9-13-2007

Washington University Record, September 13, 2007

Medical News: Humans start life with one brain control network 3

Exhibit: Colangelo displays artwork at medical school 4

Washington People: Prather targets musculoskeletal function in women 8

Sept. 13, 2007

Record

record.wustl.edu

Washington University in St. Louis

JOE ANGELES

The former CBC site provides 169,000 square feet of interior space for the University.

University acquires former high school from Concordia

The former Christian Brothers College (CBC) High School property in the 6500 block of Clayton Road in Clayton has been sold to Washington University, it was announced Sept. 11 in a joint statement by Concordia Seminary and the University. Concordia purchased the property in 2001 when the high school moved to its new location in Town & Country, Mo.

The sale was finalized following approval by the executive committee of Washington University's Board of Trustees, Concordia Seminary's Board of Regents and the Board for Pastoral Education and Board of Directors of The Lutheran Church-Missouri Synod.

The 8.2-acre site contains eight buildings, providing 169,000 square feet of interior space. The facilities include classrooms, offices, a theater and library complex, a gymnasium and sports annex and a cafeteria.

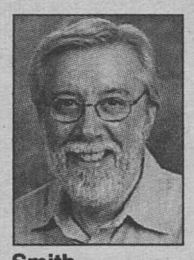
The grounds include an athletic field, a track, tennis courts and a 150-space parking lot.

The University has not announced any long-range plans for the property — in walking and shuttle distance from the Danforth Campus — but work will begin soon on renovating and improving the gymnasium and athletic fields for the use of intramural and club sports.

Richard Smith to become A&S Graduate School dean

Robert Thach completes 15-year deanship next July

Richard J. Smith, Ph.D., the Ralph E. Morrow Distinguished University Professor and chair of the Department of Anthropology in Arts & Sciences, will become dean of the Graduate School of Arts & Sciences July 1, 2008, when Robert E. Thach, Ph.D., dean since 1993, steps down, announced Edward S. Macias, Ph.D.



Smith

Thach

"Richard Smith is ably poised to succeed Bob Thach, whose extraordinary leadership has made a significant impact on graduate education not only at Washington University but also nationally," said Macias, executive vice chancellor, dean of Arts & Sciences and the Barbara and David Thomas Distinguished Professor in Arts & Sciences.

"Bob has introduced many innovative programs within the Graduate School that have greatly improved the graduate student experience here and have been emulated at other top research universities," Macias said. "I am confident that Rich will continue the positive momentum that Bob has set in motion."

"I am honored to have the opportunity to take on this new challenge," Smith said. "The graduate school has complex responsibilities serving students in schools and departments throughout the University. Bob Thach has done an outstanding job moving the graduate school forward, and he is leaving it superbly positioned for further progress in the distinction and excellence of our programs.

"I am looking forward to working with Washington University faculty and the dedicated staff of the graduate school as we make new efforts to increase our national and international leadership in graduate education," Smith said.

Thach, a professor of biology in Arts & Sciences and of biochemistry and molecular biophysics in the School of Medicine, will return to full-time teaching and research. His research in epidemiology and environmental medicine will focus on vector-borne diseases, including Lyme-like and Ehrlichiosis diseases.

Among the highlights of his tenure as dean, Thach developed innovative ways to reduce time-to-degree and increase the completion rate for doctoral candidates by admitting fewer Ph.D. students, providing stipend support for six years and generating year-round financial support for those who apply; created a global focus in attracting outstanding graduate students, including organizing the International Graduate Scholarship Conferences in Beijing (2005) and Shanghai (2006); and encouraged shared governance, where graduate student leaders actively participate in the administrative activities of the University.

Recognized as a national leader in improving doctoral education, Thach, from 2001-05, chaired the Deans' Task Force of the Woodrow Wilson National Fellowship Foundation's Responsive

See **Deans**, Page 6

Interaction of genes, environment focus of national addiction study

By Jim Dryden

A School of Medicine psychiatric geneticist is one of several principal investigators around the country who will participate in the Genes, Environment and Health Initiative (GEI), a unique collaboration between geneticists and environmental scientists. The $48 million initiative is sponsored by the National Institutes of Health (NIH).

Bierut

Laura Jean Bierut, M.D., professor of psychiatry, will head the national study of addiction, looking both at genetic and environmental factors that contribute to the problem. The co-principal investigator is John Rice, Ph.D., professor of mathematics in psychiatry and of biostatistics.

Bierut received $561,000 in funding for the first year of her research, "Study of Addiction: Genetics and Environment."

"Addiction is a classic condition requiring the interaction of genetic, environmental and behavioral factors," Bierut said. "A person with a genetic tendency to become addicted to alcohol, nicotine or other drugs will never develop that addiction if that individual never drinks, smokes or uses. We want to get a better handle on how genes and environment interact to cause disease."

Bierut and the other investigators involved in GEI projects will conduct whole genome association studies of problems from addiction and diabetes to heart disease and tooth decay. Whole genome association studies can identify specific points of variation in human DNA that underlie particular conditions. Identifying genetic factors that influence health, disease and response to treatment is believed to be

See **Addiction**, Page 6

Students living in the South 40 welcome two new Faculty Fellows

By Neil Schoenherr

Students living in the Park/Mudd and Brookings residential colleges may notice some wiser and more mature residents this semester.

Joseph Thompson, Ph.D., assistant professor of English and of African and African American studies, both in Arts & Sciences; and Patrick Eisenlohr, Ph.D., assistant professor of linguistic anthropology in Arts & Sciences, have moved into apartments in Park/Mudd and Brookings, respectively.

They are the two newest of five Faculty Fellows currently living on the Danforth Campus' South 40.

The goal of the Faculty Fellows program, started in 1998, is to help integrate academic and residential life by having professors live in the residential colleges with students for three-year stints.

The program emerged in response to the realization that there was a growing gap between faculty members and undergraduate students on college campuses. In addition, many faculty members wished to extend their interaction with students outside the academic realm. Today, many campuses across the nation have well-developed faculty/student interaction programs similar to the one at WUSTL.

BILL STOVER

Patrick Eisenlohr, Ph.D., assistant professor of linguistic anthropology in Arts & Sciences, relaxes in his apartment with his wife, Roschanack Shaery-Eisenlohr, Ph.D., postdoctoral lecturer in Asian and near eastern languages and literatures in Arts & Sciences, and his daughters, Shirin (left), 2 1/2, and Leyli, almost 1.

"Over the last 10 years, the

See **Families**, Page 2

Rising gas prices could take a bite out of obesity epidemic, graduate student says

BY GERRY EVERDING

Just as rising gasoline prices are forcing many Americans to tighten their financial belts, new research suggests higher fuel costs may come with a related silver lining — trimmer waistlines.

"An additional $1 in real gasoline prices would reduce obesity in the U.S. by 15 percent after three years," said Charles Courtemanche, an economics doctoral student in Arts & Sciences.

"In fact, about 13 percent of the rise in obesity between 1979 and 2004 can be attributed to falling real gas prices during the period."

Courtemanche's conclusions are based on a comparison of average state fuel prices with health behavior trends documented in government surveys covering two decades, 1984-2004. He provides evidence for two direct and causal links between gasoline prices and obesity.

"If the price of gas rises, the cost of driving also rises, which may affect body weight in two ways," Courtemanche said.

"First, people may substitute from driving to walking, bicycling or taking public transportation. Walking and bicycling are forms of exercise, which increase calories expended, decreasing weight.

"If a person uses public transportation, such as subways, buses, trolleys or rail services, the need to move to and from the public transit stops is likely to result in additional walking, again decreasing weight.

"Second, since the opportunity cost of eating out at restaurants rises when the price of gas increases, people may substitute from eating out to preparing their own meals at home, which tend to be healthier. People may also eat out less in an effort to save money to pay for the increased cost of gas."

Titled "A Silver Lining: The Connection Between Gas Prices and Obesity," Courtemanche's study touched off a lively debate in online economics groups this summer when findings from his working paper were cited in an article published in The New York Times.

Some suggested that Courtemanche was politically incorrect to suggest a gasoline tax as a means of addressing a larger societal problem, such as an individual's obesity.

"I'm afraid my findings are being a bit misinterpreted," Courtemanche said. "I did not intend to imply that additional gasoline taxes would be beneficial for society, just that additional gasoline taxes would reduce obesity."

Courtemanche points out that his current study makes no attempt to determine whether increased fuel costs would have a positive or negative net impact on social welfare. He sees this question as a possible direction for future research, but cautions that such studies must be careful to take into account all the consequences of increased fuel costs.

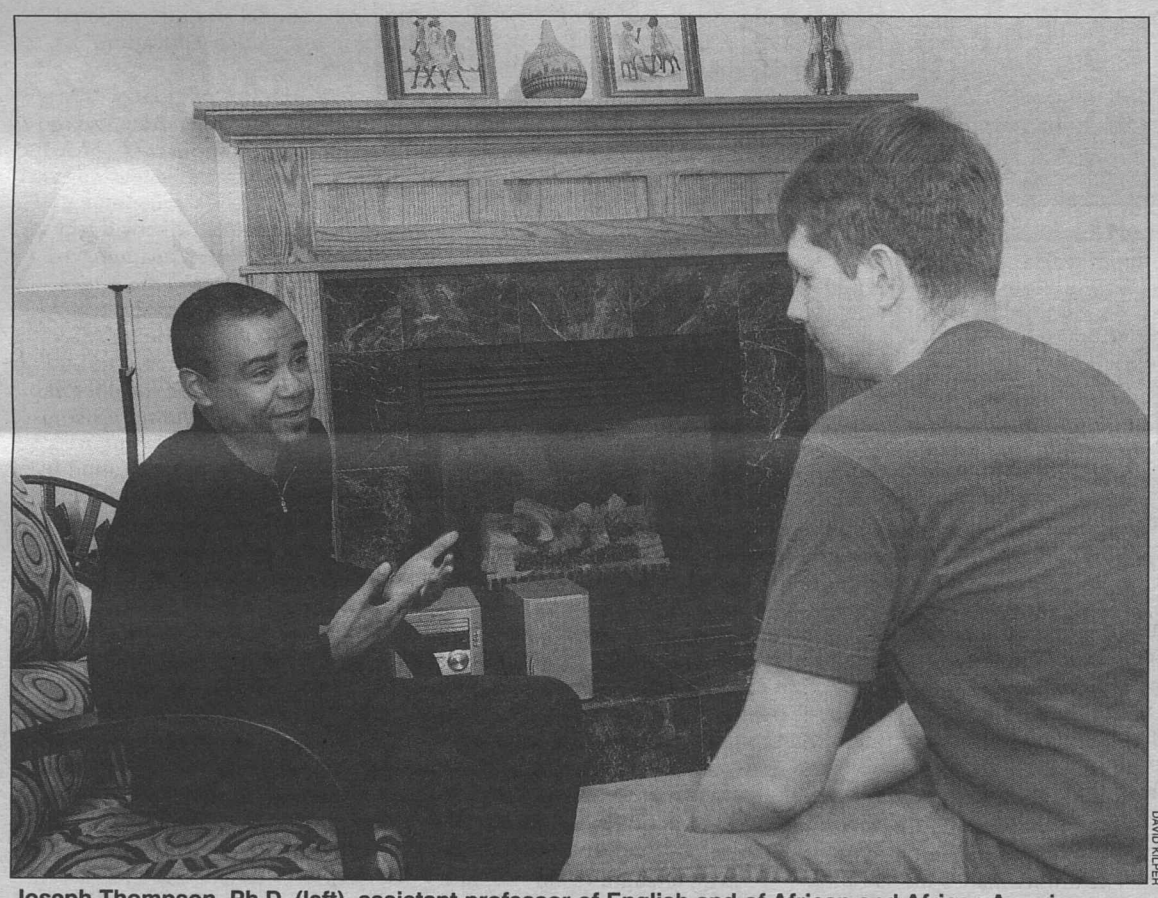
"Research shows that reducing people's incomes would worsen obesity, so any increase in the gasoline tax should be accompanied by mass transit subsidies, payroll tax reductions, or some other policy that replaces the lost income," he said.

Courtemanche stands behind his numbers and their potential implications for policy decisions. As a health economist, he argues that such potential is too important to be overlooked.

See **Study**, Page 6

BILL GREENBLATT/UPI

ONE state, ONE city Stephanie Koh, a sophomore majoring in anthropology in Arts & Sciences and a member of "ONE: The Campaign to Make Poverty History," receives a proclamation from Gov. Matt Blunt declaring Missouri a "State of ONE" in the fight against extreme global poverty during a Sept. 6 event in the Women's Building Lounge. Koh also received a proclamation from St. Louis Mayor Francis G. Slay declaring St. Louis a "City of ONE." A member of the Alliance of Students Against Poverty (ASAP), Koh helped organize the event, which ASAP and ONE co-hosted to raise awareness and to encourage Americans to get active in the fight against global disease and extreme poverty. ONE is a coalition of millions of Americans and more than 100 of the nation's leading relief, humanitarian and advocacy organizations. Missouri is the country's ninth state to join the ONE campaign and St. Louis is the country's 120th city of ONE. Chancellor Mark S. Wrighton was among the speakers at the ONE Missouri event.



DAVID KILPER

Joseph Thompson, Ph.D. (left), assistant professor of English and of African and African American studies, both in Arts & Sciences, chats in his apartment with junior Mike Hayes.

Families

Faculty members enjoy their new space

– from Page 1

Faculty Fellows program has enriched the lives of the students living on the South 40," said Jill A. Stratton, assistant dean of students and director of residential academic programs.

"Each faculty member contributes his or her own unique talents, interests and personality to the position. We have been fortunate to have such dynamic faculty as a part of the program and are grateful to them and their families for serving in this important role."

Thompson and Eisenlohr are enjoying their new roles.

"For us, it's wonderful to live there. The students are nice and respectful, and it's great to have them around as neighbors," said Eisenlohr, who moved into his apartment in November 2006 and started his duties in January 2007.

"I get a close perspective on how students live and how they learn," Eisenlohr said. "I get a better idea of how many classes they actually take, the stress they have in midterm and exam time. I've learned to be flexible in the timing of assignments."

Eisenlohr's wife, Roschanack Shaery-Eisenlohr, Ph.D., postdoctoral lecturer in Asian and near eastern languages and literatures in Arts & Sciences, joins him in the apartment, along with the couple's two daughters — Shirin, 2 1/2, and Leyli, almost 1.

"The activities we do with our students fit into our family life and they are often also extensions of our academic interests. For example, I took students to a Hindu temple and a mosque in St. Louis, which is part of my research interests," said Eisenlohr, who studies linguistic and media practices in transnational settings, especially their role in the making of religious authority and subjectivity.

Thompson moved into his apartment before the beginning of this semester. He said he has long been looking for a way to be more involved with students outside the classroom.

"During my time at the University, much of my energy has been focused on dealing with students as thinkers and writers in the classroom," he said. "But obviously there is a whole other component to students — who they are as people. I was interested in dealing with them holistically and learning more about how to mentor and advise them on a broader level, as they take what they learn here and grow into productive citizens of the world."

While Thompson, who is single, gets settled into his apartment, he has started to think about some programming he'd like to incorporate, such as a possible film series and a trip to Forest Park to ride the paddleboats.

Thompson also will be taking a group of students to see the Black Rep's performance of "Boesman and Lena" at Edison Theatre, followed by a discussion in his apartment with students and actor Ron Himes, a member of the cast and the Henry E. Hampton Jr. Artist-in-Residence in the Performing Arts Department in Arts & Sciences.

"I'm very much looking forward to the three years," Thompson said. "I see this experience as something that I want to weave into my own personal journey. It's not just another aspect of my job. I believe my activities as a Faculty Fellow will significantly enrich the next three years of my life."

For more information on the program, visit reslife.wustl.edu.

New law school intersession offers intensive study opportunities

The School of Law will be introducing an intersession from Jan. 7-11, 2008, allowing upper-level students to take a one-unit short course in a subject that enriches their curriculum. Noted judges, practicing attorneys, professors and other legal professionals will teach these classes.

"The January Intersession Program offers us a valuable opportunity to invite distinguished visitors to the law school and allows students to explore a narrow topic in depth with experts in the field," says Tomea Mayer Mersmann, J.D., associate dean for strategic initiatives.

"We are thrilled with the interest in teaching this program from members of the judiciary and distinguished practitioners. The courses they have developed are substantive and engaging," she said.

Intersession offerings include: "Problems in Corporate Law"; "The Supreme Court in Wartime: World War II Through the War on Terrorism"; "WTO Law and East Asia"; "Chapter 11 Strategies for the Business Lawyer"; "Introduction to Intellectual Property"; "Introduction to Law Firm Practice"; and "Negotiation."

Graduate students from other disciplines are welcome to attend the courses. Registration will begin in October.

For more information, contact the law school registrar's office at 935-4610 or visit law.wustl.edu/Registrar/.

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Washington University in St. Louis

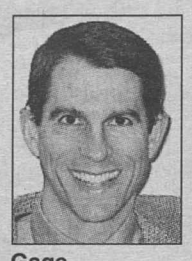
School of Medicine Update

Genetic information makes it safer to prescribe common blood thinner

BY GWEN ERICSON

Doctors prescribing blood thinners have had to go through a lengthy trial-and-error process to arrive at the optimal dose for their patients. But now the process can be faster and safer, thanks to School of Medicine research.

Researchers here, along with colleagues at Saint Louis University and St. Louis College of Pharmacy, have developed an improved dosing formula for the widely prescribed anticoagulant warfarin (Coumadin) that takes into account variations in two key genes. This approach is an important example of the trend toward personalized medicine.


Gage

With the new dosing formula, doctors can more quickly and accurately estimate the appropriate dose of warfarin, an anticoagulant that is notoriously challenging to use because so many factors affect its activity. Brian F. Gage, M.D., associate professor of medicine, and colleagues reported their findings in the Sept. 1 issue of the journal Blood.

Their report follows closely upon the U.S. Food and Drug Administration's August announcement of updated labeling for warfarin that includes information on the role of the two genes. At the time of the announcement, the director of the FDA's Office of Clinical Pharmacology, Larry Lesko, Ph.D., called for studies to establish proper dosing for patients with specific variations of these genes. The current study is the first to address that goal.

"We already knew these genes affected warfarin dosing, but we didn't know how to use that information clinically," said Gage, medical director of Barnes-Jewish Hospital's Blood Thinner Clinic. "But with this study, we've established a simple way to combine these genetic factors with clinical factors in a dosing algorithm."

The researchers have made the new algorithm publicly available at warfarindosing.org. The Web site allows physicians to input patient information and receive dosing recommendations.

Doctors prescribe warfarin to prevent blood clots or reduce the risk of stroke in patients with atrial fibrillation, artificial heart valves, deep venous thrombosis and pulmonary emboli. It also is helpful in preventing blood clot formation after certain orthopedic surgeries such as knee or hip replacements.

Until now, doctors have had to use trial and error, repeatedly changing the dose and retesting clotting time to arrive at the warfarin dose that works for each patient. During this adjustment period, which may be a matter of two to three weeks, patients are in danger of hemorrhaging when the dose is too high or blood clots and strokes when the dose is too low.

The new formula developed by Gage and colleagues calculates the proper warfarin dose using some physical and health attributes but also factors in individual variation in the two genes VKORC1 and CYP2C9. Past research showed that certain variations in these genes can affect a person's sensitivity or resistance to warfarin and how fast a person's body breaks down the drug.

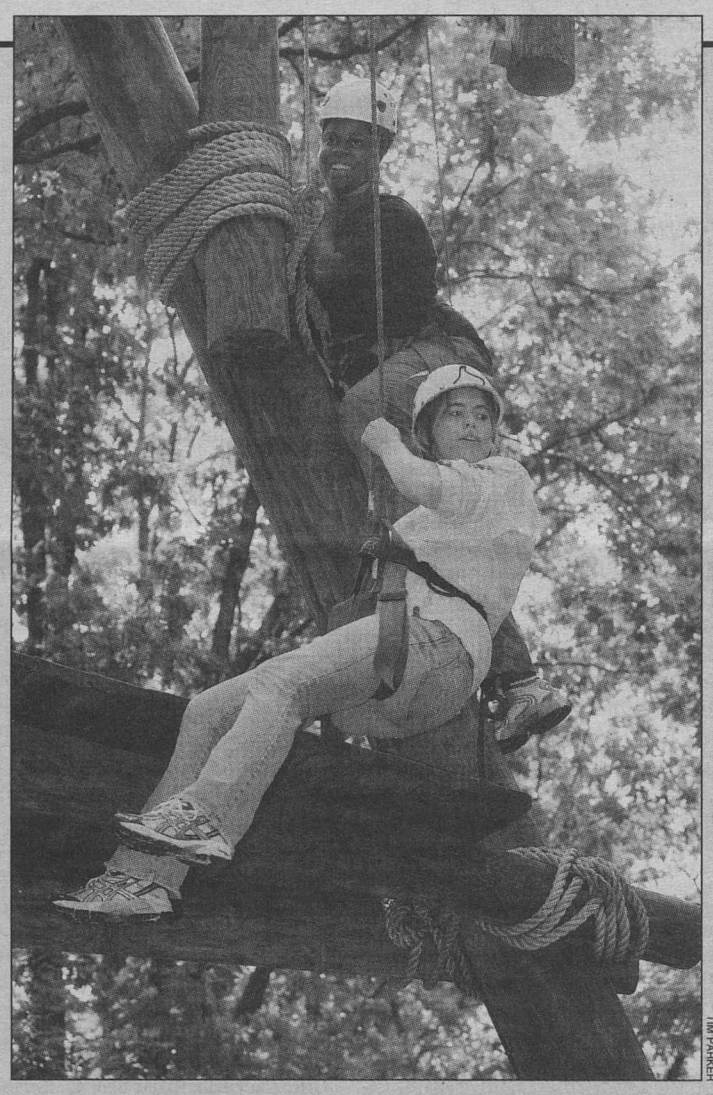
The new dosing calculation better predicts each patient's response to warfarin and significantly cuts the number of dosage changes, shortening the time needed to achieve a therapeutic dose and potentially increasing patient safety.

Gage and colleagues also adapted their approach to accommodate real-world delays in gene testing, which may take two or three days to complete.

Using the new method, physicians and pharmacists can use the Web tool to estimate an initial dose based on clinical factors and once the gene tests are available, revise the initial estimate to accommodate the influence of the genetic factors.

"That approach makes our method practical," Gage said. "Physicians don't have to delay initiation of therapy while they wait for genotype results."

The dosing algorithm was established in a study of patients undergoing knee or hip replacement surgery, and Gage and colleagues are now testing it on patients with other conditions to confirm its general applicability.


TIM PARKER

Hanging in there First-year medical students Toyin Falola (top) and Katie Niemeyer negotiate the Alpine Tower at Greensfelder Park Aug. 25 as part of the annual Diversity Retreat and Ropes Course, sponsored by Student Support Services and the Office of Diversity Programs. Participants climb the Alpine Tower while classmates offer support and encouragement. In addition to the Alpine Tower and a ropes course, the retreat covers topics including group dynamics, confronting stereotypes and cross-cultural communication.

Myeloma Research Consortium joins University in search for therapies

BY GWEN ERICSON

The School of Medicine has joined the Multiple Myeloma Research Consortium (MMRC), an organization of 13 leading U.S. academic centers designed to speed the development of new myeloma therapies.

The School of Medicine serves as a major center for multiple myeloma treatment and research in the St. Louis area.

"As a member of the MMRC, we can provide our patients with access to novel medications that would not otherwise be available," said Ravi Vij, M.D., assistant professor of medicine in the Division of Oncology and a medical oncologist with the Siteman Cancer Center.


Vij

"The unfortunate truth about multiple myeloma is that so far it is incurable. Treatments can work for a while, but they all eventually stop working. That's when it becomes very important for patients to be able to enroll in clinical trials for new therapies."

Multiple myeloma is the second most common blood cancer. With improvements in therapy, patients are living longer with the disease, causing it to be more prevalent. About 50,000 people in the United States are living with multiple myeloma, and an estimated 19,900 new cases of the disease are expected to be diagnosed in 2007.

> **"The unfortunate truth about multiple myeloma is that so far it is incurable. Treatments can work for a while, but they all eventually stop working. ... It becomes very important for patients to be able to enroll in clinical trials for new therapies."**
>
> RAVI VIJ

"Multiple myeloma treatment is rapidly undergoing a revolution," Vij said. "In the '80s, the median length of survival after diagnosis was about three years. Now with the use of stem cell transplantation and three very active drugs — thalidomide, Revlimid and Velcade — patients often are surviving more than six or seven years."

A number of emerging therapies — including novel proteosome inhibitors, immunomodulatory drugs, histone deacetylase inhibitors, heat shock protein inhibitors and many other classes of drugs in development — may offer hope when standard treatments fail.

Founded in 2004 by Kathy Giusti, a myeloma patient and chief executive officer of the Multiple Myeloma Research Foundation, the MMRC has created many opportunities in myeloma research and drug development that did not exist just a few years ago.

The MMRC facilitates collaborative research between biotechnology and pharmaceutical companies and academic research institutions. This research is solely directed toward creating new and effective treatments and to ensure progress toward a cure for myeloma.

"This is a unique endeavor that has not yet been tried in other spheres of cancer research," Vij said.

MMRC researchers benefit from having a large patient base and a critical mass of tissue samples, making it easier to identify and validate molecular targets for myeloma as well drugs that are active against these targets. In addition, the MMRC will connect patients with early clinical trials evaluating promising new therapies, both alone and in combination with standard myeloma therapies, to ensure that new treatments are brought to market as quickly as possible.

Brain's control network splits in two as children approach adulthood

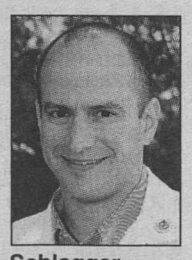
BY MICHAEL C. PURDY

Two recently discovered control networks that govern voluntary brain activity in adults start life as a single network in children, School of Medicine neuroscientists report.

Researchers previously showed the networks supervise most goal-oriented brain activity, enlisting the specialized talents of multiple brain regions for tasks such as reading a word or listening to music. They were surprised to find the two networks merged together in children.

"This has important implications not only for our thinking about how the architecture of the brain develops, but also for how that same structure breaks down in aging, disease and injury," said senior author Bradley L. Schlaggar, M.D., Ph.D., assistant professor of pediatrics and of radiology.

The results appeared in the Proceedings of the National Academy of Sciences.


Schlaggar

Neuroscientists have spent the past few decades pinning brain functions to small brain areas or collaborations between a few of those areas. But scientists have sometimes found it difficult to use this approach to predict how injuries to a given area of the brain will affect a patient's cognitive abilities.

"We're optimistic that answers to these problems and other important questions may lie in a more network-oriented approach that analyzes how several different brain regions regularly work with each other, exchanging data, directives and feedback," said co-author Steven Petersen, Ph.D., the James McDonnell Professor of Cognitive Neuroscience and professor of neurology and of psychology.

In June, Petersen and his colleagues revealed that they had identified two control networks that seem to be in charge of much higher brain function. The two networks do not consult with each other but still work toward a common purpose: control of voluntary, goal-oriented behavior.

Scientists used a new brain scanning technique called resting state functional connectivity MRI to identify the control networks. Instead of analyzing mental activity when a volunteer works on a cognitive task, the new technique scans their brains while they do nothing. The scans reveal changes in the levels of oxygen in blood flowing to different areas of the brain. Researchers interpret correlations in the rise and fall of blood oxygen to different brain areas during inactivity as a sign that those areas likely work together.

For the new study, scientists analyzed the brains of 210 children, adolescents and adults. They found the two control networks are merged in children but begin pulling apart in adolescents. The prominent changes add another layer of intricacy to the challenge of predicting how brain injuries will affect patients.

"These networking changes mean a lesion in the same place in the brain could have different consequences depending on when it occurs," said Schlaggar, also assistant professor of neurology and of neurobiology and anatomy.

Researchers also found a key component of the sustaining network in adults was closely linked in children to regions that eventually make up the heart of the adaptive network.

"We expected to find some differences in terms of these networks not being fully mature, but a complete switch of allegiance was not something our field would have predicted and is quite provocative," Petersen said.

University Events

Art meets medicine Carmon Colangelo displays artwork at Medical School

BY LIAM OTTEN

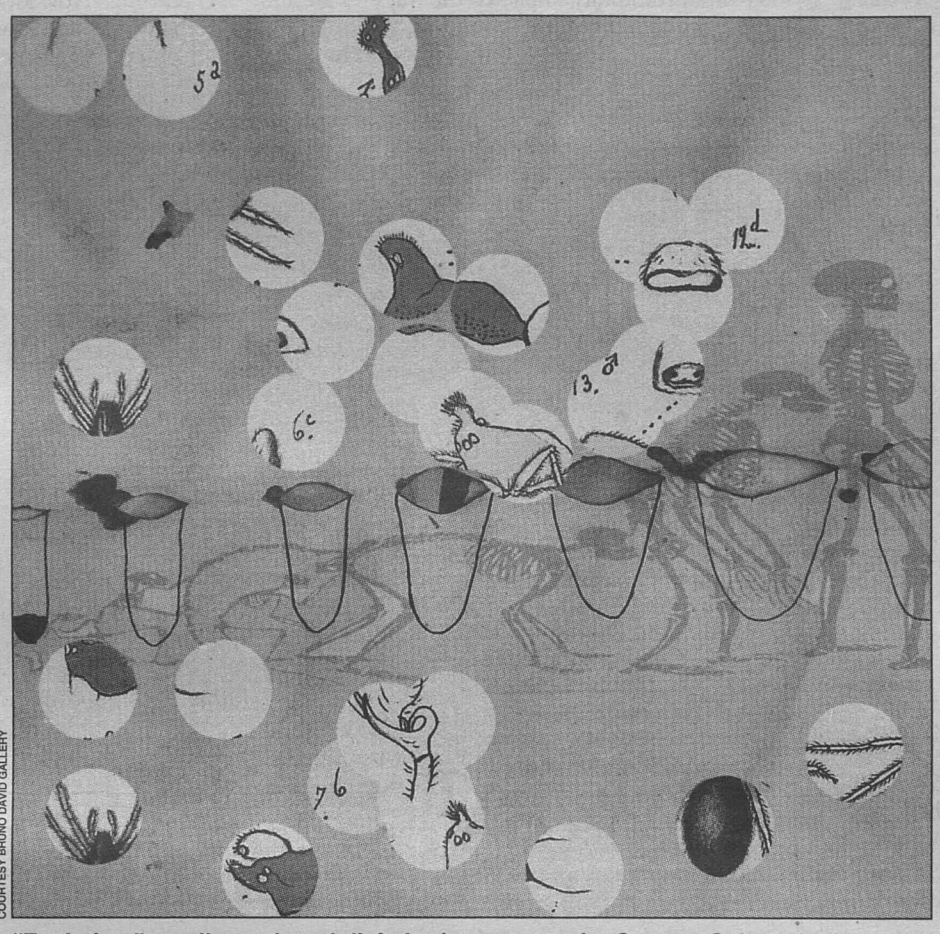
Art and medicine have changed drastically since the early 16th century, when the Veronese anatomist Marcantonio della Torre famously conducted dissections with Leonardo Da Vinci. Yet numerous commonalities remain — the appreciation of complexity; the importance of careful observation; the intrinsic understanding of human frailty.

Such themes inform the work of Carmon Colangelo, dean of the Sam Fox School of Design & Visual Arts and the E. Desmond Lee Professor for Collaboration in the Arts. Over the last several years, Colangelo — known for creating large-scale multimedia prints — has developed an extensive body of work investigating the moral and ethical questions raised by contemporary research into human genetics.

"This is one of the most important issues of our era, and I think we're at something of crossroads in terms of the politics and our ability to move forward," Colangelo said. "I wanted to explore the conversations and controversies surrounding bioengineering and cloning, as well as the popular mythologies about them — the horror stories of science gone wrong. These stories, right or wrong, are shaping public attitudes toward scientific research, medicine and religion."

This fall, the School of Medicine will present "Carmon Colangelo: Prints" in Farrell Learning and Teaching Center, 520 S. Euclid Ave.

The exhibition will open with an artist's talk at 7 p.m. Friday, Sept. 14. A reception immediately follows. The exhibition is free and open to the public and remains on view through January 2008. The Farrell Center is open from 9 a.m. to 5 p.m. Monday through Friday.



COURTESY BRUNO DAVID GALLERY

"Evolution," a collagraph and digital print on paper by Carmon Colangelo, is from the exhibition "Carmon Colangelo: Prints." The exhibit opens Sept. 14 at the School of Medicine's Farrell Learning and Teaching Center.

Curated by Bruno David, who handles Colangelo's work for the Bruno David Gallery, the exhibition will showcase more than a dozen prints inspired by medical and scientific issues.

"Through his provocative work, Carmon presents an artist's vision of the many dimensions of biomedical research," said Larry J. Shapiro, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine. "Carmon's artistic explorations will give our students, faculty and staff much to ponder and discuss along the way to the clinics, the lab and the classrooms."

Colangelo was deeply influenced by "Body Bazaar: The Market for Human Tissue in the Biotechnology Age" (2001) by Lori Andrews and Dorothy Nelkin. The book documents the ways various commercial interests have come to regard human cells and DNA as natural resources that can be harvested and even patented, sometimes without the knowledge or consent of the health care consumer.

Conversely, Colangelo also was struck by the continuing tensions between the scientific and religious communities on issues ranging from evolution to stem cell research.

Still, in his own work, Colangelo tries to avoid editorializing.

"It's not really about taking a particular stance or deciding what is right or wrong," he said. "It's about capturing the feeling and sensibility of the issues without actually telling a story. I want the work to have a kind of strangeness that you can't quite pin down.

"I started with the idea of creating very simple drawings and taxonomies of anatomical parts," Colangelo said. "I did a series about spiders and then moved on to 'Gray's Anatomy,' scanning things into the computer and mixing them up, taking them apart and distorting them to get different qualities."

"Evolution" and "Devolution," for example, is a large diptych based on a familiar natural history graphic. In "Evolution," a line of subtly printed skeletons advances from small creatures to larger, four-legged mammals and eventually to primates and humans. A row of rough conical shapes, possibly suggesting test tubes, is overlaid, while scattered about the image are small spheres containing anatomical details of spiders. In "Devolution," the entire scene is reproduced again, this time juxtaposed with thin horizontal bands recalling corrupted digital images.

"They're derived from the lessons of the spider drawings and use cut-outs, both in the paper and digital, to construct and deconstruct the image and meaning," Colangelo said. "A blue translucent overprinting gives the feeling of a TV or computer screen space."

"Bride and Groom" depicts a skeletal couple draped in thick red lines that suggest a sort of crude circulatory system. Flanked by a colorful confetti that might be pills or strands of DNA, the figures are joined at the neck by the outline of a large hand while a bright, gown-like cascade of white — topped by the head of a cartoon buzzard — spills between them. A neon green bunny floats upside down above the scene.

"It's a real strange configuration of things," Colangelo said, "everything from fuzzy animals to bone structures, blood cells and dissections of the body.

"I see them as a little comical, a playful language-of-images that creates a kind of visual tension around these subjects and their paradoxes."

For more information on the exhibit, call 747-3284 or visit fltc.wustl.edu.

In addition, Colangelo's most recent series, "Pharmland," is on view through mid-October at the Bruno David Gallery, 3721 Washington Blvd. Hours are 10 a.m. to 5 p.m. Wednesday through Saturday. The gallery is free to the public. For more information, call 531-3030 or visit brunodavidgallery.com.

Jazz at Holmes • Sports and Drugs • Mini-Medical School

"University Events" lists a portion of the activities taking place Sept. 13-27 at Washington University. Visit the Web for expanded calendars for the Danforth Campus (webevent.wustl.edu) *and the School of Medicine* (medschool.wustl.edu/calendars.html).

Exhibits

"Horse Series." Abstract images of Clydesdale horses by Robert Boston, School of Medicine photographer. Through fall. Farrell Learning and Teaching Center, 520 S. Euclid Ave., Lvl. 2.

Lectures

Thursday, Sept. 13

Noon. Genetics Seminar. "RNA Polymerase IV and the Nuclear siRNA Pathway for Gene Silencing in Arabidopsis." Craig S. Pikaard, prof. of biology. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

3 p.m. Siteman Cancer Center Basic Science Seminar Series. Matthew J. Ellis, assoc. prof. of medicine. Eric P. Newman Education Center. 454-7029.

4 p.m. Chemistry Seminar. "Nanoscale Lipid Bilayers for Elucidating the Structure and Function of Integral Membrane Proteins." Stephen Sligar, prof. of chemistry, U. of Ill., Urbana-Champaign. McMillen Lab., Rm. 311. 935-6530.

4 p.m. Vision Science Seminar Series. "Preventing Nuclear Cataracts: Ascorbic Acid and the Vitreous Gel Protect the Lens From Oxygen Exposure." David C. Beebe, prof. of cell biology and physiology. Maternity Bldg., Rm. 725. 362-3315.

8 p.m. The Writing Program Fall Reading Series. Peter Orner, author, will read from his works. Hurst Lounge, Room 201 Duncker Hall. 935-7130.

Friday, Sept. 14

9:15 a.m. Pediatric Grand Rounds. "Securing Access to Quality: Medicaid's Role in Purchasing High-quality Mental Health Care for Children and Child Welfare." Ramesh Raghavan, asst. prof. of social work and psychiatry. Clopton Aud., 4950 Children's Place. 454-6006.

9:30 a.m. School of Medicine Dean's Update. Larry J. Shapiro, exec. vice chancellor for medical affairs. Eric P. Newman Education Center. 362-7196.

Noon. Cell Biology & Physiology Seminar. "Conserved Signaling Mechanisms During Cell Repair and Cell Division." William M. Bement, prof. of zoology, U. of Wis. McDonnell Medical Sciences Bldg., Rm. 426. 362-3964.

12:30-4:30 p.m. Program in Physical Therapy Symposium. Steven J. Rose Symposium. "Exercise & Nutrition to Enhance Human Performance." Edward Coyle, prof. of kinesiology & health education, U. of Texas at Austin. Cost: $60; free for full-time faculty, residents and fellows. Eric P. Newman Education Center. 286-1404.

4 p.m. Assembly Series. John B. Ervin Scholars Program 20th Anniversary Celebration Lecture. "How to Change the World With Your Bare Hands: A Lifelong Commitment to Community." Cory Booker, mayor. Lab Sciences Bldg., Aud. 935-5285.

Saturday, Sept. 15

7 a.m.-4 p.m. Pulmonary Division CME Course. "Pulmonary Vascular Symposium." Course chairs: Sonja Bartolome, asst. prof. of medicine, U. of Kan. School of Medicine; Murali Chakinala, asst. prof. of medicine; and Tim Williamson, predoctoral student. Cost: $95 for physicians; $75 for allied health professionals. Eric P. Newman Education Center. To register: 362-6891.

Monday, Sept. 17

4 p.m. Immunology Research Seminar Series. Daved Fremont, assoc. prof. of pathology & immunology. Farrell Learning and Teaching Center, Connor Aud. 362-2763.

Wednesday, Sept. 19

Noon. Mallinckrodt Institute of Radiology Lecture. Annual G. Leland Melson Visiting Professorship and Lecture. "Functional Body MRI as a Predictive Biomarker for Tumor Treatment Response." Anwar R. Padhani, imaging research, Paul Strickland Scanner Centre. Scarpellino Aud., 510 S. Kingshighway Blvd. 362-2866.

2 p.m. School of Medicine Dean's Update. Larry J. Shapiro, exec. vice chancellor for medical affairs. Moore Aud., 660 S. Euclid Ave. 362-7196.

4 p.m. Assembly Series. Department of English Hurst Visiting Professorship Lecture. "Einstein and Relativity." Alan Lightman, physicist and author. Graham Chapel. 935-5285.

4 p.m. Biochemistry & Molecular Biophysics Seminar. "Selenoproteins: Roles in Redox Biology and Human Health." Vadim Gladyshev, prof. of biochemistry, U. of Neb. Cori Aud., 4565 McKinley Ave. 362-4152.

6:30 p.m. Center for the Study of Ethics & Human Values Lecture. "Sports and Drugs: Do You Have to Cheat to Be a Champion?" Ken Daley, former pitcher, St. Louis Cardinals; Larry Kindbom, head football coach; Stan London, prof. emeritus of clinical surgery; and Rick Wright, assoc. prof. of orthopedic surgery. Women's Bldg. Lounge. (Refreshments served.) 935-9358.

Thursday, Sept. 20

8 a.m. Saulo Klahr Lecture. "The Future of Medical Journals in the Electronic Era." Julie R. Ingelfinger, prof. of pediatrics, Harvard Medical School. Clopton Aud., 4950 Children's Place. 961-2828.

Noon. Genetics Seminar. "Deciphering Regulatory Control: The Role of cis-regulation in Development and Disease." Andrew S. McCallion, asst. prof. of genetics, Johns Hopkins School of Medicine. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

4 p.m. I-CARES Seminar. "Achieving Environmentally and Economically Viable Biofuel Feedstock Crops: Why Improvement of Photosynthetic Efficiency is Critical and Attainable." Stephen Long, prof. of crop sciences, U. of Ill., Urbana-Champaign. Co-sponsored by the Dept. of Chemistry. McMillen Lab., Rm. 311. 935-9541.

4 p.m. Vision Science Seminar Series. "Mechanism of Hereditary Cataract Formation." Usha Andley, prof. of ophthalmology & visual science. Maternity Bldg., Rm. 725. 362-3315.

4:30 p.m. Freedom From Smoking Class. (Continues twice weekly through Oct. 16.) Farrell Learning & Teaching Center, Rm. 213 A&B. To register: 362-6961.

8 p.m. The Writing Program Fall Reading Series. Peter Orner, author, lectures on the craft of fiction. Hurst Lounge, Room 201 Duncker Hall. 935-7130.

Friday, Sept. 21

9:15 a.m. Pediatric Grand Rounds. Robert Rothbaum, prof. of pediatrics, and Phillip Tarr, prof. of pediatrics. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell Biology & Physiology Seminar. "Actin, CD2AP and Immunological Synapses." Andrey S. Shaw, prof. of immunobiology. McDonnell Medical Sciences Bldg., Rm. 426. 362-3964.

Monday, Sept. 24

Noon. Work, Families and Public Policy Brown Bag Seminar Series. "Linguistic Profiling in the African Diaspora: Voice Discrimination in Schools and Society." John Baugh, Margaret Bush Wilson Professor in Arts & Sciences. Eliot Hall, Rm. 300. 935-4918.

4 p.m. Immunology Research Seminar Series. "Gene Regulatory Networks Orchestrating Cell Fates in the Immune System." Harinder Singh, prof. of molecular genetics and cell biology, U. of Chicago. Farrell Learning & Teaching Center, Connor Aud. 362-2763.

Tuesday, Sept. 25

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Frontiers in Molecular Biology: Targeting Herpes Simplex Viruses for Treatment of Malignant Glioblastomes." Bernard Roizman, prof. of microbiology, U. of Chicago. Cori Aud., 4565 McKinley Ave. 362-7367.

Noon. Program in Physical Research Seminar. "Discriminating Healthy Aging and Early Stage DAT." Janet M. Duchek, assoc. prof. of psychology. 4444 Forest Park Blvd., Lower Lvl., Rm. B108. 286-1404.

3 p.m. School of Law Center for Interdisciplinary Studies Lecture. "Religious Cycles in American Politics." Robert William Fogel, prof. of American institutions, U. of Chicago. Co-sponsored by the Dept. of Economics. Anheuser-Busch Hall, Bryan Cave Moot Courtroom. (Refreshments served.) 935-7988.

7-9 p.m. School of Medicine CME Course. Mini-Medical School I. Cost: $125. (Continues weekly through Nov. 13.) Eric P. Newman Education Center. To register: 362-6585.

Wednesday, Sept. 26

8 a.m.-5 p.m. St. Louis STD/HIV Prevention Training Center Course. "STD Laboratory Methods." (Continues 8 a.m.-5 p.m. Sept. 27 & 28.) Cost: $75. For location and to register: 747-1522.

11 a.m. Assembly Series. "Is Religion Good for Your Health?" Richard Sloan, prof. of behavioral medicine, Columbia U. Graham Chapel. 935-5285.

4 p.m. Biochemistry & Molecular Biophysics Seminar. "Viral DNA Packaging One Step at a Time." Yann Chemla, asst. prof. of physics and biophysics, U. of Ill., Urbana-Champaign. Cori Aud., 4565 McKinley Ave. 362-4152.

Writer, scientist Lightman nimag ines Einstein's dreams

BY MARY KASTENS

As a distinguished theoretical physicist and accomplished writer, Alan Lightman has successfully bridged the gap between science and the humanities. At 4 p.m. Wednesday, Sept. 19, in Graham Chapel, Lightman will provide an understanding of one of the greatest triumphs of the human imagination with the Department of English Hurst Visiting Professorship Lecture, "Einstein and Relativity." In addition, Lightman will conduct a reading from his work at 8 p.m. Tuesday, Sept. 18, in Anheuser-Busch Hall, Bryan Cave Moot Courtroom.


Lightman

From an early age, Lightman has pursued two passions: science and the arts. While in high school, he began independent science projects and writing poetry.

His first novel, "Einstein's Dreams" (1993), was an international bestseller and has been translated into 30 languages. It is an account of the unconscious musings of a young Einstein on the verge of a great discovery, exploring many different psychological perceptions of space and time.

More than two dozen independent theater and musical productions have been based on "Einstein's Dreams." One of the most widely used books on college campuses, Lightman's novel was the 2007 selection for Washington University's Freshman Reading Program.

Lightman received a bachelor's degree in physics from Princeton University in 1970, Phi Beta Kappa, and a doctoral degree in theoretical physics from the California Institute of Technology in 1974. From 1974-76, he was a postdoctoral fellow in astrophysics at Cornell University. He served as an assistant professor of astronomy at Harvard University from 1976-79 and for 10 years was a research scientist at the Harvard-Smithsonian Center for Astrophysics.

In 1989, he became the first professor at Massachusetts Institute of Technology to receive a joint appointment in the sciences and the humanities. In 1995, he was appointed the John E. Burchard Professor of Humanities.

He later co-founded the graduate program in science writing. He also helped create a new communication requirement for all MIT undergraduates to have a course equivalent in writing or speaking each of their four years. He resigned his chair in 2002 to allow more time for writing, and now serves as an adjunct professor of humanities.

His essays and stories have appeared in many national publications. His novel "The Diagnosis" was a finalist for the 2000 National Book Award for fiction.

Among his non-fiction books are "Origins: The Lives and Works of Modern Cosmologists" (with R. Brawer, 1990); "Ancient Light: Our Changing View of the Universe" (1991); "Great Ideas in Physics" (new edition 2000); and "The Discoveries: Great Breakthroughs in 20th-century Science" (2005).

Lightman's research articles have appeared in The Physical Review, The Astrophysical Journal, Nature and other journals.

He has received numerous awards and honors and is a fellow of the American Association for the Advancement of Science, the American Physical Society and the American Academy of Arts and Sciences.

In 1999, he and his wife, Jean, founded the Harpswell Foundation, which provides educational opportunities to disadvantaged children and young people.

The event is free and open to the public. For more information, call 935-4620 or visit assemblyseries.wustl.edu.

New media workshops begin at Kemper

BY LIAM OTTEN

The proliferation of new and digital media — from computers and Web sites to television screens, cell phones and other handheld devices — has profoundly impacted the ways we see and interact with the world around us.

It also has provided tremendous new possibilities for the creation and experience of art. This fall, the Mildred Lane Kemper Art Museum will launch several new outreach programs designed to highlight the aesthetics and expanding role of new media and digital art.

"We have all of this technology in our daily life but for museum-goers there's still a lack of familiarity with these mediums," said Michael Murawski, Ph.D., the museum's coordinator for education and public programs. "People aren't quite sure how to approach or understand them. So one of our primary goals is to help a wide range of audiences come to appreciate and feel more comfortable with this work."

Next week, the museum will launch "No Experience Required," a series of workshops exploring the what, why, who and how of digital and new media art. The series begins at 7 p.m. Tuesday, Sept. 18, with "What is New Media Art?" which will survey the role of digital media in contemporary artistic (and museum) practice. The series will continue at 7 p.m. Oct. 17 with "Video as Art and Interface," which will include viewings and discussions of landmark works from the 1960s and '70s.

Both workshops are hosted by Sabine Eckmann, Ph.D., director and chief curator for the Kemper Art Museum, and Lutz Koepnick, Ph.D., the museum's curator for new media, as well as professor of German and of film and media studies, both in Arts & Sciences. Eckmann and Koepnick recently co-curated the exhibition "Window | Interface" (on view through Nov. 5), which explores the ways electronic windows and interfaces have come to structure the practice and experience of art today.

Seating is limited and advance registration is required. Cost is $20 per workshop ($10 for students and Kemper Art Museum members). For more information, call 935-5490; visit kemperartmuseum.wustl.edu/rsvp; or e-mail kemperartmuseum@wustl.edu.

In addition to "No Experience Required," the museum is collaborating with RoundTrips, a student-centered distance learning project based in St. Louis, to offer "virtual field trips" of "Window | Interface." Using satellite video-conferencing technology, students from schools around the country will be able to speak with museum educators and curators in real-time while engaging with interactive artworks by Peter Campus, Olafur Eliasson, Iñigo Manglano-Ovalle and Jeffrey Shaw.

"It presents some technological challenges, but I think it's one of the most important educational programs we're doing," Murawski said, adding that the program was designed to meet both Missouri grade-level expectations and national education standards. "Students can ask the curators and myself questions, but more importantly they can tell the camera to move to the left, or closer, or further away to give them an active experience of these new media works."

Novelist Orner to launch fall reading series

Novelist Peter Orner, the visiting Fannie Hurst Professor of Creative Literature in the Writing Program in Arts & Sciences, will read from his fiction at 8 p.m. Thursday, Sept. 13. In addition, Orner will lead a talk on the craft of fiction at 8 p.m. Thursday, Sept. 20.

Both events — which launch The Writing Program's Fall Reading Series — are free and open to the public and take place in Hurst Lounge, Room 201 Duncker Hall.

Orner is the author of "The Second Coming of Mavala Shikongo" (2006), winner of the Bard Fiction Prize and a finalist for the Los Angeles Times Book Prize. Set in the African nation of Namibia — where Orner lived and worked in the early '90s, shortly after the nation's independence — the book follows Larry Kaplanski, a white American who volunteers to teach at a remote all-boys Catholic school. Sharing quarters with his male colleagues, Kaplanski soon falls in love with the principal's sister-in-law, Mavala Shikongo, a former guerilla fighter now teaching kindergarten.

"(Orner) has written a starvation diary about desire, with as much sexual tension as a bodice-buster," noted The New York Times Review of Books. Salon.com praises "Mavala Shikongo" as "the standard by which all writing of this southern African region should be set," while the Boston Globe adds that "with this staggering debut novel, Orner has joined the first rank of American writers."

Orner is also the author of the collection "Esther Stories" (2001), a finalist for the Hemingway Foundation/PEN Award and winner of the Goldberg Prize for Jewish Fiction as well as the Rome Prize from the Academy of Arts and Letters. His work also has appeared in the Atlantic Monthly, The Paris Review, McSweeney's, and "Best American Stories 2001." He received a Guggenheim Fellowship in 2006.

Born in Chicago, Orner is currently a writer-in-residence at Bard College.

For more information, call 935-7130 or e-mail dschuman@wustl.edu.

Subsequent events take place at 8 p.m. in Hurst Lounge.

- **Sept. 27** — Short story writer ZZ Packer, author of "Drinking Coffee Elsewhere," reads from her work.
- **Oct. 25** — Susan Wheeler, visiting Hurst professor, reads from her work. Wheeler is author of the novel "Record Palace," as well as four poetry collections: "Bag 'o' Diamonds," "Smokes," "Source Codes" and "Ledger."
- **Oct. 30** — Susan Wheeler gives a talk on the craft of poetry.
- **Nov. 8** — Poet Thomas Sayers Ellis, author of "The Maverick Room," "The Good Junk" and the forthcoming "Breakfast and Blackfist: Notes for Black Poet," reads from his work.
- **Nov. 29** — University alumna Kathleen Finneran, author of "The Tender Land: A Family Love Story," will read from her work.

Thursday, Sept. 27

Noon. Barnes-Jewish Hospital Ethics Committee Lunch and Learn Brown Bag Forum. "Teenage Sex and the HPV Vaccine, Ethical Issues." Diane Merritt, prof. of obstetrics and gynecology. Barnes-Jewish Hosp. Bldg., Steinberg Amphitheatre. 747-5361.

Noon. Genetics Seminar. "Genetic Control of Bacterial Virulence." Eduardo Groisman, prof. of molecular microbiology. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

4 p.m. Vision Science Seminar Series. "Neurturin-RET Mediated Signaling is Critical for Normal Retinal Function." Milam Brantley, asst. prof. of ophthalmology. Maternity Bldg., Rm. 725. 362-3315.

7-9 p.m. School of Medicine CME Course. Mini-Medical School III. Cost: $125. (Continues weekly through Nov. 15.) Eric P. Newman Education Center. To register: 362-6585.

8 p.m. The Writing Program Fall Reading Series. ZZ Packer, author, will read from her work. Hurst Lounge, Room 201 Duncker Hall. 935-7130.

Music

Thursday, Sept. 20

8 p.m. Jazz at Holmes. Carolbeth True, pianist, and Randy Holmes on trumpet. Holmes Lounge, Ridgley Hall. 935-4841.

Thursday, Sept. 27

8 p.m. Jazz at Holmes. Paul DeMarinis on saxophone. Holmes Lounge, Ridgley Hall. 935-4841.

Sports

Friday, Sept. 14

7:30 p.m. Volleyball vs. Juniata College. Washington University Teri Clemens Invitational. Athletic Complex. 935-4705.

Saturday, Sept. 15

9:30 a.m. Volleyball vs. U. of La Verne. Washington University Teri Clemens Invitational. Athletic Complex. 935-4705.

Noon. Football vs. Wheaton College. Francis Field. 935-4705.

5 p.m. Volleyball vs. U. of Wisconsin-Whitewater. Washington University Teri Clemens Invitational. Athletic Complex. 935-4705.

Sunday, Sept. 23

1:30 p.m. Men's soccer vs. Ill. Wesleyan College. Francis Field. 935-4705.

3:30 p.m. Women's soccer vs. Ill. Wesleyan College. Francis Field. 935-4705.

Wednesday, Sept. 26

7 p.m. Women's soccer vs. Webster U. Francis Field. 935-4705.

And More

Wednesday, Sept. 19

8 p.m. Gephardt Institute for Public Service. "'We the People' Intercollegiate Student Trivia Face-Off." Saint Louis U. and WUSTL undergraduates and law students. Mudd House Multipurpose Rm. 935-8628.

Sports

Football goes to 2-0

Senior Gabe Murphy ran for a career-high 128 yards and sophomore Tim Machan tied a school record with three interceptions as the Bears posted a 34-3 win Sept. 8 at Westminster College in Fulton, Mo.

The Bears defense, which held Lake Forest to 17 yards rushing a week ago, limited Westminster's rushing attack to 41 yards on 30 carries in the win.

Women's soccer wins

The No. 14 women's soccer team extended its regular-season winning streak to 18 games with two wins last weekend at the Glenn Hyundai College Showcase in Lexington, Ky.

In the first game Sept. 8, the Bears rallied with two goals in an eight-minute span to post a 2-1 victory over Transylvania University. In the second game Sept. 9, junior Lauren Mehner scored the game-winning goal leading Washington U. to a 1-0 win over Centre College. Goalkeeper Carrie Sear picked up her third and fourth wins of the season and now has 21 wins in her WUSTL career.

Runners ranked No. 3

The women's cross country team is ranked No. 3 in the U.S. Track & Field and Cross Country Coaches Div. III preseason poll.

The Bears return 15 runners from last season, including All-America honoree senior Tricia Frisella, who placed 22nd at the 2006 NCAA meet. Washington U. also welcomes back senior Kate Pentak and senior Tyler Mulkin, both of whom received All-Midwest Region accolades in 2006. The WUSTL men's and women's cross country teams return to action 10 a.m. Saturday, Sept. 15, at the Maryville Classic in St. Louis.

Volleyball goes 3-1

The No. 4 volleyball team posted a 3-1 record at the WUSTL National Invitational in the Field House Sept. 7-8.

The Bears defeated No. 15 Ohio Northern, 3-0, and Central College (Iowa), 3-0, Sept. 7. WUSTL lost its first match of the season the next day, falling to No. 2 Wittenberg University, 3-1. The team bounced back from the loss, defeating No. 12 Concordia College-Moorhead, 3-1.

Junior outside hitter/defensive specialist Alli Alberts and junior setter Audra Janak were named to the WUSTL National Invitational All-Tournament Team. The team returns to action this weekend against the top teams in the country at the Fourth Annual Teri Clemens Invitational.

Men's soccer 3-1

The No. 12 men's soccer team split a pair of home games last week, and is now 3-1.

The Bears defeated Westminster College, 6-0, in the home opener Sept. 6, and lost, 2-0, to Division II Truman State University Sept. 8. Junior midfielder Kellen Hayes and senior forward Marshall Plow led the Bears' offense against Westminster. The defense shut down the Westminster attack, and did not allow a shot on goal.

The loss to Truman State was the first of the season. Truman took the early lead, scoring in the fifth minute. The Bears struggled to find an offensive rhythm, taking just two shots on goal and failing to score for the first time in 2007.

MARY BUTKUS

Opening day Edward F. Lawlor, Ph.D., dean and the William E. Gordon Professor at the George Warren Brown School of Social Work, greets students, faculty, staff and friends during the grand opening of the new Commons in Goldfarb Hall Sept. 5. The Commons features spacious areas for informal gatherings, a coffee bar and state-of-the-art wireless Internet service and televisions.

Software developed to 'cut the chatter' in machining

BY TONY FITZPATRICK

A WUSTL engineer has helped find a way to "cut the chatter" in high-speed machining of aluminum and titanium aircraft parts.

Chatter in milling is an instability that arises because the cutting tool vibrates, making oscillating patterns on the work piece. The tool goes over the patterns, making the tool vibrate even more, yielding deeper patterns in the work piece, worsening until eventually the chatter destroys the tool or work piece.

Now researchers including Philip V. Bayly, Ph.D., the Hughes Professor of Mechanical Engineering, and University alumnus Jerry Halley, of Tech Manufacturing, Wright City, Mo., have developed software that predicts when chatter is going to occur as well as the accuracy of the cut. The software is based on a technique called time finite element analysis (TFEA).

Avoiding chatter allows much faster machining, makes the tool last longer and increases the quality of the parts. Lighter, stronger and more accurate parts lead to faster, more durable and more affordable aircraft.

"This analytical technique helps get accurate machining processes and can play a major role in businesses creating higher quality parts that are less costly to make," Bayly said. "You can get a big payoff in stability and accuracy just by changing the speed at which the tools cut. That's one of the key things that TFEA finds out."

TFEA simulations are performed before the milling process, using a computer model of the machining system. The analysis predicts good and bad speeds for stability and accuracy of the cuts.

Bayly and several colleagues have applied for a patent on a concept that will take advantage of TFEA to design machining processes. The computations can be done so swiftly that researchers hope the software will be used widely in advanced aerospace, automotive and medical machine shops.

Addiction

Groundbreaking research on genetic differences

– from Page 1

central to discovering and developing next-generation medicines that target diseases with increased precision and reduced risk.

Virtually all diseases have a hereditary component, transmitted from parent to child through the 3 billion pairs of DNA letters that make up the human genome. When researchers completed the final analysis of the Human Genome Project in April 2003, they confirmed that the 3 billion base pairs of genetic letters in humans were 99.9 percent identical in every person.

But housed within that remaining 0.1 percent is the mystery of why some people are more or less susceptible to particular conditions than their neighbors or even other members of their own families.

That miniscule variation explains why some people inherit relatively rare disorders, such as cystic fibrosis and muscular dystrophy, or inherit an increased risk for more common problems such as cancer, heart disease, diabetes and addiction.

"This is groundbreaking research in understanding the complex factors that contribute to health and disease," said U.S. Department of Health and Human Services Secretary Mike Leavitt.

To identify genetic risks, researchers will rely on the newfound ability to swiftly identify genetic differences throughout the genome between people with an illness and those who are healthy, leading to a better understanding of the underlying genetic contribution to the disease.

"Researchers have long known that our genes, our environmental exposures and our own behavioral choices all have an influence on our health. This new initiative will use innovative genomic tools as well as new instruments for measuring environmental factors — from diet and physical activity to stress and substance addiction — in order to begin sorting out how these different factors affect a person's risk for a number of health conditions."

To identify genetic risks, researchers will rely on the newfound ability to swiftly identify genetic differences throughout the genome between people with an illness and those who are healthy, leading to a better understanding of the underlying genetic contribution to the disease. The environmental component of the projects will begin by developing new technologies that accurately measure personal exposures with small, wearable sensors that can be used to assess environmental agents.

The final component of the research strategy is to determine whether the effect of genetic variants that increase disease risk is different in the presence of environmental exposures. In the first year of the initiative, the NIH will fund eight genome-wide association studies, two genotyping centers, a coordinating center and more than 30 environmental technology projects.

"Genome-wide association studies have proven themselves to be powerful tools for discovering the genetic contributions to common diseases," said Elias A. Zerhouni, M.D., director of the NIH. "Early findings from such studies have identified new genetic variants contributing to a higher risk of common diseases such as prostate cancer, diabetes and heart disease, but researchers have only scratched the surface."

The genome-wide association studies will be led by the National Human Genome Research Institute, part of the NIH. First-year funding for the studies was contributed by all NIH institutes and centers, including an extra investment of approximately $3.4 million by NIH's National Institute of Dental and Craniofacial Research.

Study

Economics researcher sparks lively debate

– from Page 2

According to his analysis, the reduction in obesity caused by a $1 increase in gasoline prices would save 16,000 lives and $17 billion a year.

While classical economic theory suggests that welfare is maximized by staying out of people's way, Courtemanche argues that some policy intervention may be necessary in dealing with the obesity epidemic, in part, because the problem falls into a special category known to economists as a "market failure."

"One of the most common market failures is an externality, which is where your action affects others," he said. "This is why we have cigarette taxes — secondhand smoke creates a negative externality, so it is possible that government intervention would improve social welfare."

Despite the fact that eating and exercise are personal choices, intervention may be justified because an individual's obesity may have a negative impact on society.

Despite the fact that eating and exercise are personal choices, intervention may be justified because an individual's obesity may have a negative impact on society, he said.

"With obesity, the most obvious negative externality is medical expenses," Courtemanche said. "Because of public insurance (Medicare and Medicaid), the medical expenses of obese people are often paid for by taxpayers. For people with private insurance, their medical expenses increase everyone's premiums.

"In short, then, the argument that weight is a personal choice and should not be interfered with breaks down because of our insurance system. Other market failures that may also apply to obesity are addiction and lack of perfect information, such as not knowing how many calories are in the food you eat at restaurants. Again, that doesn't necessarily mean the gas taxes are the best policy, just that some obesity-reducing policy may be appropriate."

Deans

Changing of the guard in Arts & Sciences

– from Page 1

Ph.D. initiative aimed at providing a richer purpose for Ph.D. education in the United States. He has been co-chair of this consortium of 20 leading research universities since 2005.

He recently completed terms on the Association of Graduate Schools' Executive Committee, the Council of Graduate Schools' Board, Emory University's Graduate School Advisory Council and the Graduate Record Examination Board, of which he was chair.

Thach was featured in a recent Chronicle of Higher Education cover story for his involvement in developing Academic Analytics' Faculty Scholarly Productivity Index, the newest and most academically reliable ranking system for graduate programs in the United States.

Prior to becoming dean of the Graduate School, he was chair of the University's Department of Biology from 1977-1981, coordinator of the Program for Special Major in Biochemistry and Molecular Biology from 1983-1993, director of the Graduate Program in Molecular Biology from 1974-77 and director of the Center for Basic Cancer Research from 1972-77.

"It has been an absolutely wonderful 14-plus years with never a dull moment," said Thach of his years as dean. "The focus of attention and requirements are changing continuously, which keeps it always new and fresh. Rich Smith will certainly find the job exciting and challenging."

"It has been an absolutely wonderful 14-plus years with never a dull moment. The focus of attention and requirements are changing continuously, which keeps it always new and fresh. Rich Smith will certainly find the job exciting and challenging."
ROBERT THACH

About Richard J. Smith

Smith has held a number of leadership positions since he came to the University in 1984 as professor and chair of the Department of Orthodontics in the School of Dental Medicine and as an adjunct professor of anthropology in Arts & Sciences.

In 1989, he was appointed dean of the School of Dental Medicine as a decision was being made to close the school. For the next two years he took the leadership role in completing the school's closing.

He joined the Department of Anthropology faculty in 1991 and has been chair since 1993.

Smith helped create the Program in Applied Statistics and Computation, now the Center for Applied Statistics, in Arts & Sciences and served as its first director from 2002-04.

His research focuses on the ways in which statistical assumptions are used when new knowledge is incorporated into the general record of human evolution; specifically, how the human fossil record, being incomplete, can be studied and whether complex inferences drawn from the record can be validated.

He is particularly interested in how this relates to the evolution of the human brain, the craniofacial skeleton and the differences between gender in body size.

Popular with students, Smith teaches an introductory physical anthropology course, advises undergraduates and mentors graduate students. He was elected an honorary member of the Golden Key Honor Society and the Order of Omega, the Greek leadership honorary, and he received the Emerson Excellence in Teaching Award in 2001.

In 2005, he received the Distinguished Faculty Award at Founders Day, which is given for outstanding commitment and dedication to the intellectual and personal development of students.

Smith earned a bachelor's degree in psychology from Brooklyn College of the City University of New York in 1969 and a master's degree in anatomy and a dental degree, both in 1973, from Tufts University.

After completing a three-year orthodontics residency at the University of Connecticut Health Center, he went to Yale University, where he earned a doctorate in anthropology in 1980.

Notables

DAVID KILPER

Sharing the vision Mary Sansalone, Ph.D., dean of the School of Engineering, visits with state Rep. Allen Icet (R-84th), chairman of the House Budget Committee, shortly before her presentation at the BIO Benchmarking program held Sept. 5 in the Knight Executive Education Center. Sansalone spoke on the convergence of engineering and biotechnology and of the school's vision in key research areas such as neural engineering, biomaterials, nanobiotechnology, biomedical imaging, quantitative systems biology and energy and environment. The program, sponsored by the Missouri Biotechnology Organization, brought together approximately 80 biotechnology leaders — including about a dozen legislators — to assess the state's potential in biotechnology. The Missouri Biotechnology Organization is a nonprofit trade association dedicated to development and growth of the Missouri biotechnology and biomedical industry.

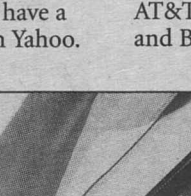
McLeod honored

Named an influential minority business leader

The St. Louis Business Journal has named James E. McLeod, vice chancellor for students and dean of the College of Arts & Sciences, one of St. Louis' Most Influential Minority Business Leaders for 2007.

He, along with the 24 other winners, will be profiled in tomorrow's Business Journal and recognized at an awards luncheon later in the day in the Chase Park Plaza's Khorassan Ballroom.

The winners were selected based on their career achievements and community involvement.



McLeod

Since being named dean in 1992 of Washington University's largest undergraduate school and then vice chancellor for students in 1995, McLeod has conceived and shepherded many great advances here.

Some of the most successful undergraduate efforts in the past two decades in which McLeod has played a major role include developing a residential college approach to dormitory living; strengthening the undergraduate advising system; constructing new small-group housing; advising the new undergraduate curriculum effort in Arts & Sciences; enhancing career planning and placement services; enriching the mix of seminar experiences for freshmen; establishing and building the John B. Ervin Scholars Program for talented students; and helping initiate and shape the expanded study-abroad program.

"I've always thought of Jim as a genius. I'm delighted that the St. Louis Business Journal, by selecting Jim for this honor, is letting others know about the great treasure we have in him," said Edward S. Macias, Ph.D., executive vice chancellor, dean of Arts & Sciences and the Barbara and David Thomas Distinguished Professor in Arts & Sciences.

"He has done so much to enhance this institution for our students," Macias said. "He has a way of working with people to get hard work done while keeping everyone feeling good about the results."

McLeod, who joined the University in 1974 as an assistant professor of German, has held various administrative positions: assistant dean of the Graduate School of Arts & Sciences from 1974-77; assistant to Chancellor William H. Danforth from 1977-1987; and director of the African and Afro-American Studies Program (now known as African & African American Studies) from 1987 until 1992, when he was appointed dean.

Freshman research projects awarded

The opportunity to work on a cutting-edge research project from day one with a faculty member in engineering or medicine is one of the School of Engineering's exciting new initiatives for undergraduates.

Inspired by the legacy of former Dean James M. McKelvey and funded in part by a grant from the Clare Boothe Luce Foundation, these undergraduate research awards are giving 17 members of the Class of 2011 the opportunity to learn what makes a research university special.

Under this new program, incoming engineering freshmen who are designated as either McKelvey or Luce Research Scholars receive an award of $8,000 each, which can be used to conduct research with one or more faculty members in the schools of Engineering and Medicine. Research grants permit students to earn a stipend for work on a research project, travel to a conference and buy essential materials. Scholars spend at least one summer at the University immersed in research under the direction of a faculty member.

McKelvey and Luce scholars also benefit from special programming that will help them gain familiarity with important issues, such as research ethics, major questions and emerging challenges in research, grant writing and applying for graduate fellowships. The program also provides numerous opportunities for improving writing and speaking skills. Scholars can publish research, participate in forums and give presentations.

Students pursue research projects in areas as diverse as tissue engineering, the mechanics of brain development and regeneration and rewiring of neural tissue. They develop biosensors and synthesize nanomaterials for use in energy and environmental technologies.

The research scholars participate in the exciting process of discovery en route to developing innovative solutions to challenging and unsolved problems. By collaborating with faculty and graduate students — and often other undergraduates working in a research group — scholars also learn teamwork and how to function in an unstructured environment.

Obituary

Spiegel, 87

Mary Jane Spiegel, a lab assistant at the School of Medicine from 1957-1986, died Wednesday, Aug. 29, 2007. She was 87.

Two schools tapped as top sources of talent

BY SHULA NEUMAN

Yahoo Inc. has made the Olin Business School and the School of Engineering two of its "Tier One" (core school) recruitment targets for recruiting operations and finance talent.

"For many students, Yahoo is a premier company to work for," said Mahendra Gupta, Ph.D., dean of the business school. "In addition to creating more opportunities for our students, this recognition enables us to have a stronger relationship with Yahoo. We have great alums at the company and I look forward to seeing an increase in that number and their successes at the company."

Yahoo is part of a growing list of firms that have made the University one of their highest priority partners for business talent acquisition. Some of the other companies that turn to Olin for new hires include Deloitte Consulting, General Mills, Citi, Bain, 3M, Exxon, Johnson & Johnson, AT&T, PricewaterhouseCoopers and Bloomingdale's.

Got happy feet? Register for Dance Marathon 2007

Registration continues for Dance Marathon 2007, a student-run effort to raise funds for and promote awareness of the Children's Miracle Network of Greater St. Louis. People may register on the event's Web site, sladm.org.

Faculty and staff members who are interested in participating, donating or volunteering with Dance Marathon can visit the faculty and staff section of the site and indicate their interest. Also, alumni are encouraged to visit the alumni portion of the site to learn how to become involved as well.

The event is a 12-hour dance-a-thon, to be held from 2 p.m.-2 a.m. Nov. 3-4 in the Athletic Complex. The event consists of music, performances, team competitions, games and a play with the "miracle children" from St. Louis Children's Hospital and Cardinal Glennon Children's Medical Center. All of the money donated is split evenly between these two hospitals to help provide programs, purchase equipment and fund facility renovations to meet the needs of area children.

Participants raise funds individually and with their teammates throughout the fall with the understanding that they will remain dancing (or at least standing) for the entirety of the dance-a-thon in November.

"This is an incredible opportunity for students, alums and faculty and staff members to become involved in an upbeat, interactive celebration while serving a great cause," said senior Greg Perlstein, executive director of St. Louis Area Dance Marathon. In 2006, Dance Marathon raised more than $123,000. This year, organizers hope to contribute even more.

For more information, e-mail executivedirector@sladm.org.

KEVIN LOWDER

Art in motion Colin Christy, a senior sculpture major in the Sam Fox School of Design & Visual Arts, hangs his work at the 14th annual Saint Louis Art Fair last Friday. Christy was one of several students taking part in the fair's Student Mentoring Program, now in its ninth year. Spearheaded by Ron Fondaw, professor of art, the program aims to prepare university-level art students for careers in the arts by matching them with professionals who work in the same medium. Students did setup and teardown at the fair, interacted with customers and attended the awards ceremony and brunch. In their second year, they get to display their own artwork as Christy did last week.

Washington People

Keeping dancers on their toes

Prather is 'missing link' among a variety of orthopedic specialists

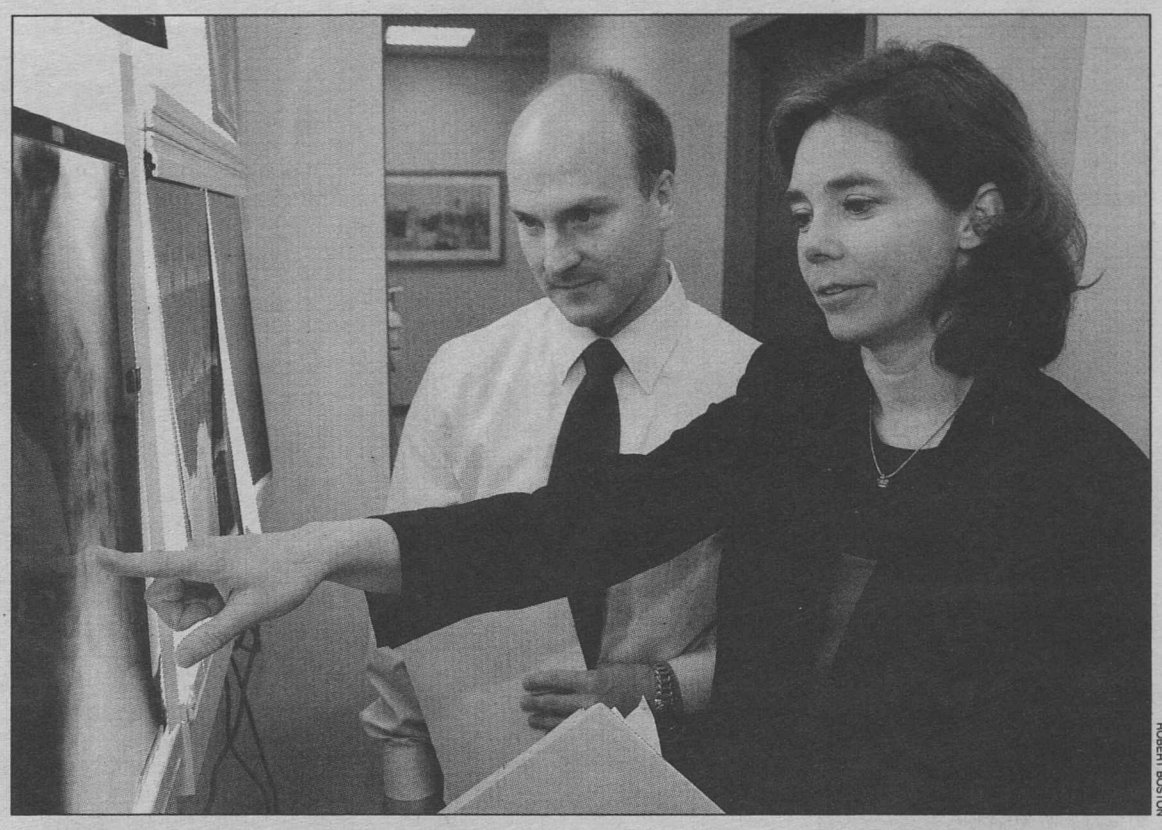
By Jim Dryden

In her office at the new Washington University Orthopedics and Barnes-Jewish Hospital Outpatient Orthopedic Center in Chesterfield, Heidi Prather, D.O., first lowers her eyes, then looks at the ceiling for a moment as she recalls her decision to go into physical medicine and rehabilitation as a specialty and to focus a part of her practice primarily on women.

"I've never told this story," she says. "My mentor during residency, who happened to be male, once looked at me and said, 'Since you're going into academic medicine, you'd better figure out these things about women because we men aren't going to.' That's honestly when I thought, 'OK, that can be my issue.'"

That was during her residency at the Rehabilitation Institute of Chicago, which is home to the Northwestern University Feinberg School of Medicine's Department of Physical Medicine and Rehabilitation. Her mentor, Joel M. Press, M.D., says he was mostly telling her things she already knew.

"She always understood that it's about the patient," says Press, director of the Rehabilitation Institute's Spine and Sports Rehabilitation Center in Chicago. "By focusing on patient needs, both women and men, she's become a leader in our field. She's also been able to build one of the best musculoskeletal fellowship programs around and helped improve the already outstanding reputation of Washington University Orthopedics."



ROBERT BOSTON

Heidi Prather, D.O. (right), and Evan Knaus, D.O., a fellow in physiatry, analyze a patient's X-ray at the Washington University Orthopedics and Barnes-Jewish Hospital Outpatient Orthopedic Center in Chesterfield. "Dr. Prather has been a driving force in the development of our multidisciplinary clinical research group that investigates the diagnosis and treatment of pre-arthritic and early arthritic hip disorders," says John C. Clohisy, M.D., associate professor and director of the Adolescent and Young Adult Hip Service for Washington University Orthopedics.

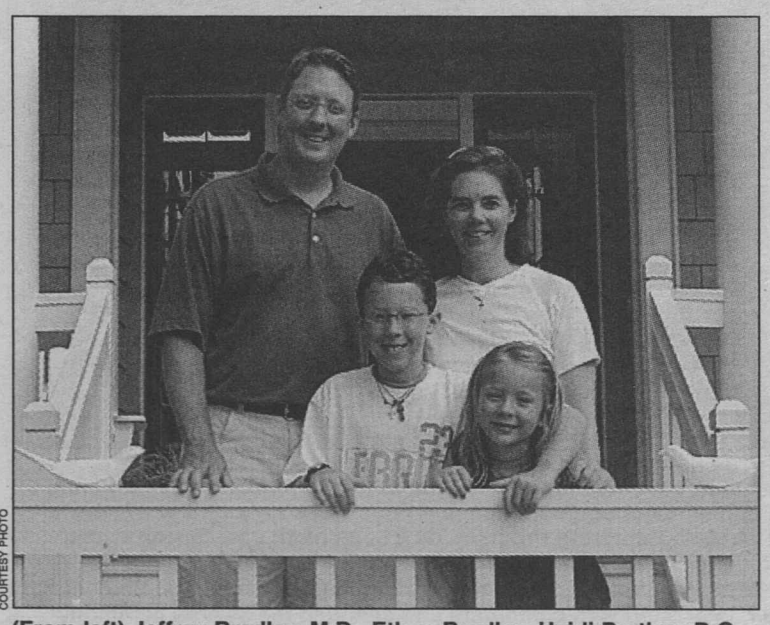
Prather, an associate professor of physical medicine and rehabilitation, is the first woman president of the Physiatric Association of Spine, Sports and Occupational Rehabilitation. In that capacity, she's getting a chance to raise awareness nationally among physiatrists (those who specialize in physical medicine and rehabilitation) regarding issues involving women and injuries.

She says when treating an injured woman, doctors — and physiatrists in particular — must consider the continuum of the lifecycle for women and where the woman is along that timeline when she experiences an injury or impairment.

"There are pre-pubertal women versus post-pubertal," she explains. "Then there's before babies, during pregnancy, immediately post-partum, pre-menopausal, post-menopausal and aging. Where a woman is on that timeline will greatly influence her musculoskeletal function. Men simply don't undergo the same kinds of changes."

For example, when a premenopausal woman has a compression fracture of the spine, Prather immediately worries about early osteoporosis. A similar fracture in an older woman also might be due to weakened bones, but determining the cause of such a fracture — an important factor in determining treatment and rehabilitation — is especially urgent for a woman of 40.

"I might easily see what the problem is, but figuring out why a woman has the problem is key," she says. "If I don't learn the cause, there's a good chance she may face that same problem in the future."



COURTESY PHOTO

(From left) Jeffrey Bradley, M.D., Ethan Bradley, Heidi Prather, D.O., and Emma Bradley on a recent vacation.

Choosing physiatry

Prather got her first exposure to the field during high school and college when she worked as a nursing assistant in a rehab hospital. That experience helped her decide on medicine as a career and physiatry as a specialty.

"I wanted to do something meaningful to me that I could be passionate about," she says.

The field began to develop during and after World War I as a means of providing care for people with impairments and disabilities, particularly amputees. Later, patients with head injuries, spinal cord injuries and stroke began to be treated by physiatrists. Since the early 1980s, physiatrists have become involved in problems with the musculoskeletal system.

"I think part of what's great about this specialty is that patients sometimes need a doctor who can cross lines," she explains. "If I see a patient complaining of neck and shoulder pain, is it the neck, or is it the shoulder? Well, sometimes it's both. A physiatrist can focus on how the pain affects a person's daily life. I work with the shoulder specialists. I work with the spine specialists and the hip specialists, and I end up being a kind of 'missing link' among those providers."

A particular area of overlap involves working with hip surgeons to better recognize and classify hip injuries in young people. There's often not much that occurs between the time when all seems fine and the time when a patient becomes a candidate for total hip replacement.

"Dr. Prather has been a driving force in the development of our multidisciplinary clinical research group that investigates the diagnosis and treatment of pre-arthritic and early arthritic hip disorders," says John C. Clohisy, M.D., associate professor and director of the Adolescent and Young Adult Hip Service for Washington University Orthopedics. "There are a variety of musculoskeletal problems in the hip that can cause symptoms in young patients, and it's been through Heidi's efforts in large part that we've been able to develop a team that provides a complete spectrum of treatment options from nonsurgical physiotherapy through major reconstructive surgery."

Another project Prather is launching involves neck, shoulder and chest pain in women undergoing breast cancer treatment. She'll work with women — after surgery and chemotherapy, but before radiation therapy begins — to learn about problems that cause upper-quadrant pain in these women.

"They can have nerve injuries or soft-tissue injuries or rotator-cuff problems in the shoulder that may or may not be related to the cancer," she says. "Many have different types of problems, but they tend to be lumped into a single group. We'd like to look more closely and find ways to change that."

Performing arts is another area of concentration. Prather and Devyani Hunt, M.D., instructor of physical medicine and rehabilitation in orthopedics, are co-directors of WUSTL's program that works with injured performing artists, primarily dancers.

"Dance is just a sport of a different nature," she says. "Dancers can injure themselves in a number of ways, and again, if the dancer is a woman, we have to determine where she is on her timeline. If she is a young girl, has she reached the point of bone maturation? Or is she in her 30s and dealing with the kind of arthritic conditions that can arise after years of dancing? Those types of issues are key both to successful treatment and to prevention of future injuries."

Music and tennis

Prather herself has been happy to avoid injuries lately. Because she's been injury-free, she's been running quite a bit. She says she rarely exercises when injured.

"I don't overdo it because when I work with my patients, I see what can happen," she says. "I'm pretty good when I'm hurt. I rest, and then I usually go around and ask other physicians and physical therapists to look at me. I find it's usually better to trust someone else than to try to diagnose yourself."

She grew up in Kansas City in a family of musical tennis players. Her father, Carl Prather, was a band director. Her mom, Becky, played drums. Heidi herself took up the trumpet and attended Drury College in Springfield, Mo., on a music scholarship, playing in the symphonic band and other musical groups, including the professional symphony in Springfield. But she never wanted music to be "work," hoping instead to use it as an outlet.

These days, she plays piano to relax after long nights of dictation. She'd like to return to music more seriously someday, but that will have to wait until her kids Ethan, 10, and Emma, 6, are a little older. Much of her spare time these days is spent as a "soccer mom," attending games and practices and taking turns shuttling them to Tae Kwon Do and dance lessons with her husband, Jeffrey D. Bradley, M.D., associate professor of radiation oncology at the Siteman Cancer Center.

She calls herself the least talented tennis player in the family, but she still managed to compete at Drury. Her younger sister, Gretchen, was the star, however, and still competes in sanctioned tournaments, recently playing in a national event.

In addition to running, Prather also rode her bike across Missouri this summer, accompanying her mentor, Joel Press. She was with him for 213 miles of his cross-country bike trip called the Ride for Rehab. Missouri was only a small portion of his total trip, but Prather made enough of an impression to receive official recognition as the Ride for Rehab's "top female physiatrist rider without twins."

Heidi Prather, D.O.

Born: May 20, 1965, Kansas City, Mo.

Education: Bachelor of arts with honors, biology and chemistry, 1987, Drury College; D.O., University of Health Sciences College of Osteopathic Medicine, 1991

University position: Associate professor of physical medicine and rehabilitation, Washington University Orthopedics

Family: Son, Ethan Bradley (10); daughter, Emma Bradley (6); husband, Jeffrey Bradley, M.D.; mother, Becky Prather; father, Carl Prather; sister, Gretchen Evans