Interaction of genes, environment focus of national addiction study

BY JIM DRYDEN

A School of Medicine psychiatric geneticist is one of several prize-winning 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).

Lauren Birur, M.D., professor of psychiatry, will lead the national study of addiction, looking at both 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 bio-statistics.

Birur 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," Birur 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."

Birur and the other investigators involved in GEI projects will conduct whole genome association studies of problems from addiction and disorders of diabetes to heart disease and sleep disorders. 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 treatments is believed to be a key to finding new ways to fight these problems.

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 6000 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 arena 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 running distance from the Danforth Campus — but work will begin soon on renovating and improving the gymnasium and athletic facilities for the use of intramural and club sports.

Students living in the South 40 welcome two new Faculty Fellows

By Neil Schoenmacher

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 linguistics, 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 undergraduates 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.

"Over the last 10 years, the
Rising gas prices could take a bite out of obesity epidemic, graduate student says

By GERRY EVERGREEN

just as rising gasoline prices are forcing many Americans to tighten their financial belts, new research indicates that higher costs may come with a related silver lining — trimmed waistlines.

"An additional $1 in real gasoline prices would reduce obesity in the US by 1.3 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 direct and causal links between gasoline prices and obesity. "This could be happening because people spend less on food, which tends to be healthier, when the price of gas goes up," 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, or trains, they 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 is greater when the price of gas goes up, people may substitute from eating out to preparing their own meals at home, which tend to be healthier."

"Research shows that reducing people's income 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 their numbers and their potential implications for policy decisions. "As a health economist, I am reasonably confident that such potential is too important to be overlooked," Courtemanche said.

The study, "A Silver Lining: The Connection Between Gasoline Price Increases and Obesity," is available online. Courtemanche's work was supported by the National Bureau of Economic Research.

Families

Faculty members enjoy their new space

On the first day of class, the 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 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 again this new academic year for the families for serving in this important role," Stratton said.

"Thompson and Eisenlohr are enjoying their new role. "For us, it's wonderful to live there. The students are nice and respectful," 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, Rosucharck Sherry 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 daughter — Shira, 2 1/2, and Leviy, 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 religion, philosophy and oral traditions, especially their role in the making of religious authority and subjectivity.

Thompson moved into his apartment before the beginning of the fall 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 of Virginia, much of my energy has been focused on dealing with students, their thinkers and writers in the classroom," he said. "But obviously there is a whole other component to students — who they are in people. I was interested in dealing with them holistically and learning more about how to mentor and guide them on a broader level, as they take what they learn here and grow into productive citizens of the world."

"We are thrilled with the interest in teaching this program from members of the judiciary and distinguished practitioners.

\"Titled \"A Silver Lining: The Connection Between Gasoline Price Increases and Obesity,\" Courtemanche\'s study touched off a lively debate in economics groups this summer when its findings were published in \"The New York Times.\"

\"Courtemanche suggested that \"families\" 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 misunderstood,\" 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 it difficult 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 the consequences of increased fuel costs.

\"Research shows that reducing people\'s income 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 their numbers and their potential implications for policy decisions. As a health economist, I am reasonably confident that such potential is too important to be overlooked.\"
Brain's control network splits in two as children approach adulthood

BY MICHAEL A. PURDY

Two recently discovered control networks that govern voluntary brain activity in adults start life as a single network in children, School of Medicine neuroscience researchers say. The results appeared in the Proceedings of the National Academy of Sciences.

Researchers previously showed the networks are made of such different, goal-oriented brain activity, en-

"It becomes apparent that these networks supervise most goal-oriented brain activity, including the networks that "We're optimistic that answers to these problems and other im- portant questions may lie in a more network-oriented approach that analyzes how different brain regions regular work with each other, exchanging data, direct- ly or by feedback loops," said co-author Steven Petersen, Ph.D., the James S. Canton Professor of Neurology and of Psychology.

In June, Petersen and his co-author 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 work toward a common purpose: control of voluntary, goal-oriented behavior. Scientists have used a new brain scanning technique called resting state functional connectivity fMRI to identify the control networks. They found that the networks work in adults was closely linked to the warfarin dose that works for each patient.

"Physicians don't have to delay initiation of therapy while they wait for genotype results," Gage said.

The dosing algorithm was established in a study of pa- tients undergoing life or hip replacement surgery, and Gage and colleagues are now testing it on patients with other conditions to confirm its general applicability.
**Writer, scientist Lightman imagines Einstein's dreams**

**By Mary Kastens**

A s 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 Anheuser-Busch Hall, Bryan Center, Courtyard Room, Lightman will provide an understanding of one of the central triumphs of science: the imagination of Albert Einstein by one of his greatest scientific colleagues.

### Department of English

**Lightman**

Visiting Professor, “Einstein and Relativity.” In addition, Lightman will conduct a writing session from 8 p.m. Tuesday, Sept. 18, to 9 a.m. Wednesday, Sept. 19, in Anheuser-Busch Hall, Bryan Center, Courtyard Room.

From an early age, Lightman has nurtured an interest in science and the arts. While in high school, he began developing science projects and writing poetry.

His first novel, “Einstein’s Dream” (1993), was an international bestseller and has been translated into 30 languages. It is an account of the subconscious musings of a young Einstein on the power of a galactic collision, and explores many different psychological perceptions of space and time.

More than two dozen independent science and musical productions have been based on Lightman’s works, including the musical “Ameriklas” by the most widely used books on college campuses, Lightman’s novel, which appeared in the 2007 selection for the 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 physics from the California Institute of Technology in 1974-76, where 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 professor at the Harvard-Smithsonian Center for Astrophysics.

In 1986, 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. Burhard Professor of the Humanities.

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

His essays and stories have appeared in many national publications. His novel “The Diagnosis” was a finalist for the National Book Award for fiction in 1995.


Lightman’s research articles have been published in Scientific American, The Astrophysical Journal, Nature and Science. He has received numerous awards and fellowships. He was a fellow of the American Association for the Advancement of Science, the American Academy of Arts and Sciences. In 1999, and he and his wife, Joanne, founded the Harvard Foundation, which provides educational opportunities to disadvantaged children and young people.

“Einstein’s Frame is Free and Open to the Public. For More Information, Call 935-4250 or Visit Assemblies.wustl.edu.”

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**Sports**

**Friday, Sept. 14**

7:30 p.m. Volleyball vs. Iona College, Washington University Women’s Intercollegiate Athletic Complex. 935-4700.

**Saturday, Sept. 15**

9:30 a.m. Cross country at U. of I. at the Drake.

9:45 a.m. Cross-country at Xerox Great Lakes Invitational. Athletic Complex. 935-4700.

Saturday, Sept. 23

1:30 p.m. Women’s soccer vs. Illinois College.

3:30 p.m. Women’s soccer vs. Ill. 935-4700.

**Wednesday, Sept. 26**

1:30 p.m. Women’s soccer vs. Webster U. Francis Field. 935-4700.

### More and More

**Wednesday, Sept. 19**

6 p.m. Egalitarian Institute for Public Policy Students and WUSTL Employees “Student Thing Face-Off” Saint Louis U. Wellness Atrium, undergraduate and law students. Misdoub Multipurpose Rep. 935-8070.
Central to identifying 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 personal exposures — 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 new genome-wide association studies, which are 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 will be used in developing new technologies that accurately measure personal exposures with small, wearable sensors that can be used to assess environmental agents."

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.

"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 Trout


"This analytical technique helps get accurate modeling processes and can play a role in businesses creating higher quality products, or helping to develop new tools to make," Bayly said. "You can get a big payoff in stability and accuracy by choosing the tools that cut. That's one of the key things about the tool's output."

"SETRA simulations are performed before the milling process, using a computer model of the machining system. The analysis predicts good and bad accuracy of the cuts."
**McLeod honored**

**Earned an influential minority business leader**

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

Since being named dean in 1992 of Washington University in St. Louis’ largest undergraduate school and then vice chancellor for students in 1995, McLeod has counseled and shepherded many great advancements.

Some of the most successful undergraduate efforts in the past two decades in which McLeod has taken a major role include developing a residential college approach to dormitory living; strengthening the undergraduate advising system; constructing a small-group housing; advising the new undergraduate curriculum effort in Arts & Sciences; enhancing career planning and placement services; enriching the mix of cutting-edge research project leadership; and the development and growth of the Missouri biotechnology and biomedical industry.

**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 online or call 314-935-6673.

Faculty and staff members who are interested in participating, donating or volunteering with Dance Marathon can visit 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. to 2 a.m. Nov. 3-4 in the Fieldhouse Complex. The event consists of music, dance, trivia, 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 teams 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, alumni and faculty and staff members to become involved in an upbeat, interactive celebration while serving a great cause," said senior Greg Perlerin, president of 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.

**Freshman research projects awarded**

The opportunity to work on a cutting-edge research project from day one with a faculty mentor and enjoy the funding of a stipend is one of the School of Engineering's exciting new initiatives for undergraduates.

Inspired by the legacy of former Dean James M. McKeever and funded in part by a grant from the Clara Boebbe Luxe Foundation, these undergraduate research awards are given to 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 McKeever or Luxe Research Scholars receive an award of $4,000, 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 working in a research group — structured environment.

In addition, 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 environmental engineering, the mechanics of brain development and regeneration and studies 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 — scholars also learn teamwork and how to function in an unstructured environment.

**Obituary**

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 Mahmoud Guepratte, Ph.D., dean of the School of Business. "In addition to creating more opportunities for our students, this recognition enables us to have a stronger relationship with Yahoo.

"Tier One" (core school) recruitment targets for recruiting operations and finance talent.
Keeping dancers on their toes

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

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