University to purchase 33 apartment buildings

Washington University has reached an agreement with Parkview Properties Inc. to purchase 33 apartment buildings — 32 are located in the Skinker-DeBaliviere neighborhood in St. Louis city, and one is located in University City. They comprise 331 apartment units that are occupied primarily by Washington University graduate and professional students.

"The University is arranging to purchase the properties and also to sign a 10-year contract with Parkview Properties to manage the facilities," said Executive VP and Chancellor Richard A. Robb. The University will connect the buildings and apartments to its computer network and to its telephone system after the properties are acquired. The University also will provide transportation support by adding capacity to its shuttle loop system and, with additional security personnel.

The University is purchasing the properties from Stephen and LeCil Sailer and Alan and Kathleen Hamilton. The Sellers and Hamiltons are longtime residents of the Skinker-DeBaliviere neighborhood and have acquired the buildings over a 25-year period, managing them through their company, Parkview Properties.

"As residents of Skinker-DeBaliviere, we have come to love this neighborhood, and we want it to continue to thrive," said Alan Hamilton, president of Parkview Properties. "We believe that Washington University will bring many important additional benefits to those living in these apartments, most of whom attend Washington University."

APARTMENT BUILDINGS TO BE ACQUIRED

The following is a list of the apartment buildings that Washington University plans to purchase:

<table>
<thead>
<tr>
<th>Address</th>
<th>No. of Units</th>
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<tr>
<td>6044 Kingsbury</td>
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<td>6679 Kingsbury</td>
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<td>6512 McPherson</td>
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<td>6518 McPherson</td>
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<td>6188 McPherson</td>
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<td>6030 Pershing</td>
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<td>6042 Pershing</td>
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<td>6048 Pershing</td>
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<td>6050 Pershing</td>
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<td>6100 Pershing</td>
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<td>6152 Waterman</td>
<td>24</td>
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<td>6158 Waterman</td>
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</tbody>
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Vol. 21 No. 21 Feb. 20, 1997

WASHINGTON UNIVERSITY
IN ST. LOUIS

Elderly with dementia have trouble reporting pain, according to study

According to survey data, most nursing-home patients have problems with pain, one-third are in constant pain and more than half suffer severe pain. A study by School of Medicine researchers has found that elderly people with dementia are less likely to report pain than other elderly patients. This study told us that the more demented population, people really cannot answer very simple questions about pain. This has never really been documented before," said Fran L. Porter, Ph.D., assistant professor of pediatrics and principal investigator of the study, which was published in last December's issue of the Journal of Pain.

The findings are important because they could impact the effectiveness of pain-management efforts. The medical system relies heavily on verbal reporting to isolate and treat pain problems. Also, Porter said, failure to report pain can delay medical attention and lead to problematic behavior in the elderly.

Porter, who is an infant-pain researcher, said she decided to study pain in the elderly because pain management is difficult in this population, too. She wanted to measure the effects of dementia on the ability to report pain.

"As you get older, there is an increase in illness, and you're more likely to experience pain," she said. "It's a population that may have trouble communicating about pain, especially when you add in dementia."

A pilot project grant from Washington University's Alzheimer's Disease Research Center (ADRC) supported the research. Porter and her colleagues studied two groups of people 65 or older — 51 cognitively intact people and 44 individuals with varying degrees of dementia. All were participants in a long-term ADRC project that compares aging in normal persons and in persons with dementia.

The researchers measured each participant's physiologic responses — such as heart rate — before, during and after a venipuncture, which draws a vial of blood for testing. For the first phase, each participant sat quietly in a chair for 10 minutes (baseline). Then, a nurse came into the room, cleaned the venipuncture site on the arm, applied a tourniquet and showed the patient the syringe and needle (preparation). The nurse then drew blood. Physiologic responses also were measured for about 10 minutes after the venipuncture. Additionally, participants were asked a series of questions about their anticipated and actual anxiety levels during the procedure.

Porter expected the volunteers' verbal responses to be much higher than the medical records indicate. He was right. The research team was able to get consistent results from the study.
Lung surgery's benefits to be studied at School of Medicine, Barnes-Jewish Research at the School of Medicine and Barnes-Jewish Hospital. Patient enrollment will begin next September. The seven-year study will examine the role of lung volume-reduction surgery in the treatment of end-stage emphysema and will study the long-term effects on lung function. It also will determine appropriate patient selection criteria for the procedure and define criteria for patients who benefit most from the surgery. Cooper, a former single- and double-lung transplant patient, already has treated 175 patients with lung volume-reduction surgery. The two-year survival rate has been 90 percent.

**Medical Update**

Lung surgery's benefits to be studied at School of Medicine, Barnes-Jewish

Researchers at the School of Medicine and Barnes-Jewish Hospital will participate in a national multicenter study to determine the benefits of lung volume-reduction surgery. The National Heart, Lung and Blood Institute and the U.S. Health Care Finance Administration have funded the School of Medicine and Barnes-Jewish Hospital as one of 18 centers that will study this procedure. In lung volume-reduction surgery, a procedure that removes 20 percent to 30 percent of the damaged lungs of emphysema patients.

Lung transplant surgeons Joel D. Cooper, M.D., and Joseph C. Banchero, Professor of cardiothoracic surgery, developed the procedure in the 1990s. Dr. Cooper, who performs lung transplants, said the procedure is the second-best option for patients with end-stage lung disease.

For many patients, improved breathing is the only hope for continued life. The National Heart, Lung and Blood Institute and the American Heart Association estimate that 500,000 people have end-stage lung disease. The success of lung volume-reduction surgery is not a cure for emphysema, and it is offered only to those who have some remaining healthy lung tissue.

For his central role in developing lung transplantation surgery and lung volume-reduction surgery, Cooper recently was awarded the Jacobson Innovation Award by the American College of Surgeons. The award honors living surgeons, or surgical teams, who have been innovators of new surgical developments or techniques.

The Washington University-Barnes-Jewish Hospital team has performed the largest number of lung transplants and lung-reduction surgeries of the 18 selected sites.

**Burton's touch research earns grant**

Harold Burton, Ph.D., professor of anatomy and neurobiology, has received a four-year, $1.4 million grant from the National Institute of Neurological Disorders and Stroke. The award honors the brain processing the information people gather by touching objects. Burton, who also is a professor of cell biology and physiology, said, "Little is known about how the brain pays attention to what you are touching and how it stores information in short-term memory," said Burton, who also is a professor of cell biology and physiology.

For Burton's research, these questions: Burton makes functional images of the brain while subjects perform in a PET (positron emission tomography) scanner or an MRI (magnetic resonance imaging) scanner and touch various raised surfaces. These studies have revealed several areas in the parietal cortex—the upper-back part of the brain—that become active when tactile information is processed. Burton will fine-tune these studies by trying to match individual areas with specific functions. These experiments with unfamiliar surfaces should reveal how the brain handles everyday tasks. When you touch a hot coffee mug, for example, one part of your parietal cortex attend to the texture of the mug and another to its temperature, which parts of your brain are active during the brief period you remember these features? As well as identifying somatosensory areas of the human brain, Burton examines how these regions function by recording impulses from individual brain cells while monkeys perform tactile discrimination tasks. A larger question underlies these experiments: "Do the parts of the brain that process tactile information function in the same way as the brain's visual system, which has been studied much more extensively?" Burton asked. "Neuroscientists assume they do, but the evidence isn't there."

Clarifying this issue might lead to better prostheses for people who rely on touch instead of sight, Burton hopes.

**Driving study**

As part of the Safe Driving Program, Linda Hunt, right, evaluates Eleanor Fiedler, left, of Ladue, who recently completed her first driving test. Eleanor Fiedler is one of 18 centers that will study lung volume-reduction surgery. The two-year survival rate has been 90 percent.

A Washington University study finds that the parietal cortex—the upper-back part of your brain—is involved in the sense of touch. Burton said, "If we can determine how the tactile features of objects such as pattern of raised dots activate the brain, we may be able to redesign tactile prostheses to optimize this activation and make them work even better."

People began using Braille in 1844," he said. "If we can determine how the tactile features of objects such as pattern of raised dots activate the brain, we may be able to redesign tactile prostheses to optimize this activation and make them work even better."
Fisher fuses psychology, biology of health

Behavioral science is an area of health care whose time has come, says Edwin B. Fisher Jr., Ph.D., professor of psychology in Arts and Sciences on the Hilltop Campus. Fisher is working on the Hilltop Campus as an assistant professor. In 1980, he earned a Ph.D. at the State University of New York at Stony Brook — and said, “It’s always been a part of health care, but its role with the results?”

And changing behavior entails some thorny psychological issues, said Karen Monaco, the lung association’s senior investigator. Fisher heads the Center for Health Behavior Research as a research professor of medicine in the Division of General Medical Sciences. There, he probes the realm and views of the field of Psychology as health. It’s that place when someone is overlooked and viewed as not real science. For the past 20 years, however, Fisher has been a patient voice for the importance of behavioral science in health. “Biology and psychological science are intrinsically tied,” he said. “The understanding of how our relationships grow and change can be even more multi-faceted.”

Fisher came to Washington University in 1972 as a child of the 1960s, Fisher was drawn to psychology as a way to help people. His early research interests focused on self-control — how people manage behavior in the face of temptation. He tried to decipher how people are able to resist what they want — to say “no” to a cookie or a cigarette. Fisher learned that self-control essentially is about making clever choices. Most people erroneously see self-control as mental sweetness. But dieters who lose weight and smokers who quit acknowledge the temptation and plan around it, Fisher said. “We do all it,” he said. “For example, putting the alarm clock across the room is essentially planning around the temptation to hit the ‘off’ switch and go back to sleep.”

In the course of his work, Fisher has become one of the nation’s leading spokespersons on the issue of smoking and health. On behalf of the American Lung Association, he has spoken to an array of audiences, has testified before Congress, and has appeared on national television to discuss smoking and how to promote nonsmoking. “Eventually, attention to the psychosocial aspects of any disease will become a normal part of health care,” he said. “It’s hard, though, because integrating behavioral science into health care involves a shift in perspective.”

Why will this field grow in acceptance? Fisher said there are three reasons.

First, research has uncovered clear links between health and behavior. For example, smoking is tied to heart disease, and an overweight and sedentary lifestyle can lead to non-insulin-dependent diabetes. “The medical field sees those ties and realizes that a patient’s health improves when his behavior changes,” Fisher said.

Second, behavioral breakthroughs are raising some interesting and troublesome psychological issues. Medical doctors have such as genetic testing pose a mine field for the mind. How do we handle the discovery of disease-causing genes? Should a woman with a high risk for breast cancer test for the gene? If so, what does she do with the results?

“By shifting to the new, behavioral psychology,” Fisher said, “It’s always been a part of health care, but its recognition is growing immensely.”

A Way to Help People

Fisher came to Washington University in 1972 — straight from the doctoral program in psychology at the State University of New York at Stony Brook and the Department of Psychology on the Hilltop Campus as an assistant professor. In 1980, he earned a joint appointment at the School of Medicine. As a professor of psychology in Arts and Sciences on the Hilltop Campus, he joined the Department of Psychology on the Hilltop Campus as an assistant professor. In 1980, he earned a joint appointment at the School of Medicine.

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Edwin B. Fisher, Jr., Ph.D., center, talks with George Eberle, president and chief executive officer of Grace Hill Neighborhoods, and Edna Moses, a community center site director, outside the Grace Hill administration offices.

“Eventually, attention to the psychosocial aspects of any disease will become a normal part of health care.”

Feb. 20, 1997

Nancy Marv
**Films**

All Filmboard movies cost $3 and are shown in Room 100 Brown Hall. For the 24-hour Filmboard hotline, call 935-5983.

**Friday, Feb. 21**

7 and 9:30 p.m. Filmboard Feature Series: "Night on Earth." (Also Feb. 22, same times, in Room 100 Brown Hall. For the Filmboard program, call 935-5983.)

**Tuesday, Feb. 25**

6 p.m. Japanese Film Series: "The Burmese Harp." Room 219 South Ridgely Hall.

1 and 9 p.m. Filmboard Classic Series: "Grand Illusion." (Also Feb. 26, same times.)

**Lectures**

**Thursday, Feb. 20**

11:15 a.m. Social work seminar. "Measuring the Use From Production of Industry — One Person’s Perspective," Dennis W. Priore, asst. prof. of biochemistry and of pediatrics. Room 201 Daniher Hall.


**Friday, Feb. 21**


11 a.m. Assembly Series. "Redemption Through Science: A Look at the Relationship Between Slavery," jazz musician Wynton Marsalis performs. Steinberg Hall. Room 361 McDonnell Hall.


4 p.m. Psychology/Linguistic Studies Program lecture. "A Picture is Worth a Thousand Words," P. A. Petrov, prof. of psychology, of psychiatry, and of pediatrics. Room 162 McDonnell Hall.

6:15 p.m. Germanic languages and literatures lecture. "Wahnsmitt als Metapher? The Natural Step: A Framework for Suspenseful Film Series. "The Gods Must Be Crazy." (Also Feb. 22, same times, in Room 100 Brown Hall. For the Filmboard program, call 935-5983.)


7:30 p.m. Astronomy meeting. "The Great Comet Hunt," Carl M. Bender, prof. of physics. Room 162 McDonnell Hall.

**Saturday, Feb. 22**

11 a.m. University College Saturday Seminars. "When you see this, remember me..." William H. Giam, the David Mayo Disting­ uished Professor in the Humanities and director, International Center, Room 307 South Bldg.

1 p.m. Slide lecture. Patrick C. Renschen lecture. "The story of his recent work: "Where the River Turns," which will be the first trip to Big Bend National Park, Texas, for the McMillan Hall.

9 p.m. Social work seminar. "Grassroots Empowerment and Economic Entrepreneurism," Rebecca D. Stoner, prof. of history, SUNY at Stony Brook. Room 361 McDonnell Medical Sciences Bldg.

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Plasma Membrane Fatty Acid Transport, Analysis of Monogenic and Polygenic

Thursday, Feb. 20

7 p.m. Freshman show, "Gowns in the Gallery" features designs by eight seniors in the fashion-design program. Lisa Stehling, new art department chair. (See story on page 6.) 935-6470 or 725-0097.

Friday, Feb. 21

4:30 p.m. Annual student reception. Come and enjoy refreshments and more pool parties. Holmes Lounge, Ridgley Hall. 725-1273.

Saturday, Feb. 22

7:30 a.m. Office of Continuing Medical Education: "Recent Advances in Neurology—Recent Developments in Diagnosis, Pathogenesis and Treatment of Multiple Sclerosis." Carlton, Clayton. For more info. and to register, call 314-935-6000.


Monday, Feb. 24

7-10 p.m. Twenty-third International Medical Review. "The Genetic Diagnostics of Huntington's Disease." Strobel Amphitheater, 216 S. Kingshighway Blvd. For more info. and to register, call 362-6891.

Tuesday, Feb. 25


Wednesday, Feb. 26

11 a.m.-2:30 p.m. University College on-campus job fair. "Job Surfing the 'Net." Continuations. Cost: $60. To register, call 935-6788.

Saturday, March 1

8 p.m. New Music Circle presents an Atlanta-based quartet Only a Mother. (Theodorakis, larvae-in-residence; University College's "Over the Edge;") 211 Program; two sonatas by Domenico Scarlatti; Variations on "Aegeg" by Robert Schumann; Sonata in B-flat — Recent Developments in Diagnosis, Pathogenesis and Treatment of Multiple Sclerosis." Carlton, Clayton. For more info. and to register, call 314-935-6000.

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Conference bridges high school, college transition

A daylong conference titled "Bridging Systems for Habits of the Mind: A High School-University Dialogue for Administrators and Faculty Members" was held Feb. 8 in Anheuser-Busch Hall. This is the third year that Washington University and the Parkway School District have co-sponsored the conference for high school teachers. This year, the conference was co-sponsored by the Missouri High School Mathematics and Science Partnership and the Missouri High School Science Partnership.

The annual conference encourages dialogue on the factors affecting the successful student transition from high school to college. This year's theme focused on how instructional strategies related to brain research, critical thinking and problem-solving impact student success, particularly in foreign languages and history.

Some of the University faculty and staff members involved in planning and participating in the conference were Marilyn M. Coh, Ph.D., director of the Office of Community Engagement, and Jere Hochman, Parkway North High School principal.

The conference, which included panel discussions and dialogue sessions, was coordinated by Steven Krantz, Ph.D., professor of mathematics in Arts and Sciences and director of the Teaching Center; Martin H. Israel, Ph.D., vice chancellor for academic planning; Susan L. McLauchlin, executive assistant to Chancellor Mark S. Wrighton; and James V. Wertsch, Ph.D., professor of the history of education in Arts and Sciences.

"It was a very engaging dialogue," Isaiah said. "All of the discussions could be a lot more extensive. Everybody left with their own personal conclusions." More than 100 people attended the conference.

Ability to report pain focus of study

--- from page 1

reports to correlate with the physiologic measurements. In the cognitively normal group, heart rate increased greatly during the preparation phase but fell during the actual needle stick.

"So, for them, the disturbing part was the anticipation," Porter said. "But when the needle stick came, they weren't surprised at all and calmed down because they knew what was happening. Their heart rates went back down."

The participants with dementia had a different reaction. They did not use the preparation time to psychologically brace themselves for the needle stick.

"In fact, they may not have even realized there was an impending event," Porter said.

"This study is a first attempt to look at whether demented people can tell their caregivers if they're in pain."

--- Frank L. Porter

Porter said his only tool to ask questions like these was to observe the patients. The demented group also reported relatively low anxiety and pain. They did not use the preparation time to psychologically brace themselves for the needle stick.

"They did not use the procedure. The individuals with dementia had a very low risk of the disturbing part being the procedure," Porter said.

"So they were caught off-guard by the painful event and showed more discomfort," Porter added.

"The smallest group had a relatively low. The demented group also reported relatively low anxiety and pain. They did not use the procedure. The individuals with dementia had a very low risk of the disturbing part being the procedure," Porter said.

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Dorothy Jung Echols, pioneering geologist

Dorothy Jung Echols, professor emeritus of earth and planetary sciences in Arts and Sciences, died Tuesday, Feb. 4, 1997, of cancer at Barnes-Jewish Hospital. She was 86.

There will be a private celebration of her life March 29 at her home.

Echols was named an assistant professor of anatomy and neurobiology, has received a $1,631,613 four-year grant from the National Institute of General Medical Sciences, titled "The Woman in the Supernormal Junction." For The Record contains news about a wide variety of faculty, staff and student scholarly and professional activities.

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Of note

Five School of Medicine faculty members have received grants for pilot projects from the Missouri State Alzheimer's Disease Research Program. They are John Cernavskis, M.D., the Gregory D. Couch Professor of psychiatry and associate professor of anatomy and neurobiology, for automating volume measurements of the brain's hippocampus; Kathleen Mann, M.D., Ph.D., research assistant professor of neurology, for determining whether elderly people with dementia can give valid consent for research studies; Raj Ajiit Srivastava, Ph.D., research assistant professor of medicine, for studying how cholesterol and estrogen regulate levels of apolipoprotein E and beta-amyloid protein in the brain; Richard D. Todd, M.D., Ph.D., the Blanche F. Inelson Professor and director of the Division of Child Psychiatry and professor of genetics, for studying the clinical subtypes of Alzheimer's disease; and Jane Y. Wu, M.D., Ph.D., assistant professor of pediatrics and of molecular biology and pharmacology, for exploring the function of a gene called presenilin-1.

John E. Heuser, M.D., professor of cell biology and pharmacology, has received a $927,805 four-year grant from the National Institute of Neurological Disorders and Stroke for a project titled "Germline Proliferation and Mutations in C.Elegans." Joseph H. Steinbach, Ph.D., professor of anesthesiology and associate professor of psychiatry and neurobiology, has received a $1,161,315 five-year grant from the National Institute of Neurological Disorders and Stroke for a project titled "Arychtyocline Receptor Function.

On assignment

John W. Clark, Ph.D., professor of physics in Arts and Sciences, was scientific co­ordinator of the 1650 Whirlwind X-ray telescope for a project titled "Theory of Spin Lattices and Lattice Gauge Models" held last October at Physik-Zentrum Bad Honnef in Germany. He also spoke on 'Scientific Applications for Applications of Neural Networks." While visiting the University of Cologne's Institute for Crystal­lological Society of Germany, Clark delivered a lecture on "Applications of Neural Networks in Chemistry and Physics." Peter Heath, Ph.D., associate profes­sor of Arabic language and literature and chair of the Department of Asian and Near Eastern Languages and Literatures in Arts and Sciences, recently was named chair of the Committee on Academic Freedom in the Middle East and North Africa for the Middle East Studies Asso­ciation of North America. He also pre­sented "As-SuyutT's Maqamat: A Later Pre­Modern Example of the Genre" at last November's 38th annual meeting of the Middle East Studies Association in Provi­dence, R.I. At the same meeting, he served on a panel on "Intellectual and Political Patterns of the Third/Ninth Century in the Islamic World." Nancy Tye-Murray, Ph.D., associate professor of audiology in the Department of Speech and Hearing and interim direc­tor of research at the Central Institute for the Deaf, has been named president-elect of the American Academy of Audiology (ARA). The ARA is an international professional organization formed in 1966 to promote excellence in hearing health care through the provision of comprehensive rehabilitative and habilitative services.

To press

A book by Joan Cassel, Ph.D., research associate in anthropology in Arts and Sciences, titled "Ancestral Body," has been accepted for publi­cation by Harvard University Press.

The next generation

Graduate student Susan Manan, right, talks with Junior Academy of Science member Andy Blaida, center; his mother, Vicki Blaida-Keller; and Robert M. Walker, Ph.D., the McDonnell Professor of physics in Arts and Sciences and director of the McDonnell Center for the Space Sciences. Members of the Junior Academy of Science visited Walker's research lab on Feb. 11. The Junior Academy, which is sponsored by the Academy of Science of St. Louis, is a science network for students in grades 7 through 12. On March 20, Walker and Paul E. Lacy, M.D., Ph.D., professor emeritus of pathology at the School of Medicine, will each receive the Peter H. Raven Lifetime Award from the Academy of Science of St. Louis.

Still Life in Harlem (Henry Holt Co.)

Eddy L. Harris, visiting lecturer and writer-in-residence in African and Afro-American studies in Arts and Sciences, has been the subject of much interest in the last year, thanks to his book "Still Life in Harlem" (Henry Holt Co.), which was published last year.

A deeply affecting memoir, "Still Life in Harlem" is Harris' insightful look at a neighborhood — both real and metaphorical. He reveals the magic of Harlem as it becomes home and spirit in his masterful hands.

Through his keen perceptions, we enter the images and passions Harlem always has conjured, coming to under­stand its significance to those who live there and to those who only yearn to come to it. Unforgettable moving, this book chronicles how the world we know as Harlem came to be — from its pastoral days as a New York suburb, to its days as the mecca of the black universe, to its decline into a symbol of urban despair. Harris is torn over what this community has become and is remodeled for battle, for having abandoned it. Lured back by Harlem's enchanting whispers in the ear of his imaginings, he returns in reverse. With amazing emotional depth and candor, he explores issues of identity through Harlem's sturdy people — folks with eyes dimmed from too few chances and with life worns burred and enough to bend backs. He also examines his taut relationship with his father, juxtaposing a generation that aspired to do everything in its power to ensure that their sons and daughters would enjoy a better life against a recent generation cornered by resignation and surrender. Through it all, in what only can be seen as a stretch toward grace, Harris discovers his need for Harlem and Harlem's need for him, locating the life in this rich community that still harbors the embryos of hope. (Excepted from book jacket.)

Campus Authors

The following is a recent release available at the Campus Bookstore in Mallinckrodt Center or the Hilltop Campus or at the Washington University Medical Bookstore in the Olin Residence Hall. For more information, call (314) 935-7500 (Hilltop Campus) or (314) 362-3240 (School of Medicine).
**Hilltop Campus**

The following is a partial list of positions available in the Hilltop Campus. Information regarding these positions is available at the Office of Human Resources, Room 110, 125 University Drive, St. Louis, MO 63110. Job openings also may be accessed via the Hilltop Web at http://www.stlouis.edu/hr/home.

University Webmaster 970150. Bachelor’s degree plus five or more years experience in creating and maintaining sophisticated Web sites. Ability to work independently and with aggressive deadlines, as well as to manage and direct large projects. Responsible for monitoring and updating the University Web site. Requirements: bachelor’s degree plus five years experience in Web site design and programming. Ability to develop sophisticated Web sites. Application required.

Director of Operations 970162. Bachelor’s degree, master’s degree preferred; accuracy; strong computer skills; aptitude; ability to work independently and with aggressive deadlines. Responsible for the day-to-day operations of the Hilltop Campus. Requirements: bachelor’s degree plus two or more years experience designing and offering formal training programs to employees. Application required. 

Computer Programmer II 970685-R. Bachelor’s degree in computer science or related field, with two years experience with Macintosh/Windows, JAVA/TIM, programming and World Wide Web technology. Requirements: bachelor’s degree in computer science or related field; experience designing and offering formal training programs to employees. Application required.

Business Manager 970140. Bachelor’s degree in business administration, finance or related field; minimum of two years experience in accounting or related area; strong oral and written communication skills; ability to analyze data and recommend action; must have high level of interpersonal skills; ability to work effectively with a wide variety of people. Application required.

Career Advisor 970155. Bachelor’s degree in English with emphasis on college placement; five or more years experience in counseling college-bound students; experience in high school or college counseling. Requirements: bachelor’s degree in English, five years counseling experience, ability to work with minimal supervision. Application required.

Patient Billing/Services Representative 970655-R. Require- ments: law degree; ability to maintain effective working relation- ship with patients; must be able to handle stress of work environment. Application required.

Statistical Data Analyst 970632-R. Requirements: master’s degree; doctorate in mathematics, statistics or another related field; proficiency in computer network software; ability to work independently and with aggressive deadlines. Application required.

Lac de Sewanie

The following is a partial list of positions available in the Washington University campus in Lac de Sewanie, Quebec. Information regarding these positions is available at the Office of Human Resources, Room 110, 125 University Drive, St. Louis, MO 63110. Job openings also may be accessed via the Hilltop Web at http://www.stlouis.edu/hr/home.

Director of Operations 970162. Bachelor’s degree, master’s degree preferred; accuracy; strong computer skills; aptitude; ability to work independently and with aggressive deadlines. Responsible for the day-to-day operations of the Hilltop Campus. Requirements: bachelor’s degree plus two or more years experience designing and offering formal training programs to employees. Application required. 

Computer Programmer II 970685-R. Bachelor’s degree in computer science or related field, with two years experience with Macintosh/Windows, JAVA/TIM, programming and World Wide Web technology. Requirements: bachelor’s degree in computer science or related field; experience designing and offering formal training programs to employees. Application required.

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**FISCAL '96 TECHNOLOGY-TRANSFER STATISTICS**

In the last four years, there has been steady growth in all areas of Washington University's technology-transfer program. Fiscal year 1996 was particularly a good year. All numbers that year increased dramatically from the previous fiscal year, and licensing income increased dramatically — more than doubling the fiscal year 1995 total. Here are some statistics for fiscal year 1996:

- There were 218 total active licenses on file, and 53 of them were new licenses or license-option agreements.
- A total of 44 patent applications were filed. Of those, 31 were new patent applications and 13 were applications for improvements to previously patented technologies.
- Twenty patents were issued.
- Licensing income was $9.2 million — up $5.7 million from fiscal year 1995's total of $3.5 million.

Fiscal year 1996 ran from July 1, 1995, to June 30, 1996. According to the University's current technology-transfer policy, 50 percent of licensing income goes to the inventor, 45 percent goes to the University, and 5 percent go to the University's research office.