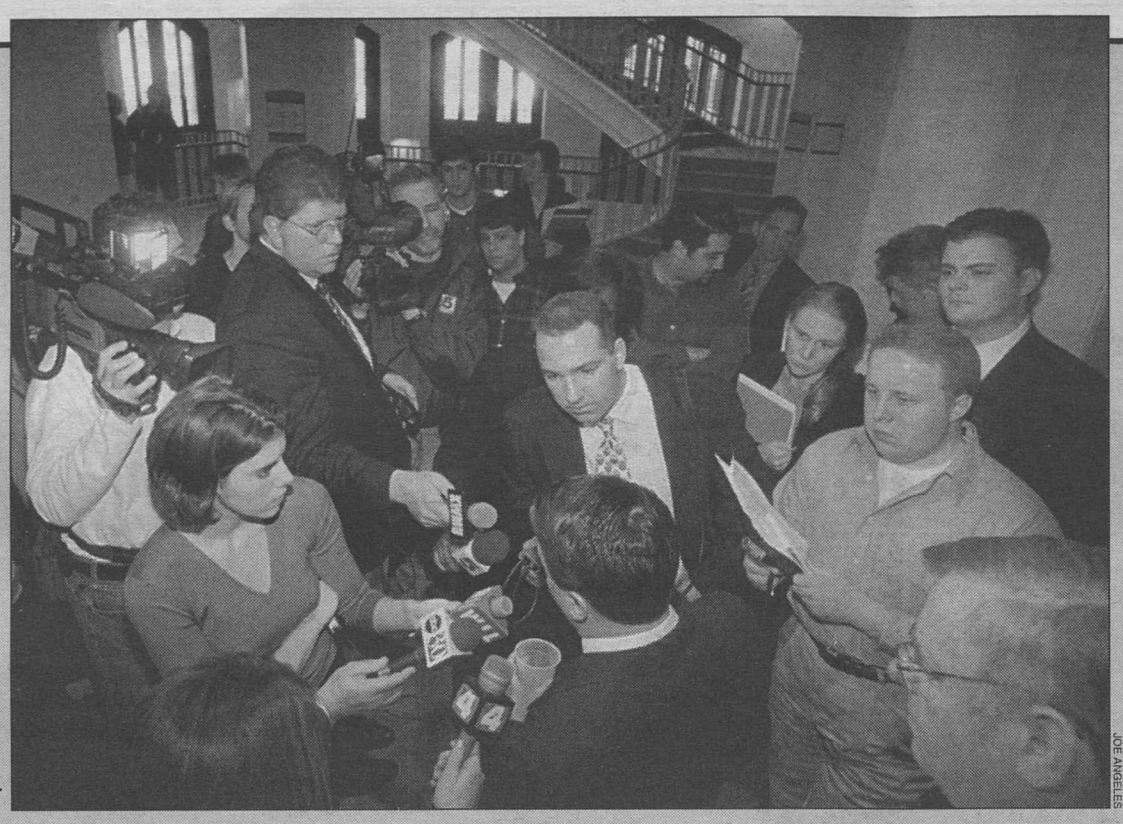
The model was developed by researchers here in collaboration with Jonathan Cohen, M.D., Ph.D., professor of psychology at Princeton University.

Known as a "connectionist neural network model," the system relies on a complex, interconnected set of computer algorithms to mimic various human thought processes. The connectionist model is based on the theory that there is no single physical area of the brain that controls the thought process. Rather, cognition is carried out in an intricate web of interlocking and interacting brain regions, which together spur our thoughts and actions.

"Our model predicted specific effects of aging on brain function, and these effects were confirmed through empirical studies of actual human behavior," Braver said. Other members of the research team are Deanna M. Barch, Ph.D., an assistant professor of psychology, and psychology doctoral student Beth A. Keys.

The computer model's success, coupled with other recent

See **Memory,** Page 2



JOE ANGELES

Court in session Members of the media question attorney Joseph Murphy (front center, facing reporters) following oral arguments before the Missouri Court of Appeals Eastern District. Murphy represents Brian T. Stewart in his appeal of a life sentence for infecting his son with the Human Immunodeficiency Virus (HIV). The court session was held in the School of Law's Bryan Cave Moot Courtroom as part of an educational program for students. Two members of the three-judge panel, the Honorable William H. Crandall Jr. and Richard B. Teitelman, are law school alumni.

MLA

Pioneering program celebrates 20 years

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to 80, Hetlage said.

"In some cases the students are older than the faculty and have experienced the events being discussed. It makes for exciting teaching," she observed.

Wayne Fields, Ph.D., the Lynne Cooper Harvey Distinguished Professor of English in Arts & Sciences and director of the American Culture Studies Program, is among the faculty that enjoy teaching courses in the program, not only for the interdisciplinary exploration, but because of the students.

"A lot of the appeal of it is that you have people with a wide range of experience and interests coming into the classroom. It brings different fields, faculty and students together," he said. "I've gotten to read a lot of good books with a lot of great people."

Williams perhaps described it best: "Adult students seem to me to validate faculty learning. The MLA program develops better teaching faculty willing to accept the challenge of bright, well-educated adult students who are working and paying for their own education. The faculty are perpetual adult students themselves. So there is great synergy."

George M. Pepe, Ph.D., director of the program and professor and chair of the Department of Classics in Arts & Sciences, taught one of the first courses in the program 20 years ago. He is teaching "The Legacy of Greece" this spring.

"The only changes I can see over the years is in those of us who are teaching. We've aged," he said with a chuckle. "The program is still as young as the students, who bring to it a lot of enthusiasm and vitality. They share a realization that their lives and careers can be enriched by the liberal arts. They have different occupations, some married, some with children, but they are all there because they want to be there, not to get their ticket punched."

There are now more than 100 such programs in the country, but Washington University's is among the oldest, preceded by Johns Hopkins, Georgetown, Harvard, Dartmouth, Southern Methodist University and several others.

Among the 175 graduates of the program are Lee M. Liberman, retired president and chief executive officer of Laclede Gas Co., who is now a Ph.D. candidate in American literature and history; William E. Cornelius, former chief executive officer of Union Electric Co.; and Tom Lowther, a law school alumnus and member of the executive committee of The Stolar Partnership, a downtown law firm. Liberman and Cornelius are members of the University's Board of Trustees, and Lowther serves as chairman of the University's Alumni Board of Governors.

Lowther, who earned his MLA degree in 1999, said he enrolled to broaden his vistas.

"I wanted to understand what I see in the museums and hear in the concert halls, to learn who built those Gothic masterpieces in France and Spain," he said.

In celebrating the anniversary of the program, the Saturday Seminar Series this month features current and past directors of the program — Fields, Pepe, Williams and Gerald N. Izenberg, Ph.D., professor of history. For more information on the seminars, call 935-6778.

Memory

Counterintuitive prediction made by computer

— from page 1

breakthroughs in cognitive research, has led the team to propose a novel theory of brain function— that our ability to retrieve, hold onto and evaluate important contextual clues is essential in a range of critical executive-level mental functions.

It's clear that a number of complex cognitive functions depend heavily on our ability to grasp context. In language, for instance, a single word, such as "pen," could have one of several distinct meanings, depending on its use in a sentence.

In this study, researchers suggested that context-processing also plays an important underlying role in cognitive processes, such as short-term memory and attention. Each process, they argue, can be understood as being supported by a chemical neurotransmitter system that continually rewards the brain for holding onto informational tidbits relevant to the task at hand. In healthy young adults, the reward system for contextually important information is so strong that sensory distractions and other nonessential information are blocked out of working memory, effectively maintaining attention and goal orientation.

"A wide range of age-related impairments in cognitive control may, in fact, be due to a single fundamental deficit in the mind's ability to properly represent and maintain task-relevant context," Barch said.

In studies such as this one, and in others using sophisticated advances in functional neuro-imaging techniques, researchers have begun to identify important pieces of the puzzle of human cognition.

The researchers also believe, she added, that "these cognitive declines might be due to disturbances in the functional interactions between the prefrontal cortex and the dopamine neurotransmitter system, which serve as the neural mechanisms underlying context representation and maintenance."

Although science now understands a great deal about the specific functions of various brain regions and how these functions are affected by dopamine and other chemical neurotransmitters, very little is understood about how these functions interact and what central operational mechanics govern the intricate workings of human thought. In recent years, computer modeling has emerged as a viable option for exploring the underlying forces that shape cognition.

In this study, the computer model helped researchers recognize that the sheer power and agility of young people's contextual processing skills might leave them vulnerable to errors in certain context-related decision-making situations. More interesting, the model also produced the very counterintuitive suggestion that the diminished cognitive skills of older adults might leave them less susceptible to making some of those same mistakes.

To test the computer's hypothesis, the researchers analyzed data from an experiment in which two large groups of younger and older adults were instructed to observe a series of letters flashed across a computer screen and to push one button if the letter "X" appeared immediately following the letter "A" or another button for any other combination of letters.

As expected, older adults performed much worse than the younger ones in situations where the first letter presented was not an "A" and the second letter was an "X." Young people quickly realized that without an initial "A" in the sequence, the two letters presented would never meet the A-X target guidelines. Older adults made more errors in this situation, apparently taken in by the appearance of the "X" and losing track of the context — the fact that it was not preceded by an "A".

Interestingly, as the computer model had predicted, researchers were able to lull young minds into a trap by front-end-loading the test with an abnormally high percentage of positive A-X combinations. Young minds, easily capable of keeping context information in working memory, apparently jumped to the conclusion that any "A" presentation was statistically likely to be followed by the target letter "X." Older minds, struggling to keep context in working memory, were less primed to expect an "X" as the next letter.

In situations where the next letter was, in fact, not an X, healthy older adults actually gave the youngsters a run for their money, performing with fewer errors and with reaction times that were as good, if not better, than those of their younger counterparts.

In studies such as this one, and in others using sophisticated advances in functional neuroimaging techniques, researchers have begun to identify important pieces of the puzzle of human cognition. Now, researchers such as Barch and Braver are hoping that computer brain modeling could help science to begin fitting these pieces together.

"Compared to the human brain, which has billions and billions of neurons, our models are quite simple, but they hold the potential to be very powerful in predicting and understanding the basic mechanisms of brain function," Braver said. "By systematically 'damaging' cognitive functions in computer models of the healthy brain, we hope to unlock secrets about what goes awry with normal aging and brain diseases."

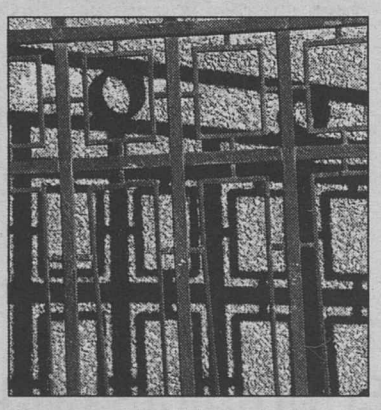
News Briefs

Star mentors

The Graduate Student Senate of Arts & Sciences is seeking nominations for its first Outstanding Faculty Mentor Awards, designed to honor Arts & Sciences faculty members with extraordinary commitment to graduate students and to excellence in graduate education. All graduate students and alumni in Arts & Sciences are invited to make nominations. For more information or to submit a nomination, visit the awards Web site at artsci.wustl.edu/~gss/mentor_awards/index.htm.

Pharmacy providers

Both Health Partners of the Midwest and Group Health Plan have changed their pharmacy providers, effective Jan. 1. This change affects all active and retired faculty and staff enrolled in either of these health plans. Health Partners' new provider is Express Scripts, and GHP's new provider is Caremark.



Campus quiz: This intriguing pattern appears where on the University's medical campus? Answer below.

Announcements of this change and new identification cards were sent to all subscribers in December. If you did not receive a new card, call the Member Service Department at Health Partners, 1-800-338-4123, or at GHP, 1-800-755-3901. If you have not already done so, you will need to show your new identification card at your next visit to the retail pharmacy and/or complete a new prescription request with your next order under the mail-order pharmacy program. For more information, call the member service departments listed above.

Journal evolves

The Washington University Journal of Urban & Contemporary Law has changed its name and its format. Now the Journal of Law & Policy, the law school-based journal will publish primarily symposium-centered issues, with a focus on social policy, interdisciplinary and multicultural perspectives and the implications of technology and economic globalization.

Answer: This metalwork is part of a loading dock gate at the entrance to an alley at 499 S. Euclid Ave.

Record
Washington University community news

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Medical School Update

Old heart treatment finds new proponents

By Linda Sage

Medical treatments often fall out of favor after they have been used for a while and newer treatments become available. For example, a surgical procedure for cleaning out the coronary arteries that was developed in the 1950s is used much less frequently today than coronary bypass surgery. But as the population grows older, cardiologists are seeing more patients with advanced artery disease who are ineligible for bypass operations. Now School of Medicine researchers have determined that many of these patients might benefit from the older procedure, coronary endarterectomy.

To perform this endarterectomy, surgeons open up the chest, cut open the blocked coronary artery, remove the blockage and sew up the artery wall.

The researchers determined outcomes of 177 patients who underwent this procedure between 1986 and 1997 at Washington University Medical Center. "We concluded that coronary endarterectomy can be performed with an acceptable risk and good long-term results in patients whose vessels are not otherwise graftable," said Thoralf M. Sundt III, M.D., associate professor of cardiothoracic surgery. Sundt and colleagues reported their findings in a recent issue of Annals of Thoracic Surgery.

Blocked arteries

While testing a new method for providing blood flow to the heart, the researchers encountered many patients who were ineligible for bypass surgery. "As we were evaluating those patients, we often wondered if they could have had coronary endarterectomy," Sundt said. "Our concern was that people who might benefit from that procedure might end up getting newer procedures whose benefits have not yet been determined."

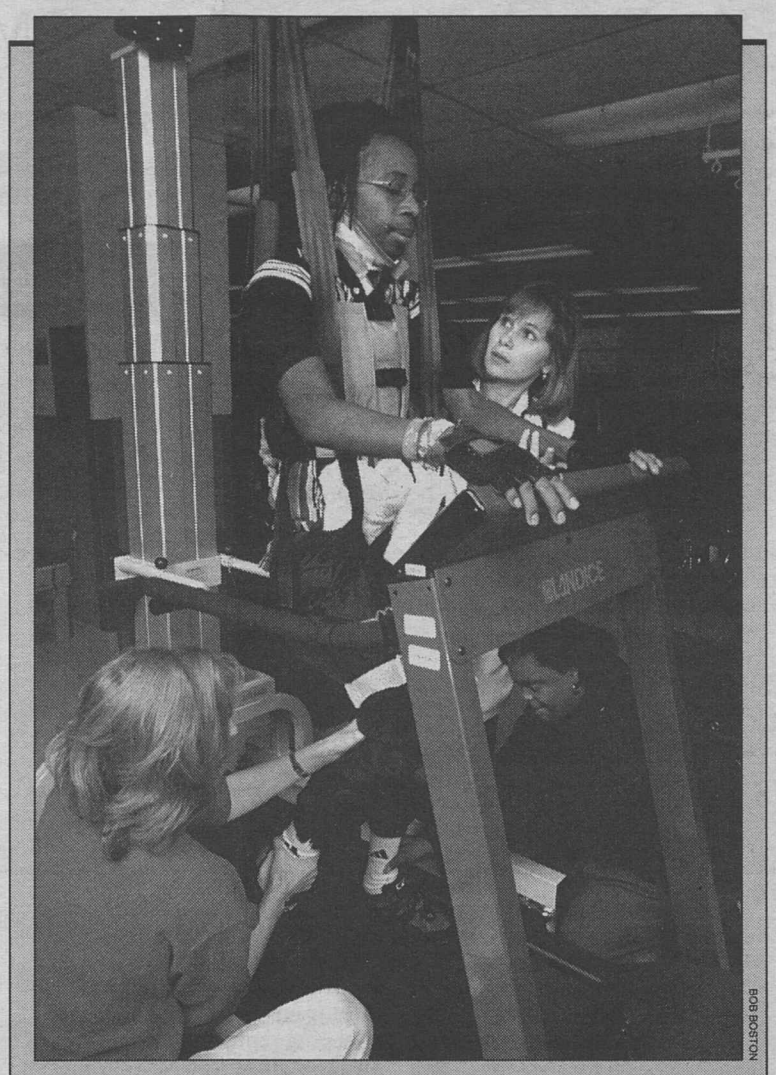
To find out how people with advanced heart disease fare after coronary endarterectomy, the researchers examined computerized medical records of the 177 patients and obtained follow-up data by phone and a questionnaire. The mean interval between the surgery and the follow-up was 56 months.

The patients ranged in age from 39 to 83, with a mean age of 64. Sixty-eight percent of them were men. When compared with 6,919 patients who underwent coronary bypass grafting during the same period, the endarterectomy patients had a greater incidence of high cholesterol levels. Diabetes mellitus and a history of coronary artery bypass grafting also were more common.

The data revealed that 11 patients died from heart attacks in the first 30 days after the endarterectomy, an operative mortality rate of 6 percent. This was slightly higher than the 4.5 percent rate for the bypass patients, but the difference between the two percentages was not statistically significant.

The calculated five-year survival rate was 75 percent or 76 percent, depending on which artery was cleaned out. At the follow-up, 75 percent of 117 survivors were free of angina, 6 percent had had angioplasty, and 3 percent had had more surgery. Only 4 percent had had a heart attack in the intervening years.

"We concluded that coronary endarterectomy can be performed with an acceptable risk and that it should be applied in a selective manner — to patients whose vessels are not otherwise graftable, Sundt said.



Partial weight-supported walking Patient Rush Wilkerson, with the help of Cristina Sadowsky, M.D. (standing), assistant professor in neurology, therapist Rachel Lawry (lower left) and physical therapy aide Gwen Pruitt (lower right), is learning how to move again using a technique called partial weight-supported walking. Wilkerson, who has quadriplegia, is suspended over the treadmill by a harness that can slowly increase the amount of weight he bears on his own, allowing him to maintain cardiovascular fitness and bone strength.

Gilbert Jost elected to board of leading radiological society

R. Gilbert Jost, M.D., interim head of Mallinckrodt Institute of Radiology, has been elected to the board of directors of the Radiological Society of North America (RSNA), the largest of the radiological societies.

Jost will serve as a liaison for communications and corporate relations for five years before chairing the board during the sixth year. He is the first faculty member from Mallinckrodt Institute to serve on the eight-member board and will become RSNA president-elect in 2007 and president the following year.

A professor of radiology at the School of Medicine, Jost has been director of diagnostic radiology since 1985. He is responsible for diagnostic radiology services at Barnes-Jewish Hospital, St. Louis Children's Hospital, Barnes-Jewish West County Hospital, Barnes-Jewish St. Peters Hospital, Doctors Hospital and the BJC Health Centers located throughout metropolitan St. Louis. He also is an affiliate professor of computer science at the University.

He is the author of more than 115 scientific articles, many dealing with the use of computers in the practice of diagnostic radiology. In addition, Jost has been a member of the executive committee of Project Spectrum since 1994. This teleradiology information system allows diagnostic images, video consultations and other medical information to be transferred electronically among the BJC hospitals and physicians. A joint effort between the medical school and BJC Health System, Project Spectrum is the first in the nation to link an academic medical center with suburban, rural and metropolitan health facilities.

Jost previously served as chairman of the RSNA's Electronic Communications Committee. He oversaw the organization's computer-related activities and advocated the integration of health-care information systems.

Jost: Diagnostic radiology expert

He also has served as chairman of the Radiology Information System Consortium and as vice chairman of the American College of Radiology's Committee on Radiological Systems and Informatics and as a member of numerous medical societies.

He is an associate editor for the Journal of Digital Imaging and is a member of the medical school's Executive Faculty. He also is on the board of directors of the school's Faculty Practice Plan.

Jost earned a bachelor's degree from Harvard University in 1964 and a medical degree from Yale University in 1969. He came to Mallinckrodt Institute of Radiology in 1972 for a residency in diagnostic radiology, where he also served as chief resident. Jost joined the faculty as an instructor in radiology in 1975.

Reich team to study genetics of two psychiatric illnesses

By Jim Dryden

School of Medicine investigators led by Theodore Reich, M.D., the Samuel and Mae S. Ludwig Professor of Psychiatry and professor of genetics, have received $11.2 million in grants to study the genetic causes of alcoholism and bipolar disorder, also known as manic depressive illness.

One grant is a five-year $7.5 million award from the National Institute on Alcohol Abuse and Alcoholism (NIAAA). This grant is the third renewal of the Collaborative Study of the Genetics of Alcoholism (COGA) grant, which funds a national effort to locate genes associated with alcoholism. Reich is the national co-principal investigator.

The COGA study has followed families with several members who have problems with alcohol dependence. Family members as young as 7 have been interviewed to help researchers find out how this illness evolves. After taking blood samples from participants, investigators create lymphoblastoid cell lines with the samples, providing an unlimited supply of DNA. The DNA is used to isolate genes and study genetic factors that could be related to alcoholism.

"The COGA study already has found 50 or 60 candidate genes that may be linked to alcohol problems," Reich said. "There is a gene located on chromosome 1 that we're particularly interested in because it is part of a genetic system that's been demonstrated to control sensitivity to alcohol in the fruit fly. We're looking at the human homologue for that gene, which we refer to as DUNCE. It interacts with another gene, referred to as CHEAP DATE. Together, they seem to affect the fruit fly's nervous system and its sensitivity to alcohol."

Reich believes the COGA study will be able to link several more genes to alcohol dependence, and a second new grant could help locate more. That five-year $1.4 million grant also is from NIAAA. It will involve neuroimaging studies of structures in the brain that might behave differently in people who are alcohol-dependent. Those studies will use positron emission tomography (PET) to find those differences in brain function.

In addition, Reich and colleagues have received a five-year $2.3 million grant from the National Institute of Mental Health to continue their work in the Collaborative Genomic Study of Bipolar Disorder, which involves searching for genes that put people at risk for manic depressive illness.

"Washington University's participation in the search for genetic factors in bipolar disorder dates back to the 1960s," Reich said. "And we continue to participate in this national consortium with a number of other centers. We're actively recruiting families with multiple cases of bipolar disorder and hoping to isolate the genes that make people susceptible to that devastating illness."

Reich expressed gratitude to all the families who have participated in the COGA and bipolar studies. "Our families are the real heroes of these research studies," Reich noted. "Without them, none of our findings would be possible."

Reich and colleagues are recruiting volunteers for all of the studies. For more information on the bipolar disorder study, call (888) 292-1210.For more information on the COGA study, call (800) 611-2642.

Medical school faculty receive grants totaling $10 million

Numerous School of Medicine faculty recently have received grants of $1 million or more to fund research on topics ranging from the hepatitis C virus to neuropeptides to a tropical parasite called *Leishmania.*

Charles M. Rice, Ph.D., professor of molecular microbiology, has received a five-year $1.9 million grant from the National Cancer Institute. Rice is identifying factors that enable the hepatitis C virus (HCV) to establish a successful infection. HCV is a major cause of liver disease in many parts of the world and the prime reason for liver transplants in the United States.

Michael J. Holtzman, M.D., the Selma and Herman Seldin Professor of Medicine and professor of cell biology and physiology, has received a four-year $1.4 million grant from the National Heart, Lung, and Blood Institute. He will study changes in the body's airways that follow viral infection.

Timothy M. Lohman, Ph.D., professor of biochemistry and molecular biophysics, has received a four-year $1.4 million grant from the National Institute of General Medical Sciences to study the unwinding of DNA, the genetic material of living organisms.

Virginia L. Miller, Ph.D., associate professor of pediatrics and of molecular microbiology, has received a $1.4 million grant from the National Institute of Allergy and Infectious Diseases. She is studying a bacterium called *Yersinia enterocolitica.* This small, rod-shaped bacterium causes a gastrointestinal disease with symptoms of diarrhea, vomiting, fever and abdominal pain.

Samuel A. Santoro, M.D., Ph.D., professor of pathology and medicine, has received a $1.4 million grant from the National Heart, Lung, and Blood Institute. Santoro will study how endothelial cells and other cells attach to structural components in tissues.

Paul H. Taghert, Ph.D., associate professor of neurobiology, has received a four-year $1.3 million grant from the National Institute of Neurological Disorders and Stroke. Taghert is examining the functions of small transmitter molecules in the brain called neuropeptides, which regulate activities such as appetite and mood.

David G. Russell, Ph.D., professor of molecular microbiology, has received a four-year $1.2 million grant from the National Institute of Allergy and Infectious Diseases to study a tropical parasite called *Leishmania.* Leishmaniasis is endemic in 86 countries in Africa, Asia, Europe and the Americas.

University Events

Neural Maps • The British Library • Surgical Misadventures • Songbirds

"University Events" lists a portion of the activities taking place at Washington University Feb. 10-19. For a full listing of medical rounds and conferences, see the School of Medicine's Web Site at medschool.wustl.edu/events/. For an expanded Hilltop Campus calendar, go to www.wustl.edu/thisweek/thisweek.html.

Exhibitions

"Beginnings: The Taste of the Founders." Through March 19. Gallery of Art. 935-4523.

"Gestures, Words, Buildings." Through Feb. 18. Work of Adrian Luchini, assoc. prof. of architecture. Givens Hall. 935-6200.

"Island Press: Innovation at Washington University." Through March 19. Gallery of Art. 935-4523.

"Zen Paintings and Japanese Art." Through March 19. Gallery of Art. 935-4523.

Film

Thursday, Feb. 10

7 p.m. Filmboard Diversity Series. "Rosewood." Room 100 Brown Hall. 935-5983.

Friday, Feb. 11

7, 9:30 p.m. and midnight. Filmboard Feature Series. "Life is Beautiful." (Also Feb. 12, same times, and Feb. 13, 7 and 9:30 p.m.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Wednesday, Feb. 16

6 p.m. Japanese Film Series. "Gate of Hell" (English subtitles). Sponsored by Dept. of Asian and Near Eastern Languages and Literatures. Room 219 Ridgley Hall. 935-5156.

Friday, Feb. 18

7 and 9:30 p.m. Campus Y's Cultural Celebration film. "The Wedding Banquet." (Also Feb. 19, same times, and Feb. 20, 7 p.m.) Cost: $3 first visit, $2 subsequent visits. Co-sponsored by Filmboard. Room 100 Brown Hall. 367-3771.

Midnight. Filmboard Feature Series. "Tie Me Up! Tie Me Down!" (Also Feb. 19, same time, and Feb. 20, 9:30 p.m.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 367-3771.

Lectures

Thursday, Feb. 10

Noon. Genetics lecture. "Glycan Synthesis in the Pathogenic Fungus Cryptococcus Neoformans." Tamara Doering, research assoc., molecular microbiology dept. Room 823 McDonnell Medical Sciences Bldg. 362-7072.

4 p.m. Cardiovascular research seminar. "Quest for Fire: Phagocyte-derived Oxidants in the Pathogenesis of Atherosclerosis and Cancer." Jay W. Heinecke, assoc. prof. of medicine and of molecular biology and pharmacology. Room 801 Clinical Sciences Research Bldg. 362-8901.

4 p.m. Chemistry lecture. "Synthetic Analogues of Zinc Enzymes." Gerard Parkin, prof. of chemistry, Columbia U. Room 311 McMillen Lab (coffee 3:40 p.m.). 935-6530.

4 p.m. Earth and planetary sciences colloquium. "Planetesimal Formation in the Solar Nebula: Contributions of Laboratory Astrophysics." Jurgen Blum, assoc. scientist of astronomy, U. of Fla., Gainesville. Room 361 McDonnell Hall. 935-5610.

4 p.m. Joint Center for East Asian Studies Colloquium Series. "The Rise of Indigenous Christianity in China." Xi Lian, Seattle Pacific College. Room 331 Social Sciences and Business Bldg., U. of Mo.-St. Louis. 935-4448.

4 p.m. Mildred Trotter Neuroscience Lecture. "Signaling Pathways in the Early Mouse Embryo." Janet Rossant, joint head, Program in Development and Fetal Health, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, N.Y. Cori Aud., 4565 McKinley Ave. 362-7043.

4:15 p.m. Philosophy and Philosophy-Neuroscience-Psychology Colloquium Series. "How Neurons Mean." Chris Eliasmith, Philosophy-Neuroscience-Psychology Program. Room 216 Psychology Bldg. 935-6670.

4:30 p.m. Mathematics colloquium. "Here, There and Everywhere – Eigenvalues in Differential Equations." Richard Laugesen, prof. of mathematics, U. of Ill., Urbana-Champaign. Room 199 Cupples I Hall (tea 4 p.m., Room 200). 935-6726.

5 p.m. Vision Science Seminar Series. Resident research presentations. Susan Yang and Blake Cooper, second-year ophthalmology residents. East Pavilion Aud., Barnes-Jewish Hospital Bldg. 362-5722.

Friday, Feb. 11

Noon. Cell biology and physiology seminar. "Type IV Collagen of Basement Membrane: Defect in Renal Disease and a Cancer Therapeutic." Billy G. Hudson, prof. and chair of biochemistry and molecular biology, U. of Kansas Medical Center. Room 426 McDonnell Medical Sciences Bldg. 362-2254.

Noon. Central Institute for the Deaf research seminar. "Implant Outcomes: Measuring the Impact of Cochlear Implants in the Lives of Deafened Adults." Anthony Hogan, U. of Sydney, Australia. Room 310 CID School Bldg., 818 S. Euclid Ave. 977-0271.

Noon-1 p.m. Gastroenterology research conference. "Determining Optimal Sampling Interval for Topographic Esophageal Manometry." Aydamir Alrakawi, fellow in gastroenterology. "Disorders of Fatty-acid Oxidation: Studies in Mice and Men." Ray Merriman, fellow in gastroenterology. Room 901 Clinical Sciences Research Bldg. 362-8951.

4 p.m. Anatomy and neurobiology seminar. "Inactivation Mechanisms of Ca2+ and Voltage-dependent BK-type K+ Channels." Christopher J. Lingle, prof. of anatomy and neurobiology and of anesthesiology. Room 928 McDonnell Medical Sciences Bldg. 362-7043.

4 p.m. Hematology seminar. "Collagen Receptors: From Ligand Binding to Control of Cell Phenotype." Samuel A. Santoro, prof. of medicine and of pathology. 8841 Clinical Sciences Research Bldg. 362-8801.

Saturday, Feb. 12

9 a.m. Neuroscience Seminar Series. "Detection and Encoding of Directional Movement by Primary Afferents and Vestibular Central Neurons." David Dickman, Central Institute for the Deaf. Cori Aud., 4565 McKinley Ave. 362-7043.

11 a.m. University College Saturday Seminar Series. "Liberty: Ancient and Modern." George Pepe, prof. and chair of classics dept. and dir., Master of Liberal Arts Program. Co-sponsored by the Master of Liberal Arts Program. Room 162 McDonnell Hall. 935-6778.

Monday, Feb. 14

Noon. Lung biology conference. "Proving an Epithelial Point With Chemokine Genes." Michael J. Holtzman, the Selma and Herman Seldin Prof. of Medicine and prof. of cell biology and physiology. Room 801 Clinical Sciences Research Bldg. 362-8983.

Noon-1 p.m. Molecular biology and pharmacology seminar. "Ephrins in Axon Guidance and Neural Map Development." John Flanagan, assoc. prof of cell biology and program in neuroscience, Harvard Medical School. Room 3907 South Bldg. 362-2725.

Noon-1 p.m. Work, Families and Public Policy Seminar Series. "Learning and the Evolution of Medical Technologies." Vivian Ho, asst. prof. of economics and management. Room 300 Eliot Hall. 935-4918.

4 p.m. Biology Faculty Search Candidate Seminar Series. "Cell-cell Signaling Coordinates Spatially Localized Gene Expression and Cell Differentiation During Myxococcus Xanthus Development." Anthony Garza, Stanford U. Room 322 Rebstock Hall. 935-6860.

4 p.m. Immunology Research Seminar Series. "Genetic Modification of T Cell Clones for Adoptive Therapy of Human Viral and Malignant Diseases." Philip Greenberg, prof. of medicine and immunology, U. of Wash. Eric P. Newman Education Center. 362-2763.

4 p.m. Mathematics analysis seminar. "The Arveson Extension Theorem and Co-analytic Models." Michael Jury, graduate student, mathematics. Room 199 Cupples I Hall. 935-6726.

7 p.m. Architecture Monday Night Lecture Series. "The Design and Construction of the British Library." Colin St. John Wilson, architect, Colin St. John Wilson & Partners, London. Steinberg Hall Aud. (reception 6:30 p.m., Givens Hall). 935-6200.

Tuesday, Feb. 15

4 p.m. Chemistry seminar. "Some Recent Developments in Low Oxidation State, Low Coordination Number Main Group Chemistry." Alan H. Cowley, prof. of chemistry and chair, chemistry/biochemistry dept., U. of Texas, Austin. Room 311 McMillen Lab (coffee 3:40 p.m.). 935-6530.

4 p.m. Molecular microbiology Marvin A. Brennecke Lecture. "Antigenic Variation in Trypanosomes: Allelic Exclusion, a New DNA Base and a Variant Transferrin Receptor." Piet Borst, dir. of research, The Netherlands Cancer Inst. Moore Aud., 660 S. Euclid Ave. 747-2630.

Wednesday, Feb. 16

8 a.m. Obstetrics and Gynecology Grand Rounds. "Surgical Misadventures." William B. Saye, diplomate, American Board of Obstetrics and Gynecology, and fellow of American College of Surgeons, Marietta Medical Center, Marietta, Ga. Clopton Aud., 4950 Children's Place. 362-1016.

11 a.m. Assembly Series Cultural Celebration/Chimes Lecture. "Contemporary Tribal Issues." Wilma Mankiller, former principal chief of the Cherokee Nation of Oklahoma. Graham Chapel. 935-5285. *See story on page 5.*

3 p.m. Molecular microbiology seminar. "Multidrug Resistance in Cancer Cells; Lessons From Biochemical Experiments and Knock Out Mice." Piet Borst, dir. of research, The Netherlands Cancer Inst. Moore Aud., 660 S. Euclid Ave. 747-2630.

4 p.m. Biology Faculty Search Candidate Seminar Series. "The Role of Learning-related Neural Circuits in Adult Songbirds." Neal Hessler, physiology dept., U. of Calif., San Francisco. Room 215 Rebstock Hall. 935-6860.

5:15 p.m. Mothers and Babies Research Center conference. "Cytotrophoblasts: Masters of Vascular Morphing." Susan J. Fisher, prof. of anatomy and of obstetrics and gynecology and reproductive sciences, school of medicine, U. of Calif., San Francisco. Room 36, third floor south, St. Louis Children's Hosp. 747-0739.

7:30 p.m. Catholic Student Center lecture. "Where Do the Church and Sacraments Fit Into Our Lives?" The Rev. Gary Braun, dir., Catholic Student Center, and the Rev. Jeff Vomund, producer. Co-sponsored by the Student Union. Catholic Student Center. 935-9191.

Thursday, Feb. 17

1:10 p.m. Social work lecture. "Black and White and Beyond: Race in the 21st Century." Evelyn Hu-Dehart, prof. and chair of ethnic studies, U. of Colo.-Boulder. Brown Hall Lounge. 935-4909.

4 p.m. Cardiovascular research seminar. "Novel Uses of Echocardiography Intraoperative and Intracardiac Echo." Benico Barzilai, assoc. prof. of medicine. Room 801 Clinical Sciences Research Bldg. 362-8901.

4 p.m. Chemistry seminar. "Electron Transfer in Molecular Photonic Materials." Gerald J. Meyer, prof. of chemistry, Johns Hopkins U. Room 311 McMillen Lab (coffee 3:40 p.m.). 935-6530.

4 p.m. Women's Studies and Social Thought and Analysis lecture. "Patterns of Time: Women and Life on the Land in the West of Ireland." Ricca Edmondson Woerner, lecturer, political science and sociology depts., National U. of Ireland, Galway. Room 102 Eads Hall. 935-5102.

4:30 p.m. Mathematics colloquium. "Growth of Koenigs Eigenfunctions: An Episode in the Study of Composition Operators, Recounted in Words, Pictures – Even Movies." Paul Bourdon, prof. of mathematics, Washington & Lee U., Lexington, Va. Room 199 Cupples I Hall (tea 4 p.m., Room 200). 935-6726.

5 p.m. Vision Science Seminar Series. "Complement Regulation and Intraocular Inflammation." Nalini S. Bora, research assoc. prof. of ophthalmology and visual sciences and research asst. prof. of pathology. East Pavilion Aud., Barnes-Jewish Hospital Bldg. 362-5722.

Friday, Feb. 18

Noon. Gallery of Art's Friday Forum Luncheon Lecture Series. "Island Press: Innovation at Washington University." Mark Weil, the E. Desmond Lee Prof. for Collaboration in the Arts and dir. of the gallery, and Maryanne Ellison Simmons, master printer. Cost: $15 (includes lunch). Steinberg Hall. To register, call 935-5490.

4 p.m. Molecular biology and pharmacology seminar. "Regulation of Skeletal Myogenesis – Upstream and Downstream of Xenopus MyoD." Ralph Rupp, prof. of biology, U. of Tübingen, Germany. Room 3907 South Bldg. 362-2725.

'Ancestral Voices' fill Edison Feb. 26

By Liam Otten

Internationally renowned folksinger Buffy Sainte-Marie will be joined by the Native American a cappella trio Ulali for "Ancestral Voices," a special one-night-only performance at Edison Theatre Feb. 26. The show begins at 8 p.m.

Born on a Cree reservation, Buffy Sainte-Marie first achieved international recognition in the early 1960s, while a student at the University of Massachusetts, where she earned a doctorate in fine arts. Over the years, her music has been recorded by Janis Joplin, Barbra Streisand, Elvis Presley, Neil Diamond, the Highwaymen and many others. In 1982 her song "Up Where We Belong," recorded by Joe Cocker and Jennifer Warnes for the film "An Officer and a Gentleman," won an Academy Award.

Folksinger Buffy Sainte-Marie comes to Edison Theatre Feb. 26.

OVATIONS!

Who Buffy Sainte-Marie with Ulali

Where Edison Theatre

When 8 p.m. Feb. 26

Tickets $25, from Edison Theatre Box Office, 935-6543, or MetroTix, 534-1111

Sainte-Marie left recording in 1976 to begin a five-year stint on the PBS program "Sesame Street" with her son Dakota Wolfchild Starblanket. In 1993 she released the come-back album "Coincidence and Likely Stories"; later that year France named her "Best International Artist," and the United Nations chose her to announce the International Year of Indigenous People.

At once political, romantic and humorous, Ulali is known for its sweeping renditions of traditional and contemporary Native American song, as well as for energetic forays into gospel, jazz and blues. The group, which formed in 1987, takes its name from a legendary tribal singer whose beautiful voice caused her to be known as "ulali," or songbird.

Ulali consists of singers Pura Fé (of the Tuscarora people), Soni Moreno (Mayan, Apache and Yaqui) and Jennifer Elizabeth Kreisberg (Tuscarora) — all of whom have enjoyed successful individual careers. Fé, who trained with Martha Graham and the American Ballet Theatre, has appeared in numerous Broadway productions. Moreno also has appeared on Broadway, notably as Chrissie in the original New York and San Francisco productions of "Hair." Kreisberg has recorded background vocals for numerous rock and jazz groups and regularly conducts vocal workshops for universities, schools and festivals.

Ulali has toured throughout the United States, Canada and Central and South America, and has performed at venues including Woodstock '94, Lincoln Center in New York, the Kennedy Center in Washington, D.C., and the 1996 Olympics in Atlanta.

Tickets are $25 and are available at the Edison Theatre Box Office, 935-6543, or through MetroTix, 534-1111. Call for discounts. For more information, call 935-6543.

Social work lectures focus on diversity, poverty

Evelyn Hu-Dehart, Ph.D., professor and chair of ethnic studies at the University of Colorado-Boulder, will discuss "Black and White and Beyond: Race in the 21st Century" in a lecture at 1:10 p.m. Thursday, Feb. 17, in Brown Hall Lounge.

Hu-DeHart received a B.A. with honors in political science from Stanford University and a Ph.D. in Latin American history from the University of Texas at Austin. She has published three books on the Yaqui Indians of Northern Mexico and Arizona.

The lecture is part of the George Warren Brown School of Social Work's spring lecture series, which runs through April 13. Other lectures in the series are:

March 16: "Multicultural Practices in Social Work: What It Means and What It Should Look Like," by Lorraine M. Gutierrez, Ph.D., associate professor, Social Work Department, University of Michigan. Gutierrez received an A.M. in social service administration from the University of Chicago and both an A.M. in psychology and a Ph.D. in social work and psychology from the University of Michigan.

April 13: "Impoverished Children: A Societal Dilemma," by Ruth McRoy, Ph.D., director, Center for Social Work Research, University of Texas at Austin. McRoy received bachelor's and master's degrees from the University of Kansas and a Ph.D. at the University of Texas at Austin. She has published seven books on adoption and adolescent development.

All lectures in the series are free and open to the public, and each begins at 1:10 p.m. in Brown Hall Lounge. For more information, call 935-4909.

Cultural Celebration 2000

Love stories, ethnic food and dance, lectures, language classes on tap

Learn to write your name in Arabic, take a taste or two of ethnic cuisine, and discuss contemporary issues during the Campus Y's weeklong Cultural Celebration 2000, to be held Sunday, Feb. 13, through Sunday, Feb. 20.

Scheduled events include:

• Sunday, Feb. 13 — **"Love Stories From Around the World,"** featuring Chinese storytelling, African-American poetry reading and more, at 7:30 p.m. in Friedman Lounge, Wohl Student Center.

• Monday, Feb. 14 — **"Taste of the World,"** serving free ethnic foods from 10 diverse cultures, at 4 p.m. in the Gargoyle; and **"A Discussion on the American Identity,"** a forum featuring an opening skit by the Cultural Diversity Players and facilitated by Wayne Fields, Ph.D., the Lynne Cooper Harvey Distinguished Professor of English and director of the American Culture Studies Program, both in Arts & Sciences, at 7:30 p.m. in Friedman Lounge, Wohl Student Center.

• Tuesday, Feb. 15 — **International Game Day**, with various cultural play stations, at 11:30 a.m. in the lower level of Mallinckrodt Student Center.

• Wednesday, Feb. 16 — **"Contemporary Tribal Issues,"** an Assembly Series lecture by Wilma Mankiller, former principal chief of the Cherokee Nation, at 11 a.m. in Graham Chapel; and an **International Coffeehouse**, featuring free food and music by Reggae At Will, at 8 p.m. in Friedman Lounge, Wohl Student Center.

• Thursday, Feb. 17 — **Dance exhibition**, with demonstrations by the Shotokan Karate Club, the Barkada Filipino Club, the Israeli Folk Dancing Club and the Breakdancing Club, at 11:30 a.m. in the lower level of Mallinckrodt; and **dance lessons**, with members of the Association of Latin American Students and Wash U Jive teaching the salsa and merengue, at 8:30 p.m. in Mudd House Multipurpose Room.

• Friday, Feb. 18 — **Language classes**, lessons in writing your name in Korean, Japanese, Malay, Arabic, Hindi and sign language, at 11 a.m. in the lower level of Mallinckrodt.

• Friday-Sunday, Feb. 18-20 — **"The Wedding Banquet,"** an American/Taiwanese romantic comedy presented by Filmboard, at 7 and 9:30 p.m. (7 p.m. only on Sunday) in Room 100 Brown Hall. Cost is $3, first visit, and $2 for subsequent visits.

Co-sponsors for the celebration include Student Union, Campus Y, Congress of the South 40, Office of Residential Life and Office of Student Activities.

For more information, call 935-5010.

MARY BUTKUS

Pulsating The Black Anthology dance troupe perform "Pulse," the opening piece of "Flip the Script: Dreams, Escapes, Revolutions" Sunday, Feb. 6, in Edison Theatre. The program of dance, drama and song — among the events celebrating February as Black History Month — featured 14 pieces, including five written by University students. The dance was choreographed by junior Jayson Johnson, a dance and social thought and analysis major in Arts & Sciences.

Saturday, Feb. 19

11 a.m. University College Saturday Seminar Series. "Individuality vs. Individualism in Liberal Democratic Theory." Gerald N. Izenberg, prof. of history. Co-sponsored by the Master of Liberal Arts Program. Room 162 McDonnell Hall. 935-6778.

18, 19, 24, 25 and 26, same time, and Feb. 19 and 20, 3 p.m.) Cost $10, $8 WU faculty, staff, students and senior citizens. A.E. Hotchner Studio Theatre. 935-6543.

Music

Thursday, Feb. 10

8:30 p.m. Holmes Jazz Series. John Norment Quartet. Holmes Lounge, Ridgley Hall. 935-4841.

Wednesday, Feb. 16

8 p.m. WU Jazz Band concert. Chris Becker, dir. Graham Chapel. 935-4841.

Thursday, Feb. 17

8:30 p.m. Holmes Jazz Series. Holmes Lounge, Ridgley Hall. 935-4841.

Saturday, Feb. 19

8 p.m. Senior recital. Music of Barber, Handel, Schumann, Poulenc and Still. Mark Kent, baritone, and Henry Palkes, piano. Graham Chapel. 935-4841.

Performances

Friday, Feb. 11

8 p.m. Black History Month performance. B. Cole, comedian. Co-sponsored by the Association of Black Students and Campus Programming Council. Umrathskeller. 935-5994.

8 p.m. OVATIONS! "Soul Deep." Urban Bush Women and the David Murray Ensemble. (Also Feb. 12, same time, and Feb 13, 2 p.m.) Cost: $25. Edison Theatre. 935-6543.

Sunday, Feb. 13

8 p.m. Black History Month program. "Black Thighs, Black Guys and Bedroom Lies." Hasani Pettiford, author and commentator. Co-sponsored by the Black Greek Council and the Office of Student Activities. Ike's Place, Wohl Student Center. 935-5994.

Thursday, Feb. 17

8 p.m. Performing Arts Dept. play. "Hannah's Shawl." Henry Schvey, prof. and chair of Performing Arts Dept., author, and Anna Pileggi, dir. (Also Feb.

Sports

Friday, Feb. 11

6 p.m. Women's basketball vs. Case Western Reserve U. Athletic Complex. 935-5220.

8 p.m. Men's basketball vs. Case Western Reserve U. Athletic Complex. 935-5220.

Sunday, Feb. 13

1 p.m. Men's basketball vs. U. of Rochester. Athletic Complex. 935-5220.

3 p.m. Women's basketball vs. U. of Rochester. Athletic Complex. 935-5220.

And More...

Sunday, Feb. 13

7:30 p.m. Campus Y's Cultural Celebration. "Love Stories From Around the World." Featuring Chinese storytelling, African-American poetry reading, and more. Friedman Lounge, Wohl Student Center. 367-3771.

Monday, Feb. 14

4 p.m. Campus Y's Cultural Celebration. "Taste of the World." Free ethnic foods. Green Chairs and Gargoyle, Mallinckrodt Student Center. 367-3771.

7:30 p.m. Campus Y's Cultural Celebration. "A Discussion on the American Identity." Featuring an opening skit from the Cultural Diversity Players. Wayne Fields, the Lynne Cooper Harvey Distinguished Prof. of English and dir., American Culture Studies Program, will serve as facilitator. Friedman Lounge, Wohl Student Center. 367-3771.

Tuesday, Feb. 15

11:30 a.m. Campus Y's Cultural Celebration. International Game Day. Various cultural playstations. Green Chairs, Mallinckrodt Student Center. 367-3771.

Wednesday, Feb. 16

8 p.m. Campus Y's Cultural Celebration. International Coffeehouse. Reggae At Will and free food from Red Sea. Friedman Lounge, Wohl Student Center. 367-3771.

Thursday, Feb. 17

11:30 a.m. Campus Y's Cultural Celebration. Dance exhibition. Shotokan Karate Club, Barkada Filipino Club and Breakdancing Club. Green Chairs, Mallinckrodt Student Center. 367-3771.

8:30 p.m. Campus Y's Cultural Celebration. Dance Lesson. Learn to dance salsa and merengue from Assoc. of Latin American Students and WU JIVE. Multipurpose Room A & B, Mudd House. 367-3771.

Friday, Feb. 18

11 a.m. Campus Y's Cultural Celebration. Language classes. Learn to write and speak in Korean, Japanese, Malay, Arabic. Green Chairs, Mallinckrodt Student Center. 367-3771.

Saturday, Feb. 19

8 a.m. Continuing Medical Education program. "Second Annual Update in the Management of Hypertension." Cost: $55. Eric P. Newman Education Center. To register, call 362-6891.

8:15 a.m. Continuing Medical Education program. "Breast Cancer Prevention: Incorporating New Data Into Clinical Practice." Co-sponsored by Discovery International, Deerfield, Ill. Frontenac Hotel, St. Louis (breakfast 7:30 a.m.). To register, call 635-8116.

Former Cherokee Nation chief discusses tribal issues Feb. 16

Wilma Mankiller, the first woman to serve as principal chief of the Cherokee Nation of Oklahoma, will deliver the Cultural Celebration/Chimes Lecture at 11 a.m. Wednesday, Feb. 16, in Graham Chapel. Her talk, which is free and open to the public, will focus on contemporary tribal issues.

Assembly Series

Who American Indian leader Wilma Mankiller

Where Graham Chapel

When 11 a.m. Feb. 16

Admission Free and open to the public

Elected deputy chief in 1983, Mankiller succeeded the previous principal chief upon his resignation in 1985. She went on to win a full four-year term in 1987 and re-election in 1991 with 83 percent of the vote. As chief, Mankiller guided the second largest Indian nation in the United States, leading a team that dramatically increased the revenue, services and stature of the Cherokee Nation. Her legacy includes the development of a comprehensive health care system.

The story of her life is chronicled in "Mankiller: A Chief and Her People," which she wrote in 1993 with Michael Wallis, a Tulsa journalist and author.

Mankiller has received numerous awards, including selection as one of 50 great Americans by Who's Who and a Chubb Fellowship from Yale University, both in 1995.

For more information, visit the Assembly Series Web page (http://wupa.wustl.edu/assembly) or call 935-5285.

Sports Section

Bears hold on for win over Brandeis

Brandeis University sophomore guard Mike McGlynn set a University Athletic Association (UAA) record with nine three-point field goals and led all scorers with 36 points, but Washington University's men's basketball team held on a for 93-87 victory over the Judges Sunday, Feb. 6, at the WU Field House. Four Bears netted double figures, led by junior forward Chris Alexander with a team-high 20 points. Alexander, who added nine rebounds, now has 999 career points. Sophomore forward Ben Wanger added 16 points and freshman guard Dustin Tylka chipped in 15 points. Alexander scored 14 points and Wanger added 11 Friday, Feb. 4, as the Bears defeated visiting New York University (NYU) 57-45. In a sloppy game featuring 37 turnovers, the Bears shot just 39 percent from the field (21 of 54), but the Violets could not capitalize and scored at only a 31-percent clip (19 of 61).

Winning streak at 57

It's three and counting for the women's basketball team as the Bears pushed their winning streak to 57 games with UAA wins over NYU (70-47) Friday and Brandeis University (61-42) Sunday in the Field House. The Bears' 57-game winning streak is just three victories shy of the NCAA women's all-divisions record of 60 consecutive wins held by Division III Capital University. The Bears can tie the record this Sunday, Feb. 13, at home against the University of Rochester at 3 p.m. Against NYU, senior All-America center Alia Fischer finished with a game-high 18 points and added six rebounds, a game-high three blocks and a game-high four steals. Junior Tasha Rodgers finished with 14 points. In the Brandeis game, Fischer again led all scorers with 22 points and added nine rebounds and five steals. Rodgers tallied 13 points, and Lindsey Merrill had nine points and five rebounds.

Freshmen aim high

Freshman high jumper Elizabeth Stoll broke the indoor school record for the second time in as many weeks, and fellow freshman David Popiel came within one inch of All-American Dave Bolton's 20-year-old indoor high-jump record as both athletes picked up wins for the Bears' indoor track and field teams Saturday, Feb. 5, at the Illinois State University Redbird Open in Bloomington, Ill. Senior Claudine Rigaud finished second in the 60-meter hurdles and third in the 60-meter dash, sophomore Beth Peterson was second in the 3,000 meters, and senior Kristin Meade was second in the triple jump. On the men's side, senior Tim Julien took second in the 3,000 meters, sophomore Travis Deutman was third in the mile run, and senior Richard Greene was fourth in the 60-meter hurdles.

Washington University's Policy on Sexual Harassment

I. Introduction and policy statement

Washington University is committed to having a positive learning and working environment for its students, faculty and staff and will not tolerate sexual harassment.

Sexual harassment is an attack on the dignity of individuals and the integrity of the University as an institution of learning. Academic freedom can exist only when every person is free to pursue ideas in a non-threatening, non-coercive atmosphere of mutual respect. Sexual harassment is reprehensible and threatening to the careers, educational experience and well-being of all members of our community.

Sexual harassment is a form of discrimination that violates University policy. It is also illegal under state and federal law.

This policy applies to all members of the Washington University community. It allocates responsibilities for helping to ensure that University policy is fairly applied, explains the process by which complaints of sexual harassment may be brought forward and provides sanctions for sexual harassment, which may range from reprimands to termination or dismissal, depending upon the severity of the offense. If you believe you have been sexually harassed, Sections IV and V describe options about what you can do and where you can get help. If you believe you have been falsely accused of sexual harassment, the procedures set out below are also available to you. Those charged with implementation of this policy will, whenever appropriate, encourage and assist those who believe they may have been sexually harassed to pursue the assorted informal means outlined in Section IV below for securing the cessation of unwelcome and offensive conduct.

II. What is sexual harassment?

For the purposes of this statement, Washington University has adapted the Equal Employment Opportunity Commission (EEOC) definition of sexual harassment for an academic community: Sexual harassment is defined as any unwelcome sexual advance, request for sexual favor or other unwelcome verbal or physical conduct of a sexual nature, whether committed on or off campus, when:

(1) submission to such conduct is made, either explicitly or implicitly, a term or condition of an individual's employment or academic advancement;

(2) submission to or rejection of such conduct by an individual is used as the basis or threatened to be used as the basis for employment or academic decisions or assessments affecting an individual; or

(3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or educational performance or creating an intimidating or hostile environment for work or learning. Such conduct will typically be directed against a particular individual or individuals and will either be abusive or severely humiliating or will persist despite the objection of the person targeted by the speech or conduct.

Sexual harassment includes but is not limited to situations where one person has authority over another. In such situations, sexual harassment is particularly serious because it may unfairly exploit the power inherent in a faculty member's or supervisor's position.

Sexual harassment can be verbal, visual, physical or communicated in writing or electronically. Some conduct obviously constitutes sexual harassment — such as a threat that a grade or promotion will depend on submission to sexual advance. But whether particular conduct constitutes sexual harassment will often depend upon the specific context of the situation, including the participants' reasonable understanding of the situation, their past dealings with each other, the nature of their professional relationship (e.g., supervisor-subordinate, colleague, etc.) and the specific setting. The inquiry can be particularly complex in an academic community, where the free and open exchange of ideas and viewpoints preserved by the concept of academic freedom may sometimes prove distasteful, disturbing or offensive to some.

Examples of conduct which may constitute sexual harassment include but are not limited to:

- requests for sexual favors
- hugging, rubbing, touching, patting, pinching or brushing another's body
- inappropriate whistling or staring
- veiled suggestions of sexual activities
- requests for private meetings outside of class or business hours for other than legitimate mentoring purposes
- use in the classroom of sexual jokes, stories or images in no way germane to the subject of the class
- remarks about a person's body or sexual relationships, activities or experience
- use of inappropriate body images to advertise events

Members of the University community can expect to be free from sexual harassment and thus all members of the University community should guard against it. The fact that someone did not intend to sexually harass an individual is generally not considered a sufficient defense to a complaint of sexual harassment, although the reasonableness of the accused's perceptions may be considered. In most cases, it is the effect and characteristics of the behavior on the complainant and whether a reasonable person similarly situated would find the conduct offensive that determine whether the behavior constitutes sexual harassment.

III. Confidentiality

The University will strive to protect, to the greatest extent possible, the confidentiality of persons reporting harassment and of those accused of harassment. Because the University has an obligation to address sexual harassment, however, the University cannot guarantee complete confidentiality where it would conflict with the University's obligation to investigate meaningfully or, where warranted, take corrective action. Even when some disclosure of the University's information or sources is necessary, it will be limited to the extent possible. The University will, to the extent permitted by law, keep confidential all records of complaints, responses and investigations. The records maintained by the Sexual Harassment Response Coordinator shall be available only to the Coordinator and, to the extent necessary, to administrators and other supervisors charged with responding to allegations of harassment. Allegations of sexual harassment shall not be placed in student records or personnel files unless, after appropriate investigation, such allegations have been sustained. Records of allegations maintained by the Coordinator which do not lead to formal hearings or personnel actions will be discarded after five years unless there are additional, more recent complaints against the same person. Any records maintained by the Coordinator concerning an allegation about which an accused person was not given reasonably timely notice and an opportunity to respond shall not be used to justify or enhance a sanction, other than an oral or written warning, imposed for a different instance of harassment.

If you want to discuss possible harassment in a more confidential setting or clarify your feelings about whether and how you wish to proceed, you may want to consult a social worker, therapist or member of the clergy, who is permitted, by law, to assure greater confidentiality. Clergy and counseling resources on campus are listed in **Bearings, Ternion** and **Safety and Security on the Hilltop Campus**. In addition, any member of the University community may contact the Student Health and Counseling Service at 935-6695, for a confidential discussion and, if desired, referral to off-campus resources.

IV. Seeking advice; making a complaint

If you believe that you have been sexually harassed, you have a number of response options, both formal and informal. Some people may wish to pursue informal means instead of or before making a formal complaint; others will not. If an informal procedure is ineffective, the formal procedures will remain open to you. You should select the route you feel most appropriate for your circumstances. However you wish to proceed, you may consult at any time with the Hilltop or Medical Center Sexual Harassment Response Coordinator (listed in the Appendix), whose responsibilities include assisting students, faculty and staff with sexual harassment issues, be they general or specific, formal or informal. You may wish to work with the Coordinator to select an approach.

A. Informal Procedures

I. If you feel comfortable dealing with the situation without assistance, you can:

A. Clearly say "no" to the person whose behavior is unwelcome.

B. Communicate either orally or in writing with the person whose behavior is unwelcome. The most useful communication will have three parts:

1. A factual description of the incident(s) including date, time, place and specific action.

2. A description of the writer's feelings, including any consequences of the incident.

3. A request that the conduct cease. Frequently, such a communication will cause the unwelcome behavior to stop, particularly where the person may not be aware that the conduct is unwelcome or offensive.

II. If you would like to proceed informally, but with the assistance of someone else, you may:

A. Ask the person's supervisor, e.g., department chair, dean, director, housing office representative, academic advisor or resident advisor, to speak to the person whose behavior was unwelcome. The purpose of such conversations is the cessation of unwelcome behavior.

B. Consult with the Coordinator or one of the Sexual Harassment Response Advisors listed in the Appendix and specifically charged with responding to sexual harassment inquiries and complaints. These individuals are thoroughly familiar with University policy on sexual harassment and are available to consult with victims of sexual harassment, those charged with sexual harassment, witnesses and supervisors of parties to a complaint. They can provide information about informal actions that might remedy the situation and discuss University policy on sexual harassment and procedures for resolving complaints.

C. Ask the Coordinator to mediate or arrange for mediation. Mediation is discussion and negotiation, with the help of a third party, designed to permit the parties to reach a mutually agreeable resolution of a dispute. If a person complaining of sexual harassment seeks mediation, the person accused of harassment agrees and the Coordinator concludes that the mediation would be consistent with the University's legal obligations in responding to and preventing sexual harassment, the Coordinator may mediate or arrange for mediation.

B. Formal Procedures

Whether or not you have attempted to resolve a sexual harassment claim through informal means, you may initiate a formal sexual harassment grievance proceeding by filing written complaint. This process may lead to a formal hearing at which evidence will be considered and witnesses heard. If this is the course you wish to take, the Coordinator can assist you in filing a complaint.

Complaints, prepared with or without the assistance of the Coordinator, can be filed with the following Committees, with a copy to the Coordinator for your campus:

Complaints against faculty or staff:
Faculty and Administrative Affirmative Action Committee
(complaints by faculty and administrators)
Title IX Grievance Committee
(complaints by students)
Human Resources Advisory Committee
(complaints by staff)
All of these committees may be contacted:
c/o Office of Human Resources
North Brookings Hall, Room 126
Campus Box 1184
935-5990

Hearing procedures are set out in the Washington University Discrimination and Sexual Harassment Hearing Procedures. These procedures may be obtained from the Office of Human Resources or from any Sexual Harassment Response Coordinator or Advisor.

Complaints against students or student groups:
Office of the Judicial Administrator
Women's Building, Room B2
Campus Box 1136
935-4062

Hearing procedures are set out in the University Judicial Code, found in **Bearings** and **Washington University Faculty Information**. These procedures may also be obtained from the University Judicial Administrator or from the Sexual Harassment Response Coordinators or Advisors.

Whether or not you choose to file a complaint, the University may be required, or may otherwise deem it necessary and protective of the academic community, to commence its own investigation.

V. Protection of rights

The University will not tolerate retaliation or discrimination against persons who report or charge sexual harassment or against those who testify, assist or participate in any investigation, proceeding or hearing involving a complaint of sexual harassment. In this context, retaliation means speech or conduct that adversely affects another's terms or conditions of employment or education and is motivated by an intent to harm the targeted person because of his or her participation in the filing or investigation of an allegation of sexual harassment. Any such retaliation — or any encouragement of another to retaliate — is a serious violation of University policy and law, independent of whether the particular claim of sexual harassment is substantiated. If you believe you have been subjected to retaliation in violation of this rule, you may use the procedures described above to complain and seek redress.

The University seeks to protect the rights of all persons, accusers and accused, to fair procedures. Accusations of sexual harassment typically have injurious far-reaching effects on the careers and lives of accused individuals. Allegations of sexual harassment must be made in good faith and not out of malice. Knowingly making a false or frivolous allegation of sexual harassment, whether in a formal or informal context, will be treated as a serious offense under this policy and, where it applies, the University Judicial Code. If you believe you have been falsely accused of sexual harassment you may use the procedures of this policy or the University Judicial Code, where applicable, to seek redress. See Section IV.

VI. Obligations of vigilance and reporting

The University can respond to specific instances and allegations of harassment only if it is aware of them. The University therefore encourages anyone who believes that he or she has experienced sexual harassment to **promptly** come forward with inquiries, reports or complaints and to seek assistance from the University. In addition, any University employee who becomes aware of instances or allegations of sexual harassment by or against a person under his or her supervisory authority must report it to those charged with responding to such allegations and reports: the appropriate dean, director or department head or other similar administrator or to the Sexual Harassment Response Coordinator or one of the Advisors. It shall be the responsibility of these individuals to respond to allegations and reports of sexual harassment or refer them to other University officials for such response.

Any dean, director or department head or other similar administrator who becomes aware of information indicating a significant likelihood of sexual harassment must report such information to the Sexual Harassment Response Coordinator for the appropriate campus. These administrators must respond not only when they receive a specific complaint or report alleging improper activity, but also when such matters come to their attention informally. Unconfirmed or disputed allegations should be clearly labeled as such and reports should indicate any steps already taken to investigate or otherwise respond. Administrators may wish to consult with the Coordinator or any of the Advisors prior to investigating or otherwise responding to any situation involving alleged harassment.

VII. Possible sanctions

Possible sanctions for a person found guilty of behavior in violation of this policy include but are not limited to the following:

- oral or written reprimand, placed in the personnel file
- required attendance at a sexual harassment sensitivity program
- an apology to the victim
- oral or written warning
- loss of salary or benefit, such as sabbatical or research or travel funding
- transfer or change of job, class or residential assignment or location (i.e., removing the person from being in a position to retaliate or further harass the victim).
- fine
- demotion
- suspension, probation, termination, dismissal or expulsion

While counseling is not considered a sanction, it may be offered or required in combination with sanctions. Where alcohol is involved in the sexual harassment, such counseling may include an alcohol abuse program.

If students or student groups are guilty of sexual harassment any of the sanctions set forth in the University Judicial Code may also be invoked.

VIII. Education

The best way to deal with sexual harassment is to prevent it. Education is essential to eliminating sexual harassment. Washington University has developed an ongoing training program. Please call a Sexual Harassment Response Coordinator or Advisor to find out more about these programs, what sexual harassment is, how to respond to it and what to do when someone asks for advice about sexual harassment.

Approved by the Washington University Senate Council, October 19, 1995.

Approved by the Washington University Senate, April 22, 1996.

Revision approved by the Washington University Senate, April 28, 1997.

(This policy supersedes prior University Policies on Sexual Harassment).

Appendix: Sexual Harassment Coordinators and Advisors

(as of Aug. 12, 1999)

Hilltop Campus

Coordinator: Ann B. Prenatt — 935-8046

Advisors: Kathy Steiner-Lang (complaints by students and others) 935-5910
Thomas L. Lafata (complaints by students and others) 935-5970
Richard Diemer (complaints by faculty and others) 935-4237

Medical Campus

Coordinator: Denise McCartney — 362-1936

Advisors: Dr. Leslie Kahl (complaints by students and others) 362-7481
Denise McCartney (complaints by faculty, staff and others) 362-1936
Laurel Taylor (complaints by staff and others) 362-7198

Notables

Of note

Salvatore P. Sutera, Ph.D., the Spencer T. Olin Professor of Biomedical Engineering, recently received the 1999 Guglielmo Marconi Science Award from UNICO National. The nation's largest Italian-American service organization, UNICO National presents the award to recognize Italian-Americans who have excelled in the sciences. "UNICO" stands for unity, neighbor, integrity, charity and opportunity. …

Oksana A. Volshteyn, M.D., assistant professor of neurology and of medicine and director of Physical Medicine and Rehabilitation residency training, has been certified in spinal cord injury medicine by the American Board of Physical Medicine and Rehabilitation. Volshteyn is one of the first physicians in the United States to become board-certified in this subspecialty. …

Speaking of

Helen Liapis, M.D., assistant professor of pathology, recently lectured about her research on "Growth Factor Effects to the Fetal Kidney in the North American Opossum Ureteral Obstruction Model" at the Institute of Child Health of University College, London.

On assignment

Amir Arsham Amini, Ph.D., assistant professor of medicine and of biomedical engineering, has been selected to serve on the editorial board of IEEE Transactions on Medical Imaging. The journal is published by the Institute of Electrical and Electronics Engineers (IEEE).

To press

An article by **Peter MacKeith,** assistant dean in the School of Architecture, on Finnish architect Juhani Pallasmaa's designs for the Siida Museum in Inari, Finland, recently was published in the Italian architectural journal Casabella. …

Stephen Molnar, Ph.D., professor emeritus of anthropology in Arts & Sciences, has co-authored a book titled "Environmental Change and Human Survival" with Iva M. Molnar. The book, recently published by Prentice Hill, examines the evidence for human biosocial adaptations in a changing world.

MARY BUTRUS

Networking Beth Landers (right), a graduate student studying French in Arts & Sciences, discusses career options with Nancy Odgen (left) of Maritz Performance Improvement Co. at the Career Connections 2000 Networking Reception, held Thursday, Feb. 3, in the Women's Building Formal Lounge. The reception, organized by the Career Center, culminated a week filled with 33 career exploration and job search strategy functions, bringing together some 60 businesses and several hundred University students.

News Analysis

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

Supreme Court must avoid value judgments in grandparents' rights case, Appleton says

Susan Frelich Appleton, *J.D., professor of law and associate dean of faculty, is following the grandparents' visitation rights case (Troxel vs. Granville) that recently was argued before the U.S. Supreme Court and is slated for a ruling later this spring. Appleton specializes in the legal aspects of parental rights, reproductive rights, adoption, divorce, welfare reform and surrogate motherhood. She is the co-author of a leading casebook on family law and an outspoken critic of governmental intrusion into the intimate aspects of individuals' lives.*

"The Supreme Court has a 'dangerous opportunity' in the grandparents' visitation rights case," Appleton said. "The case concerns more than just grandparents. The court must resolve a constitutional challenge to the State of Washington's very expansive statutes that allow any person to petition at any time for visitation with a child under any circumstances.

"A broad ruling either way could have very unfortunate consequences for some children," she continued. "On the one hand, a rule of virtually unfettered parental control could upset some established relationships between children and individuals who have played a significant nurturing role in their lives, although without the benefit of the label 'parents.'

"On the other hand, a broad ruling in favor of court-ordered visitation by third parties could undermine the decision-making authority that children need to know their parents possess, and could also require parents to defend their choices about who should have access to their children," Appleton said.

"In walking this fine line that both respects the presumptively private nature of family life and also recognizes the importance of emotional attachment in child development, the justices must remain sensitive to the increasing diversity of modern family forms, which might include various members of extended families, stepparents, a parent's same-sex partner, just to name a few examples," she said.

"Child custody has long stood out as an area in which judges have succumbed to the temptation to impose their own value judgments — something the justices must try to avoid here," Appleton concluded. "The Washington statutes go too far. The court should strike them down, while leaving room for more narrowly crafted efforts to address the issues raised here."

Drewry to direct admissions for Olin's executive programs

Doris A. Drewry has been named director of admissions for executive programs at the John M. Olin School of Business. She is responsible for marketing the school's three degree programs for executives, offered on weekends, allowing executives to continue their employment while pursuing a degree.

Drewry: Marketing executive programs

Drewry will oversee the recruitment of students for the three programs — the Executive Master of Business Administration (EMBA), the Executive Master of Manufacturing Management (EM^3) and the Executive Master of Business Administration in Health Services Management (HSM).

As part of this function, she is responsible for attracting students locally, regionally and nationally, using means such as advertising, personal contact, publications, events and information sessions. She also is responsible for interviewing applicants and providing them with campus tours. Currently, there are more than 200 executives enrolled in the three programs.

Previously, Drewry held her current position for several months on an interim basis. Before that, she was the assistant director of EMBA admissions. Prior to joining the University in 1997, she held positions at Graphic World and St. Gabriel's School, where she taught at the junior high level.

"Doris has done an excellent job of recruiting prospects for our programs," said William H. Clover, Ph.D., associate dean and the Vernon W. Piper Director of Executive Education at the business school. "She has been proactive, creative and diligent in reaching our target audiences and showcasing the benefits of our executive degree programs, which are in Business Week's Top 20."

Clover added that Drewry would play a key role in the expansion of executive programs keyed to the opening of the $44-million Charles F. Knight Executive Education Center now under construction and set to open in spring 2001.

Drewry, a native St. Louisan, received a bachelor of arts degree in political science and English from Saint Louis University.

Employment

Use the World Wide Web to obtain complete job descriptions. Go to **cf6000.wustl.edu/hr/home (Hilltop)** or **medicine.wustl.edu/wumshr (Medical).**

Hilltop Campus

Information regarding positions may be obtained in the Office of Human Resources, Room 130, West Campus. If you are not a WU staff member, call 935-9836. Staff members call 935-5906.

Administrative Coordinator 000160

Library Technical Assistant for Islamic Studies 000162

Customer Services Representative (part time) 000165

Lab Technician III 000167

Lab Technician III 000168

Administrative Aide/ Environmental Engineering 000169

Unix Systems Administrator 000171

Financial Analyst 000172

Accounting Clerk 000173

Departmental Secretary 000175

Awards Coordinator 000176

University Communications Secretary 000180

Computer Lab Supervisor 000182

Switchboard Operator (part time) 000184

Accountant 000185

Administrative Assistant 000186

LAN PC Support Specialist 000187

Communications Technician I 000188

Researcher 000190

Research Assistant 000191

Payroll Services Representative 000193

Field Station Manager 000194

Department Secretary (part time) 000197

Library Technical Assistant (serials) 000198

Data Entry Operator 000199

Genetics Research Technician 000200

Administrative Assistant, Geochemical Society 000201

Campus Visit Assistant 000204

Assistant Graphic Designer 000206

Library Technical Assistant 000207

Medical Campus

This is a partial list of positions at the School of Medicine. Employees: Contact the medical school's Office of Human Resources at 362-7196. External candidates: Submit resumés to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.

Research Technician II 000686

Clinical Research Coordinator 000837

Secretary III 000988

Secretary II 000992

Professional Rater I 001023

Patient Services Representative 001049

Insurance Billing and Collections Assistant II 001056

Clinical Nurse Coordinator 001158

Secretary III/Education Coordinator 001177

Secretary I 001212

Insurance Billing and Collections Assistant II 001226

Medical Assistant II 001229

Secretary II 001230

Campus Watch

The following incidents were reported to University Police from **Jan. 31 – Feb. 6.** Readers with information that could assist in investigating these incidents are urged to call **935-5555.** This release is provided as a public service to promote safety awareness and is available on the University Police Web site at **rescomp.wustl.edu/~wupd.**

Feb. 2

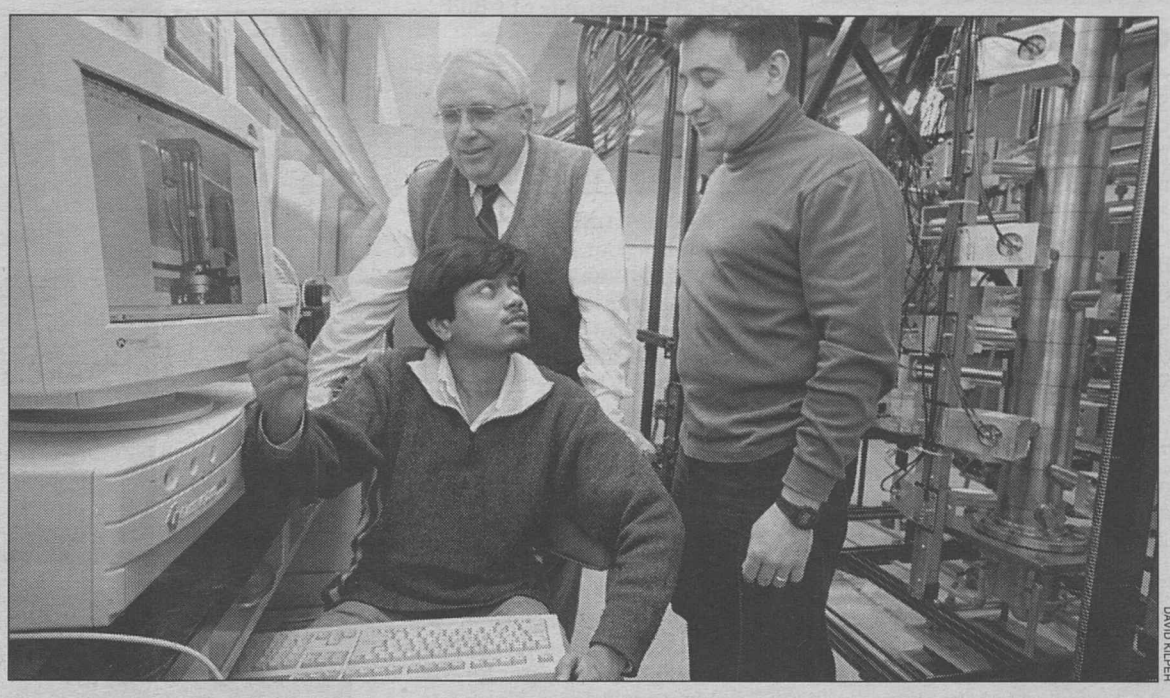
11:27 p.m. — Staff members working in McDonnell Hall reported seeing a suspicious person carrying items they believed to be stolen from laboratories there. They chased the subject to the front of Brookings Hall, where they recovered a blue bag. Two other items were recovered at a McDonnell Hall door. Police arrested the subject and turned him over to St. Louis County Police. The recovered property was valued at $3,050.

Feb. 5

2:23 a.m. — A student reported the theft of a laptop computer, valued at $2,500, from an unlocked room in Mudd House.

University Police also responded to seven additional reports of theft, three auto accidents, two reports of vandalism, one report of bicycle theft, a false fire alarm and a report of stalking.

Washington People



DAVID KILPER

Abdenour Kemoun, Ph.D. (right), research associate in the University's Chemical Reaction Engineering Laboratory, discusses the computer-controlled calibration device he constructed for bubble column reactors with Mike Dudukovic (center) and graduate student Shantanu Roy. Dudukovic is a leading figure in multiphase reactor research.

Guiding top-flight program into new century

Milorad P. Dudukovic, Ph.D., works to develop key partnerships with life sciences

BY TONY FITZPATRICK

Dedicated, innovative, caring, inspiring, collaborative, loyal. These are the terms that colleagues and students use when speaking of Milorad "Mike" P. Dudukovic, Ph.D., the Laura and William Jens Professor of Environmental Engineering and chair and professor of chemical engineering.

"Flexible," however, is arguably the single best word to describe Dudukovic's talents and his approach in guiding a top-flight chemical engineering department into the new century.

His flexibility was apparent when he first arrived here in the summer of 1974. His doctoral thesis at the Illinois Institute of Technology was in biomedical engineering: He analyzed and modeled transport of tracers such as dye and radioactive tags in the bodies of experimental animals and in humans. When he came to Washington University, Dudukovic was excited about the prospects of collaborating with School of Medicine researchers. Almost immediately, however, his department chair called him in and steered him elsewhere.

"The chairman at the time said that the department was losing its identity as a traditional chemical engineering department," Dudukovic recalled in his comfortable Urbauer Hall office. He speaks in a deep, pleasant, eastern-European accent that is at once strong and kind. "The chair wanted me to concentrate on reaction engineering, and I applied myself very hard to that, because that is the core of chemical engineering."

Reaction engineering involves understanding how chemical reactions happen, at what speed and rate they happen, the analysis of molecular change from one form to another in various environments, and determining what kind of equipment to use to conduct those reactions.

Heat plays a major role in chemical reactions, as does the phase of materials. More than 90 percent of processing involves more than one phase — gas and liquid reactant materials interacting with a solid catalyst, for instance. Thus, reaction engineering employs complex technology and marries chemical kinetics — the study of reaction rates — to fluid flow, heat, and mass transfer models to make vital industrial processes work smoothly and efficiently.

Transforming materials

"People often fail to recognize that in technologically advanced societies like ours everything we use — fuel, materials, paints, clothing, semiconductors — does not occur naturally in that form," Dudukovic explained. "To get it in that form requires transforming materials chemically and physically, and that's what we chemical engineers do."

Dudukovic became director of the University's Chemical Reaction Engineering Laboratory (CREL) in 1974 and still holds that title today. In 1974, CREL had three local collaborative sponsors; since then, through Dudukovic's initiative, persistence and drive, the CREL Consortium has grown to more than 20 basic collaborators spanning the globe.

Forty-one industrial CREL sponsors from 24 companies attended the CREL annual meeting this past fall to participate in lectures, poster presentations and discussions of future research directions. Among the attendees were partners from France, England, Norway and South Africa, as well as representatives of Monsanto Co. (one of the three original sponsors), Du Pont, Conoco Inc., ExxonMobil Corp. and Bayer Inc.

The consortium draws such wide support in large part because Dudukovic is a leading figure in multiphase reactors, extremely complex systems used by the petrochemical and chemical industries. He has pioneered the use of computer-aided radioactive particle tracking (CARPT) and has combined it with computer-assisted tomography (CAT) in his research. These techniques in tandem are not in use at any other reaction engineering laboratory in the world. In combination, CAT and CARPT allow a non-invasive determination of the flow pattern for different types of multiphase reactors.

"By choosing a proper type of multiphase reactor for each process, we can eliminate pollution at the source," Dudukovic explained.

Dudukovic has been active in environmental studies of nitrogen oxide abatement, oxidation of organics in water, and process safety and waste minimization through reactor redesign. In 1994, he was elected a Fellow of the American Institute of Chemical Engineers (AIChE); he also received the institute's R.H. Wilhelm Award that year for his pioneering research contributions. He has been elected Professor of the Year here an amazing five times and also won the Burlington Northern Foundation Teaching Award. Most recently, in 1999, he received the Malcolm E. Pruitt Award from the Council for Chemical Research for "outstanding contributions to the progress of research in chemistry and chemical engineering achieved through mutually beneficial interactions among universities, government laboratories and the private sector."

Dudukovic graduated first in his class from the University of Belgrade, Yugoslavia, with a bachelor's degree in chemical engineering in 1967. His father was a professor of electrical engineering at the university; his mother holds degrees in mathematics. Dudukovic grew up in Tito's Yugoslavia in the 1960s, which at the time was not the worst place to be in eastern Europe.

> **"We are asking: How can our talents become married to those of other areas so that the results will be more than just the sum of the two parts?"**
>
> MILORAD P. DUDUKOVIC

"The educational system then was good," he recalled. "It was merit-based; with good grades you could go to any university and study in any field. During my time in Yugoslavia, the standard of living was improving, and we had freedom to travel, unlike most Eastern Block countries. I made trips to England, Germany and Italy.

"I have family and friends in Yugoslavia," he went on. "Few of us had any inkling that the disintegration of the country was going to happen."

The past two years especially have been difficult for Dudukovic, who did not file for U.S. citizenship until 1991.

"I never wanted to renounce the Yugoslavia that had been good to me," he explained. "I felt that there was no need to renounce my native country for my new one — until everything broke up. Then the decision was easy. I felt so fortunate to have the United States.

"Last spring was one of the hardest times of my life. It was very sad seeing friends and family exposed to the chaos and destruction. But I predicted that the bombing would do nothing. Not only did it not get rid of the bad guys, they've become even more entrenched. … I think that openness (and) exchanges bring down regimes like Milosevich's. They can't fight that."

Dudukovic came to Chicago in 1968 on a Fulbright Fellowship to attend the Illinois Institute of Technology (IIT). He completed master's and doctoral degrees in record time, just three and a half years. At IIT, he met and married Judith Ann Reiff, a native of suburban Berwyn, Ill., and now a French teacher at Mehlville High School in suburban St. Louis. The Dudukovics have two daughters, Aleksandra, who is about to complete a master's degree in landscape architecture at the University of California, Berkeley, and Nicole, a psychology major at Stanford University.

Dudukovic believes the future of his department, which is very strong in reaction, environmental and materials engineering, will depend on that Dudukovic virtue — flexibility.

"We have an excellent faculty, but all of the fields that we're in are related more to what is perceived as mature technologies," he said. "We simply have to change, become more synergistic. We are asking: How can our talents become married to those of other areas so that the results will be more than just the sum of the two parts? One key area is in the life sciences."

Developing new compounds

Dudukovic said that faculty trained in molecular modeling could help plant biologists who use plants as minifactories to develop useful compounds. The chemical engineering approach would develop efficient ways of separating the compounds from the biomass and purifying the material for use in medical applications. Chemical engineers also are well equipped to use the rest of the biomass to make materials, chemicals or fuels in an environmentally benign way.

This sort of medical application of chemical engineering harkens Dudukovic back to his doctoral degree in tracer analysis. Magnetic resonance imaging and positron emission tomography eliminated the need to trace dye in an organism, but those advances did not make his methodology obsolete. He still uses it as a flaw-mapping technique for faulty chemical reactors.

"That approach has served me well, and I think that as our department advances into this century, we will be looking for partnership opportunities to share our know-how in developing the most efficient processes," Dudukovic said.

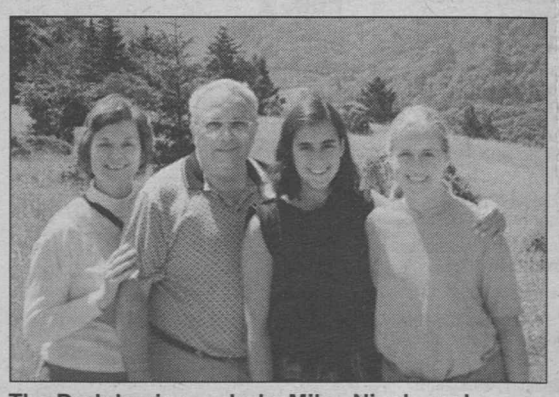
Milorad P. Dudukovic, Ph. D.

Born and raised in Yugoslavia

Education University of Belgrade, B.S.; Illinois Institute of Technology, M.S., Ph.D.

University position The Laura and William Jens Professor of Environmental Engineering, professor and chair of chemical engineering

Family Wife, Judy; daughters Aleksandra and Nicole



The Dudukovics — Judy, Mike, Nicole and Aleksandra.