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# Record

Feb 2007

record.wustl.edu



Washington University in St. Louis

## Super Bowl ad contest includes WUSTL team

The best student-created ad for Chevy  
will air during the big game Feb. 4

By LIAM OTTEN

Last fall, a team of three University students was among five teams to make the finals of the Chevy Super Bowl College Ad Challenge.

Selected from hundreds of entrants, the team was flown to Detroit and spent days refining its concepts before making a formal presentation to executives from General Motors Corp. and its advertising agency, Campbell-Ewald.

The ad created by the winning team will air Feb. 4 on CBS during Super Bowl XLI — among the most expensive and coveted advertising slots with an audience estimated at 100 million.

The winning team will be announced Feb. 2 during CBS' "Super Bowl's Greatest Commercials 2007" special, when viewers will see behind-the-scenes footage of the competition.

WUSTL's team, known as Chevrolet Team 509, is composed of Hubert Cheung, Shlomo Goltz and Nathan Heigert. Cheung is a senior marketing major in the John M. Olin School of Business. Goltz and Heigert are senior visual communication majors in the Sam Fox School of Design & Visual Art.

"This is a huge honor for the students," said Frank Oros, associate professor of visual communications, who served as adviser to the team. "It's also very smart public relations for General Motors. They are clearly targeting a youth audience, and this is a great way for them to differentiate themselves. The contest creates a perception of GM, and Chevy in particular, as a friendly, approachable company that understands young people. It's really going to help them reach a

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**Surprise!** The University's Sports Hall of Fame Class of 2006 now boasts a 10th member: Director of Athletics John Schael (at lectern). Chancellor Mark S. Wrighton made the surprise announcement near the end of the induction ceremony for nine former student-athletes Jan. 26 in the Charles F. Knight Executive Education Center. Of his 29 years as athletic director, Schael says, "It's been a team effort." The sports portrait in the foreground will hang with those of other inductees in the Hall of Champions in the Athletic Complex. For more information, visit bearsports.wustl.edu.

## Lung disease research aided by grant

By GWEN ERICSON

Physicians say that smoking is by far the biggest cause of emphysema, but why doesn't every smoker get the disease? If you ask that of Michael J. Holtzman, M.D., he might answer that for most cases of emphysema you need a mix of genes, viruses and cigarettes.

To study that mix, Holtzman and his colleagues have obtained funds from the National Heart, Lung, and Blood Institute of the National Institutes of Health totaling \$14.9 million to establish a Specialized Center for Clinically Oriented Research (SCCOR), an

ambitious grant program meant to foster research that quickly can apply basic science findings to clinical problems.

Emphysema and the associated condition of chronic bronchitis contribute to chronic obstructive pulmonary disease (COPD), the fourth leading cause of death in the United States. Research by Holtzman and his School of Medicine colleagues suggests that



Holtzman

someone destined to suffer from COPD may start with a susceptible genetic makeup and then experience a severe viral lung infection in early childhood. The infection could "reprogram" the cells of the lung's air passages and sacs, and the reprogrammed cells could react badly if the same person began smoking cigarettes, leading to COPD.

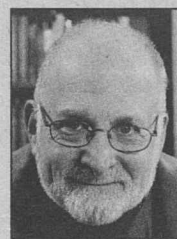
"Cigarette smoking has created a very large population of COPD patients worldwide," said Holtzman, the Selma and Herman Seldin Professor of Medicine, professor of cell biology and physiology and director of the Division

See Grant, Page 6

## Friendship spurs world premiere of Schvey's play

By LIAM OTTEN

In 1973, while a doctoral student at Indiana University, Henry I. Schvey, Ph.D., struck up a friendship with eminent Austrian expressionist painter Oskar Kokoschka (1886-1980). Now chair of the Performing Arts Department (PAD) in Arts & Sciences, Schvey has written an original drama about a notorious incident from Kokoschka's youth: his torrid affair with Alma Mahler, the beautiful widow of composer Gustav Mahler.



Schvey

"Kokoschka: A Love Story" will receive its world premiere at 8 p.m. Feb. 8 in the A.E. Hotchner Studio Theatre. Performances, featuring a student cast, continue at 8 p.m. Feb. 9-10 and at 2 p.m. Feb. 10-11.

"Alma was the great love of Kokoschka's life," said Schvey. The couple met in 1912, a year after Gustav Mahler's death. Though Alma was already famous, and several years older than Kokoschka, she and the young painter quickly became inseparable.

"Kokoschka felt that Alma was almost his female half, his 'Anima,' and that he could not create without her," Schvey said. "He liked to wear her red blouse while working and for a time even signed his name 'Alma

See Play, Page 6

## Robot navigates fire using sensor networks

By TONY FITZPATRICK

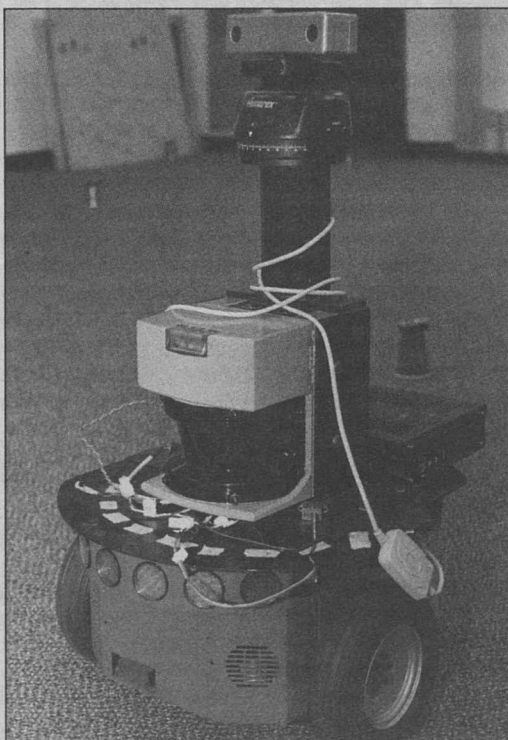
Agent 007 is a mighty versatile fellow, but he takes a backseat to agents being trained at the University. Computer science engineers have succeeded at having a robot spot simulated fire by seeking out heat and safely navigating the robot through the "fire" using wireless sensor networks that employ software agents. Once the agent locates the fire, it clones itself — try that, James Bond — creating a ring of software around the fire. Should the fire spread, the agents clone again to maintain the ring.

The development could allow firefighters to use a personal digital assistant (PDA) to communicate with the agent and determine a fire's location and intensity.

The use of wireless sensor networks is poised to explode in the world of technology, said Gracia-Catalin Roman, Ph.D., the Harold B. and Adelaide G. Welge Professor and chair of computer science & engineering.

Wireless sensor networks are made up of tiny computers that can fit in the palm of a hand. They run on simple AA batteries and sport an antenna and a sensor with the specialized task of sensing the environment — temperature, magnetism, sound and humidity. Agents, in computer lingo, are specialized pieces of code that are

See Robot, Page 6



Aristo, the University's robot, uses sensor networks to avoid simulated fire while navigating near "safe" areas, denoted by plastic cups in the background.

## Grounds for Change facilitates dialogue with a conscience

By JESSICA MARTIN

Students in the George Warren Brown School of Social Work usually spend their days in class or off campus at practicum sites.

Now the social work theory learned in the classroom and the field is being put into practice inside the school itself, through a new project called Grounds for Change (GFC).

Established in September by Lisa Harper Chang and Sarah Hunter, both master of social work students, GFC is a community space on the main level of

Goldfarb Hall.

"During our 'Social Work Practice With Organizations and Communities' class, Sarah and I realized that there really wasn't a space in the school that fostered dialogue between students, staff and faculty," Harper Chang said.

"Using what we learned in class, we proposed GFC as a community building project and received a great amount of support from the administration."

Besides serving as a gathering place, GFC offers coffee and snacks for a donation. All profits

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Chancellor Mark S. Wrighton (right) installs Lihong Wang, Ph.D., as the Gene K. Beare Distinguished Professor of Biomedical Engineering, while Frank Yin, M.D., Ph.D., looks on.

## Wang receives Beare professorship

BY BARBARA REA

**A**t a Nov. 29 ceremony in Uncas A. Whitaker Hall, Lihong Wang became the first Gene K. Beare Distinguished Professor of Biomedical Engineering in the School of Engineering & Applied Science (SEAS). Wang is a leading researcher on new methods of cancer imaging.

"The late Gene Beare was a very generous person, and Washington University is fortunate to be among the many organizations that benefited from his philanthropy," Chancellor Mark S. Wrighton said. "This gift will contribute greatly to advancing the tremendous research and important discoveries taking place in the Department of Biomedical Engineering."

Mary Sansalone, Ph.D., dean of the engineering school, commented at the installation ceremony: "Unfortunately, I did not have the opportunity to meet Gene Beare, but through this professorship and his many friends at Washington University, he will be remembered always for his generous spirit and his commitment to the work we do," she said.

The sentiment was echoed at the installation by Frank Yin, M.D., Ph.D., the Stephen F. and Camilla T. Brauer Professor of Biomedical Engineering and chair of the department: "Gene Beare will always have a presence in our department and be known for his support for the advancement of biomedical research."

Beare passed away in 2005, but the installation was attended by his daughters, Joanne and Gail, the latter presenting a personal reflection of her father.

Despite modest beginnings and a number of setbacks early in life, Beare became a leader in the telephone industry. He earned a bachelor's degree in mechanical engineering from WUSTL in 1937 and a business degree from Harvard University two years later.

A summer job at Southwestern Bell led to an interest in the telephone field, and after graduation from Harvard, he joined Automatic Electric Co., a multinational manufacturer of office equipment, instruments for the independent (non-Bell) industry and military communications equipment.

When Automatic Electric merged with General Telephone Co. in 1959, Beare was chosen to head its Sylvania International component. Two years later, he was promoted to president of Sylvania Electric Products.

Surviving a plane crash, he continued his rise and, in 1969, became executive vice president and director

of General Telephone and Electronics (GTE). In 1972, he came to St. Louis to help lead General Dynamics Corp., from which he retired in 1980.

Throughout his long career, Beare served as a leader in professional associations and served on a number of boards. He has been honored by WUSTL, first in 1981, with an Alumni Achievement Award, and in 2001, with the Dean's Award, both from SEAS. His support for his alma mater includes earlier contributions to Whitaker Hall.

Wang joined the SEAS biomedical engineering faculty last year, after many years at Texas A&M University as a professor of biomedical engineering and electrical engineering.

His research has made seminal gains regarding a variety of forms of tomography, including ultrasound-modulated optical tomography, photoacoustic tomography, thermoacoustic tomography, modeling of light transport in biological tissue and polarization-sensitive optical coherence tomography. His research team created a model of photon transport in scattering media, called the Monte Carlo model, which is widely used.

His work has appeared in more than 120 scholarly journals and he is a frequent speaker at major conferences and symposia. He has received numerous professional awards from the National Institutes of Health (NIH), the National Science Foundation (NSF) and several faculty awards from Texas A&M.

His research on non-ionizing biophotonic imaging has been supported by the NIH, NSF, the U.S. Department of Defense, The Whitaker Foundation and the National Institute of Standards and Technology.

In addition, he chairs the International Biomedical Optics Society, and is a fellow of the American Institute for Medical and Biological Engineering, the Optical Society of America, the Institute of Electrical and Electronics Engineers and the Society of Photo-Optical Instrumentation Engineers.

He serves on a number of editorial boards and has reviewed for more than 30 journals in his field. Furthermore, Wang serves on scientific advisory boards for three corporations.

A native of Guangshui, in Hubei province, China, he earned bachelor's and master's degrees of science from Huazhong University of Science and Technology in 1984 and 1987, respectively. He earned a doctorate in electrical engineering from Rice University in 1992.

Prior to Texas A&M, he conducted research at the University of Texas' MD Anderson Cancer Center.

## Zinner symposium to be hosted by WUSTL Feb. 3-4

BY SUSAN KILLENBERG MCGINN

**S**tudying stars has never been so easy, thanks to the efforts and expertise of Ernst K. Zinner, Ph.D., research professor of physics and of earth and planetary sciences, both in Arts & Sciences.

For the past 30-plus years, Zinner has helped develop and fine-tune increasingly sophisticated instruments that allow researchers to get details about circumstellar and interstellar dust — actual stardust — right in their own labs.

These precision instruments use a measurement technique called secondary ion mass spectrometry (SIMS) to determine the isotopic and elemental composition of microscopic samples, such as interplanetary dust particles and meteorite grains that come from stars.

The early versions of these ion microprobes — dating to the 1970s — can measure grains weighing as little as a millionth of a gram. The latest SIMS — the NanoSIMS — can measure particles 10 times smaller.

To recognize Zinner's contributions to the development of SIMS and its many uses in the earth and space sciences, the departments of Physics and of Earth & Planetary Sciences and the McDonnell Center for the Space Sciences, all in Arts & Sciences, are hosting a scientific symposium Feb. 3-4 in Crow Hall, Room 201.

More than 125 researchers worldwide who use SIMS in various disciplines such as astrophysics, cosmochemistry, material science and geochemistry will participate in the symposium, titled "SIMS in the Space Sciences: The Zinner Impact."

"When I think about the symposium title — 'The Zinner Impact' — it is very satisfying to realize that I have made an impact on my former students and post-docs and colleagues who are today using SIMS in various fields with important results," said Zinner, who is considered a pioneer in the analysis of stellar dust grains found in primitive meteorites.

"While I have a small family," Zinner continued, "I have an extended scientific family. I was at a conference where a young woman from South America came up to me and identified herself as my 'scientific granddaughter' — that's because she had been a student of

one of my former students. I have all kinds of 'grandchildren' out there that I'm not even aware of!"

The symposium will honor Zinner, who has been at WUSTL since earning a doctorate in high-energy physics here in 1972, while also highlighting the current research that has benefited from SIMS applications.

Among those presenting a talk is Donald D. Clayton, Ph.D., professor emeritus in the Department of Physics & Astronomy at Clemson University.

"Ernst developed the SIMS technology to the point that it was able to revolutionize astronomy," Clayton said. "It did so by proving that solid chunks of stars exist in the interstellar matter, some of which were incorporated into the meteorite mixing pot when the solar system formed from interstellar matter 4.6 billion years ago."

"This is the only technique available to astronomers for 'seeing' stars that ended their own lives before our earth was even born," Clayton continued. "Telescopes cannot measure isotopic ratios in long-dead stars. It was long felt impossible to study in our laboratories — as Ernst has done — solid matter that predates the earth. Ernst used SIMS to decode these ancient messages of presolar nucleosynthesis and of the evolution of our Milky Way galaxy. This knowledge has revolutionized astronomy."

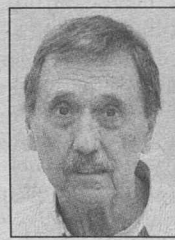
Using an ion microprobe — for which Zinner helped develop methods to measure proportions of specific isotopes — Zinner and his colleagues in the late 1980s and '90s identified three types of interstellar grains — silicon carbide, graphite and aluminum oxide — and two important stellar sources of the grains.

For more than 10 years, Zinner and Frank J. Stadermann, Ph.D., senior research scientist in physics, helped design and test the NanoSIMS, the latest ion microprobe on the scene that can resolve objects one thousand times smaller than the diameter of a human hair.

WUSTL acquired the first NanoSIMS in the world in 2000. Since then, researchers have been making scientific discoveries on it that would have been impossible with earlier technologies, including recently finding the first stardust particle from a comet.

In addition to the symposium, the journal *Meteoritics and Planetary Science* will publish an issue in May dedicated to Zinner.

There is no symposium fee, but registration is required. For more details, call 935-6206 or visit [presolar.wustl.edu/events/zinner2007](http://presolar.wustl.edu/events/zinner2007).



Zinner

## Tuition assistance programs: A generous University offering

**T**uition assistance is among the most generous benefits the University offers.

This benefit is available to faculty and staff, their spouses or domestic partners and their dependent children. Except as noted below, benefits apply only to courses offered by Washington University.

Those who wish to enroll in programs or courses must establish eligibility for tuition benefits through the Danforth Campus Benefits Office.

They also must comply with normal admissions procedures and requirements. Information about requirement and benefit details is available from the Benefits Office.

"In our effort to attract and retain quality faculty and staff, the WU tuition assistance benefit is the most competitive perk in our total benefits program," said Tom Lauman, director of benefits. "It ranks at the very top as compared to major St. Louis corporations and ranks as above av-

erage compared to our peer universities. These benefits provide our employees with an opportunity for personal development and our dependent children with a greater opportunity to receive a college education."

Details of the program are:

### Employee tuition assistance:

Full-time faculty and staff may enroll in undergraduate or graduate courses offered through WUSTL evening programs. Full-time employees who regularly work evening or night shifts may (with verification of that schedule) enroll in courses offered through WUSTL day programs. To be eligible, employees must complete one year of continuous full-time service.

Full-time employees are entitled to fee remission for up to seven credit hours of course work per semester and must achieve a passing grade. Fee remission for eligible undergraduate courses is 100 percent; fee remission for eligible graduate courses is 50 percent.

### Spouse/domestic partner tuition assistance:

Spouses or domestic partners of full-time WUSTL faculty and staff who have completed one year of continuous full-time service are entitled to fee remission of 50 percent for undergraduate courses offered through WUSTL evening programs.

Spouses/domestic partners of full-time WUSTL faculty and staff who have completed five years of continuous full-time service also are entitled to fee remission of 50 percent for WUSTL undergraduate day programs. Under certain circumstances, full-time service at other accredited institutions of higher education may count toward this eligibility requirement.

### Dependent-child tuition assistance:

The University offers education benefits to the financially dependent children of full- and part-time faculty and staff. Both the employee and the dependent student must meet eligibility requirements.

The percentage of tuition remission depends on the school the child attends and the employment status and service history of the employee. Under certain circumstances, full-time service at other accredited institutions of higher education may count toward the eligibility requirement.

For eligible children of full-time faculty and staff who have completed five years of continuous full-time service or the equivalent, the University pays 100 percent of tuition and mandatory academic fees in any WUSTL undergraduate program and tuition and mandatory academic fees at another accredited undergraduate institution not to exceed 50 percent of the then-current WUSTL undergraduate tuition.

For eligible children of part-time faculty and staff who have completed the equivalent of seven years of continuous full-time service, the University pays 50 percent of tuition and mandatory academic fees in any

WUSTL undergraduate program and tuition and mandatory academic fees at another accredited undergraduate institution not to exceed 25 percent of the then-current WUSTL undergraduate tuition.

To seek these tuition benefits, employees must complete a Request for Tuition Assistance form and provide specific documentation, such as birth certificate, marriage certificate, domestic partner affidavit and/or federal income tax return. Obtaining and retaining dependent tuition benefits requires compliance with responsibilities and procedures described in the plan document at [hr.wustl.edu](http://hr.wustl.edu).

Full- and part-time benefits-eligible faculty and staff as of July 1, 2006, receive the dependent-child tuition benefits outlined above.

Full- and part-time faculty and staff hired after that date receive a different schedule of dependent-child tuition benefits described at [hr.wustl.edu](http://hr.wustl.edu).



## School of Medicine Update

# New AIDS treatments research supported by \$10 million grant

By CAROLINE ARBANAS

**T**he AIDS Clinical Trials Unit (ACTU) at the School of Medicine has received a \$10 million grant to find new treatments for AIDS and HIV-related complications, such as dementia, neuropathy and cardiovascular disease.

The seven-year grant is from the National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health (NIH).

"AIDS is no longer an automatic death sentence but often can be managed as a chronic disease," said David B. Clifford, M.D., director of the ACTU and the Melba and Forest Seay Professor of Clinical Neuropharmacology in Neurology. "With current drugs, many HIV patients live for 20 or more years in good health. But standard drugs are not effective in all patients, and many develop complications of their disease. Our focus is on developing better treatments with fewer side effects."

The grant will fund investigations of new therapies for patients recently diagnosed with HIV, as well as treatments for patients who have developed resistance to standard HIV medications. The latter includes clinical trials evaluating drugs called CCR5 blockers, which are designed to work differently from current HIV/AIDS drugs. Rather than fighting HIV inside white blood cells, the new drugs prevent the virus from entering cells by blocking its typical entry route, the CCR5 co-receptor.

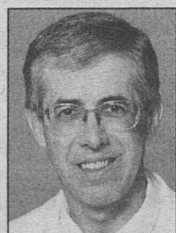
University researchers also will assess new therapies for HIV-related dementia and memory loss. So-called neuroAIDS affects at least one in five people with HIV and has become more common as patients live longer, said Clifford, who also leads the NIH Neurologic AIDS Research Consor-

tium. The virus reaches the brain soon after infection, but few HIV drugs can penetrate the brain to attack the virus. As part of a multi-center trial, the ACTU will evaluate whether certain drugs known to penetrate the blood-brain barrier, including the antibiotic minocycline, can protect brain cells from HIV damage.

An estimated one-third of patients with HIV experience peripheral neuropathy caused by either the virus or by the drugs used to treat it. Symptoms often cause great discomfort and can include burning, stiffness, prickling, tingling or numbness in the toes and soles of the feet. Addressing this problem as a high priority, Clifford's group is engaged in a clinical trial investigating whether the topical application of high-potency capsaicin applied to the feet can control the pain associated with neuropathy. Evidence suggests that capsaicin, found in hot chili peppers, can deaden the nerve endings where the pain originates.

While current HIV therapy typically improves immune function and dramatically reduces the amount of the virus circulating in the blood, in some instances, the patient's immune system never fully recovers from the virus' initial assault. In these cases, levels of CD4 immune cells remain low, leaving patients susceptible to infections, such as pneumonia, and to certain cancers. ACTU researchers are evaluating whether growth factors can stimulate CD4 cells and revive the full function of the immune system.

As patients with HIV live longer, doctors have found that both the disease and its treatment can increase the risk of cardiovascular disease. Researchers have found that levels of HDL (good) cholesterol drop in patients infected with HIV even before treatment begins. Standard HIV drug therapy also has been shown to have adverse effects on levels of lipids and good cholesterol. The new funding will aid research to identify patients at high risk for cardiovascular disease and to find HIV drug combinations that could help reduce that risk.



Clifford



**All smiles** Kaidence Oliver, 22 months, shares a smile with William Chapman, M.D., chief, abdominal transplantation section at Barnes-Jewish Hospital. Kaidence had a liver transplant one year ago at St. Louis Children's Hospital after being diagnosed in utero with an inherited liver disease. When Kaidence came to St. Louis Children's Hospital Jan. 17 for her one-year checkup, she was treated to a party for being the 1,000th liver transplant patient in the University's liver transplant program. With Kaidence are (from left) her mother, Amber Oliver; Ross Shepherd, M.D., director of the liver program at St. Louis Children's Hospital; her father, Matt Oliver; Chapman; and Jeffrey Lowell, M.D., chief, abdominal organ transplantation at St. Louis Children's Hospital and associate director, abdominal organ transplantation at Barnes-Jewish Hospital, who performed the transplant.

## Bone-health monitoring necessary during chemotherapy, researchers say

By GWEN ERICSON

**S**chool of Medicine researchers are recommending increased awareness of bone health during cancer treatments after their laboratory tests on mice showed that a medication often used to reduce toxic side effects of chemotherapy induced bone loss and helped tumors grow in bone.

The medication is a growth factor commonly used to help cancer patients recover healthy blood counts after chemotherapy, which can destroy white blood cells. Low levels of white blood cells leave patients susceptible to infection.

"This growth factor encourages bone breakdown, and any therapy that decreases bone density could potentially enhance tumor growth in bone," said senior author Katherine Weillbaeher, M.D., assistant professor of medicine and of cell biology and physiology. "But there are things that can be done to counteract this. Physicians should carefully monitor their cancer patient's bone health with

regular bone density scans and prescribe medications to prevent bone loss when needed. And patients should consume enough calcium and vitamin D and get sufficient exercise to maintain strong bones."

Weillbaeher and her colleagues found that when they gave mice an eight-day course of the growth factor, called granulocyte colony-stimulating factor (G-CSF), the mice lost bone mass and experienced increased bone-tumor growth when injected with cancer cells. Their study will appear in an upcoming issue of the journal *Blood* and is available online.

G-CSF is known by the trade names Neupogen, Neulasta and Granocyte. Clinical use of G-CSF has recently increased because by speeding blood-cell regrowth, it allows patients to undergo more

intensive chemotherapy regimens in which anticancer agents are given at more frequent intervals. Studies have suggested these dose-dense therapies could prolong survival in women with breast cancer.

"We are not at all advocating ending G-CSF use," said Weillbaeher, an oncologist with Siteman Cancer Center. "G-CSF seems to have significant benefits for some cancer patients."

Although G-CSF had a strong effect on bone metastasis in the experimental mice, early clinical trials in humans using G-CSF with chemotherapy so far have shown no adverse effects on survival and no increase in bone metastasis. In fact, breast-cancer patients undergoing dose-dense chemotherapy with G-CSF support tend to have a longer disease-free period than those getting standard dosing without G-CSF.

"It's possible that women on G-CSF-supported chemotherapy could do even better if we paid more attention to skeletal health," said lead author Angela Hirbe, an M.D./Ph.D. student in Weillbaeher's lab. "Strengthening the skeleton would not only help prevent osteoporosis and fractures but also might give patients a survival advantage."

In the laboratory mice studied, G-CSF increased the number and activity of bone cells called osteoclasts, which resorb bone material as part of the normal process of bone turnover. The resulting loss of bone density created a favorable environment for bone tumor growth.

When the researchers injected melanoma or breast cancer cells into mice, those getting G-CSF developed a two-fold increase in tumor burden, a measure of the size and severity of tumors, compared to those that did not receive G-CSF.

Interestingly, mice treated with a bisphosphonate, an anti-osteoporosis agent that inhibits osteoclasts, were resistant to the effects of G-CSF on bone tumor growth. Weillbaeher is investigating bisphosphonates as a means of preventing tumor metastasis to bone in breast cancer patients.



Weillbaeher

## Potential bioterror threat slowed without key protein

By MICHAEL C. PURDY

**T**he deadly attack of the bacterium that causes pneumonic plague is significantly slowed when it can't make use of a key protein, School of Medicine scientists report in this week's issue of *Science*.

Speed is a primary concern in pneumonic plague, which kills in three to four days and potentially could be used in a terrorist attack. The bacterium that causes plague, *Yersinia pestis*, is vulnerable to antibiotics, but by the time an unusual infection becomes evident, *Yersinia* often has gained an unbeatable upper hand.

"By the time most doctors recognize an infection as plague rather than the flu, it's already too late to begin antibiotic treatment," said senior author William Goldman, Ph.D., professor of molecular microbiology. "That makes pneumonic plague a concern both because of its rare natural outbreaks, one of which began in the Congo in 2005, and because of its potential use as a bioweapon."

*Yersinia* is best known for causing the Black Death in the Middle Ages in Europe, when historians estimate it killed a third or more of the population. Depending on how *Yersinia* is introduced, the versatile pathogen can modify it-

self to infect the lungs (pneumonic plague), the lymph glands (bubonic plague) or the bloodstream and organs (septicemic plague). Bubonic plague was spread by bites from infected fleas; pneumonic plague can spread through droplets of moisture expelled by coughing and sneezing.

With pilot project funding from the NIH-sponsored Midwest Regional Center for Excellence in Biodefense and Emerging Infectious Diseases Research, Wyndham Latham, Ph.D., a post-doctoral fellow in Goldman's laboratory, developed a mouse model of pneumonic plague and showed that it had many similarities to human infection.

In mice, pneumonic plague causes the lungs to fill up with a fluid composed of bacteria, inflammatory cells and other substances. Shortly before infected mice die, the bacteria also begin to appear in the spleen and other organs, spreading there via the bloodstream.

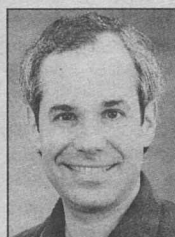
Previous research suggested that pneumonic plague might be spreading in the body in part through use of a protein known as plas-

minogen activator (PLA). The protein is a protease, which degrades other proteins.

Goldman, Latham and colleagues thought PLA might be a tool *Yersinia* uses to break open protective blood clots that form around pockets of infection. This clotting response is believed to be a way the body attempts to limit the spread of infections: Surround a pathogen with blood clots, and it can't reproduce and spread. Scientists speculated that breaking open the clots might be how *Yersinia* opened a path from the lungs into the blood.

When scientists infected mice with *Yersinia* that lacked PLA, though, they found infection ebbing in the lungs but spreading to the spleen. The mice still died, but it took them several days longer to do so. They concluded that the aggressive pneumonia and rapid death of pneumonic plague appears to depend on the activity of PLA.

"Pharmaceutical companies have large libraries of protease inhibitors, so hopefully someone will start the search soon for an inhibitor of PLA that is specific and non-toxic enough to be used as an adjunct treatment," Goldman said. "That might give us enough time to use antibiotics to save patients afflicted with pneumonic plague."



Goldman



# University Events

## Brown bag it with 'Work, Families and Public Policy'

By JESSICA MARTIN

Faculty and graduate students from St. Louis-area universities with an interest in topics relating to labor, households, health care, law and social welfare are invited to take part in a series of Monday brown-bag luncheon seminars to be held biweekly through April 30.

Now in its 11th year, the "Work, Families and Public Policy" series features hourlong presentations on research interests of faculty from local and national universities.

Presentations will be from noon-1 p.m. in Eliot Hall, Room 300, and will be followed by half-hour discussion periods.

The series kicked off Jan. 22 with a presentation by Sebastian Galiani, Ph.D., associate professor of economics in Arts & Sciences, on "Modeling Informality Formally: Households and Firms."

The series' remaining presentations, listed below, are designed to promote interdisciplinary research.

- Feb. 5: Erik Hurst, Ph.D., professor of economics and the Neubauer Family Faculty Fellow at the University of Chicago, will discuss "Conspicuous Consumption and Race."

- Feb. 19: Robert C. Ellickson, the Walter E. Meyer Professor of

## Spring social work lecture series begins Feb. 5

By JESSICA MARTIN

Leading experts in the fields of mental health services, civic service and human behavior are part of the George Warren Brown School of Social Work's spring lecture series.

"The Brown school is committed to presenting the most outstanding scholars and thought leaders in the field of social work and related disciplines," said Barbara E. Levin, the series organizer and co-ordinator of the Alliance for Building Capacity at the social work school.

The first lecture, "Community Engagement in Mental Health Services Research: What Happens to Science and Scientists When Partners Come First?" will be given by Kenneth B. Wells, M.D., professor of psychiatry and biobehavioral sciences at the David Geffen School of Medicine and professor of health services at the University of California, Los Angeles School of Public Health. The talk, set for noon Feb. 5 in Brown Hall Lounge, is

co-sponsored by the Center for Mental Health Services Research at Brown school.

Other talks are:

- Teresa Sepúlveda Matus, Ph.D., co-chair of the graduate studies research division of the Department of Social Work at the Catholic University of Chile, will speak about "Civic Service in an Unequal World: Analyzing Four Paradoxes" at 1:10 p.m. March 5 in Brown Hall Lounge. This lecture is co-sponsored by the Center for Social Development at Brown school and will be in Spanish with English translation.

- Felton Earls, M.D., professor of human behavior and development in the Department of Society, Human Development and Health at the Harvard School of Public Health, will present "Lessons From the Chicago Project" at 4 p.m. April 25 in Room 132 of Goldfarb Hall.

All lectures are free and open to the public. For more information, call Jenny Kraus-Smith at 935-7573.

Professor of Economics at the University of Pennsylvania, will discuss "What Determines Adult Skills? Impacts of Pre-School, School-Years and Post-School Experiences in Guatemala."

Robert A. Pollak, Ph.D., the Hernreich Distinguished Professor of Economics in Arts & Sciences and in the John M. Olin School of Business, has been the lead organizer of the series since its inception.

The co-organizer is Michael W. Sherraden, Ph.D., the Benjamin E. Youngdahl Professor of Social Development and director of the Center for Social Development in the School of Social Work.

The series is sponsored by the business school; the social work school and the Center for Social Development; the Center for Interdisciplinary Studies in the School of Law; the economics department; the Center for Health Policy; and the College of Arts & Sciences.

The classroom is courtesy of the Weidenbaum Center on the Economy, Government and Public Policy in Arts & Sciences.

For more information, visit [olin.wustl.edu/links](http://olin.wustl.edu/links) and click on the "Academic Seminars" dropdown menu on the right side, or contact Pollak (935-4918; [pollak@wustl.edu](mailto:pollak@wustl.edu)) or Sherraden (935-6691; [sherrad@wustl.edu](mailto:sherrad@wustl.edu)).

## Untold Scandal • Aren't Eyes Part of the Body? • Your Cancer Risk

"University Events" lists a portion of the activities taking place Feb. 2-15 at Washington University. Visit the Web for expanded calendars for the Danforth Campus ([calendar.wustl.edu](http://calendar.wustl.edu)) and the School of Medicine ([medschool.wustl.edu/calendars.html](http://medschool.wustl.edu/calendars.html)).

### Exhibits

"Eyes on the Prize: Documenting the Civil Rights Movement." Through Feb. 28. Olin Library Grand Staircase Lobby. 935-5495.

School of Medicine Student, Faculty & Staff Art Show '07. Through Feb. 26. Farrell Learning & Teaching Center, First Floor Atrium. [wattson@msnotes.wustl.edu](mailto:wattson@msnotes.wustl.edu).

"Selections from the Black Film Promotional Materials Collection." Through Feb. 28. Olin Library, Lvl. 1, Ginkgo Reading Rm. 935-5495.

### Saturday, Feb. 3

6-10 p.m. "Parabola." Annual Graduate Student Art Exhibit. Exhibit continues through Feb. 27. Baseline Workshop, Showroom and Gallery, 1110 Washington Ave. [grad.wustl.edu/~gradexhibit/home](http://grad.wustl.edu/~gradexhibit/home).

### Friday, Feb. 9

7-10 p.m. "Reality Bites" Opening Reception. Exhibit continues through April 29. Kemper Art Museum. 935-4523.

### Film

### Friday, Feb. 2

6 & 8:30 p.m. Travel Lecture Film Series. "Hello! Louisiana." Monty & Marsha Brown, dir. Graham Chapel. For costs and information: 935-5212.

7 p.m. Korean Film Festival: The Varied Colors of Korean Cinema. "Untold Scandal (2003)." E J-Yong, dir. Brown Hall, Rm. 100. 935-4448.

### Friday, Feb. 9

7 p.m. Korean Film Festival: The Varied Colors of Korean Cinema. "Spring in My Hometown (1998)." Lee Kwangmo, dir. Brown Hall, Rm. 100. 935-4448.

### Lectures

### Friday, Feb. 2

Noon. Cell Biology & Physiology Seminar. "Sugar Shock: A Metabolic Sensor Governing Cell Size." Petra Levin, asst. prof. of biology. McDonnell Medical Sciences Bldg., Rm. 426. 362-7437.

6:30 p.m. Performing Arts Lecture. "Kokoshka: Painter and Playwright." Henry Schvey, prof. of drama and chair of per-

forming arts. Kemper Art Museum, Rm. 103. 935-7918.

### Saturday, Feb. 3

11 a.m. MLA Saturday Seminar Series. "Environmental Education and Research at Washington University." Pratim Biswas, Stifel and Quinette Jens Professor of Energy, Environmental & Chemical Engineering. McDonnell Hall, Goldfarb Aud. 935-6700.

### Monday, Feb. 5

8 a.m.-5 p.m. St. Louis STD/HIV Prevention Training Center Course. "STD Intensive." (Continues 8 a.m.-5 p.m. Feb. 6 & 7.) Cost: \$125. For location and to-register: 747-1522.

Noon. Midwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research Guest Lecture. "Do Health-care Workers Have a Duty to Care for Infectious Patients?" Lauris Kaldjian, dir., biomedical ethics & medical humanities, U. of Iowa. Clopton Aud., 4950 Children's Place. 286-0432.

2 p.m. Women & Gender Studies Lecture. "Vernacular Sociology and the Sexy Modern Girl Advertising Icon in Chinese Advertising Culture During the Inter-war Years." Tani Barlow, prof. of history and of women studies, U. of Wash. Duncker Hall, Rm. 201, Hurst Lounge. 935-5102.

3 p.m. Neuro-oncology Research Group Seminar Series. "Modeling Human Brain Tumors in Mice." David Gutmann, Donald O. Schnuck Family Professor of Neurology. McDonnell Medical Sciences Bldg., Rm. 928. 454-8981.

4 p.m. Immunology Research Seminar Series. "Unique Regulatory Proteins of HIV-1 & -2." Lee Ratner, prof. of medicine. Farrell Learning & Teaching Center, Connor Aud. 362-2763.

5:30 p.m. Cardiac Bioelectricity & Arrhythmia Center Seminar Series. "Substrate-based Approaches for the Ablation of Post-infarction Ventricular Tachycardia." David Wilber, Eisenberg Professor of Cardiovascular Sciences, Loyola U. Chicago. (5 p.m. reception.) Whitaker Hall, Rm. 218. 935-7887.

### Tuesday, Feb. 6

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Probing Bacterial Toxin Transport Pathways Using Genetics and Chemical Genetics." David Haslam, assoc. prof. of pediatrics and of molecular microbiology. Cori Aud., 4565 McKinley Ave. 362-3692.

4:15 p.m. Earth & Planetary Sciences Colloquium. "Tracing Biological Magnetism in Sediments." Robert Kopp, div. of geological & planetary sciences, Calif. Inst. of Technology. Earth & Planetary Sciences Bldg., Rm. 203. 935-5610.

5:30 p.m. Biochemistry & Molecular Biophysics Biophysical Evenings Seminar. "Diffusion-sensitive Magnetic Resonance in Vivo: Many Questions? Some Answers." Joseph Ackerman, prof. and

chair of chemistry. Cori Aud., 4565 McKinley Ave. 362-4152.

### Wednesday, Feb. 7

4 p.m. Division of Biology & Biomedical Sciences "Frontiers in Human Pathobiology" Lecture Series. Daniel Link, assoc. prof. of medicine. Farrell Learning & Teaching Center, Holden Aud. 362-4806.

4 p.m. Physics & Center for Materials Innovation Joint Colloquium. "Nuclear Spin Dynamics in Solids: Implications of Microscopic Chaos." Boris Fine, postdoctoral research assoc., dept. of physics and astronomy, U. of Tenn. (3:30 p.m. Coffee, Compton Hall, Rm. 245.) Crow Hall, Rm. 204. 935-6276.

### Thursday, Feb. 8

Noon. Genetics Seminar Series. "Mining Genomic 'Junk': Technology for Intronic Studies of RNA Processing." Jay Hesselberth, postdoctoral fellow, dept. of genome sciences, U. of Wash. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

3 p.m. Siteman Cancer Center Basic Science Seminar Series. Gerard Evan, Gerson and Barbara Bass Bakar Distinguished Professor of Cancer Research, U. of Calif., San Francisco. Eric P. Newman Education Center. 454-7029.

4 p.m. Ophthalmology & Visual Sciences Seminar. "Aren't Eyes Part of the Body? The Apparent Disjoint Between Health and Visual Health — Evidence Using Preference Based Measures of Quality of Life." Steven Kymes, research asst. prof. of ophthalmology & visual sciences. Maternity Bldg., Rm. 725. 362-3315.

### Friday, Feb. 9

11 a.m. Energy, Environmental and Chemical Engineering Seminar. "Fire, Fractals and Physics." Chris Sorensen, distinguished prof. of physics, Kan. State U. Lopata Hall, Rm. 101. 935-5548.

Noon. Cell Biology & Physiology Seminar. "A Genomic Network for Preserving Genome Stability in Yeast." Judith Campbell, prof. of chemistry & biology, Calif. Inst. of Technology. McDonnell Medical Sciences Bldg., Rm. 426. 362-7437.

2 p.m. Energy, Environmental and Chemical Engineering Seminar. Julia W. P. Hsu, Sandia National Laboratories, N.M. Cupples II Hall, Rm. 217. 935-5548.

3 p.m. Comparative Literature Lecture. Matheson Lecture. "Papers on Technique: The Future of Theory in Comparative Literature." Emily Apter, prof. of French, N.Y.U. Women's Bldg. Formal Lounge. 935-5170.

3 p.m. Joint Center for East Asian Studies Colloquium. "Peripheral Vision: New Studies on East Asian Borderlands." (Reception follows.) McMillan Hall Café. For information or to register: 935-4448.

6:30 p.m. Hematology & Oncology Case Discussion. "Case Discussions in Breast Cancer." The Ritz-Carlton, St. Louis, 100

Carondelet Plaza. To register: 362-6891.

### Saturday, Feb. 10

8 a.m.-3:45 p.m. Hematology & Oncology CME Course. "Highlights of the 2006 San Antonio Breast Cancer Symposium." Cost: \$65. The Ritz-Carlton, St. Louis, 100 Carondelet Plaza. To register: 362-6891.

11 a.m. MLA Saturday Seminar Series. "Changes in River Management Policies." William Lowry, prof. of political science. McDonnell Hall, Goldfarb Aud. 935-6700.

### Monday, Feb. 12

2:30 p.m. Energy, Environmental and Chemical Engineering Seminar. "Your Cancer Risk: Integrating Epidemiology, Behavior Change and Risk Communication." Graham Colditz, Niess-Gain Professor in Medicine. Lopata Hall, Rm. 101. 935-5548.

4 p.m. Immunology Research Seminar Series. "Dendritic Cells in the Periphery and Their Migration to Lymph Nodes." Gwendalyn Randolph, assoc. prof. of gene & cell medicine, Mt. Sinai School of Medicine. Farrell Learning & Teaching Center, Holden Aud. 362-2763.

5:30 p.m. Cardiac Bioelectricity & Arrhythmia Center Seminar. Craig January, prof. of medicine & physiology, U. of Wisc. (5 p.m. reception.) Whitaker Hall, Rm. 218. 935-7887.

### Tuesday, Feb. 13

Noon. Program in Physical Therapy Research Seminar. "Whole-body and Myocardial Substrate Metabolism in HIV-metabolic Syndrome." W. Todd Cade, instructor in physical therapy. 4444 Forest Park Blvd., Lower Lvl., Rm. B108. 286-1404.

### Wednesday, Feb. 14

Noon. Mallinckrodt Inst. of Radiology Lecture. Annual Hyman R. Senturia Lecture. "How to Perform and Interpret MR Cine Sleep Studies for Obstructive Sleep Apnea in Children." Lane Donnelly, prof. of radiology and of pediatrics, Cincinnati Children's Hospital. Scarpellino Aud., 510 S. Kingshighway Blvd. 362-2866.

4 p.m. Division of Biology & Biomedical Sciences "Frontiers in Human Pathobiology" Lecture Series. "The Promise of Nanotechnology in Medicine." Karen Wooley, James S. McDonnell Distinguished Professor of Chemistry in Arts & Sciences. Farrell Learning & Teaching Center, Holden Aud. 362-4806.

5:30 p.m. Kemper Art Museum Gallery Talk. Meredith Malone, curatorial intern. Kemper Art Museum, Rm. 104. 935-4523.

### Music

### Thursday, Feb. 8

8 p.m. Jazz at Holmes. Dave Black Trio.

Ridgley Hall, Holmes Lounge. 935-4841.

### Thursday, Feb. 15

8 p.m. Jazz at Holmes. William Lenihan, guitar. Ridgley Hall, Holmes Lounge. 935-4841.

## On stage

### Thursday, Feb. 8

8 p.m. Performing Arts Dept. Presentation. "Kokoshka: A Love Story" by Henry I. Schvey. William Whitaker, dir. (Also 8 p.m. Feb. 9 & 10; 2 p.m. Feb. 10 & 11.) Cost: \$15, \$9 for students, children, seniors, WUSTL faculty & staff. Mallinckrodt Student Center, A.E. Hotchner Studio Theatre. 935-6543.

## Sports

### Friday, Feb. 9

6 p.m. Women's basketball vs. Emory U. Athletic Complex. 935-4705.

### Sunday, Feb. 11

Noon. Men's basketball vs. Case Western Reserve U. Athletic Complex. 935-4705.

2 p.m. Women's basketball vs. Case Western Reserve U. Athletic Complex. 935-4705.

## And more

### Saturday, Feb. 3

11:30 a.m. Domestic Violence "Teach-in." Urso's Fireside. For information and schedule: 935-7576.

1 p.m. Art and Activism Panel Discussion. Urso's Fireside. For information and schedule: 935-7576.

### Friday, Feb. 9

4 p.m. Artists' Panel Discussion. In conjunction with the opening of "Reality Bites." Rudolf Herz, Christian Jankowski, Via Lewandowsky and Beate Gütschow, artists; and Sabine Eckmann, Dierich Diederichsen and Lutz Koepnick, critics. Kemper Art Museum. 935-4523.

### Sunday, Feb. 11

2 p.m. Book Discussion. "Fahrenheit 451." Part of The Big Read. (Also 2 p.m. Feb. 18.) Kemper Art Museum. 935-4407.

### Tuesday, Feb. 13

5:30-8:30 p.m. Health Fair. Hosted by the Program in Physical Therapy. Wohl Student Center, Friedman Lounge. 495-0504.





**Driving efficiency** Eric Kaufman (left), a General Motors Corp. Energy Center engineer from Detroit, and Pratim Biswas, Ph.D. (wearing tie), the Stifel and Quinette Jens Professor and chair of the Department of Energy, Environmental & Chemical Engineering, discuss fuel efficiency and bioenergy Jan. 25 with a group gathered outside Whitaker Hall, where three fuel-efficient GM vehicles were on display. Earlier in Whitaker Hall auditorium, Biswas outlined the new department he chairs and its vision on energy and environment. Kaufman explained GM's thrust in fuel-efficient technologies, stressing the need to reduce reliance on fossil fuels.

## Environment is Saturday Seminar series focus

By ANDY CLENDENNEN

Arctic ice shelves are breaking away; spring is coming sooner as evidenced by earlier thaw dates for rivers and lakes and earlier dates for plant blooming and leafing; and the global sea level has risen 4 inches to 10 inches over the past 100 years.

Clearly, the environment is, or should be, near the forefront of everyone's concerns and efforts to preserve what remains.

The MLA Saturday Seminar series, sponsored by the Master of Liberal Arts program and University College in Arts & Sciences, will examine recent developments in one of the most compelling and complex of subjects — the environment.

Lectures will take place from 11 a.m.-12:30 p.m. every Saturday in February in McDonnell Hall, Goldfarb Auditorium. The lectures are free to the public and no registration is required.

"Environmental issues are of course on everyone's mind these days: not only the warm and/or strange weather experienced in recent years in the United States and Europe, and the growing consensus on global warming and its dangers, but also the growing industrialization and modernization of other economies," said Robert E. Wiltenburg, Ph.D., dean of University College.

"What we hope people will take away from this series is a sense of the range of the issues, questions, problems, opportunities and choices involved: not just industrial pollution and its consequences and remedies, but the interconnectedness of questions of esthetic and moral or spiritual values with political choices, technical advances in agriculture, water treatment, etc."

Wiltenburg continued: "The MLA program was founded to explore the richness and complexity of all the most interesting questions — of which our relation to

nature and the environment is one of the great perennials."

The series schedule is as follows:

- Feb. 3: "Environmental Education and Research at Washington University," Pratim Biswas, Ph.D., the Stifel and Quinette Jens Professor and chair of the Department of Energy, Environmental & Chemical Engineering
- Feb. 10: "Changes in River Management Policies," William R. Lowry, Ph.D., professor of political science in Arts & Sciences
- Feb. 17: "Agriculture and Conservation," Barbara A. Schaal, Ph.D., the Spencer T. Olin Professor of Biology in Arts & Sciences and of genetics in the School of Medicine
- Feb. 24: "Respect for Nature," J. Claude Evans, Ph.D., associate professor of philosophy in Arts & Sciences

For more information, go online to [ucollege.wustl.edu/freetlect\\_mlalectu.php](http://ucollege.wustl.edu/freetlect_mlalectu.php).

## Harvard physicist unravels a multi-dimensional universe

By MARY KASTENS

Lisa Randall's intuitive approach to physics and accessible writing style have brought her critical acclaim and attracted widespread popular interest in the complex field of theoretical physics.

She presents her theory on the geometry of space, extra dimensions and gravity in her book, "Warped Passages: Unraveling the Mysteries of the Universe's Hidden Dimensions," which is also the title of her talk.

Randall will deliver the William C. Ferguson Science Lecture at 11 a.m. Feb. 7 in Graham Chapel as part of the Assembly Series.

Einstein introduced us to the strangeness of our world with his general theory of relativity. But Einstein's theory about matter, space, gravity and time seems incompatible with the theory of quantum mechanics, which governs the microworld of quarks and leptons. Physicists have been searching for ways to make a happy marriage between the two.

In 1999, Randall and Raman Sundrum of Johns Hopkins University co-authored what many consider two of the most important scientific papers on extra spatial dimensions, explaining how our visible world of four dimensions could be embedded in a higher-dimensional universe.

Randall's work has influenced advocates of string theory, and technology may be coming closer to verifying string theory and Randall's theory.

When the new Large Hadron Collider in Geneva begins operations next year, it may have enough energy to produce particles that travel in or through an extra dimension, or even produce microscopic black holes. Evidence of extra dimensions could signal a new era in physics.

Randall earned bachelor's (1983) and doctoral (1987) degrees in physics from Harvard University and held professorships at the Massachusetts Institute of Technology and Princeton University before returning to Harvard as a professor of physics in 2001.

"Warped Passages" was included in The New York Times' 100 notable books of 2005, and in 2006, Newsweek called Randall one of the most prominent theoretical physicists of her generation.

In 2004, she was the most cited theoretical physicist of the previous five years.

She is a member of the American Academy of Arts & Sciences and a fellow of the American Physical Society, and has published articles in numerous publications including New Scientist, The New York Times, Nature and Science.

The event is free and open to the public. For more information, call 935-4620 or visit [assemblyseries.wustl.edu](http://assemblyseries.wustl.edu).

## Chief Justice Roberts to judge law's moot court competition

John G. Roberts Jr., chief justice of the United States, will head the prestigious panel of judges presiding over the finals of the School of Law's Wiley Rutledge Moot Court Competition. The competition will take place Feb. 6 in the Bryan Cave Moot Courtroom of Anheuser-Busch Hall.

The other four members of the panel are Karen Nelson Moore, judge on the 6th U.S. Circuit Court of Appeals; law school alumna Catherine D. Perry, judge on the U.S. District Court, Eastern District of Missouri; David R. Herndon, judge on the U.S. District Court, Southern District of Illinois; and Richard J. Lazarus, professor at the Georgetown University Law Center.

Two student teams will present oral arguments in the final round of the 140th annual intramural law school competition. The teams were selected during last fall's preliminary rounds in which nearly 100 second- and third-year students participated. On Feb. 6, third-year students James Frazier and Daniel Rhoads will compete against second-year students Samir Kaushik and Renee Waters.

The problem for the competition is fictitious and was adapted from a New York University School of Law moot court casebook. Based on characters from the 2004 movie, "Win a Date

With Tad Hamilton," it focuses on the criminal appeal of a contest winner's boyfriend who allegedly threatened a celebrity.

The competition finals are closed to the public. Limited seating will be provided for the WUSTL community to view a simulcast of the student arguments. Space in the overflow rooms in Anheuser-Busch Hall will be available on a first-come, first-served basis.

The arguments begin at 3:30 p.m. Announcements of several specialty awards and the winners of the competition finals will be at 4:45 p.m.

In addition to judging the finals, Roberts will teach a constitutional law class to WUSTL and Saint Louis University law students.

Each year, the Rutledge moot court competition board invites respected jurists to judge its final round. The last time a Supreme Court justice participated was in 1998, when Antonin Scalia was a member of the panel.

Law school alumnus Kevin Lipson was instrumental in helping to arrange Roberts' visit to the law school for this year's competition.

Begun in 1867, the competition later was named in honor of Justice Wiley B. Rutledge Jr., who served on the U.S. Supreme Court after a five-year tenure as dean of the law school.

## Religious pluralism lecture series sponsored by University's PPRI

By ANDY CLENDENNEN

Religion and politics have been around for nearly as long as the world itself. And at various times in various societies, one has had a profound influence on the other.

But how do they, or should they, co-exist in today's world? In an effort to examine and discuss the issues surrounding this topic, the University's Pluralism, Politics and Religious Initiative (PPRI) is sponsoring a lecture series titled "Re-examining Pluralism in Religious Traditions."

"Over the past few years and across North America and Europe, we have been debating and arguing over what role religious arguments ought to play in public life," said John Bowen, Ph.D., the Dunbar-Van Cleve Professor in Arts & Sciences, who directs the PPRI. "Is religion inimical to reasoned debate in pluralistic societies? Or can religions provide ethical beginnings for healthy public encounters over policy issues? To what extent do different religious traditions welcome or tolerate diversity in their own beliefs?"

"We have invited three distinguished scholars of religious traditions, in Asia, Europe and North America, to present their insights on these issues."

The lectures will take place at 4:30 p.m. Feb. 5 and April 2 in Hurst Lounge in Duncker Hall and March 5 in Eliot Hall, Room 200F. The lectures are free and open to the public.

On Feb. 5, Richard Madsen will speak on "Three Forms of Ethical Pluralism: Existential, Cultural and Civilizational."

Madsen is professor of sociology and director of the Council on East Asian Studies at the University of California, San Diego. He has written extensively on Chinese culture, American culture and international relations, including the collective 1985 book (with Robert Bellah, William Sullivan, Ann Swidler and Steven Tipton) "Habits of the Heart: Individualism and Commitment in American Life," winner of a Los Angeles Times Book Award and jury-nominated for the Pulitzer Prize.

On March 5, Ananda Abeysekara will give the talk "The Future of Pluralism: Un-inheriting our 'Democratic' Heritage."

Abeysekara is associate professor of religious studies at Virginia Polytechnic Institute. His research and teaching focuses on trying to fashion a new relation between secularism, postcolonial religion and postsecular futures, particularly in South Asia. His books include "Mourning Democratic Futures: Religion, Modernity and Postsecular Politics" (2007) and "Colors of the Robe: Religion, Identity and Difference" (2002), winner of the 2003 American Academy of Religion Award for "Best First Book in the History of Religions."

The April 2 talk is called: "Godless? Liberalism and Religion: A Reply to Leo Strauss, Jacques Maritain and Ann Coulter," and will be presented by Paul Sigmund of Princeton University.

Sigmund is professor of politics at Princeton and specializes in political theory and Latin American politics. He is author of "Liberation Theology at the Crossroads: Democracy or Revolution?" editor of "Religious Freedom and Evangelization in Latin America: The Challenge of Religious Pluralism" and translator of "Nicholas of Cusa: The Catholic Concordance."

For more information, call 935-7186, visit [artsci.wustl.edu/~ppri](http://artsci.wustl.edu/~ppri) or e-mail [ppri@wustl.edu](mailto:ppri@wustl.edu).

## Sports

### Men's hoops extends win streak to 13

The No. 10 men's basketball team ended regulation on a 6-0 run to force overtime before defeating No. 24 New York University, 79-78, Jan. 28 at the Field House.

On Jan. 26, the Bears (16-1, 7-0 UAA) picked up a hard-fought, 68-64, win against Brandeis University.

### Women's basketball upends Brandeis

The women's basketball team (14-4, 6-1 UAA) upended No. 17 Brandeis, 69-50, Jan. 26. Senior Rebecca Parker finished with 13 points and 11 rebounds.

On Jan. 28, the Bears defeated No. 12 New York, 78-71, behind senior Sarah Schell's career-high 32 points.

### Track and field wins Rose-Hulman invite

The men's and women's track and field teams won the Rose-Hulman Engineer Invitational Jan. 27 in Terre Haute, Ind.

The men continued to make strides in the sprints with faster times in the 55-meter dash, the 200 meters, 400 meters and 4x400-meter relay.



## Supplier Diversity Initiative fine-tunes its focus

By Andy Clendenen

One should never rest on one's laurels, regardless of the endeavor.

And so it goes for the Supplier Diversity Initiative (SDI) at the University. Despite posting impressive numbers once again — numbers that have surpassed all previous year's totals — the SDI is refocusing and has changed its mission statement.

The new emphasis is to maximize the use of minority-owned businesses within the University's supply chains and to foster the creation of sustainable jobs for minorities within the St. Louis metropolitan area.

"As a consultant to the University's strategic business units, I focus on the underrepresented groups when looking at our supplier base and meaningful supplier relationships," said Sandra Marks, SDI director.

"Our spending with businesses owned by ethnic minorities, in particular African-American-owned businesses in this region, has been stagnant for the past few years for various reasons," Marks added. "By fine-tuning our mission, we shed light on the need to foster the creation and development of these businesses to help build the communities around us."

This refocusing comes after the fiscal year 2006 numbers were crunched, numbers that show the University spending more than \$25 million with Women Business Enterprises, an all-time high since the SDI started in 1999.

Those same numbers show that approximately \$11 million went to Minority Business Enterprises.

Overall, in FY '06 the University spent \$136.9 million on construction, of which 21.1 percent went to Minority and Women Business Enterprises (MWBE) firms. Non-construction expenditures totaled \$405.9 million, for a total of \$541.7 million spent.

Of that, 6.7 percent went directly to MWBEs, the highest percentage since the start of the diversity initiative and nearly a full percentage point higher than in FY '05.

"The higher percentage over last year is an indi-

cation of the continued and increased utilization of minority and woman owned contractors as well as substantial preferred supplier relationships in key non-construction areas.

"Although we see improvement, we continue to challenge ourselves to tap into our heavy spending categories for more opportunities to do business with local minority-owned firms."

In addition to rewording the mission statement, the SDI has other plans to help improve its standing among MWBE programs in St. Louis.

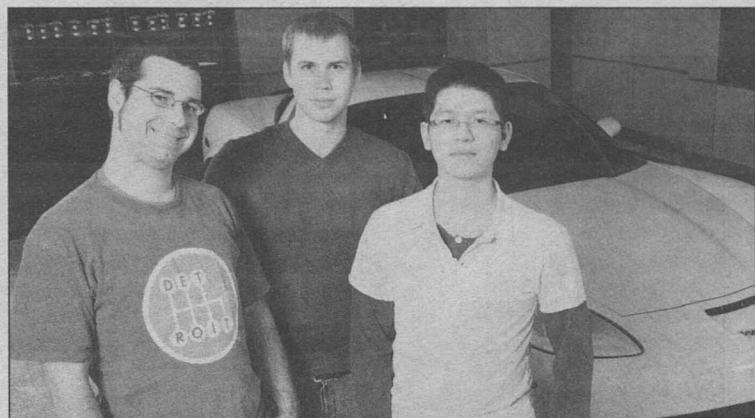
One is continued use of minority general and specialty contractors as first-tier suppliers and joint-venture partners (such as Interface Construction Corp., Clayco/Legacy JV and BRK Electrical Contractors).

Another is greater second-tier use of firms in the pre-qualified pool of minority sub-contractors, in fields including electrical, mechanical, painting, plumbing, masonry, millwork, carpentry, excavation, hauling and concrete.

"It's important to keep quantitative data in perspective and not lose sight of the bigger picture and our overall mission," Marks said. "Our numbers are impressive, but we know this region needs to continue to improve the economic base of minority businesses and create sustainable jobs for minorities."

"As just one of several consumers and employers in this region, we are committed to staying on course and challenging our own internal policies and procedures to ensure our program remains effective and produces positive outcomes," Marks said.

Other strategies call for greater use of minority workers throughout a project's duration by prime and specialty contractors; implementation of an on-going Apprenticeship Utilization Plan with increased recruiting, hiring and retention of new minority entrants into the corresponding unions; and greater opportunities for existing and future minority suppliers to participate in supplying the University's non-construction core products and services, including lab/medical supplies, printing and binding, computer supplies, office products and industrial supplies.



Chevrolet Team 509 is composed of WUSTL students (from left) Shlomo Goltz, Nathan Heigert and Hubert Cheung.

## Super ad

— from Page 1

prime audience."

The four other final teams came from Elon University in North Carolina, Savannah College of Art and Design, San Jose State University and the University of Wisconsin-Milwaukee.

"We received submissions from across the country and greatly appreciate the creative ideas that students shared with us," said Ed Peper, general manager of Chevrolet. "These submissions represent the ideas that were most creative and that showed the best understanding of the Chevy brand."

In Detroit, the finalists spent a hectic weekend being filmed by CBS camera crews as they honed ideas, created storyboards and prepared to make presentations that Monday morning.

"Every waking moment we were wired for sound," Oros said. "The students' grace under pressure was awesome. Through constant briefings, public relations events, automobile test drives, grueling all-night brainstorming and creative production sessions — and an anxious final presentation at GM headquarters — they

performed like experienced, battle-tested professionals."

Chevy has begun posting rough animations of some proposed ads (though not yet the finalists) on YouTube.com and the official site for the challenge, ChevyCollegeAd.com.

Other "Webisodes" feature interviews in which students discuss a range of topics, from the key elements of their proposals and the biggest challenge in creating a Super Bowl ad to whether Chevy has taken a risk in launching the competition.

A series of eight online Webisodes about the finalists' weekend in Detroit airs Jan. 22-Feb. 2 at CBS.com/chevy.

"I think Chevy understands the concept of being adaptive and learning from their consumer base," Goltz recently explained on the ChevyCollegeAd.com blog. "The risk would be to ignore the trends in culture that are empowering the individual to become better informed and have their word heard."

"I see there being a general movement in advertising towards content influenced by social networking Web sites," Goltz pointed out. "The Internet has broken down the barriers between consumer and producer and allowed us normal people to be both at the same time."

Schvey met him.

Schvey first contacted Kokoschka while researching the painter's early forays into playwriting. "Kokoschka's plays are historically important because they're the first examples of German Expressionism in theater," Schvey said. "He was very, very rebellious and basically made it up as he went along. His apocalyptic one-act 'Murderer Hope of Women' caused a huge scandal when it was first performed, with fistfights breaking out in the audience."

Schvey eventually wrote the 1982 book "Oskar Kokoschka: The Painter as Playwright" and translated one of Kokoschka's major poems, "The Dreaming Youths," the first example of stream-of-consciousness technique in German. Schvey continued to visit the artist in Switzerland while teaching at Leiden University in the Netherlands. During one trip, Kokoschka gave him a portfolio of 13 lithographs illustrating his anti-fascist play "Comenius."

Perhaps surprisingly, Schvey found the artist and his wife, Olda, more than willing to discuss his extraordinary relationship with Mahler. Olda even showed him photographs of the doll.

"I was a little reticent to raise the subject," Schvey said. "But I think Kokoschka felt I understood his work, and even in his late '80s, those years with Alma remained very much in the present tense for him. Alma was the great love of his life. He never got over her."

Tickets are \$15; \$9 for students, seniors, and faculty and staff. For more information, call 935-6543.

In addition, Schvey will lecture on "Kokoschka: Painter and Playwright" at 6:30 p.m. Feb. 2 in the Kemper Art Museum, Room 103. The talk will explore the intersection between visual arts and drama. For more information, call 935-4523 or visit kemperartmuseum.wustl.edu.

## Robot

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self-contained and mobile.

Roman, along with Chenyang Lu, Ph.D., assistant professor in computer science & engineering, and graduate research assistant Chien-Liang Fok developed a new software architecture targeted to the sensor network environment. The middleware — a special kind of software — called Agilla enables agents to move across the sensor network and between sensor networks connected via the Internet and to clone themselves, forming complex communities of cooperating agents.

This novel approach to the development of sensor network applications offers an unprecedented level of flexibility. In the fire-simulation study, the network al-

lowed both simulating fire and tracking it. The approach also permits multiple applications to co-exist over the same basic hardware.

Agilla is considered a major breakthrough in the field of wireless sensor networks and lays the foundation for rapidly developing applications.

"What researchers are banking on is that sensor networks will be so cheap to make that they can be employed on a very large scale," said Roman, who directs the Mobile Computing Laboratory. "This way you can spread hundreds and thousands of them around gathering data and communicating."

The development has other applications. Imagine a farmer wanting to get soil data, such as pH levels, on hundreds of acres of varying soil. Rather than taking painstakingly physical measurements, he could, in theory, send a software agent with pH-sensing capabilities to a particular sensor

network, have the pH agent clone itself and gather the data from hundreds of acres, then transfer itself onto another sensor network on the Internet and send the data to the farmer's computer.

Similarly, a manufacturer who wants to safeguard warehoused items could use a sensor network that emits an alarm when light or vibration is sensed. The manufacturer could communicate with the network via a PDA.

"This is fascinating software, and this technology is opening up, and we have no idea where it's going to go," Roman said. "Right now, wireless sensor networks are allowing us to explore the future."

To watch a video of the robot in action, visit [news-info.wustl.edu/tips/page/normal/8048.html](http://news-info.wustl.edu/tips/page/normal/8048.html).

both issues.

"A key project, led by Richard Pierce [Ph.D., research associate professor of medicine and of cell biology and physiology] examines the structural defects found in COPD and correlates them to changes at the molecular level," Holtzman said.

Researchers will use newly developed imaging techniques, such as helium MRI, to look at the tissue of lungs removed from COPD patients undergoing lung transplants and home in on the tiny lung structures that are injured. "Then, if we find that a particular gene is overactive at a site where the disease is particularly severe, we'll analyze the normal and abnormal function of that specific gene," Holtzman said.

A defining characteristic of COPD is the breakdown of elastin, a stretchy fibrous protein that gives the lung its elastic properties. Damage to elastin prevents air sacs from deflating properly.

Holtzman's colleague Zsolt Urban, Ph.D., assistant professor of pediatrics and of genetics, has identified a mutant gene responsible for abnormal elastin in humans and has teamed with Robert P. Mecham, Ph.D., who has engineered mice that carry the mutant elastin gene. These mice and oth-

ers with different variants of the elastin gene will enable the researchers to probe the malfunctions associated with abnormal elastin genetics in the lungs. Mecham is the Alumni Endowed Professor of Cell Biology and Physiology and professor of internal medicine, of pediatrics and of biomedical engineering.

The fibrous protein collagen supports the lung's structure, and both elastin and collagen can be affected if protein-digesting enzymes in the lungs aren't tightly controlled by their normal inhibitors. Robert M. Senior, M.D., the Dorothy R. and Hubert C. Moog Professor of Pulmonary Diseases in Medicine and professor of cell biology and physiology, and colleagues are studying the imbalance that occurs in emphysema between the protein-digesting enzymes (proteases) and their inhibitors (antiproteases).

A fourth project area, led by Holtzman, addresses why COPD patients overproduce mucus in their airways. Earlier work suggested that a viral infection triggers a population boom in the mucus-producing cells of the airway.

All projects under the grant include both experimental models and patient studies, Holtzman said.

## Grant

— from Page 1

of Pulmonary and Critical Care Medicine. "At present, we can treat them with steroids to reduce inflammation, antibiotics to suppress infections and oxygen to help their breathlessness, but the disease will still progress until it's fatal. We need to find treatments that stop the disease progression, and to do that we need a much better understanding of how COPD develops."

Holtzman's SCCOR program will take a comprehensive look at the molecular changes that occur as lungs become crippled by COPD — a disease that affects at least 16 million people in the United States.

Lungs have a tree-like structure of intricately branching airways ending in tiny sacs or alveoli, which exchange gases between the blood and the air. In chronic bronchitis, airways overproduce mucus and become inflamed, obstructing airflow. In emphysema, alveoli are destroyed so they can no longer take up oxygen from the air. COPD patients can have both problems at once, and Holtzman and his colleagues are studying



## Notables



**Burning to read** David A. Lawton, Ph.D., professor and chair of English in Arts & Sciences, delivers the first Assembly Series lecture of the spring, titled "Burning to Read." The lecture was held Jan. 24 in Graham Chapel and also served to kick off The Big Read program, spearheaded locally by the University. The National Endowment for the Arts-supported initiative is a national program designed to encourage literary reading by helping communities come together to read and discuss a single book. The University chose Ray Bradbury's science-fiction classic "Fahrenheit 451." For more information on The Big Read and events, visit [bigread.wustl.edu](http://bigread.wustl.edu).

## Rosa Parks meritorious service award goes to Danforth, McLeod

By ANDY CLENDENNEN

Last year, the University's Martin Luther King Jr. Commemoration Committee established the Rosa L. Parks Award for Meritorious Service to the Community.

Margaret Bush Wilson received the inaugural award, and this year, two more recipients were recognized in a Jan. 15 ceremony in Graham Chapel.

Chancellor Emeritus William H. Danforth and James E. McLeod, vice chancellor for students and dean of the College of Arts & Sciences, were honored.

"The award was created to honor the life of the late Rosa L. Parks due to her (then) recent passing," said committee chair Harvey R. Fields Jr., Ph.D., assistant director of academic programs for Cornerstone: The Center for Advanced Learning.

"The inaugural recipient was Mrs. Margaret Bush Wilson. We wanted to have a special speaker for the 2006 event and decided on Mrs. Wilson. We were able to obtain her agreement to speak publicly with the help of Professor



Danforth



McLeod

John Baugh, the inaugural Margaret Bush Wilson Professor in Arts and Sciences."

And that first selection led directly to the selection of this year's recipients.

Wilson was asked to speak, but was not aware she'd be receiving the award. When explained what the award was for — generally presented to someone with strong University affiliations — she immediately thought McLeod would be a good choice.

Unbeknownst to her, though, she had already been selected for the 2006 award. And when it came time to select the 2007 recipients, Fields and the rest of the committee recalled Wilson's recommendation. Danforth's name also came up.

"From there it became quite obvious that, based on the criteria, they both would be worthy recipients, and that was the proposal for the 2007 event," Fields said.

"When the 2007 committee came together, this decision was, as appropriate, revisited and enthusiastically agreed to again. Thus, that is how the decision was made to present the award to Chancellor Danforth and Dean McLeod."

The award's charter, reads in part: "The award, herewith, will only be presented during the Danforth Campus annual Martin Luther King Commemoration Celebration, and only when the Danforth Campus Commemoration Committee deems that a nominee, who exhibits the same character, conscious and courage of Mrs. Rosa L. Parks, who has given a lifetime of service to the community, whose efforts have had impact far beyond the immediate circumstance, and who has served without striving for personal gain, is worthy of this singular honor."

## Online system stores health records

By ANDY CLENDENNEN

Is your vital health information in a doctor's office, a file cabinet, a stack of stuff at home or all of the above? In an emergency, could someone quickly access complete, up-to-date information?

A new electronic personal health-record program called myHealthFolders allows individuals to organize, store and retrieve personal health information for themselves and family members using a secure Web-based program. The service — at [www.myHealthFolders.com](http://www.myHealthFolders.com) — is available at no cost to University benefits-eligible faculty and staff.

"In order to manage our own health care, it is important to keep good records," said Ann B. Prenatt, vice chancellor for human resources. "Many of us are also responsible for keeping track of medical information such as appointments, prescriptions and contact information for children and elderly parents. MyHealthFolders is a free tool that faculty and staff members can use to easily track and access this important information from any computer with Internet access."

Members can use myHealthFolders to print updated medical reports to bring to physician appointments. Members also can print an emergency wallet card, giving emergency medical personnel immediate access to medical history, medications, and physician and family contacts through the Internet.

The value of myHealthFolders is largely dependent on the amount and quality of the information entered. Gathering the medical records and personal health information for each family member might be the most time-consuming part of the process. But once the information is entered, there is a permanent record of health information that can be accessed anywhere in the world.

Personal information will not be accessed by BJC HealthCare, insurance companies or the University and will not be used for any type of research or marketing. Like other medical records, the information in myHealthFolders is subject to the federal privacy provisions of the Health Information Portability and Accountability Act and will be protected accordingly.

For more information, call the Office of Human Resources at 935-5990.

## Lützeler receives Austrian Great Medal of Merit

By NEIL SCHOENHERR

Paul Michael Lützeler, Ph.D., the Rosa May Distinguished University Professor in the Humanities in Arts & Sciences, will receive the Austrian Great Medal of Merit in a ceremony at the University Feb. 8. Christoph Thun-Hohenstein, director of the Austrian Cultural Forum in New York, will present the award.

The award is being bestowed on Lützeler for his work on Jewish-Austrian novelist Hermann Broch (1886-1951) and his research in the fields of European identity and contemporary Austrian literature.

An international leading authority on Broch, Lützeler edited Broch's collected works in 17 volumes. He also has written a biography of Broch, two scholarly books on Broch and edited numerous volumes of Broch's correspondences. He is president of the International Hermann Broch Society.

In his three books and four editions on European identity and unity, Austrian authors played a large role. Lützeler has been invited to lecture on the contribution of Austrian authors to European identity at numerous Austrian universities. He founded WUSTL's European Studies program 1983 and directed it for 20 years.

Lützeler founded WUSTL's Max Kade Center for Contemporary German Literature in Arts & Sciences. With the Olin Library, he built a special collection of contemporary German literature

at the University. He has invited many writers and critics from German speaking countries, including Austria. He is the founder and editor of the yearbook "Gegenwartsliteratur."

Lützeler joined the faculty of Arts & Sciences in 1973 and was named to the May distinguished professorship in 1993. Since joining the Department of Germanic Languages and Literatures in Arts & Sciences, 42 students have written their doctoral dissertations with him. He chaired the department from 1983-88.

Early on he revived and established exchange programs on the undergraduate, graduate and faculty levels with the University of Tübingen in Germany, and he established a number of endowed fellowships for doctoral students in German.

He has served on many committees at the University. He twice was elected chair of the Faculty Senate Council, and he twice served on the Personnel Advisory Committee in Arts & Sciences.

Lützeler has written 10 books and edited numerous volumes on 19th- and 20th-century German and European literature.

He is vice president of the International Germanistik Association and a member of the German Academy of Science and Literature.

He has received many awards, prizes and fellowships, including Guggenheim, Humboldt and Fulbright grants, the German Cross of Merit, First Class and the Distinguished Faculty Mentor Award.

## GFC

— from Page 1

go to the school's Student Coordinating Council.

"Coffee is a great vehicle for bringing people together, and it's been wonderful to get to know faculty, staff and other students we normally wouldn't see in the building," Harper Chang said. "GFC facilitates learning from peers outside of the classroom."

GFC organizers also hope to promote ecological and green living. The coffee served is fair-trade and the snacks are organic or locally produced. Visitors are encouraged to bring their own mug, or they can purchase a cup.

"We hope GFC helps people start to think about making a conscious consumer choice," Hunter said. "It goes beyond the environment. Thinking about individual choices can impact how we work with our social work clients in the

future."

According to Hunter, GFC has changed how people interact with in the school.

"It seems like there's more interaction between student groups, and it's nice to see people coming back to campus to hang out and network," she said.

Gautam Yadama, Ph.D., director of international programs and associate professor in the school, has great hopes for GFC.

"It is, after all, an organization about change, and finding those vital grounds for change should be their driving force," he said. "As GFC grows, the students will continually look for newer arenas of social change through this wonderful enterprise they have begun."

GFC organizers plan to expand programming to include lunch discussion groups, open mic nights and art exhibits.

"We hope that GFC becomes a place where members of the Brown community can express their creative selves," Harper Chang said.

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## Washington People

By TONY FITZPATRICK

**A**s a child growing up in southern California, Shelly Sakiyama-Elbert, Ph.D., assistant professor of biomedical engineering, was fortunate to have some good science teachers beginning in middle school. The teachers designed interesting experiments that were challenging and encouraged problem solving.

"The laboratory experience in high school really turned me on to science and engineering," says Sakiyama-Elbert, the Joseph and Florence Farrow Assistant Professor of Biomedical Engineering. "I'd always been good in math and science, with chemistry being a favorite, so I thought I might want to be a chemical engineer. The only problem was I didn't really know what a chemical engineer does when I was in high school."

Today, after building an international reputation in the field of drug delivery, Sakiyama-Elbert certainly knows what chemical



Allison Rader (left), a senior in biomedical engineering, and Shelly Sakiyama-Elbert, Ph.D., prepare samples from a drug-release study for analysis in Sakiyama-Elbert's laboratory.

# Getting children started early

Drug pioneer Shelly Sakiyama-Elbert teaches middle-school kids about chemical engineering

### Shelly Sakiyama-Elbert

**Position:** Assistant professor of biomedical engineering

**Family:** Husband, Donald Elbert, Ph.D., assistant professor of biomedical engineering; son, Alex, will be 2 Feb. 23

**Research specialty:** Drug delivery, regenerative medicine

**Education:** Bachelor's, chemical engineering and biology, MIT (1996); masters, chemical engineering, Cal Tech (1998); doctorate, chemical engineering, Cal Tech (2000)

**Major funders:** National Institutes of Health, \$1.3 million for four years; and Wallace H. Coulter Foundation, \$240,000 for two years

engineering is about. But each fall for the past four years she makes sure that area middle-school students, predominantly girls, know what engineers do.

She and University colleague Ruth J. Okamoto, D.Sc., assistant professor of mechanical and aerospace engineering, offer the course "Moving and Shaking" to some 20 area middle-school students in 90-minute Saturday morning sessions lasting six weeks.

"The program is an introduction to engineering, and I think the kids really enjoy it. It gives a realistic view of what it's like to be an engineer," Sakiyama-Elbert says. "Students go to different labs and do hands-on experiments and computer modeling. They interact with undergraduate and graduate students, making it easier to conceptualize what engineers do and easier to picture themselves as an engineer one day."

"I think middle school is the critical age to get students excited about science and engineering. By high school, unfortunately, lots of kids are turned off by math and science."

Sakiyama-Elbert is the eldest of four siblings (all brothers) and

the daughter of Tom and Cathy Sakiyama. Her father, now retired, taught elementary school and eventually trained fellow teachers how to test gifted and/or special-needs students, primarily at the elementary-school level. Her mother also was an elementary-school teacher, in addition to being a homemaker.

"I got very good at standardized tests, given this environment," she says, smiling. "I must have taken every standardized

test known to man."

She did well enough on her SAT to be admitted to the Massachusetts Institute of Technology in 1992 where, by her sophomore year, she finally grasped what it is that chemical engineers do, thanks to projects that involved nitric oxide kinetics in biological systems and the migration of liver cells on different surfaces.

"I learned a lot about how challenging it is to do research and how you have to work through problems and troubleshoot until you get it right," she says.

Sakiyama-Elbert graduated in 1996 with a degree in chemical engineering and biology. She started graduate work that fall at the California Institute of Technology under the guidance of adviser Jeffrey Hubbell, Ph.D., professor of chemical engineering, who also advised another student named Donald Elbert, from Lexington, Ky.

Showing Sakiyama-Elbert the laboratory at Cal Tech, Hubbell introduced her to Elbert, and thus began an enduring relationship. Both Shelly and Don later moved to Zurich, Switzerland, with the rest of the Hubbell lab, where she completed the last three years of her graduate studies.

Sakiyama and Elbert married in 1999 — the wedding was in Los Angeles — and both she and her husband applied to various universities for faculty positions that fall, realizing that they might have to take employment at different locales.

Ultimately, weighing multiple offers, Sakiyama-Elbert and her husband chose Washington University.

"It was a good opportunity for us, because we could both be in the same city and both had opportunities for collaboration throughout the University, and it was good for the University because they got two new faculty members for the growing BME department (which expanded by 50 percent with our arrival)," she says. "We've actually always worked together in one way or another since we started dating. But, we don't generally work on the same research projects."

"Still, it's nice to have someone who knows what you're going through. We bounce ideas off each other all the time. Sometimes Don knows more about a certain area

than I, and I send students over to him to talk to him, or vice versa."

At Cal Tech, Sakiyama-Elbert developed an approach for delivering drugs to promote nerves and surrounding tissue to regenerate. Think of this system as a kind of scaffold upon which numerous pieces can be attached. The pieces are the drug itself and certain proteins that affect the binding of the drug and its timed release.

"The system is a versatile one," she says. "One of the key things is designing flexibility so that the system can adapt to new tissue or a new injury model. The essence of the flexibility is the modular nature of the system. We can tune each of the different pieces of the scaffold and make it a little bit more rigid or flexible for the surgeon's ease of handling."

The polysaccharide heparin is a vital cog in her system. It provides adhesion sites — or stickiness — for the drugs to bind and take hold at an injury site.

During a college senior project for a course in tissue engineering, Sakiyama-Elbert had two basic options: she could pursue cardiovascular research or the nervous system. Because she had had more exposure to cardiovascular research, she chose the nervous system to learn more.

"The nervous system is amazing," she says. "It's fascinating how it forms in development and even after birth. Nature is really elegant in its ability to direct nerves to go over long distances and find the right connections and reinforce those connections. Think of a baby learning to walk — it takes an incredible symphony of nervous communication for that to happen. And we're just now beginning to get the basic understanding of the biology behind the nervous system."

Sakiyama-Elbert has recent experience in watching a baby learn how to walk. She and her husband will celebrate son Alex's second birthday Feb. 23.

She is collaborating with Susan E. Mackinnon, M.D., the Sydney M. Jr. and Robert H. Shoenberg Professor of Surgery and chief of the Division of Plastic and Reconstructive Surgery, in peripheral nerve injury research, the kind found in hands and feet.

She also collaborates with

Richard H. Gelberman, M.D., the Fred C. Reynolds Professor, head of the Department of Orthopaedic Surgery and orthopedic surgeon in chief at Barnes-Jewish and St. Louis Children's hospitals, in regenerating flexor tendons, which are between our fingers.

"Dr. Sakiyama-Elbert's ingenious bioactive system for the sustained delivery of growth factors provides enormous opportunities for advancement in the field of orthopaedic surgery," Gelberman says. "Together with orthopaedic bioengineers Steve Thomopoulos and Matt Silva, Shelly is exploring clinically relevant applications of prolonged PDGF and bFGF delivery in tendon and ligament repair. The result could be faster and far more complete recovery from disabling hand, shoulder and knee injuries than is currently achievable."

"An ideal collaborator — thoughtful, innovative and challenging, Shelly has helped establish a cross-campus collaboration at Washington University that really works."

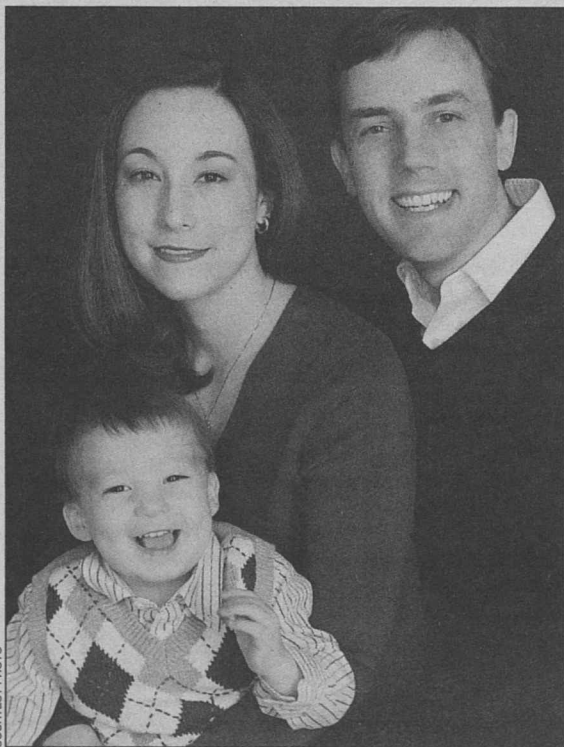
She has been cited by the St. Louis Business Journal in a 2006 summer issue titled "Who's Who in Technology," and earlier by that publication was highlighted as one of "30 Under 30" talented researchers in St. Louis.

Sakiyama-Elbert's expertise — reflecting three degrees — stacks up heavily on the chemical engineering side. To keep up with the dynamic nature of biology, she attends seminars and conferences and reads the literature all the time.

"In trying to do regenerative medicine or tissue engineering, I think we really have to look at developmental biology to understand the critical cues that are there when a tissue is generated the first time," she says.

She and her collaborators have achieved success in cell culture studies with her system and are now doing preclinical studies, with human studies "still several years away," she says.

"I'm happy to be doing regenerative medicine with some of the world's best researchers and designing materials that can interact in the body and sense cues from cells to help direct tissue regeneration," she says. "As we start to understand the biology at a molecular level, we can put just the right cues into the materials, keeping in mind that the more that the body can do itself, the better."



Shelly Sakiyama-Elbert and her husband, Don, with son, Alex, who turns 2 Feb. 23.