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1994 U.S. Olympic Festival: ready, set, go

It will be an effort of Olympic proportion.

In the five-month countdown to the start of this summer's 1994 U.S. Olympic Festival, planners and volunteers across campus are making Herculean strides to prepare for Washington University's role in the event. The Department of Housing is readying residence halls for the arrival of 3,600 athletes. The Department of Athletics is juggling schedules for competitions and practice times. The Transportation Department is planning strategies to prevent parking and traffic problems. And the Campus Police Department is anticipating security requirements.

"The logistics of putting on an event like this are huge," said Phil Godfrey, associate director of the Department of Athletics and liaison between the University and the local organizing committee for the U.S. Olympic Festival. "It is a huge event. All types of national media will be here; Washington University's name will be everywhere. To showcase what the St. Louis community can do in the world of sports could have a

significant impact for our community and its ability to attract future events. It is a wonderful opportunity for St. Louisans to serve as spectators or volunteers."

The U.S. Olympic Festival is coming to St. Louis and the Hilltop Campus July 1-10. During the festival, current and future Olympic stars will compete in 37 sports at 25 sites throughout the St. Louis metropolitan area. Held during non-Olympic Games summers, this year's U.S. Olympic Festival will preview athletic events upcoming in the 1996 Summer Olympics in Atlanta.

"Everybody at Washington University has been so helpful, so responsive," said Margaret Stroup, Olympic Village director. Stroup,

a strategic planning director for Monsanto Co., is on loan to the festival to oversee Washington University's involvement. From her temporary office in Simon Hall, Stroup is planning everything from nightly entertain-



"All types of national media will be here; Washington University's name will be everywhere."

— Phil Godfrey

ment for the athletes to Sunday morning church services at Graham Chapel.

From the morning the first athletes arrive June 25 until the last leave July 10, Washington University will be home to the Olympic Village.

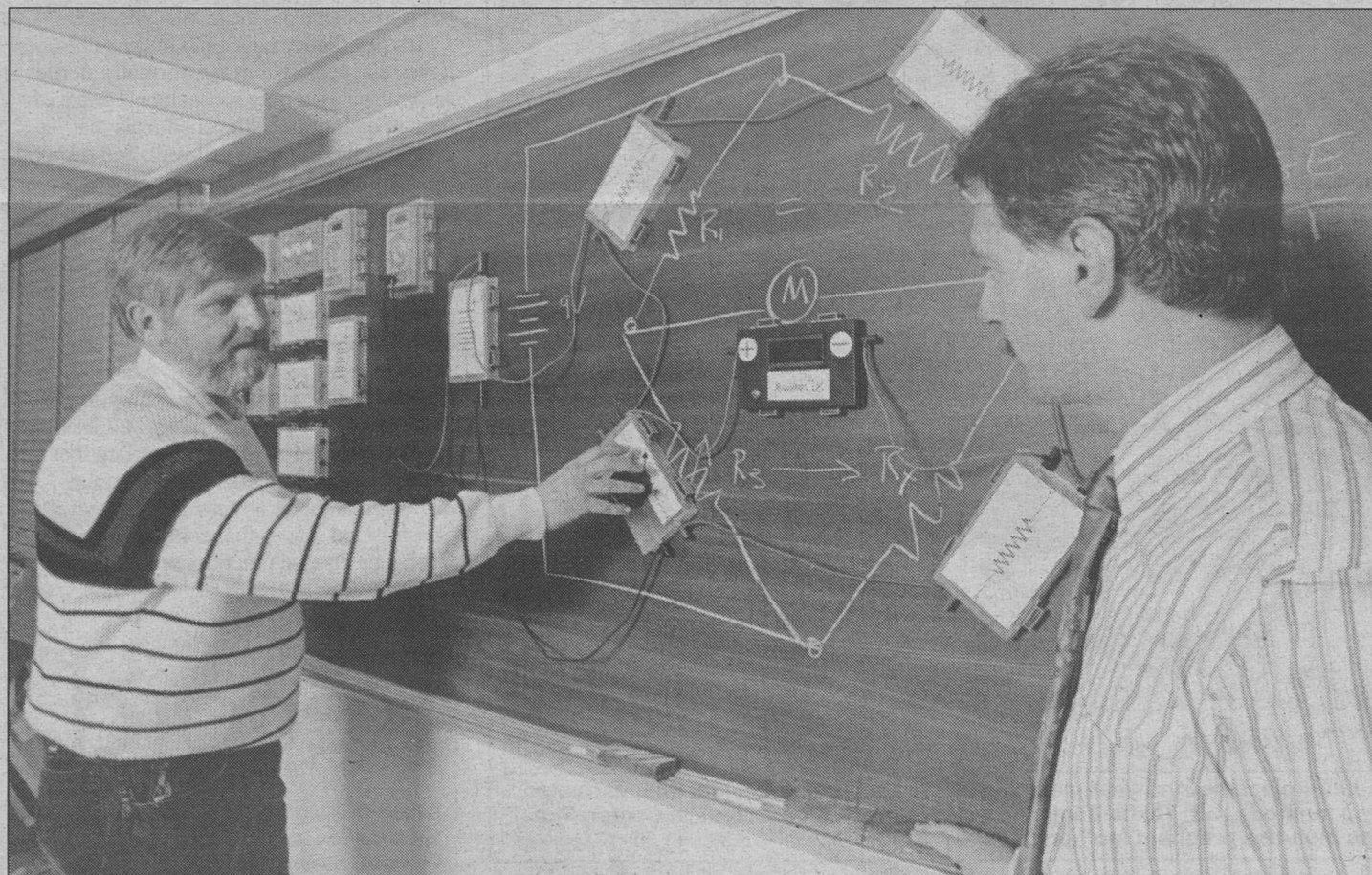
All residence halls on the South Forty, except Shepley Hall, which will be occupied by summer school students, will be used to house the athletes. Some athletes also will be accommodated in Millbrook Apartments on campus; others will be housed at Fontbonne College.

"A lot of effort is going into housing 3,600 participants in 2,300 spaces," Stroup said. "Athletes will be doubling up. The Department of Defense is donating 1,000 beds. Volunteers will help do everything from making the beds to hanging the towels to decorating with balloons, bunting and banners."

Approximately 400 members of the Washington University community, including faculty, staff, students and alumni, have signed on as festival volunteers. The volunteers will perform a wide variety of duties, including working the hospitality rooms set up on campus and at other festival locations.

"The hospitality rooms will be open from 7 a.m. to 11 p.m. and volunteers will

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Paul Discher (left), computer technician, and Robert R. Krchnavek, Ph.D., assistant professor, demonstrate how chalkboard magnetism enhances teaching in the School of Engineering.

The chalkboards of Bryan Hall

Magnetism offers a low-tech, low-cost way to teach electrical circuits

They say there's a lot of chemistry in the book *The Bridges of Madison County*. But it can't compare to the magnetism in the chalkboards of Bryan Hall.

In 1992, Paul Discher, computer technician in the Department of Electrical Engineering, discovered this venerable physics property in the chalkboards of Bryan, Lopata and Cupples II halls while he was pondering a way to demonstrate electrical circuit networks to engineering students. Discher, who is in charge of teaching and research equipment for the electrical engineering (EE) department, wanted to find a better way to demonstrate electrical circuits for professors who teach "EE 280," a networks class required for many non-EE majors.

Demonstrating networks had been a cumbersome and daunting task for EE faculty members R. Martin Arthur, Ph.D., Ronald S. Indeck, Ph.D., and Robert R.

Krchnavek, Ph.D. They had to spend time drawing the circuitry on the chalkboard then arranging a table-top demonstration only to discover that the demonstration, although correctly connected, did not obviously resemble the drawn diagram, nor was it visible to students in the lecture. Neither of these methods offered the professors intuitive presentations, mobility or versatility during lectures. Many faculty agreed that there was a need to breathe "conceptual life" into the process of teaching the principles of electrical networks, particularly to non-EE majors.

Indeck and Krchnavek wrote up a series of classroom demonstration procedures and probable lists of equipment necessary to illustrate concepts presented in a course like "EE 280." After approval by the undergraduate committee and department chair, this proposal was turned over to Discher for

implementation. Choosing commercially available classroom demonstration equipment could easily have run up a bill in the thousands of dollars and presented solutions that lie flat on a table, thus not readily in view.

Discher wondered whether components could be attached to a chalkboard.

"For some time I'd been using magnets to hold notes to students and professors on the chalkboard. Before I could employ this idea for a demonstration solution I had to see if all of the chalkboards I would propose using were magnetic. I tested all of the chalkboards in the School of Engineering and found they were magnetic. I just took it from there."

In the 1970s, manufacturers of chalkboards switched from slate to laminated composites with cork board backing; sandwiched between the two is magnetic material.

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Current students tell experiences, suggest changes to cluster

The 24 members of the Current Student Experience Cluster (CSEC) are learning what it feels like to "walk in the shoes" of students at Washington University. By listening to current students relate their experiences on campus, cluster members hope they can make that walk more comfortable.

The CSEC is one of three clusters that has grown out of the University Management Team, a group of about 75 managers from the central administration, also called the Central Fiscal Unit (CFU), and deans from the schools. This cluster's mission, as well as that of the Administrative Services Cluster and the Admission-Financial Aid Cluster, is to find ways to provide better services to students and faculty at less cost. Meeting bi-weekly, the year-old CSEC is in the process of identifying areas that students believe need improvement and is recommending changes to the management team. Many of the cluster's recommendations already have been implemented. The group is made up of representatives from most of the major administrative offices students encounter.

"The charge from the management team was to understand better the experiences of current students by 'walking in their shoes' and listening to what they have to say," said Karen Levin Coburn, associate dean for student development and CSEC co-chair. "We are making recommendations to improve that experience in the context of the management team's goals of improving services while reducing costs and working seamlessly across organizational lines."

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Villainous nitric oxide charged with causing whooping cough

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At 35, Lee Epstein already is a tenured professor of political science and co-author of nine books

No parking 6

City restricts spaces along Lindell Boulevard and in Forest Park

Medical Update

Nitric oxide nabbed as the culprit of whooping cough

Years of searching for the true culprit behind whooping cough have finally paid off as scientists have nabbed nitric oxide, a villain with a rap sheet that grows by the day.

In studies recently published in *Proceedings of the National Academy of Sciences*, William E. Goldman, Ph.D., associate professor of molecular microbiology, and School of Medicine colleagues reveal that a toxin from the whooping cough pathogen *Bordetella pertussis* causes cells in the airways to commit suicide by making them produce nitric oxide. Nitric oxide normally is produced by human cells as a weapon against invading bacteria, but massive amounts also can be toxic to the cells that produce it. This discovery suggests that *Bordetella pertussis* has evolved a way to turn a normal human host defense against itself, said Goldman.

Goldman's group also reports success using the drug aminoguanidine to block production of nitric oxide in a cell culture system that replicates pertussis infection. The idea to use aminoguanidine came from previous work by Michael L. McDaniel, Ph.D., professor of pathology, which showed that the compound could inhibit the enzyme responsible for synthesizing nitric oxide.

Aminoguanidine applied to cells treated with the *Bordetella pertussis* toxin interrupts production of nitric oxide and prevents the suicide of those cells.

Goldman has filed a patent based on this discovery. He believes aminoguanidine could form the basis of a long-awaited treatment for whooping cough if a drug company is willing to follow these studies further. Aminoguanidine could be administered to patients via an inhaler, a logical way to make sure the drug reaches the cells that need it most.

The news is none too soon. Last December, the Centers for Disease Control (CDC) released figures showing that people in the United States are coming down with whooping cough in record numbers. In 1993, the number of whooping cough cases in the United States surged 82 percent past 1992 figures. The CDC report suggests the resurgence of the disease is partly due to parents' relaxed attitudes about vaccinating children.

Goldman and others believe another reason for the startling number of whooping cough cases is that many adults are carriers of the bacteria without knowing it. The illness in adults usually doesn't manifest the same symptoms as those seen in children,

especially the violent, spasmodic coughing, but adult carriers may be spreading the disease throughout the United States and in other well-vaccinated populations.

Whooping cough, also known as pertussis or the 100-day cough, is a childhood illness caused by a bacterium that does most of its damage before parents get children to the doctor. The most severe symptoms — especially the repetitive staccato coughing — usually appear only after the major damage to the respiratory tract has been done.

In 1989, Goldman purified a toxin that causes the respiratory pathological changes seen in pertussis infection. He named the toxin tracheal cytotoxin (TCT) because it destroys ciliated cells that line the respiratory tract and also may prevent their replacement. The fine hairs, or cilia, that project from these cells are absolutely essential to keeping the respiratory tract clear and clean. The hairs beat tirelessly, creating an "escalator" that moves mucus and debris up and out of the lungs and airway. TCT destroys the escalator, leaving those stricken with pertussis no way of clearing their lungs.

On closer inspection, Goldman found that TCT actually was a small released fragment

of the bacterium's cell wall. But why would a bacterium want to lose part of the very shell that protects it from the outside world? Goldman has no final explanation, but he is convinced that TCT production may have evolved as a mechanism to propel *Bordetella* out of the airways of an infected host and into another unsuspecting host. *Bordetella* only can survive within a single host for roughly seven to 10 days before the host's immune system catches up with them. Before their time is up, they have to escape and find a new home. "Coughing or sneezing is the best way for an organism to disseminate out of the respiratory tract of one host to infect a new host," Goldman said.

The TCT clue provided a new lead for Goldman's group and others zeroing in on the whooping cough toxin. Several toxins had been characterized in the past, and each in turn was considered *the* toxin, but none could be directly linked to the damage that triggers coughing. Goldman provided compelling evidence linking TCT to cellular damage when he found that the toxin causes ciliated cells to produce large quantities of interleukin-1 (IL-1), a powerful signaling molecule that triggers many events within cells. Furthermore, he demonstrated that IL-1 can turn on production of nitric oxide (NO) within the TCT-treated cells. Once NO entered the story, Goldman knew he might be on to something. As the current body of NO literature indicates, the molecule has been implicated in everything from neurotransmission to regulating blood pressure, and it also has a "dark side" — it can kill cells.

It's just theory now, but Goldman believes that cells within the normally sterile respiratory tract may sense the presence of minute quantities of the chemicals that compose the bacterial cell wall, and respond by making NO to kill invading bacteria. *Bordetella*, which sheds its cell wall in amounts far greater than other bacteria, may overwhelm this sensitive system by producing too much signal, leading to tremendous production of NO and ultimately killing cells that are making NO.

The theory requires proof, which is what Goldman will continue to work on. In the meantime, his observations on TCT have contributed greatly to understanding the *modus operandi* of a dangerous human pathogen, and one — with a 95 percent transmission rate — that continues to plague infectious disease practitioners around the country.

— Jim Keeley



As part of the Washington University Perinatal Project, second-year medical student Damla Karsan, left, and instructor Nancy Cooksey, R.N., discuss breast-feeding methods with Tasha Benjamin at St. Louis Regional Medical Center. The perinatal project pairs medical students with high-risk pregnant mothers.

Neonatal brain disorders center to be established

The School of Medicine has received a \$1.5 million grant from the National Institute of Neurological Disorders and Stroke to establish an Experimental Neonatal Brain Disorders Center.

The three-year grant will enable researchers in a number of departments at the School of Medicine and St. Louis Children's Hospital to examine the mechanism of brain injury in newborns that results from an insufficient supply of oxygen or nutrition to the brain. These injuries can cause cerebral palsy.

The researchers also plan to develop better techniques for evaluating newborns at risk so that babies who will benefit from new therapies can be identified early.

"Right now, it's very hard to determine whether experimental treatments that we might want to use will have a beneficial effect," said Steven M. Rothman, M.D., program director of the grant and the A. Ernest and Jane G. Stein Professor of Developmental Neurology in Neurology, Pediatrics, and Anatomy and Neurobiology.

Researchers from the departments of Biostatistics, Chemistry, Neurology, Neurosurgery, Obstetrics and Gynecology, Occupa-

tional Therapy, Pediatrics, Psychiatry and Radiology will be involved in the research.

In the grant's first project, researchers will examine the role of glutamate, a normal brain constituent in producing neuronal injury at different developmental stages in fetal rats.

The second group of experiments will explore the relationship between intracranial bleeding, a common problem in small premature babies, and secondary brain damage. Researchers in the Department of Neurosurgery will examine whether intracranial bleeding leads to abnormal constriction of blood vessels in the brain and secondary injury in young experimental animals.

In the third component of the grant, investigators from the departments of Occupational Therapy and Obstetrics and Gynecology will use newly developed computer analysis techniques to determine if serial ultrasound images can predict in utero motor behavior. Ultimately, the researchers hope to develop measures that identify fetuses at risk for poor outcomes, possibly allowing for early intervention.

Researchers from the departments of Neurology, Neurosurgery, Pediatrics and

Radiology will use PET (positron emission tomography) scanning technology to study glucose metabolism in newborn infants in the fourth component of the grant.

The PET scan also will be used to examine blood flow to the brain in some newborn infants. The values obtained from the PET studies will be compared to parallel values obtained using an infrared spectrometer. The spectrometer also has the potential of providing blood flow information in newborn infants, but it has not been extensively validated. The planned study will allow physicians to use a proven technique (PET) to determine the utility of the newer infrared technology. In the future, this technique may enable neonatologists to rapidly diagnose sick newborns with inadequate blood flow to the brain.

In the last project of the grant, faculty in the departments of Neurology, Radiology and Chemistry will use nuclear magnetic spectroscopy and imaging to locate areas of brain injury prior to irreversible damage. Their long-term goal is to identify infants who may be appropriate for new therapies that are expected to be developed later in the decade.

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Washington

WASHINGTON UNIVERSITY IN ST. LOUIS

Washington People

Epstein climbs political science fast track

The autumn of 1978 was an uneasy time in Chicago.

The residents of the predominately Jewish suburb of Skokie, Ill., were in the midst of a bitter struggle with members of the Nationalist Socialist Party of America. The Nazis' request to march through the streets of the town, denied by the city, eventually was upheld by the U.S. Supreme Court.

Miles away, in Atlanta, these events served to shape the career of political science Professor Lee Epstein, Ph.D., at the time a junior at Emory University.

"When I enrolled at Emory," the New York native said, "I had no idea then of what I wanted to do. I took courses in every department in the college, then the Skokie case happened.

"It wasn't so much the incident itself, but the way my professor in a modern political theory course, Harvey Klehr, framed it. He asked us to take a work by John Stuart Mill [an English economist and reformer of the 1800s] and apply it to the Skokie situation. It really interested me in political science. I thought a lot about the application of theory to events as a result. I learned that political science was more than current events, which I wanted to move away from. I was looking for something more theoretical. I crammed in as many political science courses as I could. In my senior year, I decided to get a Ph.D."

By 1983, she had earned a doctorate, and after teaching jobs at Emory and at Southern Methodist University, Epstein joined the political science department at Washington University in 1991. In July 1993, she was made a full professor — at the age of 35.

"I'd say that's probably a young age," said John Sprague, Ph.D., chair of the political science department. "Still, you have to remember, she's been out working 10 or 11 years. Some don't get started with their doctoral program until they're 30. I think the world of her. She's been one of the great hires of the decade at this school. I'm glad she's here."

Thomas Walker, Ph.D., professor of political science at Emory University, taught Epstein as an undergraduate and a graduate student. The two have collaborated on various research projects.

"At least from graduate school on, there was no doubt she'd be a success. At the time, you could see that she had an incredible amount of energy and devotion to her work. There was no doubt she was on the fast track to the top."

He said Epstein will contribute much to her chosen field.

"She will have a great deal of success in adding to her scholarly work. I don't see any slowing down in her development. The sky's the limit. She's one of the pioneers at exploring the role of interest groups in the Supreme Court. She's been very effective at developing new theories and new ways to look at the Supreme Court, as well as new ways to predict and explain the behavior of its justices."

Epstein has co-authored nine books on law or the Supreme Court. Her most recent is titled *The Supreme Court Compendium: Data, Decisions and Developments*.

She is editor of *Law and Courts*, published by the American Political Science Association, and serves on the editorial boards of *American Political Science Review*, *Journal of Politics*, *Law and Politics Book Review* and *Western Political Quarterly*.

Still, she said she'd much rather discuss her next project, which is funded through a National Science Foundation grant.

"The current study involves the policies of the U.S. Supreme Court," Epstein said. "Most people, when they study the court, or at least discuss its policies, focus on whether it's a liberal or conservative decision, or whether it reversed a lower-court decision. This project tries to explain systematically, using the tools of modern political science, the policies that the court reaches, as opposed to what type of decisions they are. The study tries to help us understand why it reaches the policies it does."

Current study of the court, she said, too often concerns itself with the politics of its decisions. Although the court's perceived liberal or conservative bent sometimes plays a

factor in its rulings, she said she has found that other factors come into play as well — the views the justices' colleagues hold, internal haggling and precedent, to name a few.

"The past can serve to act or constrain," she said.

"Through the study, I hope to bring the court under greater theoretical focus, and move away from this liberal-and-conservative dichotomy; to study policy at its generation and to bring more attention to theory and fact."

She said she gives the court high marks for its work.

"I think the Supreme Court tries really hard to do its job. It's a very difficult job. The members of the court have been of an incredibly high caliber, regardless of the motives of the various presidents who appointed them. Not all of them, but most of them. For the most part, I think they have really tried to do their jobs, but the court makes mistakes."

Still, Epstein proposes one major change involving the third branch of the federal government. She favors requiring

"I interviewed Justice Rehnquist when he was still an associate justice and I was doing my dissertation. I had brought with me a lot of charts and graphs and data on how all the justices voted, whether they voted liberal or conservative, on a number of issues.

"When Rehnquist came out to greet me, I was going over all these graphs and data, and he wanted to know what was in them. He was very much intrigued by all this data I had. Later, at a point in my interview, he told me he almost went into political science, but he left the field because he hated numbers. I was fascinated that he was so intrigued by the numbers I had brought in, but at the same time numbers were a turnoff to him."

An interview with O'Connor, Epstein said, shed some light on how the justices view their place in the political process.

"I especially went to talk with her about the role special interest groups play in the Supreme Court. I was tentative about speaking with her, because you never know about how the justices feel about their institutional roles, whether they think it's just about putting on a black robe without taking into account societal and political pressures.

"But when I asked her whether she was surprised at the role such groups play when she was first appointed to the court, she said, 'Of course I wasn't surprised. We are a political institution.' It really struck me that she was so willing to say that so matter-of-factly."

She said Americans should know more about the third branch of the federal government.

"The average American doesn't know anything about

the Supreme Court. According to a Washington Post poll, more people know about Judge Wapner from 'The People's Court' than do Chief Justice Rehnquist of the Supreme Court.

"I think people should know there are nine justices — start with the basics: That they hold their jobs for life; we don't elect them. They should know that the only time they have input into who sits on the Supreme Court is at the point of confirmation. That's the time they need to pay attention, and write their senators."

Epstein said her research has made her a better educator.

"I think the teacher-versus-researcher debate represents a false dichotomy. I would not be a good teacher if I was not a good researcher, and my teaching informs my research.

"Some days I get in a rut with my research, and I think that the important work I have as a scholar is defined largely through my students. I love seeing the light bulbs go on over the heads when I know they've caught on to something. There's nothing like leaving a classroom after a great session. I can be smiling after a great session for a week."

Just as Epstein chose to teach political science because of her professors at Emory, she is making a difference for some of her students at Washington University.

"Through taking her courses, I decided to go to law school," said senior Danielle Rifkin, one of Epstein's research assistants. "She was what really inspired my interest. She has a very thorough teaching style. She teaches that law is a puzzle, and there are many avenues to learn. If the light bulbs go on over her students' heads, it's because she's asking us, 'Here's the situation, now how would you do it?' It makes me enthusiastic and excited about the law."

On campus, Epstein has been named to the Task Force on Undergraduate Education, which considers ways to improve undergraduate studies.

She also is a member of the Faculty Selection Committee for the Lien Scholarship, which awards scholarships to high school seniors who wish to major in social sciences.

"I like committees that have money and give out money. One of my colleagues once said to me, 'Never be on a committee that doesn't have money.' Seriously, it's a thoroughly intriguing process. I get to meet exceptional high school students. Being on the committee has really been a joy, then in the end, to be able to offer them a fantastic college scholarship, well, that's a really happy ending to things."

— Steve Taylor



Left to right: Graduate students Michelle Lorenzini, Stephen Ceccoli and Carla Molette talk with Lee Epstein, Ph.D., (seated) professor of political science.

"There's nothing like leaving a classroom after a great session. I can be smiling after a great session for a week."

a two-thirds majority vote to confirm new justices by the U.S. Senate rather than the current simple majority.

Epstein reasoned that the change would result in better candidates nominated by the president, because to gain approval, the nominees would need to attract true bipartisan support, not just a few crossover votes from the other party. In addition, she said, a two-thirds vote is required under the U.S. Constitution to approve treaties, and that choosing justices to serve on the nation's highest court is at least as important as the matter of treaties.

"Usually, I don't endorse anything, or at least much of anything," Epstein said, "but this is something I feel strongly about. I think a majority vote is really insufficient to choose Supreme Court justices."

Epstein said she's not necessarily hopeful that her proposal will be adopted.

"I don't know whether that (a two-thirds majority) will ever come to pass. Who really knows about such things?"

Through her research, she said she has interviewed Chief Justice William H. Rehnquist and Associate Justices Sandra Day O'Connor and Harry A. Blackmun and former Associate Justices William J. Brennan Jr. and Potter Stewart.

"There wasn't one who didn't strike me as not incredibly intelligent. That's the commonality among them. They come from different backgrounds and ideologies, but most of them are really quite personable, and very interested in social science research."

She said interviews with Rehnquist and O'Connor stand out.

Calendar

Feb. 24–March 5



Exhibitions

"The Near Distance: James McGarrell's St. Louis Years" by McGarrell, prof. emeritus of art. Through March 27. Gallery of Art, upper gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. 935-5490.

Student Juried Art Show. Opening: 5-7 p.m. March 4. Continues through March 20. Bixby Gallery, Bixby Hall. Hours: 10 a.m.-4 p.m. weekdays; 1-5 p.m. weekends. 935-6597.

"The Work of Joseph Allen Stein" by architect Stephen White, asst. dean, School of Architecture, Roger Williams U., Bristol, R.I., will be on display through March 4. White lectures at 8 p.m. Feb. 28 in Steinberg Hall Aud. Exhibit in Givens Hall corridor. Hours: 9 a.m.-8 p.m. weekdays and weekends. 935-6200.



Films

Thursday, Feb. 24

7 and 9 p.m. Filmboard Foreign Series. "Black Girl" (1965, B&W), in French with English subtitles. Room 100 Brown Hall. Cost: \$3. For 24-hour Filmboard hotline, call 935-5983.

Friday, Feb. 25

7 and 9:30 p.m. Filmboard Feature Series. "Zou Zou" (1934, B&W), in French with English subtitles. (Also Feb. 26, same times, and Feb. 27 at 7 p.m.) Room 100 Brown Hall. Cost: \$3.

Midnight. Filmboard Midnight Series. "Little Shop of Horrors" (1986). (Also Feb. 26, same time, and Feb. 27 at 9:30 p.m.) Room 100 Brown Hall. Cost: \$3.

Tuesday, March 1

7 p.m. Japanese Film Series. "Irezumi" (The Tattoo), with English subtitles. Room 219 South Ridgley Hall. 935-5156.

Wednesday, March 2

7 and 9 p.m. Filmboard Foreign Series. "Triumph of the Will" (1936, B&W), in German with English subtitles. (Also March 3, same times.) Room 100 Brown Hall. Cost: \$3.

Friday, March 4

7 and 9:30 p.m. Filmboard Feature Series. "Bob Roberts" (1992). (Also March 5, same times.) Room 100 Brown Hall. Cost: \$3.



Lectures

Thursday, Feb. 24

Noon. Genetics seminar. "Presentation of a Tumor-associated Antigen to Cytotoxic T Lymphocytes," Ted Hansen, prof., Dept. of Genetics. Room 816 McDonnell Medical Sciences Bldg. 935-2072.

4 p.m. Architecture lecture. "Metrolink: Different by Design," Ann Ruwitch, director, Arts in Transit, Bi-State Development Agency, St. Louis. Ruwitch will talk about the role of artists in the design of Metrolink and the first public art project in St. Louis. Room 166 Givens Hall. 935-6200.

4 p.m. Central Institute for the Deaf research seminar. "Hearing and Language

in Children With Down's Syndrome," Allison Sedey, lecturer, certified speech pathologist and audiologist and student, Dept. of Communicative Disorders, U. of Wisconsin, Madison. Second Floor Aud., Clinics and Research Bldg. 652-3200.

4 p.m. Earth and planetary sciences colloquium. "Isotopic Imaging of Hydrologic and Hydrothermal Systems," Robert E. Criss, prof. of isotope geology, Dept. of Geology, U. of California, Davis. Room 362 McDonnell Hall. 935-5610.

4 p.m. School of Medicine public screening. "Lives in the Balance" is a 15-minute video addressing the value of animal research. Opening remarks by Theodore J. Cicero, assoc. vice chancellor and assoc. dean for animal affairs. Wohl Aud., 4960 Children's Place.

Friday, Feb. 25

9:15 a.m. Pediatric Grand Rounds. "Mental Health Screening by Pediatricians," Richard E. Mattison, Blanche F. Ittleson Associate Professor of Child Psychology and director, Division of Child Psychology. Clopton Aud., 4950 Children's Place. 454-2713.

Noon. Assembly Series Lock and Chain Lecture. "Really Rosie: From the Page to the Stage," Maurice Sendak, children's author and illustrator. Graham Chapel. 935-5285.

Noon. Cell biology and physiology seminar. "Regulation of G Protein and Map Kinase Signalling Pathways in Yeast," Kendall J. Blumer, asst. prof., Dept. of Cell Biology and Physiology. Room 423 McDonnell Medical Sciences Bldg.

Saturday, Feb. 26

9 a.m. Saturday morning neural sciences seminar — Early Events in Neuronal Development. "Cellular and Molecular Events Underlying Olfactory Neurogenesis," Anne Calof, asst. prof., Dept. of Biology, U. of Iowa, Iowa City. Erlanger Aud, McDonnell Medical Sciences Bldg. 362-3641.

11 a.m.-12:30 p.m. University College Saturday Seminar. "The Endangered Species Act: A Biological Perspective," Barbara A. Schaal, assoc. prof., Dept. of Genetics, and prof. and chair, Dept. of Biology. Room 362 McDonnell Hall.

Monday, Feb. 28

Noon. Molecular biology and pharmacology seminar. "Structure-function Studies on the Snake-venom Neurotoxin, k-Bungarotoxin," James J. Fiordalisi, graduate student, Dept. of Biochemistry. Room 3907 South Bldg. 362-3352

Noon. Neurology and neurological surgery research seminar. "Oxidative Stress and Neuronal Death," Laura L. Dugan, instructor, Dept. of Neurology and Neurological Surgery. Schwarz Aud., First Floor Maternity Bldg. 362-7177.

Noon. Genetics seminar. "Toward a Detailed and Integrated Physical Map of the Distal Arm of the Human X Chromosome," G.B. Ferrero, postdoctoral research assoc., Baylor College of Medicine, Houston. Room 775 McDonnell Medical Sciences Bldg. 362-2744.

4 p.m. Biomedical engineering seminar. "Three-dimensional Microscopy at Washington University," Jose-Angel Conchello, asst. prof. of biomedical computing, Biomedical Computer Laboratory. Room 101 Cupples II Hall. 935-6164.

4 p.m. Dept. of Chemistry Marcus Colloquium. "Mechanism and Structure of a Catalytic RNA Molecule," Thomas R. Cech, prof. of chemistry, U. of Colorado, Boulder. Room 311 McMillan Lab.

4 p.m. Immunology seminar. "Protein Tyrosine Phosphatases Involved in Lymphocyte Activation," Matthew L. Thomas, asst. prof., Dept. of Molecular Microbiology and assoc. prof., Dept. of Pathology. Third Floor Aud., St. Louis Children's Hospital.

8 p.m. Architecture lecture. "The Work of Joseph Allen Stein," Stephen White, asst. dean, School of Architecture, Roger Williams U., Bristol, R.I. White and Stein are both WU alumni. (White exhibits Stein's works in Givens Hall corridor through March 4.) Steinberg Hall Aud. 935-6200.

Tuesday, March 1

5:05 p.m. Central Institute for the Deaf seminar on progressive sensory loss. "Cochlear Pathology in Human Sensorineural Hearing Loss," Barbara Bohne, prof., Dept. of Otolaryngology, and James D.

Miller, research prof., Dept. of Otolaryngology. Second Floor Aud., Central Institute for the Deaf. 652-3200, ext. 671.

Wednesday, March 2

7:30 a.m. Obstetrics and Gynecology Grand Rounds. "Results From the Radius Study," James P. Crane, prof. of obstetrics and gynecology and radiology and co-director, Genetics Division, Dept. of Obstetrics and Gynecology. Clopton Aud., 4950 Children's Place. 362-3122.

11 a.m. Assembly Series lecture. "Be True to Yourself," the keynote speech of Sexual Awareness Week, is presented by Bob and Rod Jackson-Paris, co-authors of a joint autobiography *Straight From the Heart*. Graham Chapel. 935-5285.

12:30 p.m. Neuroscience luncheon seminar. "The Elusive Neural Code for Tactile Roughness," Robert Sinclair, research asst. prof. of neurobiology, Dept. of Anatomy and Neurobiology. Room 928 McDonnell Medical Sciences Bldg.

1 p.m. Molecular cell biology thesis defense. "Expression, Targeting and Assembly of the Rodent Na,K-ATPase," Anthony DeTomaso, graduate student, Division of Biology and Biomedical Sciences. Room 423 McDonnell Medical Sciences Bldg.

3:30 p.m. East Asian studies lecture. "Modernization and the Imperial Universities in Japan," James Bartholomew, prof. of history, Ohio State U. Room 30 January Hall. 935-5958.

4 p.m. Biochemistry and molecular biophysics seminar. "The Biochemistry of Hemoglobin Degradation in the Malaria Parasite Plasmodium Falciparum," Daniel Goldberg, asst. prof., depts. of Medicine and Molecular Microbiology. Cori Aud., 4565 McKinley Ave. 362-0261.

4 p.m. Physics colloquium. "The Casimir Effect: From Quarks to the Cosmos," Kim Milton, prof., Dept. of Physics, U. of Oklahoma, Norman. Room 204 Crow Hall.

Thursday, March 3

9:30 a.m. Tenth Annual Edward Massie Lecture. "The Value of Angioplasty in Managing Coronary Artery Disease: Can it Be Cost Effective?" Spencer B. King III, prof. of medicine (cardiology) and radiology and director, Interventional Cardiology, Emory U., Atlanta. Clopton Aud., 4950 Children's Place.

Noon. Genetics seminar. "Multiplex Sequencing: Technology Development and Application to the Goals of the Human Genome Project," Doug Smith, Collaborative Research Inc. Room 816 McDonnell Medical Sciences Bldg. 362-7072.

Noon. Pediatrics research seminar. "Activation of Calmodulin Dependent Protein Kinase During Insulin Secretion," Michael L. Landt, research assoc. prof., Dept. of Pediatrics. Third Floor Aud., St. Louis Children's Hospital. 454-6128.

4 p.m. Architecture lecture. "Street Architect," Tom Cohen, architect, Johannes/Cohen Collaborative architectural firm, St. Louis. Cohen, owner and designer of St. Louis' Fitz's root beer stand, will discuss the outside opportunities in architecture. Room 116 Givens Hall. 935-6200.

4 p.m. Biology and biomedical sciences student-organized seminar. "Hybridization and Phylogenetics: An Empirical Approach," Lucinda McDade, asst. prof. of ecology and evolutionary biology, U. of Arizona, Tucson. Room 322 Rebstock Hall.

4 p.m. Earth and planetary sciences colloquium. "Late-stage Evolution of U.S. Atlantic Type Passive Continental Margins," Thomas W. Gardner, prof., Dept. of Geosciences, Pennsylvania State U., University Park. Room 362 McDonnell Hall. 935-5610.

4:30 p.m. First Annual Maya Zuck Lecture in Early Childhood Education. "Language and Literacy Development: How Important is Reading Books With Preschoolers?" Catherine E. Snow, prof. of education and academic dean, Harvard Graduate School of Education, Cambridge, Mass. Room 149 McMillan Hall. 935-6707.

Friday, March 4

Noon. Cell biology and physiology seminar. "K⁺ Channels and ATP: Both Sides Now," John P. Adelman, asst. prof., Vollum Institute of Oregon Health Sciences U., Portland. Room 423 McDonnell Medical Sciences Bldg. 362-6944.

4 p.m. Assembly Series lecture/demonstration. "The Art of Musical Improvisation." John Zorn's 12-piece emsemble group, Cobra, will perform improvisational avant garde jazz. Steinberg Hall Aud. 935-5285.

4 p.m. Microbial pathogenesis seminar. "Microbial Stress Reactions and Pathogenesis," Staffan Normark, research prof., Dept. of Molecular Microbiology. Room 775 McDonnell Medical Sciences Bldg.

4 p.m. Anatomy and neurobiology seminar. "How Many Somatosensory Cortical Areas Fit Onto the End of a Fingertip?" Harold Burton, assoc. prof., Dept. of Cell Biology and Physiology and prof., Dept. of Anatomy and Neurology. Room 928 McDonnell Medical Sciences Bldg.

6 and 8:30 p.m. WU Association Travel Lecture Series. "Antarctic Adventure," Theodore J. Walker, research marine biologist, lecturer and founder of the first whale observatory on the West Coast. Graham Chapel. Cost: \$4.50 at the door. 935-5212.

Saturday, March 5

11 a.m.-12:30 p.m. University College Saturday Seminar. "Satellite Imagery, Anthropology and Conservation Policy: A Madagascar Example," Robert W. Sussman, prof. of anthropology. Room 362 McDonnell Hall. 935-6788.

3:30 p.m. Assembly Series performance. "Building Peace" by Talk to Us, an interactive theatrical troupe from U. of Michigan, Ann Arbor. The Gargoyle. (Activities begin at 2 p.m. and continue through 5 p.m. with a food reception following the performance.) 935-5285.



Music

Friday, Feb. 25

8 p.m. Graduate recital. Performance features soprano Krystiane Cheetham, graduate student, singing selections by Wolfgang Mozart and Richard Strauss. She will be accompanied by graduate student Paul Bertagnolli on the clarinet and vocal coach Gail Andrews on the piano. Graham Chapel. 935-5581.

Monday, Feb. 28

8 p.m. Violin recital. Performance features senior Anne Nagosky on the violin and viola with faculty member Annette Burkhart on the piano, graduate student Joanne Stohs on the piano and clarinetist Linda Kinsey, a junior at Webster U. The compositions of Wolfgang Mozart, Max Bruch, Ludwig Van Beethoven and Pablo Sarasate will be performed. Graham Chapel. 935-5581.

Friday, March 4

8 p.m. New Music Circle performance. John Zorn's Cobra, a 12-piece improvisational ensemble, will perform avant garde jazz featuring electric harpist Zena Parkins, guitarist Chris Cochrane and David Shea playing the digital sampler. Sponsored by

Calendar guidelines

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

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

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

New Music Circle and co-sponsored by KWUR, Vintage Vinyl and All That Jazz, a student group. Steinberg Hall Aud. Cost: \$13 for the general public; \$7 for students with valid ID. 935-5952.

Saturday, March 5

8 p.m. Voice recital. "Soirée Française," an evening of French art songs, features Robyn Reso, doctoral student in musicology and professional vocalist, accompanied by doctoral student Garry Ziegler on the piano. Co-sponsored by St. Louis Alliance Française and Dept. of Music. Steinberg Hall Aud. 935-5581.



Performances

Friday, Feb. 25

8 p.m. Performing Arts Dept. presentation. "Bad Blood," written by Griselda Gambaro, Latin America's foremost contemporary woman playwright, and directed by Annamaria Pileggi, artist-in-residence in drama. (Also Feb. 26, same time.) Cost: \$7 for the general public; \$5 for senior citizens, WU faculty, staff and students. Drama Studio, Room 208 Mallinckrodt Center. 935-6543.

8 p.m. Edison Theatre "OVATIONS!" series presentation. "Really Rosie," a play by author and illustrator Maurice Sendak, whose extraordinary children's books have been transformed into musical theatre. (Also Feb. 26 at 2 and 8 p.m.) Cost: \$20 for the general public; \$15 for senior citizens, WU faculty and staff; and \$10 for students and children. Edison Theatre. 935-6543.

Saturday, Feb. 26

8 p.m. Hillel Foundation play. "Deborah and Simon," a one-woman play will be performed by storyteller Judith Black. Sponsored by Student Union and the Jewish Student Council's Gateways Committee. Friedman Lounge, Wohl Center.

Friday, March 4

7:30 p.m. A Cappella Invitational performance. "Jammin Toast" combines the talents of the Brown Derbies, a men's ensemble from Brown U., Providence, R.I., Measure-for-Measure, a women's group from Vassar College, Poughkeepsie, N.Y., the Greenleafs, WU women's group and the Pikers, WU men's group. (Also March 5, same time.) Edison Theatre. Cost: \$6 for the general public; \$4 for WU students, faculty and staff with valid ID. General admission tickets available Feb. 28. 935-6543.

Saturday, March 5

8 p.m. "Stage Left" series presentation. "Stuff as Dreams Are Made On," with Fred Churchack performing a one-man version

of "The Tempest." Drama Studio, Room 208 Mallinckrodt Center. Cost: \$12 for the general public; \$10 for senior citizens and WU faculty and staff; and \$8 for students. 935-6543.



Miscellany

Thursday, Feb. 24

7:30 p.m. Feminist Reading Group discussion. Susan Sherwin's book, *No Longer Patient: Feminist Ethics and Health Care*, will be discussed. Women's Bldg. Lounge. 935-5102.

Friday, Feb. 25

Noon. Brown bag lunch for women faculty. "Conversations in the Disciplines," Barbara A. Schaal, prof. and chair, Dept. of Biology, and prof., Dept. of Genetics. Lambert Lounge, Room 303 Mallinckrodt Center. 935-4406.

4:45 p.m. International Student Resource Group tour. Bus leaves Stix International House for a tour of the Chrysler Corp. Assembly Plant in Fenton. 935-4787.

Monday, Feb. 28

8 p.m. Poetry reading. Chinese-American poet Marilyn Chin will read from her works. A book signing will follow. Edison Theatre. 935-5576.

Friday, March 4

Office of Continuing Medical Education seminar. "Frontiers in Ovulation Induction," Michael J. Gast, assoc. prof., Dept. of Obstetrics and Gynecology. Seminar will be held in Denver, Colo. For times, cost and reservation info., call 362-6893.

4 p.m. Retirement options presentation. "Investment Options for Faculty and Staff," John H. Biggs, chairman and chief executive officer, TIAA-CREF. Presented by Human Resources and the WU Chapter of the American Association of University Professors. May Aud., Simon Hall. 935-5990.

Saturday, March 5

9 a.m.-noon. Fine Arts calligraphy workshop. Bring supplies and samples of work; brush up on skills. Instruction by Teresa Kragnes, instructor, fine arts evening program. Room 212 Bixby Hall. Cost: \$30. Pre-registration required. 935-4643.

9:30 a.m.-4:30 p.m. Thurtene four-on-four volleyball tournament for students only. Free T-shirts for all participants; cash prizes awarded. Cost: \$20. For times and more details, call Howie Olson at 935-3109.

Gay couple to deliver sexual awareness talk

Bob and Rod Jackson-Paris will give the Sexual Awareness keynote at 11 a.m. Wednesday, March 2, in Graham Chapel. Their lecture, "Be True to Yourself," is part of the University's Assembly Series and is free and open to the public.

They also will sign books from 1:30 to 2 p.m. March 2 in the Women's Building lobby.

Bob, a superstar bodybuilder who has won both the Mr. America and Mr. Universe titles, and Rod, a top male model featured in fashion and sports-

wear magazines, have become outspoken proponents of gay and human rights and role models for alternative lifestyles that work since their marriage in 1989.

They have been featured on "The Oprah Winfrey Show," "Donahue" and the "Joan Rivers Show." Their autobiography, *Straight From the Heart*, was released earlier this year.

The lecture is co-sponsored by the Assembly Series, Office of Student Activities and Student Union Campus Services Committee. For more information, call 935-4620.

Cobra explores art of musical improvisation

Members of John Zorn's musical improvisational group Cobra will give a lecture/demonstration at 4 p.m. March 4 in Steinberg Hall Auditorium. Their talk, "The Art of Musical Improvisation," is part of the University's Assembly Series and is free and open to the public.

The three-person lecture/demonstration will feature Anthony Coleman on piano, David Shea on turntables and Zena Parkins on electric harp.

Cobra, a 12-piece ensemble, was conceived by jazz saxophonist Zorn as a musical game, in which the musicians improvise according to rules constructed by the conductor. While its concept is

nearly impossible to grasp outside the actual performance, it is an attempt to create an entire genre of music based upon improvisation.

Cobra, based in New York City, will perform at 8 p.m. March 4 in Steinberg Hall Auditorium as part of its first national tour. Tickets are available through Metrotix (\$7 with Washington University ID, \$13 without) or KWUR Radio. For more information about the program, call 935-5952.

The lecture is co-sponsored by the Assembly Series, KWUR Radio and Student Union. For more information on the lecture/demonstration, call 935-4620.

Population issues focus of seminar

Nafis Sadik, executive director of the United Nations Population Fund (UNFPA), will keynote the Mary T. Hall Seminar on Population and Development at 1 p.m. March 6 in Simon Hall's May Auditorium. The seminar will continue at 4 p.m. March 7 as Betsy Hartmann, an author and activist on women's health and reproductive rights, gives the Thomas Hall Lecture in Rebstock 215. Both lectures are part of the University's Assembly Series and are free and open to the public.

The seminar, hosted by the Greater St. Louis Chapter of the U.N. Association, will focus on public awareness of global population issues. In preparation for the upcoming U.S. International Conference on Population and Development (ICPD) to be held in Cairo in September, Sadik, secretary general of the ICPD, will discuss "An Agenda to Restrain Growth." Hartmann will lecture on "Whose Empowerment? The Politics of Women, Population and the Environment in the 1990s."

Sadik, a Pakistani doctor, joined UNFPA in 1971. When she was appointed executive director in 1987, she became the first woman to head one of the United Nations' major voluntary-funded programs.

Sadik also was the first female recipi-

ent of the Hugh Moore Award in 1976, named after a pioneer in the United States credited with calling attention to the world population crisis.

Hartmann, director of the Population and Development Program at Hampshire College in Amherst, Mass., moves the debate on population and environment in a more feminist and progressive direction. Her books include *Reproductive Rights and Wrongs*, published in 1987, and *The Poverty of Population Control*, published in 1989.

On March 6, the seminar, which begins at 1 p.m. and concludes with a 5:15 p.m. reception, will include an overview by Thomas Merrick, World Bank senior population adviser; a discussion of the role of the United States and the individual in population issues led by Population Institute President Werner Fornos; and various workshops. To register for the seminar, which is free and open to the public, call 721-1961.

The lectures are co-sponsored by the University's Assembly Series and Thomas Hall Lecture Fund and by the Greater St. Louis Chapter of the U.N. Association, The Community Foundation, Planned Parenthood of the St. Louis Region, Population Planning Trust, Trans World Airlines and The World Bank.

Sports

Men's Basketball

Last Week: Washington 85, Brandeis 80; Washington 77, New York University (NYU) 71

This Week: Saturday, Feb. 26, vs. Chicago, 7:30 p.m., Field House

Season Record: 17-7 (10-3 UAA)

Although the Bears were eliminated from the University Athletic Association (UAA) race, they remain in the hunt for an NCAA Division III postseason play-off berth after a stirring 77-71 come-from-behind victory over 12th-ranked NYU. Needing a victory in their final game, the Bears will find out Sunday if they have earned an at-large bid to the 40-team tournament.

Using a stifling defense and some clutch foul shooting, Washington overcame a 14-point deficit against NYU, this year's league champion. The Bears, who trailed 65-51, outscored the Violets 26-6 in the game's final 10 minutes, sinking 14 of 18 free throws. Sophomore guard Gene Nolan, Chicago, who led the Bears with a game-high 27 points, drained nine of nine free throws and upped his league-leading free throw percentage to .951. In addition, he broke the school record for three-point field goals in a season, hitting four of eight treys for a season total of 78.

Women's Basketball

Last Week: Washington 70, Brandeis 49; Washington 60, NYU 55

This Week: Saturday, Feb. 26, vs. University of Chicago, 5:30 p.m., Field House

Season Record: 21-3 (12-1 in UAA)

In a winner-take-all climax Sunday, the Bears defeated NYU by a five-point margin to claim their third straight UAA title — and sixth conference crown in seven years — as well as the automatic NCAA tournament bid that accompanies it. The Bears close the regular season this coming Saturday and then await the NCAA tournament draw that will be announced on Sunday. In all likelihood, the Bears will receive a first-round bye and start play on March 5.

Senior guard Sarah Goldman, Nashville, Tenn., continued her white-hot play by averaging 19 points, 7 rebounds, 4.5 assists and 2.5 steals during weekend play. Sophomore forward Dana Bryant, Franklin, Tenn., tied Goldman for game-high honors with 17 points and scored the Bears' final seven points — all on free throws.

Men and Women's Track and Field

Last Week: at Southern Illinois University (SIU)-Carbondale Saluki Open — 18-team non-scoring meet

This Week: Idle

In what has already been a record-shattering season for the Bear tracksters, another eight records — four varsity and four first-year marks — fell at Saturday's 18-team SIU-Carbondale Saluki Open. Seven of the new additions to the Bear record book came on the women's side. Record setters were first-year student Carrie Woods, Hinsdale, Ill., (:09.35 in the 55-meter hurdles); senior Tirzah Wilson, Benton Harbor, Mich., (:07.69 in the 55); sophomore Julie Pearman, Desloge, Mo., (2:23.16 time in the 800); Alyce Nelson, Oberlin, Ohio, (5'0 1/4" in the high jump); and Adrienne Yang, Lower Marion, Pa., (32'11 3/4" in the triple jump). First-year student Keith Lit, Southampton, Pa., rewrote the only men's record that day by running a 4:25.83 mile.

Men and Women's Swimming/Diving

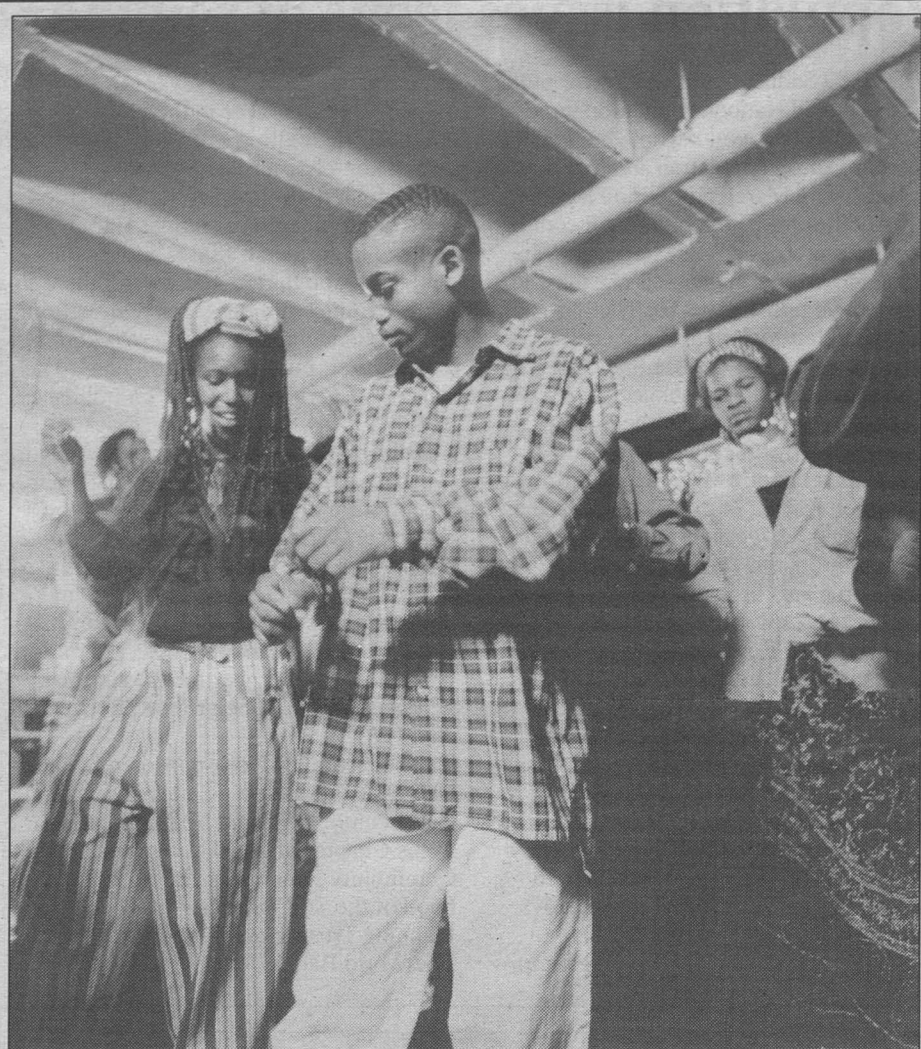
Last Week at UAA Championships — Men: 5th of 8 teams; Women: 4th of 8 teams

This Week: Idle

Season Record: Men: 7-2, Women: 6-1

Competing in the ultra-competitive UAA Championships, three Washington individuals and one relay foursome earned all-UAA status by finishing in the top three of an event.

Senior Jason Coryell, Marion, Ind., placed and set school records in a trio of championship finals. Coryell finished second in the 100-yard butterfly with a provisional national qualifying time of :51.82. His other records came in the 200 fly (1:58.35) and the 200 individual medley (2:01.31). Joining Coryell on the all-UAA list were first-year student Christine O'Brien, Billings, Mont., who placed third in the 200 fly (2:17.80), and senior Beanie Reuter, Scarsdale, N.Y., who finished third in the 400 individual medley (4:57.01). In addition, the men's 800 freestyle relay quartet of first-year Jason Price, Tucson, Ariz., first-year Mike Donnerstein, Tucson, Ariz., first-year Chris Manos, Westfield, N.J., and senior Dave Cuneo, Springfield, Pa., placed third with a Washington record-crushing time of 7:07.58.



More than 200 prospective minority students flocked to campus this month for two multicultural recruitment weekends. First-year student Christal Simmons dances with Chris Moore, a prospective student from Indiana, at the Caribbean Festival. Prospective students sat in on classes, met with faculty and took part in Cultural Celebration activities.

Festival promotes campus cooperation — from page 1

be on hand to do everything from checking out video and board games to curing homesickness to recommending places to eat and visit in St. Louis," Stroup said.

Jamesetta "Tootie" Williams, the University's director of conference and guest housing, said the Department of Housing has been working with Olympic Festival organizers for two years and, so far, "Everything has gone smoothly."

The University has planned special events and daily and nightly entertainment for the athletes housed on campus. Bands, jugglers, dancers and other groups will perform in the South Forty Swamp every night and movies will be shown in Brown Hall. Athletes will have access to the swimming pool, and the basketball and volleyball courts for recreation when they're not being used for practice or competition. Local ministers will perform an ecumenical church service at Graham Chapel on Sunday morning.

Feeding the athletes is another monumental task. Stroup said Marriott Food Services will serve three meals a day and will have food service available from 6 a.m. to 8 p.m. and the Bear's Den will stay open until midnight. Boxed lunches will be provided for the athletes at all the venues and snacks will be on hand for the volunteers. Meals also will be available for athletes with special dietary needs, including vegetarian and high carbohydrate meals.

Athletic competition is at the center of all this hoopla. Washington University's Athletic Complex is the venue for competition in men and women's volleyball, team handball and judo. The complex and its outdoor facilities also will serve as the practice sites for swimming, synchronized swimming, track and field, soccer, water polo, weightlifting and wrestling. Godfrey said he anticipates the largest crowds for the volleyball competitions but expects the other contests and practices to draw many sports fans.

"I am very hopeful that volleyball will be a sell-out," Godfrey said. "On a couple different nights, we will have both volleyball and team handball at the same time. We've never before had two such high-level competitive events being contested simultaneously."

The Transportation Department has developed a strategy to facilitate parking and ease traffic flow, particularly for the

volleyball competitions. Some campus entrances will be closed off to direct visitors to park in the new parking structure along Millbrook Boulevard. Faculty, staff and students who already have parking permits will have the same access to parking spaces on campus. Volunteers will be asked to park in the West Campus lot and will be shuttled to the Hilltop Campus.

"I don't believe there will be a problem with parking or traffic," said Gary Sparks, director of the Transportation Department. "The only real push for parking will be during the major competitions, when most of the faculty and students won't be here anyway. We will channel visitors to the new parking structure."

A visitors' parking fee will be assessed to help offset some of the costs of the festival.

"University money will not be spent on this event," Godfrey said. "Everything we do is a break-even proposition. The parking fee will help offset the costs of extra services, such as custodial and maintenance." The rest of the tab is being picked up by the Metropolitan St. Louis Festival Organizing Committee Inc.

A shuttle service will run from the parking lot of the First Congregational Church at 6501 Wydown Blvd. to transport volunteers and athletes from Washington University to the other venues scattered around the St. Louis metropolitan area.

The recent attack on Olympic figure skater Nancy Kerrigan emphasized the importance of providing security for athletes during the festival, said William Taylor, chief of the Campus Police Department.

"The Kerrigan incident underscored that what we were planning to do was correct," Taylor said. "We will work with the Clayton Police Department and about 40 state troopers to secure the Olympic Village and Athletic Complex for competitions and practices, as well as local off-campus sites, like the badminton competition at Fontbonne College, bowling at Tropicana Lanes and hockey at the Brentwood ice rink."

As the festival draws near, Stroup said she has almost all the volunteers she needs but is still taking applications. For volunteer information, call 935-6113.

Godfrey said everything seems to be falling into place.

"The spirit of cooperation shown on this campus has been phenomenal," Godfrey said. "Everyone I've talked to has been willing to help."

—Susannah Webb

City restricts parking on Lindell Boulevard and in Forest Park

The City of St. Louis plans to severely restrict parking on Lindell Boulevard some time after March 1, and to limit parking in the northwest area of Forest Park some time after May 1.

"No Parking — Monday through Friday" signs will be installed on the south side of Lindell Boulevard from University Circle to DeBaliviere in March. The signs will extend the current parking restriction west to Skinker Boulevard.

Signs that read "One Hour Parking Only 8 a.m. to 5 p.m. Monday through Friday" will be installed on the north side of Lindell Boulevard from University Circle to Des Peres Boulevard.

A "No Parking" sign also will be installed on the existing light pole at the intersection of Grand Drive and Lindell Boulevard at University Circle.

Beginning in May, parking will be limited to three hours Monday through Friday on both sides of the following drives in Forest Park: Grand Drive from Des Peres Boulevard west to Forsyth Avenue; Forsyth

Avenue from Skinker Boulevard to Grand Drive and Lagoon Drive; Lagoon Drive from Forsyth Avenue east to Fine Arts Avenue. Parking will be prohibited on the frontage of all traffic islands at the intersection of Grand Drive and Forsyth Avenue and the cut-off to University Circle.

Gary Sparks, director of the Transportation Department, said parking is available on campus and motorists will be able purchase campus permits on a pro-rated basis.

"We've been keeping a daily count of the number of spaces available in the east lot in front of Brookings and in the new garage," Sparks said. "There have been between 400 and 500 open spaces a day."

Sparks said it would be most cost-effective for students to purchase monthly parking permits for \$30 in March and April and daily permits for the first couple weeks in May.

The University was notified of the new restrictions by St. Louis Alderman Dan McGuire, who initiated the regulations after he received complaints from Lindell Boulevard residents and users of Forest Park.

Students' comments were 'eye-opening' — from page 1

"If we go on the assumption that we want to provide a better educational experience and cannot keep expanding programs and services, we have to set priorities," Coburn continued. "The best way to do this is to find out what is important to students."

Cluster members decided to tackle the task chronologically, focusing initially on first-year undergraduate students. Last spring, they invited a cross-section of current students to meet in four focus groups to discuss their early experiences at Washington University. Other students

helped moderate the focus groups and decide what questions to ask. The groups concentrated on non-academic administrative services.

"Hearing directly from the students was so exciting," said Shirley Baker, dean of University libraries and cluster co-chair. "We had some international students, minority, non-minority, Greek, non-Greek, on-campus residents, off-campus residents. We tried to think of all the defining characteristics of students. We talk to each other continuously about what we think we know about students, but to have them in the same room with us, talking openly, was eye-opening."

Baker and Coburn said they were not surprised by the content of the focus group discussions, but were surprised by the depth of feeling and the commonality of themes.

In the non-academic realm, students said they felt some University employees could be more empathic, approachable and helpful.

"We learned that it was very important for students to feel that they were being well-served," Baker said. "How they were treated was often as important as the result."

Based on this input, administrative and academic offices that serve students provide more convenient hours of operation and stay open during the lunch hour. As a result of the cluster's input, all staff will participate in service training workshops to improve interaction with students and coordinate services among related departments. In addition, the cluster urged expansion of the shuttle schedule to make the service more convenient for students.

"We learned that students don't think about services the way we do," Coburn said. "We think about these things along organizational lines. Students integrate their service and classroom experiences. Encounters with professors, financial aid, the library, other students all come together as a single experience."

Students, especially commuter students, expressed a desire to feel more a part of the Washington University community and to form closer networks with other students, faculty and staff. In response, the cluster recommended a University-wide orientation process that involves faculty and administrators and provides opportunities for small group activities. In addition the CSEC cre-

ated a program that includes a Commuter 101 orientation program, barbecue, social events and two students who act as coordinators and peer advisers for this year's 47 commuter students. In addition, the cluster recommended strengthening the University-wide orientation process and involving faculty and administrators and providing more opportunities for small group activities.

In the focus groups, students also recommended improvements to the written communication between administrative and academic offices and the student body.

"It is very confusing to new students trying to find their way around," Coburn said. "We produce a lot of written and verbal information. Students are deluged with information, yet they feel they don't have the information when they need it."

In response, the CSEC recommended that administrative and academic offices review the content, timing and effectiveness of the materials they send to students. The cluster also recommended improve-

ments to intra-campus mail services and a re-evaluation of the use of student mailboxes and electronic technology.

"Basically, there have been three different kinds of outcomes from this cluster," Baker said. "There have been simple changes that made a big difference, like opening a number of University offices over the noon hour. There have been system-wide changes across the University. An example is the ongoing service training program for staff to improve the way students are treated at service points. And there are organizational changes — more areas working across organizational lines — that we're just beginning to see."

More recently, the CSEC has been investigating the specific needs of international and transfer students and presented its recommendations to the management team Feb. 21.

Robin Ketcham, a transfer student from Hamilton College in Clinton, N.Y., who moderated a focus group, said the process someday may help students feel a greater sense of belonging.

"One concern that came out of the focus group was from students like me who transfer from small schools and feel here that they go just to the School of Arts and Sciences or engineering," Ketcham said. "Having these focus groups has been a very positive step forward."

After spring break, the cluster will reassemble more focus groups to take a look at the sophomore student experience.

"The information from the international students was especially compelling," Baker said. "There were a lot of comments made about vegetarianism. To get enough to eat, one student said he had to eat meat. He had never eaten meat before. When he went home, he had to be sanctified with holy water before he could enter his house."

"That makes an impact beyond collective data," Coburn said.

—Susannah Webb

For The Record

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

Of note

Chad D. Garibaldi, a senior in chemical engineering, received a \$1,000 scholarship from the American Electroplaters and Surface Finishers Society based in Orlando, Fla. Scholarship applicants must major in chemical engineering and have a strong academic record. Garibaldi is a student member of the society. ...

Susan E. Mackinnon, M.D., professor of surgery and of occupational therapy, received a \$5,000 grant from the Plastic Surgery Educational Foundation for a project titled "Neonatal to Adult: Comparative Analysis of Peripheral Nerve Regeneration." ...

Garland R. Marshall, Ph.D., director of the Center for Molecular Design, professor of molecular biology and pharmacology, and of biochemistry and molecular biophysics and of biomedical computing, received an honorary degree from the Polytechnika (Technical University) in Lodz, Poland. He received the degree in honor of his contributions to the field of peptide chemistry.

Speaking of

At the Program Directors Meeting held at the Howard Hughes Medical Institute in Chevy Chase, Md., **Joseph J. H. Ackerman**, Ph.D., professor and chair of chemistry, and **Sarah C. R. Elgin**, Ph.D., professor of biology, delivered presentations on undergraduate education. ...

During a meeting of the Public Relations Society of America's St. Louis chapter, **Ron Allen**, Asa F. Seay Librarian at the John M. Olin School of Business,

delivered a speech titled "On-ramps to the Information Superhighway." ...

Several faculty members in the Department of Speech and Hearing at the Central Institute for the Deaf (CID) participated in the American Speech-Language-Hearing Association's meeting held in Anaheim, Calif. **Lisa S. Davidson**, lecturer in audiology and a school audiologist at CID, presented a miniseminar titled "FM Systems: Beyond the Initial Investment." **Ann E. Geers**, Ph.D., associate professor of psychology and CID clinics director, and **Jean S. Moog**, principal of the CID School and associate professor of education, presented "Optimizing the Benefits of Cochlear Implants: Speech Perception." **Christine H. Gustus**, lecturer in education and a coordinating teacher at CID, presented "Optimizing the Benefits of Cochlear Implants for Children: Speech Production." ...

At the Graduate and Professional School Financial Aid Service's regional workshop held in Chicago, **Thomas Evola**, associate director of the John M. Olin School of Business Computing Services, spoke on "Office Automation Planning." ...

Joe Ketner, director of the Gallery of Art, gave a lecture titled "Lifting the Veil: Robert S. Duncanson and the Emergence of the African-American Artist" at the Saint Louis Art Museum. ...

At Chiang Mai University in Thailand, **Carlos A. Perez**, M.D., professor of radiology at the School of Medicine's Mallinckrodt Institute of Radiology and director of the Radiation Oncology Center, spoke on "Radiation Therapy for Carcinoma of the Uterine Cervix" and "Radiation Therapy for Carcinoma of the Endometrium." ...

During the Society of Behavioral

Medicine's 15th annual meeting to be held April 13-16 in Boston, **Judith A. Skala**, R.N., a graduate student in clinical psychology, will present a paper on "Depression, Concentration and Medication Adherence in Patients With Coronary Disease." She wrote the paper with **Robert M. Carney**, Ph.D., associate professor of medical psychology in psychiatry, **Seth A. Eisen**, M.D., associate professor of medicine, and **Kenneth E. Freedland**, Ph.D., assistant professor of medical psychology in psychiatry.

On assignment

John Stewart, associate professor of music, served as judge of The Metropolitan Opera District auditions held in Dallas. During the Missouri Music Educators Association's state convention held at Marriott's Tan-Tar-A Hotel in Osage Beach, Mo., he directed the Washington University Chamber Choir's performance.

To press

Stephen H. Legomsky, J.D., D.Phil., Walter D. Coles Professor of Law, wrote an essay on "Immigration, Equality and Diversity" that was published in Vol. 31 of the Columbia Journal of Transnational Law. ...

Alumnus Alvin Goldfarb commits challenge grant to arts and sciences

Civic leader Alvin Goldfarb has committed a \$928,000 challenge grant to arts and sciences at Washington University, Chancellor William H. Danforth has announced.

Chancellor Danforth said, "Al Goldfarb is a man of vision and good will, who cares deeply about his family, friends and the community. He and his late wife, Jeanette, have been friends of Washington University for many years. This magnificent commitment reflects Al's kindness and his concern for others. The impact of his generosity will be felt not only by the students on our campus today, but also by those who will follow in the years ahead. We are proud Al is an alumnus of Washington University and deeply grateful for his generous, far-sighted support."

In recognition of the commitment, the auditorium in James S. McDonnell Hall will be named Alvin Goldfarb Auditorium.

T. Tom Lin, Ph.D., professor of chemistry, wrote an article titled "Polarizing Nuclear Spins Via Photo-excited Triplet States" that was published in Vol. 132 of the Israel Journal of Chemistry. ...

John C. Morris, M.D., associate professor of neurology, edited Handbook of Dementing Illnesses. The book is published by Marcel Dekker Inc. of New York. ...

Michael J. Strube, Ph.D., professor of psychology, and **John Yost**, Ph.D., who received his doctorate in psychology from Washington University in 1992, wrote an article titled "Control Motivation and Self-appraisal" that is featured in a 1993 book titled *Control Motivation and Social Cognition*. The book is published by Springer-Verlag of New York.

Guidelines for submitting copy:

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

Graham named to head Assembly Series

Susan H. Graham, who formerly was with the communications department at WNYC public television and radio in New York City, has been appointed director of major events and special projects at Washington University, according to M. Fredric Volkmann, vice chancellor for public affairs.

Graham's primary responsibilities will be for the Assembly Series, which features prestigious speakers and lecturers. She succeeds Trudi Spigel, Ph.D., who retired from the University on Jan. 31, 1994, after more than two decades of coordinating the Assembly Series. Graham will be working on a part-time basis until May 16, 1994, when she joins the University full time.

In addition to her Assembly Series responsibilities, Graham also will coordinate major programs for student honors and will handle communications for development and alumni support.

Graham, who is fluent in French and German, received her master's degree in German language and literature from Oxford University in 1985, and a

professional certificate in communication, advertising and marketing in 1990 from Bristol University in the United Kingdom.

Graham grew up near London. In previous positions in Britain, she has



Susan H. Graham

managed a variety of special events, from business meetings to children's contests to fashion shows. She was director of public relations for Meadowhall Center, the largest shopping center in the United Kingdom. Approximately 22 million people visit the center each year. Prior to that, she was a marketing and public relations executive for Longleat Enterprises in Cheddar, United Kingdom. The Longleat theme park is one of Britain's top tourist attractions with 500,000 visitors annually.

Applicants sought for London acting course

The Performing Arts Department and the International Shakespeare Globe Centre are offering a four-week intensive acting and directing course this summer. All college students are eligible to apply.

The London-based program, titled "Shakespeare's Globe," runs from July 4-29. Classes are taught weekdays by Henry I. Schvey, Ph.D., chair of the department and director of the Shakespeare's Globe Summer Program, and Annamaria Pileggi, artist-in-residence in the department.

Students completing the program will receive six credits from Washington University. Interested students must submit an official university transcript, a resume and at least one letter of recommendation from a faculty member. Applications should be postmarked no later than April 1.

"Using London, the world's premier theatre city, as our living laboratory, we experience the craft of the theatre in an

extraordinary way," said Schvey. "Daily classes in acting, directing, voice, movement, theatre history and stage combat are complemented by master classes taught by some of the Royal Shakespeare Company's brightest stars and most talented teachers."

"Shakespeare's Globe" is based at the Shakespeare Globe Museum, home of the International Shakespeare Globe Centre. The centre was established by American actor and film director Sam Wanamaker in 1970 to reconstruct Shakespeare's original Globe Theatre, which was destroyed in a fire in 1613.

The entire program costs \$2,700. The price includes accommodations, tickets to six London productions and a three-day excursion to Stratford-upon-Avon, with tickets to two Royal Shakespeare Company productions. The price does not include airfare.

For more information, call 935-5858.

Taddese appointed to American Council on Education panel

Senior Abraha Taddese recently discussed the status of American higher education with five college presidents.

Taddese, along with four other members of the USA Today newspaper's All-USA College Academic First Team, was a panelist during the American Council on Education's 1994 annual meeting held Feb. 21 in Washington, D.C. The students took part in an intergenerational dialogue with presidents Thomas Ehrlich of Indiana University; Ofelia Garcia of Rosemont (Pa.) College; Thomas Gonzalez of Front Range Community College in Westminster, Colo.; William R. Harvey of Hampton (Va.) University; and Bette Landman of Beaver College in Glenside, Pa.

The panelists addressed such issues as how budget cuts and tuition increases have affected students. Pat Ordozensky, coordinator of the All-USA College Academic First Team and a retired education writer for USA Today, served as moderator.

The newspaper selected the five students "to represent the full range of talents, backgrounds and disciplines represented on the All-USA Academic First Team," said Ordozensky.

On Feb. 4 Taddese was one of 20 college seniors named to the team. Each team member received a \$2,500 award. The students were honored during an awards luncheon at the newspaper's Arlington, Va., headquarters.

Introducing new faculty members

The Record is running a series profiling new faculty on the Hilltop and Medical campuses.

Alan E. Schlesinger, M.D., assistant professor of radiology at the School of Medicine's Mallinckrodt Institute of Radiology, comes from the University of Michigan Medical Center in Ann Arbor, where he was an assistant professor of radiology. His research focuses on several areas of pediatric radiology, including cardiovascular imaging and the use of ultrasound and computed tomography to measure organ size and volume. He received a bachelor's degree in biology from the University of California, Los Angeles, in 1976, and a medical degree from the Yale University School of Medicine in New Haven, Conn., in 1980.

Josefa Toribio, Ph.D., assistant professor of philosophy, comes from Complutense University in Madrid, Spain, where she was an assistant professor in the Department of Logic and Philosophy of Science. Her research interests are the philosophy of language and of mind and cognitive science. She received a bachelor's degree in 1984, a master's degree in 1985 and a doctorate in 1988, all in philosophy, from Complutense University.

Opportunities & personnel news

Hilltop Campus

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

Administrative Secretary

940162. *Medical Alumni and Development.* Requirements: Three or more years office experience; some college, bachelor's degree preferred; typing 50 wpm with accuracy; word processing, data processing and overall computer skills; familiarity with Macintosh, Word and Excel preferred; good command of English; ability to deal with multiple assignments and organize work to meet deadlines; ability to deal cordially, accurately and responsibly with public on the telephone, in the office and at special events; ability to work well with colleagues in promoting a team environment; attentiveness to detail. Clerical tests required.

Administrative Secretary

940164. *Tyson Research Center.* Requirements: Some college, bachelor's degree preferred; typing 40 wpm with accuracy; must handle cash receipts responsibly; gracious reception to all guests, co-workers, faculty, students, visitors, etc.; generous, cooperative, helpful attitude; ability to tolerate director's poor handwriting and chaotic schedule, which includes frequent absences; Washington University experience strongly desired. Clerical tests required.

Computer System Manager/Programmer

940166. *Psychology.* Requirements: Bachelor's degree; good language and communications skills; VMS system management experience; VMS system programming skills in ADA and FORTRAN; IBM-compatible PC programming skills in C or C++. Resume required.

Programmer/Analyst II

940168. *Computing and Communications.* Requirements: Associate's degree, bachelor's degree preferred; knowledge and experience with administrative data processing; excellent organizational and communication skills. Resume required.

Admission Officer/Coordinator of Multicultural Studies

940169. *Undergraduate Admission.* Requirements: Bachelor's degree, graduate work is preferred; must be committed to the goals of a private, competitive university that is dedicated to teaching and research; sensitivity to the challenges associated with building a diverse community of undergraduate students is critical; ability to work hard and a willingness to devote long hours at key times of the year is very important; a sense of humor is essential; ability to balance a number of complex activities and set priorities; must be highly organized. Resume required.

PC Support Technician

940170. *School of Law.* Requirements: Associate's degree; extensive experience with IBM mainboards, add-on cards, hard disk drives, communication hardware and software; some network experience helpful; experience with a variety of PC-based software, specifically WordPerfect, Windows, spreadsheets, scanning (OCR) and data base; a strong DOS background; ability to stay on track regardless of interruption and to do so without prompting; ability to work independently for long periods without instruction; excellent verbal communication skills. Resume required.

Cashier, Part-time

940172. *Accounting Services.* Requirements: High school graduate; one year cashiering or comparable cash handling experience; ability to organize and account for a heavy, steady volume of checks and cash with a high degree of accuracy; dem-

onstrated customer service skills, including the ability to be courteous under all circumstances; capable of learning two complex computer systems; flexibility to work additional hours as required; flexibility to work at Hilltop or Medical campus locations. Clerical tests required.

Admission Market Analyst

940174. *Undergraduate Admission.* Requirements: Bachelor's degree; thorough knowledge of SAS, spreadsheet, word processing and presentation software; must be comfortable with the principles of data base management and data manipulation; knowledge of mainframe and microcomputer systems and applications is essential. The market analyst will provide technical support to inform the development of a strategy to recruit and enroll undergraduate students. This position reports to the dean of Undergraduate Admission and will work closely with key administrators and faculty members. Resume required.

Administrative Assistant

940175. *George Warren Brown School of Social Work.* Requirements: Some college; typing 45 wpm with accuracy; personal computer proficiency, including word processing and spread sheets; understanding of funding guidelines that apply to the preparation of proposals; ability to coordinate, write and proofread; above average knowledge of English grammar and spelling; self-study reaccreditation work. Clerical tests required.

Secretary

940176. *University College.* Requirements: Some college, associate's degree preferred; typing 50 wpm with accuracy; ability to handle multiple tasks and establish priorities under pressure; ability to meet public in a pleasant and professional manner; stamina; requires some hand deliveries of correspondence and packages across campus. Clerical tests required.

Technical Sales Specialist

940177. *Campus Stores.* Requirements: Some college, bachelor's degree preferred; knowledge of personal computers and popular software; experience using a variety of microcomputer peripherals, such as modems and printers; must be physically able to lift system components; must be able to work evening and Saturdays. Resume required.

Oiler

940179. *Euclid Power Plant.* Requirements: High school graduate; skill in the use of tools and equipment; general understanding

of power plant machinery; a history of dependability; mechanical aptitude; ability and willingness to follow instructions; one year experience as an oiler in a plant of comparable size or comparable work experience. Application required.

Medical Campus

The following is a partial list of positions available at the School of Medicine. Employees who are interested in submitting a transfer request should contact the Human Resources Department of the medical school at 362-4920 to request an application. External candidates may call 362-7195 for information regarding application procedures or may submit a resume to the Human Resources office located at 4480 Clayton Ave., Campus Box 8002, St. Louis, Mo. 63110. Please note that the medical school does not disclose salary information for vacancies, and the office strongly discourages inquiries to departments other than Human Resources.

Social Worker MSW

940428-R. *Psychiatry.* Schedule: Part-time, 20 hours per week. Requirements: Master's in social work or ACSW licensed clinical social worker; ability to identify the critical unit to work within therapy. Will be doing assessments and intervention in family therapy.

Medical Secretary II

940552-R. *Surgery.* Requirements: High school graduate or equivalent, some college helpful; three years experience in doctor's office in academic setting with patient contact; knowledge of medical terminology; word processing and data entry skills; typing 60 wpm.

Statistical Data Analyst

940580-R. *Psychiatry.* Requirements: Master's degree in math, computer science, data processing or related field; one to two years related experience; knowledge of WordPerfect, spreadsheets, LANS, DOS and UNIX; ability to use PC graphics packages for production of presentation-quality graphics and familiarity with large data base management.

Medical Research Technician

940581-R. *Pathology.* Requirements: Bachelor's degree with background in cell and molecular biology and/or biochemistry; one to two years lab experience; ability to work independently under guidelines from supervisor; tissue culture, protein purification, DNA and RNA analyses skills.

Secretary II

940582-R. *Psychiatry.* Requirements: High school graduate or equivalent; three years university experience; neat, accurate and able to organize work; confident and courteous manner; knowledge of WordPerfect; typing 60 wpm.

Medical Research Technician

940583-R. *Psychiatry.* Requirements: Bachelor's degree with knowledge of all theoretical aspects of molecular biology; interest in genetics; practical experience with PCR and DNA sequencing (automated DNA sequencer or manual gels) preferred.

Medical Research Technician

940586-R. *Cell Biology.* Schedule: Full-time with occasional evenings and weekends. Requirements: Bachelor's degree in biology, chemistry or related field; one to two years experience as a lab technician; knowledge of molecular biology; knowledge of techniques in working with DNA.

Staff Therapist

940599-R. *Psychiatry.* Schedule: Part-time, 10 hours per week, variable. Requirements: Master's degree; counseling experience; knowledge of medical terminology, diagnosis, procedures.

Medical Secretary

940601-R. *Psychiatry.* Schedule: Part-time, 22.5 hours per week. Requirements: High school graduate or equivalent; post-high school education/training desired; excellent verbal and written communication skills; experience in proofreading, composing and patient scheduling; familiarity with IBM/WordPerfect; typing 65 wpm.

Human Resources Associate, Recruitment.

940606-R. *Administration.* Requirements: Bachelor's degree or three years related experience, emphasis on human resources, behavioral sciences or life sciences; good verbal communication skills; ability to interpret or search out skill requirements indicated on personnel requisitions.

Compensation Specialist

940607-R. *Administration.* Requirements: Bachelor's degree or equivalent education/experience in human resources, business or behavioral science; knowledge of wage and salary laws; good judgment, discretion, communication skills; familiarity with WordPerfect 5.1.

Demonstration kits distributed to area high school physics teachers—from page 1

Discher's revelation led to a new, low-tech, inexpensive and exciting way to teach electrical circuits not just to Washington University students, but to high school physics students as well. With chalkboard magnetism as his springboard, Discher developed a teaching kit that, for a few dollars per unit, illustrates principles of electrical circuits with "petty cash, rather than thousands of dollars."

The foundation of the kit (total price: approximately \$5) is an ordinary videotape box that, bought in bulk, costs a mere 37 cents. Discher added four 7-pound-pull magnets (40 cents apiece) two connecting terminals (51 cents), a 9 volt battery (56 cents), plugs, clips, screws and tape costing less than \$1.50, cable and salvaged interconnecting wires and bare copper wire to make a magnetic model resistor. Four more make a magnetic model circuit that clings to a chalkboard and illustrates principles of electrical networking for just \$20. A digital meter is put inside another videotape box to test the circuit.

With these tools at hand, a professor can illustrate a range of different circuits simply by slapping the magnetic resistors on the chalkboard and doing calculations on the board next to the demonstration equipment. Students get a "hands-on" feel

for the theories discussed. Teachers are free to use the demonstration, which is most effective for about 10 minutes, Discher said, any time during the lecture, and they're able to do calculations alongside the demonstration, tying the principles together nicely.

"I had thought about using an easel and putting the resistors up with Velcro, but the nice thing about magnets and the kit is the whole thing can be stored in a briefcase, the demonstration can be sprung on students as a surprise.

"In teaching, we always talk about high-tech, but here's something in our chalkboards I don't think we've ever used, and I don't think most teachers know their chalkboards are magnetic. It's a low-tech way to teach high technology."

Discher's concept has been used each semester since the fall of 1992. Teachers have demonstrated the relatively simple circuitry of household switching as well as the more advanced "Wheatstone Bridge," a classic piece of test equipment that can be used to measure resistances.

"Something that I believe benefits the students is to set up a circuit that I have not previously tested," Krchnavek said. "Inevitably, the circuit does not perform as expected and I begin trouble-shooting on the chalkboard. This is a powerful learning experience

because the students can see the thought processes behind the analysis as it is happening.

"And," he added, "The sound of magnets attaching to chalkboard usually wakes up the less attentive students."

Discher also is editor, writer, production manager and secretary of Physics Tempo, the newsletter of St. Louis Area Physics Teachers. His newsletter goes out to the organization's 60 members, plus another 170 teachers and administrators throughout the region. On Jan. 8, Discher and Krchnavek distributed kits to area high school physics teachers at the organization's regular meeting, where 12 additional participants learned to construct the magnetic network models and use them in their own classrooms.

"Many parents don't know that secondary school science teachers often subsidize their teaching equipment with their own money. Budgets are always tight. We want to come up with ways to do more with what we've got. Videotape boxes can be found in the audio-visual department of most school libraries. Teachers can come up with first-rate science lessons with spare office supplies rather than with expensive technology."

—Tony Fitzpatrick